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HETS ONLINE JOURNAL

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Message from the Chairman

Welcome to the spring issue of the HETS Online Journal,

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

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

It is my sincere hope that you share the link to our journal with your colleagues. Should you have an innovative technique or would like share your knowledge and experience in technologies impacting higher education, please **consider submitting an article** for fall edition **on or before September 16, 2016**.

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

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

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

Message from the Chief Editor

Welcome to the Spring 2016 Edition of the HETS Online Journal!

This issue contains articles in English that explore the impact of a simulated game on learning and engagement, strategies for simplifying program assessment, reinventing remedial reading courses, and assessing student perceptions of online learning. Spanish language articles are featured on the evaluation of certification for docents teaching in virtual environments and using interactive tools to teach statistics online.

The authors, reviewers and editors, along with the HETS staff, hope that you will find these articles informative and that they will inspire you to use technology to teach and evaluate learning, as well as to retain and provide a path to graduation, for Hispanic students.

Happy Spring!!!

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Evaluación de una Certificación para Docentes que Enseñan en Entornos Virtuales

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Evaluación de una Certificación para Docentes que Enseñan en Entornos Virtuales

Evaluation of a Certification for Professors who Teach in Virtual Environments

Resumen

Este artículo presenta los hallazgos de un estudio realizado para determinar cuán eficiente es la certificación que utiliza una universidad privada en Puerto Rico para enseñar las competencias del docente virtual. El estudio utilizó un enfoque de investigación cuantitativa no experimental con un diseño transeccional descriptivo. La población del estudio estuvo constituida por el personal docente que tomó la certificación para enseñar cursos híbridos y a distancia que ofrece la institución. Para la realización del estudio se utilizó una muestra probabilística. La muestra fue seleccionada utilizando la técnica de muestra aleatoria simple. Para lograr el propósito de este estudio se utilizó un cuestionario en línea adaptado de la Escala de Competencias del Docente Virtual de Ruiz (2010). El instrumento midió la opinión de los docentes sobre las competencias pedagógica, tecnológica, interpersonal y gerencial que se enseñaron en la certificación. Los hallazgos reflejaron que las variables años de experiencia en la educación superior y años de experiencia como docente en la institución son factores que influyen en la dimensión tecnológica y gerencial. Se evidenció la necesidad de revisar la certificación y de crear un proceso de evaluación para determinar el nivel de conocimiento adquirido por el docente de las dimensiones de enseñanza virtual.

Palabras Claves

Educación a Distancia, Desarrollo Profesional, Aprendizaje a Distancia, Educación Superior, Competencias del Docente Virtual

Abstracts

This article presents the findings of a study conducted to determine the effectiveness of a certification that use a private university in Puerto Rico to teach the skills of virtual teacher competences. A non-experimental quantitative research with transactional descriptive design was performed. The study population consisted of certified instructors by the institution to teach blended and online courses. A probabilistic sample was used for the study. The sample was selected using a simple random technique. An online survey was produced from the adaptation of the Virtual Teacher Competence Scale developed by Ruiz (2010) to assess the dimensions of virtual teaching: pedagogical, technological, interpersonal and managerial. The findings reflected that the variables years of experience in higher education and years of experience as a teacher in the institution are factors influencing technological and managerial dimension. Results provided evidence that there is a need to review the certification since it lacks effectiveness in

developing the technological and managerial dimension that requires a teacher to teach in virtual environments. The findings also reflect the need to create an evaluation process to determine the level of knowledge instructors acquired of the dimensions of virtual teaching.

Keywords

Distance education, Professional Development, Distance Learning, Higher Education, Virtual Teacher Competences

Introducción

Las nuevas tecnologías de información y comunicación (TIC), han promovido la creación de novedosos modelos para la enseñanza, que implican cambios en la educación tradicional (Marquina, 2007). Este avance de las telecomunicaciones e informática han propiciado alternativas educativas, como la educación a distancia y la enseñanza en línea (Molina & Molina, 2002). Por consiguiente, la transición de la enseñanza tradicional a enseñanza en línea, presenta grandes desafíos para los estudiantes, docentes e instituciones educativas (Cormons, Lado, Rosario, & Dámaso, 2005).

Debido a la rápida adopción de estos avances tecnológicos, se requiere que los docentes se eduquen en el uso de la tecnología, para incorporarse en una nueva cultura que exige el dominio de competencias tecnológicas (Molina & Molina, 2002). Según Martín-Blas y Serrano-Fernández (2009), estas nuevas tecnologías, en particular Internet, proveen al profesor muchas herramientas que pueden ser integradas en el diseño instruccional de los cursos para mejorar el proceso educativo enseñanza-aprendizaje.

Según la demanda de cursos híbridos y a distancia aumenta, se requiere el desarrollo de programas de capacitación para instructores en línea que sirvan para alentar una mayor

participación de éstos en esta modalidad de enseñanza (Román, Kelse, & Lin, 2010). Por consiguiente, la implantación de talleres de capacitación debe profundizar en los aspectos principales educativos que se utilizan en los entornos virtuales (Marquina, 2007).

Desarrollo Profesional de Docentes que Enseñan en Entornos Virtuales

La transición de la enseñanza tradicional a la enseñanza en línea presenta desafíos para los docentes y las instituciones educativas (Batesteza & Patetta, 2004). Por tal razón, muchas instituciones de educación superior adiestran a los docentes en el manejo de tecnología para que integren la misma al salón de clases tradicional y al entorno virtual (Efaw, 2005).

Inciarte (2008) reconoce que dada la importancia de la integración de la tecnología y su uso educativo, es necesario investigar la formación inicial y continua del profesorado. Según Pankowski (2004) los docentes que enseñan en línea necesitan entrenamiento. No obstante, también indica que el tipo más común de entrenamiento que reciben se relaciona con el manejo de sistemas de gestión de aprendizaje. Esta autora dice que los docentes necesitan desarrollo profesional para aprender técnicas pedagógicas efectivas para entornos virtuales y estrategias didácticas que funcionen en los ambientes a distancia.

Taylor y McQuiggan (2008) mencionan que las destrezas pedagógicas y tecnológicas son necesarias para que los docentes sean exitosos como educadores en línea. Más aún, el avance tecnológico integrado en la educación, exige que los docentes dominen competencias tecnológicas (Molina & Molina, 2002).

No obstante, además de conocimiento en tecnología, es importante que los docentes conozcan los aspectos relacionados con los contenidos, estrategias didácticas y el diseño

instruccional de cursos en entornos virtuales (Molina & Molina, 2002). Según Pankowski (2004) el entrenamiento de los profesores que enseñan en línea debe contener cuatro componentes: (a) entrenamiento técnico, (b) entrenamiento pedagógico, (c) mentoría, y (d) actividades en un curso en línea. Por su parte, Kraus (2003) considera que parte del entrenamiento pedagógico o técnico debe ser enseñado en línea para que los docentes adquieran la experiencia de estudiar a distancia. En este sentido, se debe tener presente, que la capacitación de los docentes puede llevarse a cabo a través de un sistema a distancia en el cual los docentes puedan vivir la experiencia de ser alumnos en esta modalidad de aprendizaje (Kraus, 2003).

Competencias del Docente Virtual

Diversos estudios han determinado los criterios o dimensiones del perfil de competencias del docente virtual (Kraus, 2003; Frese, 2006; Campos J, Brenes, O., & Solano, A., 2010; Ruiz, 2010). Entre estos estudios, se presentan diversas conclusiones de cuáles deben ser las competencias básicas que debe poseer un docente para enseñar cursos en línea. No obstante, muchas de estas investigaciones coinciden en algunos de los criterios de las competencias del docente que enseña cursos a distancia (Campos et al., 2010).

Un estudio realizado por Kraus (2003) indicó que los docentes de educación tradicional que incursionan en la educación a distancia deben estar capacitados para esa modalidad de aprendizaje. De acuerdo a los resultados, Kraus (2003) considera que el profesor de educación a distancia debe poseer: (a) conocimiento actualizado en la disciplina que va a enseñar, (b) dominio de teorías y metodologías para la enseñanza a distancia, (c) destrezas de manejo de TIC para el

proceso de aprendizaje, (d) conocer las características de los alumnos del programa, y (e) desarrollar una buena relación con los estudiantes a distancia.

Para Frese (2006) los instructores de cursos en línea deben saber convertir los cursos tradicionales a cursos a distancia. Para llevar a cabo esta tarea, Frese considera que el instructor debe saber diseñar el silabario del curso y las tareas en línea. De igual forma, el instructor debe conocer las necesidades de los estudiantes de educación a distancia y su rol como facilitador del curso en línea (Frese, 2006).

Frese (2006) también indica que los docentes de educación a distancia deben ser competentes para desarrollar asignaciones y tareas en línea que sean efectivas para el desarrollo del proceso enseñanza-aprendizaje. Por tanto, es importante que estas competencias sean incluidas en las capacitaciones que se le ofrece a instructores para la enseñanza de cursos en línea (Frese, 2006).

Una investigación realizada por Orantes (2009) inquirió las actitudes, dominio y uso de las TIC en los docentes de universidades privadas de El Salvador. Las variables de su estudio comparaban el género, edad, nivel profesional, especialidad, tiempo de ejercer la docencia y tipo de contrato laboral. Los resultados demostraron que el género, nivel profesional y tipo de contrato laboral no tenían diferencia significativa con la actitud, dominio y uso de las TIC. Por el contrario, la edad de los docentes presentó diferencia significativa en el dominio y uso de las TIC. Además, los hallazgos demostraron que el tiempo de ejercer la docencia reflejó diferencias significativas en el dominio de las TIC por los docentes universitarios. Los resultados de la investigación de Orantes demostraron que la edad cronológica de los docentes y el tiempo de ejercer la docencia universitaria afectan el dominio y uso de la tecnología.

Por su parte, Angulo (2012) realizó una investigación con docentes de escuelas secundarias públicas de un municipio del Sur de Sonora. El propósito del estudio era describir las competencias digitales de los docentes en el uso de las TIC para determinar si era un factor que dificultara o favoreciera la práctica pedagógica de los docentes. En este estudio Angulo determinó la relación de las competencias digitales de docentes con la variable edad. Los resultados evidenciaron que existe una relación negativa significativa aunque de baja intensidad entre las competencias digitales de los docentes y la variable edad, lo que implica según Angulo (2009) que a mayor edad menos desarrollo de competencias.

Dimensiones de las Competencias Básicas del Docente Virtual

Entre las investigaciones relacionadas con las competencias básicas del docente virtual se encuentra un estudio realizado por Ruiz (2010) en el cual conceptualizó el constructo competencia del docente virtual. Este autor diseñó y validó psicométricamente una escala para medir el nivel de competencias del docente virtual.

Según Ruiz (2010) el docente virtual requiere de un perfil profesional competente que garantice su desempeño con eficiencia. Este autor señala que la conceptualización de la Competencia del Docente Virtual es un constructo complejo integrado por cuatro dimensiones: (a) pedagógica, (b) tecnológica, (c) interpersonal, y (d) gerencial. Este estudio utilizó estas cuatro competencias básicas del docente virtual establecidas por Ruiz.

La figura 1 representa las cuatro dimensiones de las competencias del docente virtual.

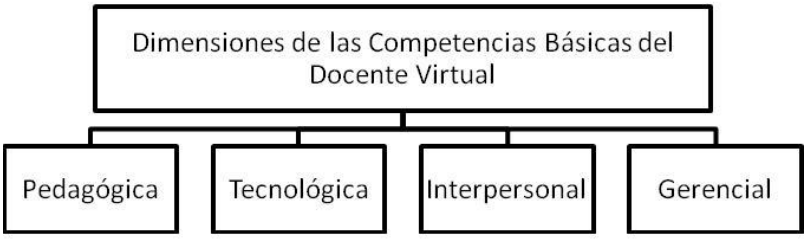

Figura 1. Dimensiones de las Competencias del Docente Virtual

Dimensión pedagógica. Ruiz (2010) indica que la dimensión pedagógica se refiere a la capacidad que debe poseer el docente para diseñar y gestionar académicamente un curso en el entorno virtual. El diseño del curso debe estar alineado a las teorías de aprendizaje y principios didácticos para garantizar el logro del aprendizaje del estudiante (Ruiz, 2010).

De acuerdo a Ruiz (2010) la dimensión pedagógica comprende dos áreas: (a) diseño de instrucción, y (b) gestión académica. El autor señala que el diseño de instrucción implica un plan didáctico en el cual se presentan los objetivos, contenido, materiales, actividades y evaluación. Mientras que la gestión académica envuelve: (a) motivación para el aprendizaje, (b) gestión de conocimiento, (c) orientación, (d) mediación cognitiva, (e) retroinformación, y (f) gestión de calidad.

Dimensión tecnológica. Según señala Ruiz (2010) la dimensión tecnológica envuelve la habilidad para diseñar y gestionar el entorno virtual que permita el fácil acceso al sistema de gestión de información utilizado para los cursos. Además, incluye la facilidad de navegación, participación, interacción y cooperación para lograr los objetivos del aprendizaje (Ruiz, 2010).

Ruiz (2010) menciona que las sub-funciones que comprenden la dimensión tecnológica incluyen el manejo de la plataforma y de las herramientas tecnológicas. Los indicadores que el

autor considera para el manejo de la plataforma comprende la creación de la interfaz del curso, accesibilidad a la plataforma y facilidad de navegación. En cuanto al manejo de herramientas tecnológicas incluye la comunicación, navegación, diseño de contenido e interacción social (Ruiz, 2010).

Dimensión interpersonal. La creación de un ambiente apropiado para el desarrollo de la interacción social y comunicación en las comunidades de aprendizaje son las habilidades necesarias para desarrollar la dimensión interpersonal (Ruiz, 2010). Para Ruiz (2010) esta dimensión es necesaria para evitar el sentimiento de aislamiento del participante que se puede percibir en un entorno virtual.

Esta dimensión comprende destrezas para manejar la comunicación y fomentar la interacción social (Ruiz, 2010). En esta dimensión es necesario el desarrollo de una comunicación efectiva a través de medios sincrónicos y asincrónicos para desarrollar comunidades de aprendizaje que ayuden a promover las interacciones estudiante-estudiante entre los miembros del curso a distancia (Palloff & Pratt, 2007).

Por otra parte, la interacción social entre los participantes de cursos en entornos virtuales se promueve con el uso de foros que fomenten la participación del grupo (Ruiz, 2010). Entre las actividades de interacción social que Ruiz (2010) recomienda para el desarrollo de la dimensión interpersonal se encuentran los foros de presentación, foros tipo cafetería y juegos interpersonales.

Dimensión gerencial. La dimensión gerencial para Ruiz (2010) se refiere a la capacidad de manejo administrativo-organizacional que un docente debe poseer en entornos virtuales. En este aspecto, Ruiz (2010) indica que las sub-funciones que incluye esta dimensión gerencial son: (a)

planificación, (b) organización, (c) liderazgo, (d) control y seguimiento; (e) evaluación y funcionamiento del curso. Ejemplos de los indicadores de esta dimensión gerencial incluyen calendario del curso, registro de participantes, normas de funcionamiento, mecanismos de seguridad, organización de grupos, liderazgo y evaluación del curso (Ruiz, p. 92, 2010).

Destrezas y Conocimientos del Docente en la Educación a Distancia

La rápida evolución de la educación a distancia ha cambiado el modo en que se imparte la enseñanza. Los docentes se enfrentan a diferentes formas de instrucción que incluyen: (a) organización, (b) presentación de contenido, (c) comunicación con los estudiantes, y (d) formas de evaluación (Ryan, Hodson, Carlton, & Ali, 2004).

En consideración a lo anterior, es necesario preparar a los docentes con las destrezas y competencias relacionadas a esta modalidad de enseñanza. Ryan et al. (2004) señalan que es preciso que los docentes conozcan cómo adaptarse al entorno virtual de cursos a distancia. Para estos autores, muchos docentes con experiencia en la enseñanza tradicional, comienzan un nuevo rol en el proceso de instrucción con nuevas pedagogías en donde deben ajustarse a un ambiente educativo distinto. Por lo que se tiene que tomar en consideración que la transición del salón de clases tradicional a la enseñanza en línea conlleva un cambio en el contexto, condiciones y ambiente de la educación (Ryan et al., 2004).

De otra parte, Mishra y Koehler (2006) mencionan que la tendencia de integrar la tecnología en el proceso educativo requiere que los docentes conozcan cómo ésta debe ser utilizada en el proceso de aprendizaje. A tales efectos, estos autores desarrollaron el modelo Conocimiento Tecnológico Pedagógico del Contenido, en inglés, *Technological Pedagogical Content Knowledge,* (TPACK).

El modelo es un marco teórico conceptual del conocimiento que debe tener el docente para la integración de tecnologías en el proceso de enseñanza (Kabakci, Ferhan, Kilicer, Nace, Birinci, & Askim, 2012). El modelo TPACK, se centra en la importancia de tres elementos: contenido (C), pedagogía (P), tecnología (T) y la interrelación entre ellos (Cacheiro, 2011). Este modelo presenta la interacción entre el conocimiento de la tecnología, pedagogía y contenido de una disciplina (Mishra & Koehler, 2006). Según Mishra y Koehler (2006) el proceso de aprendizaje es más efectivo cuando los docentes están conscientes de la interacción del conocimiento entre estas tres áreas.

En el modelo TPACK, Koehler y Mishra (2008) presentan siete componentes: (a) conocimiento tecnológico, (b) conocimiento de contenido, (c) conocimiento pedagógico, (d) conocimiento de contenido pedagógico, (e) conocimiento de contenido tecnológico, (f) conocimiento pedagógico tecnológico, y (g) conocimiento tecnológico pedagógico del contenido. Rienties, Brouwer y Lygo-Baker (2012) señalan que TPACK representa un modelo del tipo de conocimiento que los docentes deben adquirir y desarrollar para diseñar un ambiente de aprendizaje en el que se integra la tecnología. La figura 2 representa el modelo TPACK (Koehler & Mishra, 2005).

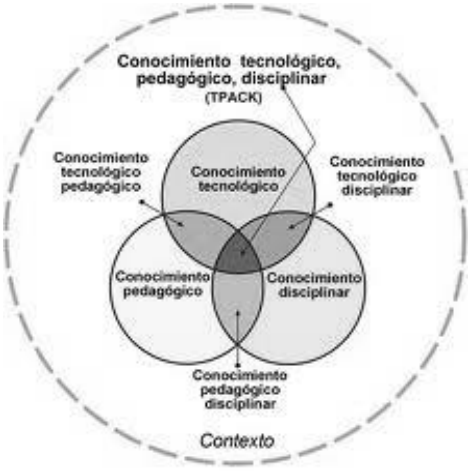

Figura 2. Modelo TPACK

El núcleo del marco teórico del modelo TPACK incluye tres áreas: (a) contenido, (b) pedagogía, y (c) tecnología (Koehler & Mishra, 2005). Estos autores describen el área de contenido (C) como la materia que se va a aprender o enseñar. El área de tecnología (T) abarca las tecnologías modernas y comunes, tales como: (a) computadoras, (b) Internet, (c) videos digitales, (d) libros, y (e) proyectores. El área de pedagogía (P) describe las prácticas, procesos, estrategias, métodos de enseñanza, avalúo y aprendizaje del estudiante (Koehler & Mishra, 2005).

Koehler y Mishra (2005) enfatizan las conexiones e interacciones existentes entre las tres áreas del modelo TPACK. Como resultado, el modelo presenta la interacción de contenido y pedagogía, que produce el conocimiento del contenido pedagógico, similar al modelo de Shulman. Según Koehler y Mishra (2005) esta interacción incluye la representación y formulación de técnicas pedagógicas y conceptos. Por tanto es una interacción que se aplica a la enseñanza del contenido específico.

Por otra parte, la interacción de tecnología y contenido produce el conocimiento de contenido tecnológico. Según Koehler y Mishra (2005) esta interacción se utiliza para describir el conocimiento de cómo el contenido de la disciplina es transformado por la aplicación de tecnología. De acuerdo a estos autores, la interacción de tecnología y pedagogía está representada por el conocimiento tecno pedagógico que describe como la tecnología puede apoyar las metas pedagógicas.

Problema de investigación

El estudio llevado a cabo evaluó la certificación que ofrece una universidad privada en Puerto Rico que prepara a los docentes para el desarrollo de cursos en entornos virtuales. La

Institución, consciente de los retos de la sociedad moderna, reconoce que el desarrollo de la tecnología en la educación es esencial en el proceso de aprendizaje. Por lo tanto, inició la integración de la tecnología en los cursos presenciales y desarrolla un proyecto de educación a distancia.

Este proyecto de educación a distancia tiene como objetivo principal, desarrollar cursos híbridos y en línea. Para la enseñanza de estos cursos, la institución ofrece una certificación a los docentes en el manejo del sistema de gestión de aprendizaje Moodle, utilizado para ofrecer los cursos a distancia. Sin embargo, los talleres, que se brindan actualmente a los docentes, tienden a enfocarse principalmente en el uso y manejo de la plataforma de gestión de aprendizaje que se utiliza para ofrecer los cursos, más que en los aspectos pedagógicos y prácticos de la enseñanza en línea (Taylor & McQuiggan, 2008; Frese, 2006).

La certificación consiste de un taller presencial de dos días y 20 horas contacto. En la certificación se llevan a cabo ejercicios en línea donde los docentes desarrollan tareas para practicar los conceptos aprendidos durante la sesión presencial, luego los participantes realizan los ejercicios de práctica en su tiempo disponible, sin embargo no se requiere la entrega de los mismos para completar y aprobar la certificación.

Durante el primer día de la certificación, se presenta a los docentes una breve historia del proyecto de educación a distancia de la institución y temas de capacitación para el desarrollo de los cursos híbridos y en línea. Los temas que se enseñan en el desarrollo de cursos incluyen: planificación y diseño del curso, asuntos a considerar al desarrollar un curso tales como: (a) contenido, (b) comunicación e interacción, y (c) avalúo.

Asimismo, en el primer día se enseñan los requisitos mínimos necesarios para desarrollar cursos híbridos y en línea. De igual forma, se muestra una guía que incluye las siete partes fundamentales que debe contener un curso a distancia. También se le entrega a los docentes, la plantilla institucional para el diseño del curso en línea. Además, se muestran siete principios de enseñanza en línea y como aplicar éstos a los cursos. El primer día de la certificación finaliza con la capacitación de los docentes en el manejo de la plataforma Moodle utilizada para ofrecer los cursos a distancia.

El segundo día de certificación, comprende las áreas de comunicación en entornos virtuales y preparación de exámenes. En la primera parte se presenta el tema de comunicación, enfatizando la importancia de ésta para fomentar el sentido de presencia en los cursos a distancia. De igual forma, se enseñan los tipos de herramientas de comunicación que provee la plataforma para el desarrollo de los cursos. Por otro lado, se instruye al docente cual debe ser la frecuencia o tiempo máximo en el cual los instructores deben contestar mensajes de los estudiantes. El segundo día de certificación concluye con los temas de herramientas de evaluación, exámenes y diseño de foros como estrategia de avalúo en cursos híbridos y a distancia. La certificación carece de un proceso de evaluación de los participantes para determinar lo que han aprendido en la capacitación estudiantes (I. Alvarado, comunicación personal, 20 de noviembre de 2012).

El problema planteado es que existe un programa de capacitación pero no se evalúan las competencias que los docentes adquieren. Por tanto, se necesitó evaluar la efectividad de la certificación haciendo un estudio de opinión sobre las competencias que adquieren los docentes certificados. Para Frese (2006) la clave del éxito de la educación en entornos virtuales y la calidad

en la educación superior no presencial está en el entrenamiento de los instructores. Por lo que según Frese, las instituciones necesitan apoyar a los docentes en el diseño, desarrollo e implantación de cursos a distancia.

En función de los planteamientos anteriormente expuestos, la autora presentó la necesidad de hacer un estudio para investigar si la certificación era efectiva en la enseñanza de las competencias del docente virtual, debido a que la misma carece de un proceso de evaluación para determinar el nivel de conocimiento del docente en los temas presentados. El estudio estuvo dirigido a evaluar cuán efectiva era la certificación para desarrollar las competencias básicas del docente virtual necesarias para enseñar cursos a distancia.

La autora investigó si la certificación capacita a los docentes en las cuatro dimensiones de las competencias básicas del docente virtual: (a) pedagógica, (b) tecnológica, (c) interpersonal, y (d) gerencial. De igual forma, determinó si existe relación entre las diferentes dimensiones de competencias básicas en los docentes certificados. El estudio sirvió para medir la opinión de los docentes sobre las dimensiones de las competencias básicas que se enseñaron en la certificación.

Metodología

Procedimiento

Diseño. La investigación fue no experimental cuantitativa con un diseño transeccional descriptivo. Según Hernández, Fernández, y Baptista (2010) una investigación no experimental se realiza sin manipular las variables. Para Creswell (2008) el diseño transeccional tiene la ventaja de medir actitudes, opiniones o prácticas de individuos respecto a algún asunto. Creswell menciona que el diseño transeccional puede medir las necesidades de servicios educativos de

una comunidad o evaluación de programa. En el estudio se utilizó un cuestionario como instrumento para medir las variables de investigación y describir las tendencias de la población.

Los resultados de la investigación, pudieron proyectar datos que ayudaron a identificar si la certificación contribuyó al desarrollo de las dimensiones pedagógica, interpersonal, tecnológica y gerencial que debe tener un docente virtual. Asimismo, se midió la opinión del docente virtual certificado respecto a la efectividad de la enseñanza de la certificación. Además, el estudio fue un medio para identificar las fortalezas y debilidades que pueden contribuir a mejorar la práctica docente en la educación a distancia. Conjuntamente, los resultados proveyeron información para mejorar la certificación que ofrece la institución a los docentes para enseñar cursos a distancia.

Instrumento. Para propósitos de este estudio, la investigadora obtuvo el permiso del Dr. Carlos Ruiz Bolívar para el uso y adaptación del instrumento utilizado en este estudio, versión adaptada de la escala *Competencia del Docente Virtual* (Ruiz, 2010). El instrumento fue seleccionado porque presentaba los criterios de las competencias básicas del docente virtual que son la base teórica del estudio.

El instrumento estaba compuesto por dos secciones. La primera sección recopiló información socio demográfica de los participantes y antecedentes en la enseñanza en línea: (a) género, (b) edad, (c) preparación académica, (d) recinto, (e) colegio/decanato al que está adscrito, (f) departamento, (g) años de experiencia como educador a nivel superior, (h) años de experiencia como docente en la Institución, (i) tiempo enseñando cursos a híbridos o a distancia, y (j) rango académico. Además, incluyó preguntas relacionadas con el diseño del curso y entrenamientos recibidos en el área de educación a distancia.

La segunda sección estaba constituida por 47 premisas relacionadas con las dimensiones: (a) pedagógica (b) tecnológica (c) interpersonal, y (d) gerencial, que midieron la opinión del nivel de competencias básicas del docente virtual. Para la valoración de los ítems se utilizó una escala Likert de 1 a 5, desde totalmente en desacuerdo (1) hasta totalmente de acuerdo (5). Para administrar el cuestionario se utilizó la herramienta para encuestas en línea Survey Monkey (SurveyMonkey, 2012).

Análisis de datos. Para propósitos de este estudio, se llevó a cabo un análisis estadístico descriptivo y correlacional de las variables contempladas en el índice de variables y la matriz de datos que se preparó utilizando el programa computarizado con paquete estadístico, Statistical Package for the Social Sciences (SPSS) Versión 21 copyright por IBM.

Las variables dependientes del estudio son las dimensiones pedagógica, tecnológica, interpersonal y gerencial. Estas variables se comparan con las variables independientes obtenidas de los datos del perfil demográfico. Las variables independientes son grupos establecidos que corresponden a años de experiencia en la enseñanza a nivel superior y años de experiencia como docente en la institución.

Resultados

Género. Ochenta cuestionarios fueron enviados a través de correo electrónico. Cincuenta y cuatro 67.5% (n = 54) docentes certificados respondieron el cuestionario. La muestra estuvo constituida por 40.7% (n= 22) hombres y 59.3% (n= 32) mujeres.

La Figura 3 presenta la frecuencia y el porcentaje del género de los participantes.

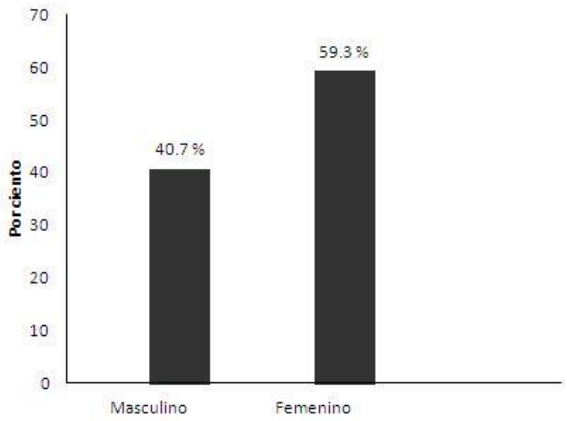

Figura 3. Distribución de los Participantes por Género

Edad de los participantes. Los resultados de la Figura 4 demuestran que el 40.7% (*n*=22) de los participantes estaba entre las edades de 46 – 55 años, un 22.2% (*n* =12) de 36 -45 años, 22.2% (*n*=12) tenían 56 años o más y 14.8% (*n* =8) estaba entre las edades de 26 – 35 años. La mayor participación fueron docentes entre las edades de 46 a 55 años.

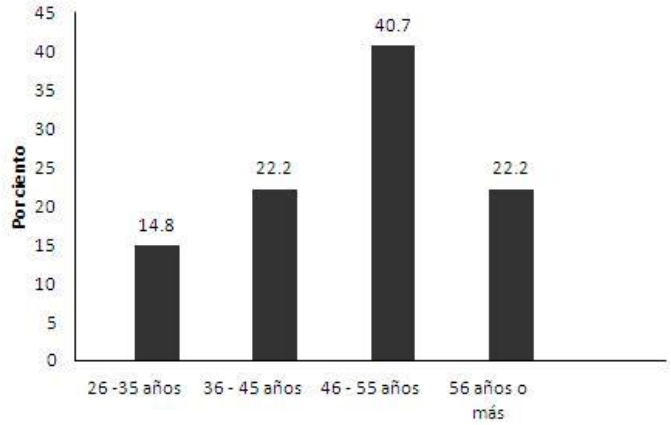

Figura 4. Rango de Edad de los Participantes

Experiencia en la enseñanza a nivel superior. Los datos de la Figura 5 muestran los años de experiencia en la enseñanza a nivel superior que tienen los docentes certificados que participaron del estudio. El 38.9% (n =21) lleva 21 o más de experiencia, mientras que un 22.2%

(n =12) tiene de 11 a 15 años, 16.7% (n =9) tiene de 1 a 5 años de experiencia, 11.1% (n =6) tiene de 6 a 10 años, 9.3% (n =5) de 16 a 20 años y 1.9% (n=1) tiene menos de un año. La mayor participación de encuestados tiene 21 años o más de experiencia enseñando a nivel superior. Solamente uno de los encuestados lleva menos de 1 año enseñando a nivel superior.

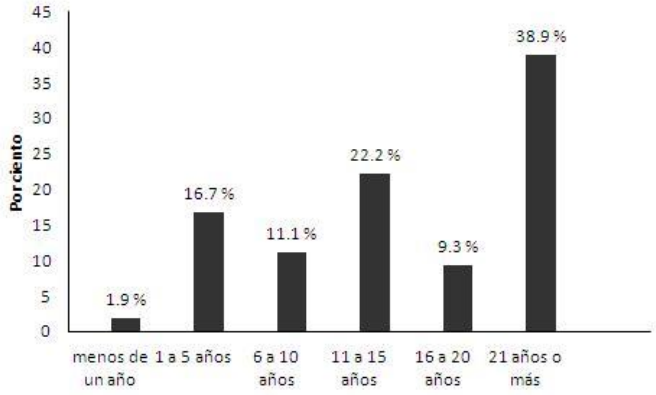

Figura 5. Años de Experiencia en la Enseñanza a Nivel Superior

Experiencia como docente en la institución. La Figura 6 muestra que el 40.7 % (n =22) de los participantes tienen de 1 a 5 años de experiencia como docentes en la institución, El 35.2% (n =19) tiene 21 o más, 13.0% de los encuestados (n =7) tiene de 11 a 15 años, 5.6% (n =3) lleva de 6 a 10 años y un 5.6% (n =3) de 16 a 20 años. La mayor participación de encuestados son profesores con menos años de experiencia como docentes en la Institución.

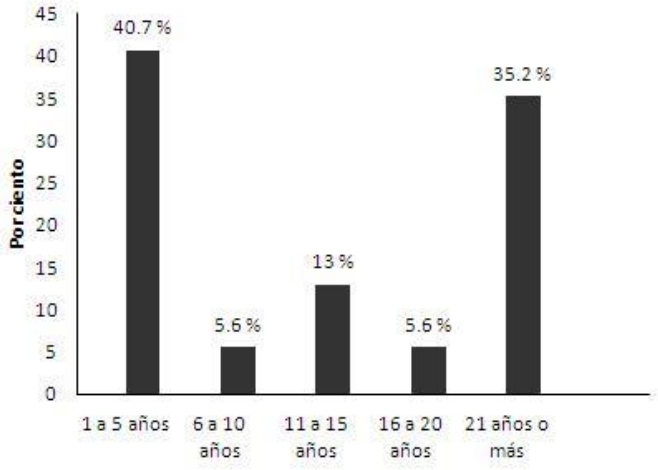

Figura 6. Años de Experiencia como Docente en la Institución

Experiencia enseñando cursos híbridos o a distancia. Los resultados de la Tabla 1 indican que el 38.9% (n =21) de los participantes lleva más de cuatro semestres enseñando cursos híbridos o a distancia, 20.4% (n =11) lleva de 2 a 4 semestres, 20.4% (n =11) lleva 1 semestre y 20.4 % (n = 11) nunca ha enseñado cursos híbridos o a distancia.

Tabla 1
Tiempo de Experiencia Enseñando Cursos Híbridos o a Distancia

Años de experiencia	Frecuencia	Porcentaje %
1 semestre	11	20.4
2 a 4 semestres	11	20.4
más de 4 semestres	21	38.9
Nunca	11	20.4
Total	54	100.0

Distribución de cursos a distancia. La Tabla 2 presenta la distribución del porcentaje de cursos híbridos y a distancia que enseñan los participantes del estudio. El 33.3% (n =18) de los participantes enseñan cursos completamente en línea, 20.4% (n =11) enseña cursos en línea e híbridos, 20.4% (n =11) enseña cursos híbridos y un 25.9% (n =14) están certificados pero no enseñan cursos híbridos ni a distancia.

Tabla 2
Distribución de Cursos a Distancia que Enseñan los Docentes

Cursos	Frecuencia	Porcentaje %
Completamente en línea	18	33.3
Cursos en línea e híbridos	11	20.4
Cursos híbridos	11	20.4
No enseñan cursos híbridos ni a distancia	14	25.9
Total	54	100.0

Diseño y desarrollo de cursos. En los resultados de la Tabla 3 el 57.4% (*n* =31) de los encuestados diseñó y desarrolló el contenido del curso que enseña a distancia. Un 24.1% (*n* =13) de los participantes no diseñó ni desarrolló el contenido del curso que enseña a distancia. El 18.5% (*n* =10) no ha diseñado ni enseñan cursos a distancia.

Tabla 3
Diseño y Desarrollo del Contenido del Curso que Enseña a Distancia

Diseño y desarrollo de cursos	Frecuencia	Porcentaje %
Si	31	57.4
No	13	24.1
no he diseñado ni enseño cursos a distancia	10	18.5
Total	54	100.0

Enseñanza de cursos en línea. Por otro lado, la Tabla 4 muestra que 77.8% (n =42) de los participantes encuestados ha enseñado cursos en línea en otra institución, mientras que el 22.2% (n =12) no ha enseñado cursos en línea en otra institución**.**

Tabla 4
Docentes que han Ofrecido Cursos a Distancia en Otra Institución

Docentes que han ofrecido cursos a distancia en otra institución	Frecuencia	Porcentaje %
Si	42	77.8
No	12	22.2
Total	54	100.0

Entrenamientos y capacitaciones para enseñar a distancia. La Tabla 5 muestra que el 64.8% (*n* =35) de los participantes ha tomado otros entrenamientos y capacitaciones para enseñar cursos a distancia. El 35.2 % (*n* =19) de los participantes solamente ha tomado la certificación que ofrece la institución.

Las capacitaciones y entrenamientos mencionados por los participantes son: Blackboard Collaborate I y II, Certificación de HETS, Certificación WebCT y Blackboard, University of Texas Pan American, Curso Capacitación Tutor en línea, Curso en línea para enseñar a distancia ofrecido por UPR, Curso Internacional de Capacitación, Curso para Tutores Virtuales de Panamá, Lynda Moodle Training, y Moodle Básico e Intermedio.

Tabla 5
Entrenamientos y Capacitaciones para Enseñar Cursos a Distancia

Ha tomado otros entrenamientos y capacitaciones	Frecuencia	Porcentaje %
Si	35	64.8
No	19	35.2
Total	54	100.0

Experiencia como estudiante en línea. La Tabla 6 presenta el porciento de participantes con experiencia como estudiantes en línea antes de enseñar cursos a distancia. La Tabla 6 indica que el 57.4 % (*n* =31) de los docentes certificados no ha tenido experiencia en línea antes de enseñar cursos a distancia, y un 42.6% (*n* =23) ha tenido experiencia previa como estudiante en línea antes de enseñar cursos a distancia.

Tabla 6
Experiencia Previa como Estudiante en Línea

Experiencia como estudiante en línea	Frecuencia	Porcentaje %
Si	23	42.6
No	31	57.4
Total	54	100.0

Análisis de Varianza para la Dimensión Tecnológica de acuerdo a los años de Experiencia en Educación Superior. De acuerdo a los resultados de la Tabla 7 el valor *F* calculado resultó significativo, $F(5,48) = 2.528$, $p < 0.05$, ya que el nivel de significancia fue de .041. Es decir, existe diferencia significativa entre las opiniones de los docentes de acuerdo a los años de experiencia en enseñanza de educación superior para la dimensión tecnológica que obtiene el docente virtual certificado.

Tabla 7
Análisis de Varianza para la Dimensión Tecnológica de acuerdo a los Años de Experiencia en Educación Superior

Fuente	*SC*	*Gl*	*MC*	*F*	*P*
Entre grupos	1161.99	5	232.40	2.528	.041
Intragrupos	4413.34	48	91.94		

*Nota*** Nivel de significancia 0.05 (dos colas)

Análisis de Varianza para la Dimensión Gerencial de acuerdo a los Años de Experiencia como Docente en la Institución. Los resultados de la Tabla 8 muestran que el valor *F* calculado resultó significativo, *F (*4,49) = 2.577, *p* > 0.05, ya que el nivel de significancia fue de .049 existe diferencia significativa entre las opiniones de los docentes de acuerdo a los años de experiencia enseñando en la Institución para la dimensión gerencial que obtiene el docente virtual certificado.

Una prueba post hoc Tukey reveló que hubo diferencia significativa entre el grupo de 1 a 5 años de experiencia y el grupo de 21 años o más (*p* < 0.05). El grupo de docentes que llevan 1 a 5 años de experiencia en la Institución demostraron mejor ejecución en la dimensión gerencial que el grupo que tiene 21 años o más de experiencia.

Tabla 8
Análisis de Varianza para la Dimensión Gerencial de acuerdo a los Años de Experiencia como Docente en la Institución

Fuente	*SC*	*Gl*	*MC*	*F*	*P*
Entre grupos	192.38	4	48.09	2.577	.049
Intragrupos	914.43	49	18.66		

Discusión de Resultados

Pregunta de investigación 1. ¿Cuál es el perfil demográfico de los docentes certificados que participaron en la investigación? se utilizó estadística descriptiva con los resultados tomados del cuestionario en su sección I. Los datos de las variables género, edad, rango académico, años de experiencia a nivel superior y años de experiencia como docente en la institución obtenidos del perfil demográfico se utilizaron para responder las preguntas del estudio.

El perfil demográfico de los docentes certificados que participaron en la investigación presenta que el 59.3% (n = 32) de los participantes (véase Figura 3) fueron mujeres. El 40.7% (n = 22) de los encuestados (véase Figura 4) tenía entre 46-55 años de edad. Basado en los hallazgos (según la Figura 5), la mayor participación 38.9% (n=21) de encuestados fueron profesores que tenían 21 años o más enseñando a nivel superior. El 40.7% (n=22) de los encuestados (véase Figura 6) tenía de 1 a 5 años de experiencia como docente en la Institución, mientras que el 35.2% (n=19) tenía 21 años o más de experiencia.

De acuerdo a los hallazgos de la Tabla 1, los profesores encuestados 20.4% (n=11) nunca ha enseñado cursos híbridos o a distancia. Por otra parte, según los resultados de la Tabla 2, 25.9% (n=14) de los encuestados no enseñaba cursos a distancia al momento de la investigación. Por lo tanto, cabe señalar que antes de que un docente certificado, que no esté enseñando cursos a distancia, se integre a la enseñanza de entornos virtuales, éste se debe capacitar nuevamente para repasar los conceptos aprendidos en la certificación para el éxito de los cursos. Lo que concuerda con Ruiz (2010) quien señala que el docente virtual requiere de un perfil profesional competente que garantice su desempeño con eficiencia. De igual forma, Frese (2006) menciona que la calidad de la educación en línea depende del entrenamiento que se le brinda a los docentes.

Basado en la Tabla 3, el 57.4% (n=31) de los docentes certificados encuestados, dijeron haber diseñado y desarrollado el contenido del curso que enseñan a distancia. El 22.2% (n=12) de los docentes (véase Tabla 4) ha enseñado cursos en línea en otra institución. Por lo que han tenido capacitaciones previas y experiencia para enseñar cursos en línea. De acuerdo a los

hallazgos de la Tabla 5, el 64.8% (n=35) de los participantes de la investigación ha tomado otros entrenamientos y capacitaciones para enseñar cursos a distancia.

También se resalta que 57.4% (n=31) de los docentes certificados (véase Tabla 6) carece de experiencia previa como estudiante en línea. Estos resultados discrepan del señalamiento de Kraus (2003), quien menciona que las capacitaciones de los docentes deben llevarse a cabo a través de un sistema a distancia que provea la experiencia de ser alumnos en esa modalidad de aprendizaje. Por lo que este autor considera que parte del entrenamiento de los docentes debe ser enseñado en línea.

El perfil demográfico de los docentes que participaron del estudio indica que la mayoría de los docentes que respondieron al estudio tenían 21años o más enseñando a nivel de educación superior y de 1 a 5 años de experiencia enseñando en la institución. Además, los hallazgos obtenidos demostraron que la mayoría de los participantes habían tomado capacitaciones previas a la certificación de la institución y carecían de experiencia como estudiantes en línea.

Pregunta de investigación 2. ¿Cuál será la diferencia significativa entre las opiniones de los docentes de acuerdo a los años de experiencia en la enseñanza de educación superior para cada una de las dimensiones de las competencias básicas que obtiene el docente virtual certificado? Para determinar si hubo diferencia significativa entre las opiniones de los profesores de acuerdo a los años de experiencia en la enseñanza de educación superior para cada una de las dimensiones, se llevaron a cabo pruebas de análisis de varianza.

A partir de los hallazgos obtenidos del análisis de varianza para la dimensión tecnológica (véase Tabla 7) se puede afirmar que hubo diferencia significativa entre las opiniones de los profesores de acuerdo a los años de experiencia en la enseñanza de educación superior.

Estos resultados podrían evidenciar que puede existir un factor generacional que influye en la opinión de los docentes respecto a la dimensión tecnológica. Por lo tanto, puede implicar que a los profesores jóvenes se les facilite desarrollar la dimensión tecnológica más que a profesores que llevan mayor tiempo enseñando a nivel superior. Estos resultados evidencian el planteamiento de Orantes (2009) quien menciona que las destrezas tecnológicas son influenciadas por el factor tiempo, tanto en edad cronológica como en el tiempo de ejercer la docencia a nivel universitario. Estos hallazgos indican que de acuerdo a la opinión de los docentes, los objetivos planteados en la certificación para las dimensiones pedagógica, interpersonal y gerencial, son logrados por los profesores independientemente de su experiencia docente en la educación superior.

Pregunta de investigación 3. ¿Cuál será la diferencia significativa entre las opiniones de los docentes de acuerdo a los años de experiencia enseñando en la institución para cada una de las dimensiones de las competencias básicas que obtiene el docente virtual certificado? Para determinar si hubo diferencia significativa entre las opiniones de los profesores de acuerdo a los años de experiencia enseñando en la institución para cada una de las dimensiones, se llevaron a cabo pruebas de análisis de varianza.

Los análisis de varianza de una vía realizados para la dimensión pedagógica, tecnológica e interpersonal no presentaron diferencias significativas entre las opiniones de los profesores de acuerdo a los años de experiencia enseñando en la Institución. Por lo tanto, estos hallazgos

indican que los objetivos planteados en la certificación son logrados por los docentes independientemente de sus años de experiencia enseñando en la institución.

Sin embargo, del análisis de varianza para la dimensión gerencial (ver Tabla 8) se obtuvo que existe una diferencia significativa entre las opiniones de los profesores de acuerdo a los años de experiencia enseñando en la Institución. Los profesores que participaron en la certificación mostraron opiniones que diferían entre ellos en la dimensión gerencial. Por lo cual, se concluye que los distintos grupos no alcanzaron la dimensión gerencial de la misma forma.

Estos hallazgos confirman los resultados del estudio hecho por Orantes (2009) en el cual las variables de mayor diferencia significativa fueron las relacionadas con el tiempo: edad cronológica del docente y tiempo de ejercer la docencia a nivel universitario. Los hallazgos del estudio de Orantes (2009) demostraron que hubo diferencia significativa en docentes mayores de 41 años en términos del dominio y uso de las TIC. Por lo cual, Orantes (2009) recomienda que las universidades deben intensificar sus programas de capacitación para docentes mayores de 40 años y quienes tengan más de 15 años de experiencia laboral universitaria.

Conclusiones

De acuerdo con los resultados cuantitativos de la investigación se concluye que de acuerdo a la opinión de los docentes la certificación logra los objetivos de la dimensión pedagógica, interpersonal y gerencial independientemente de los años de experiencia como docente en la enseñanza de educación superior. De igual forma, la certificación logra los objetivos de la dimensión pedagógica, tecnológica e interpersonal independientemente de los años de experiencia como docente en la institución.

El estudio manifestó que se encontraron diferencias significativas de acuerdo a la opinión de los docentes en la dimensión tecnológica de acuerdo a los años de experiencia en la enseñanza a nivel superior. Estos hallazgos concuerdan con los resultados del estudio de Angulo (2012) que evidencian a mayor experiencia de los docentes en la enseñanza, menor el desarrollo de las dimensiones tecnológicas. Por consiguiente, los docentes que tienen más años enseñando de forma tradicional pueden tener cierta dificultad con la tecnología, que profesores con menos experiencia en la docencia y más familiarizados con los medios tecnológicos. Se puede concluir que podría existir limitación de los profesores de más experiencia para someterse a cambios en la enseñanza educativa lo que impide el logro de los objetivos tecnológicos de la certificación. Por lo tanto, se recomienda que la certificación sea revisada en todo lo relacionado con temas y actividades que capaciten a los profesores que no tienen muchas destrezas utilizando la tecnología.

También, los resultados del estudio (véase Tabla 8) manifestaron diferencia significativa en la opinión de los docentes certificados para la dimensión gerencial de acuerdo a los años de experiencia enseñando en la institución. Los dos grupos de mayor participación (véase Figura 6) fueron los docentes de 1 a 5 años de experiencia 40.7% (n=22) y de 21 años o más 35.5% (n=19). De acuerdo a la opinión de algunos docentes que llevan menos tiempo en la institución, éstos habían sido capacitados previamente para enseñar en entornos virtuales en otros lugares donde laboraron antes de trabajar en la institución. Por lo cual, podrían dominar las dimensiones presentadas en la certificación. Mientras que según la opinión de los docentes que llevaban más tiempo enseñando en la institución y habían incursionado en la modalidad de enseñanza en línea,

éstos requieren de capacitaciones en los temas gerenciales de planificación, organización y liderazgo en TIC para enseñar en entornos virtuales.

Los hallazgos demuestran que los grupos no alcanzaron la dimensión gerencial de la misma forma. Estos resultados coinciden con Orantes (2009) quien encontró que existía diferencia significativa entre el dominio de las TIC y el tiempo de ejercer la docencia en una institución. En este sentido, es recomendable que se integren en la certificación actividades para desarrollar las dimensiones tecnológica y gerencial del docente que enseña cursos en entornos virtuales. De acuerdo con Gros y Silva (2005) la capacitación de docentes de forma presencial o en línea, así como los programas de apoyo pueden brindar seguridad a los instructores de manera que sean parte fundamental del éxito del programa a distancia.

Implicaciones de los Hallazgos

Esta investigación permitió determinar si la certificación para docentes que enseñan en entornos virtuales fue efectiva para lograr los objetivos planteados en la dimensión pedagógica, tecnológica, interpersonal y gerencial de acuerdo a la opinión de los docentes que participaron de la misma. De los resultados obtenidos se deriva que de acuerdo a la opinión de los docentes, la certificación que ofrece la institución privada en Puerto Rico logra desarrollar la dimensión pedagógica e interpersonal. No obstante, los hallazgos demostraron que debe mejorar la enseñanza de la dimensión tecnológica y gerencial.

El estudio evidenció la necesidad de capacitación en la dimensión tecnológica para profesores que llevan más tiempo enseñando a nivel de educación superior y sus métodos son los tradicionales. También, los hallazgos del estudio demostraron la necesidad de capacitación en la dimensión gerencial para docentes con mayor experiencia enseñando en la institución.

La importancia de los resultados de esta investigación es que se identificó que la fortaleza de la certificación estriba en el logro de los objetivos planteados para el desarrollo de la dimensión pedagógica e interpersonal. Sin embargo, la debilidad que tiene la certificación es que debe reforzar el desarrollo de la dimensión tecnológica y gerencial para que lleguen satisfactoriamente a los profesores más comprometidos con la enseñanza tradicional. Los resultados de esta investigación pueden ser útiles para instituciones que deseen mejorar los programas de capacitación profesional para docentes que enseñen cursos híbridos o en línea. Al identificar las áreas débiles que se deben mejorar en la certificación, se pueden modificar e integrar actividades que desarrollen el conocimiento en herramientas tecnológicas, estrategias pedagógicas, y manejo gerencial de la plataforma que debe poseer un profesor para adaptarse a la modalidad de cursos a distancia.

Limitaciones

Algunas limitaciones de esta investigación incluyeron, por ejemplo, que algunos de los participantes habían tomado certificaciones previas a la que ofrece la institución. Por lo tanto, tenían conocimiento adquirido de otros talleres y esto pudo influenciar en los resultados obtenidos en las respuestas del instrumento. Otra limitación fue el tiempo de maduración que tuvieron los participantes. El estudio se llevó a cabo después de transcurrido un tiempo en que los docentes habían tomado la certificación, lo cual pudo influenciar las opiniones del participante. Finalmente, otra limitación fue que algunos de los participantes no enseñan cursos a distancia por lo que no aplican lo aprendido en sus cursos, lo cual puede ocasionar que se olviden estas destrezas y no se desarrollen en el docente.

Recomendaciones

Considerando los hallazgos obtenidos y las implicaciones del estudio a continuación se presentan las siguientes recomendaciones.

1. Revisar la certificación en todo lo que se refiere a la dimensión tecnológica y gerencial necesaria para enseñar en entornos virtuales.

2. Considerar la evaluación del docente participante en la certificación antes y después de la misma para determinar si se logró la enseñanza de las dimensiones de las competencias básicas del docente virtual.

3. Reformar la certificación ofreciendo la misma de forma híbrida o en línea para la capacitación que el docente adquiera la experiencia de aprendizaje en la modalidad de educación a distancia y puedan tener la experiencia antes de participar con los alumnos en esta modalidad de aprendizaje.

4. Fortalecer la certificación en la dimensión tecnológica y dimensión gerencial en docentes que tienen más tiempo enseñando de forma tradicional para el logro de los objetivos planteados en las destrezas tecnológicas y gerenciales.

5. Integrar el modelo TPACK a la certificación para reforzar el conocimiento tecnológico, pedagógico y de contenido que permitirá fortalecer el proceso de enseñanza-aprendizaje en entornos virtuales.

6. Evaluar la certificación para determinar la efectividad del proceso de capacitación de acuerdo al aprendizaje logrado, satisfacción de los participantes, aplicabilidad de los conocimientos y resultados logrados.

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Hostos Online Learning Assessment: A Survey of Student Perceptions

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Abstract

The Office of Education Technology (EdTech) at Hostos Community College and faculty members from various departments created the Hostos Online Learning Assessment (HOLA) Task Force to design a survey for gathering and assessing data about students' perceptions of their online learning experiences. The task force wanted to utilize the survey results to identify strengths and weaknesses in online instruction and student preparedness for the online learning environment. Student perceptions of online learning are integral to building upon current best practices and also gauging the preparedness of the students for the online learning environment, particularly in an urban, Hispanic-serving community college. The survey and results will be discussed within the broader context of best practices and online learning assessments as well as the way the HOLA Task Force is utilizing the data to make meaningful changes in the survey instrument, in addittion planning for continuous improvement in online learning.

Keywords: online learning, asynchronous, hybrid, blended, student, community college, urban, Hispanic, African American

Hostos Online Learning Assessment (HOLA): A Survey of Student Perceptions

Hostos Community College (HCC), part of the City University of New York (CUNY), is located in the South Bronx, the poorest congressional district in the country. HCC enrolls approximately 7,000 students, and more than half (5,000) are enrolled full time. Sixty-five percent of students reside in the Bronx and come from families who reside below the poverty line. Sixty percent of students identify as female, and the vast majority of students (85 percent) are 29 years old or younger, with nearly 45 percent under the age of 21. Students at Hostos are ethnically diverse. Nearly 60 percent identify as Hispanic, 22 percent as Black, and 13 percent as Other/Unknown. Three percent identify as Asian and two percent as White. The majority of first- year students are enrolled in developmental or remedial courses ("Student Profiles," 2014). Hostos is categorized under the Hispanic-Serving Institutions (HSI) program authorized by Title V of the Higher Education Act of 1965, and has received grants as a Hispanic-serving institution under the Department's Office of Postsecondary Education ("Minority Institutions", n. d.).

This uniquely diverse population in an urban, commuter, community college is served primarily by traditional, in-person courses; however, an increasing number of courses are being offered online. The college currently offers two types of online courses: hybrid and asynchronous. At least 30 percent of a course's content must be offered online to be considered a hybrid course. At least 80 percent needs to be offered online to be considered an asynchronous course ("Online Learning", 2016). Blackboard 9.1 is currently the Learning Management System (LMS) that CUNY hosts centrally and is used by Hostos faculty members teaching online content.

Faculty members who want to develop and teach online courses are encouraged to participate in the college's Online-Teaching Initiative and are considered certified to teach online upon completion of the initiative. Each faculty member who develops an online component for a course submits the online component to the EdTech Leadership Council (ETLC) for review in the form of a Blackboard course shell. The course needs to meet ETLC's requirements for hybrid ("Hybrid Guidelines", 2016) or asynchronous courses ("Asynchronous Guidelines", 2016) before it is offered.

Out of 1,270 total sections offered in Fall 2015, approximately 4 percent of courses (59 course sections) were offered in the hybrid modality and 2 percent (29 courses sections) were offered in the asynchronous modality. These numbers have been on the rise since the college began offering partially and fully online courses well over a decade ago. In the last five years, the number of courses offered with an online component has at least tripled. There has been no formal assessment of student perceptions of online learning at Hostos as of yet, but individual faculty are given the results of the standard course assessment by the Office of Academic Affairs.

As education continues to evolve along with technology, there has also been a growth in online delivery of courses in recent years. With online education increasingly becoming readily available in higher education, examining issues like student readiness and online pedagogies has become commonplace in educational institutions. Collins and Halverson (2009) acknowledge that, with educational content steadily transitioning to an online medium, "people will need to develop skills to find the information they are looking for, to evaluate its usefulness and quality, and to synthesize the information they glean from the different sources they locate;" these skills qualify as *critical thinking* skills. According to the U.S. Department of Education's (2016) *National*

Educational Technology Plan, the combination of these skills, along with complex problem-solving, collaboration, and multimedia communication, in addition to traditional content knowledge, is the key to creating engaging and relevant online courses.

Allen and Seaman have maintained that online education is an important long-term strategy for the majority of postsecondary institutions (2012) and have self-acknowledged that, based on annual reports conducted over a 12-year period, they are the sole source of comprehensive studies of online education (2015). They reported that "the number of students taking at least one online course increased by over 411,000 to a new total of 7.1 million" and that one third of all students attending higher-education institutions will take at least one online class (2013). Their 2016 report indicated that the proportion of academic leaders who aver that online learning is an integral component of their institution's long-term strategic plan is now at an all-time high of 70.8 percent.

As Hostos Community College works toward academic excellence in conjunction with current higher educational trends, attention to content, delivery, and student perceptions needs to be carefully examined, with comparisons to the standards in online learning.

Pros and Cons of an Online Class

Advantages to online courses include "lower total cost, more comfortable learning environment, convenience and flexibility, greater interaction and greater ability to concentrate, career advancement, continue in your profession, avoid commuting, improve your technical skills and transfer of credits" ("10 Advantages", 2012). Advocates of online learning also argue that

technology-enhanced education can lead to superior learning outcomes, in addition to greater access for distance learners (Jaggars & Bailey, 2010).

`While HCC has taken many steps to ensure that the quality of classes is leveraged by the aforementioned advantages, it should be noted that (like face-to-face courses) there are some real-world disadvantages to online education. These disadvantages include "lack of accreditation and low quality, little or no face-to-face interaction, more work, intense requirement for self-discipline and even more intense requirement for self-direction" (Hickey, 2014).

Those who oppose online learning often raise concerns about the quality of online coursework. Jaggars & Bailey (2010) stated that some instructors tended to simply dump their content into an online space rather than take advantage of the online format to develop new curricula around new learning technologies. By understanding and identifying these disadvantages when developing and designing online learning-modalities, HCC has made efforts to avoid these pitfalls and create a program that minimizes these disadvantages, while amplifying the potential advantages that online education offers.

Reasons for Online Learning

Jaggars (2014) investigated the reasons students were interested in taking online classes. Some reasons that were highlighted included increased flexibility and convenience for their work and travel schedules, a more efficient use of time, the opportunity to learn at their own pace, students' belief that they could teach themselves certain subjects, and the inability to find available face-to-face sections of particular courses. Jaggars (2014) also examined the type of learning and interactions students preferred. She found that students preferred "to-the-point

content" (in comparison to an extended lecture) and fewer distractions from disruptive in-class students.

According to Jaggars (2014), "in order to scale online learning offerings appropriately, community college administrators need a stronger understanding of the reasons students take some courses online, and others face to face." As HCC continues to advance in terms of its offerings and standards for online courses, there is much to be learned from the best practices described in past research from other institutions and the study that the Hostos Online Learning Assessment (HOLA) Task Force is currently conducting. Utilizing these lessons will allow HCC to develop future online courses that work as effectively, if not more so, than the equivalent face-to-face programs, in order to best serve the student population at HCC.

Research Design

The Office of Education Technology (EdTech) solicited faculty members who were leaders on campus with regard to online teaching to be part of a task force to design a survey for gathering data about students' perceptions of their online learning-experiences. The authors of this article comprise that task force, and, as a group, represent the Office of Educational Technology, the Department of Behavioral & Social Sciences, the Business Department, the Education Department, and the Library. In the spring of 2015, a pilot 23-question survey was distributed, and 161 students responded. The authors met during the summer of 2015 to analyze the data and to discuss whether revisions needed to be made to the survey; as a group, they decided that more specificity was needed to create a more streamlined survey experience for students. The HOLA Task Force came up with the following four revised hypotheses: (1) students

would indicate that their experiences in online courses is comparable to their experiences in face-to-face courses (in terms of workload, level of course difficulty, and engagement with both the instructor and other students in the course); (2) there would be a relationship between the perception of workload intensity and course difficulty and students' experience with prior online courses; (3) students would access the course from multiple devices and multiple locations, and (4) students would indicate ease in navigating their hybrid and asynchronous courses. In order to collect data formally, the authors obtained human-subject research approval from the college's Human Research Protection Program (HRPP, formerly known as Internal Review Board [IRB]) in September of 2015. Since the data was collected as an aggregate, correlations between students' experience with online courses and their perceptions of workload intensity were not analyzed.

The Office of Educational Technology was crucial in identifying the participants. The Blackboard administrator identified all of the faculty members listed in the university-wide course management system (CUNYFirst) who were teaching either hybrid or asynchronous courses during the fall 2015 semester and sent that list to the EdTech Director, one of the Principal Investigators (PI) for this study, who emailed the faculty and asked them to share a link that included the informed consent and 23-question HOLA survey with their students on Blackboard 9.1. Students were not incentivized to take the survey (no payment or extra credit were offered). Since some of the PIs were also faculty providing the link to the survey to their hybrid and asynchronous students, the HOLA Task Force made sure that the surveys would be anonymous so the PIs had no way of knowing which students completed the survey. Students who chose to click the HOLA survey link were asked to read an informed consent form and check

a box to proceed with the survey. Data was only collected electronically, further reducing the risk of students being identified, as no handwriting was required at any time during the study. Students were also given the option to exit the survey at any point without penalty from their instructor and without the PIs' knowledge.

Students submitted survey data through a web-based form. Only the PIs had access to the raw data that was being generated. While data was shared through protected email accounts and via Google Drive during the student survey period, once the research period ended, all research data was moved from any online space to a secure server that is stored at Hostos Community College. Hostos already provided security protocols to store confidential information for the college. The authors protected participants' confidentiality and anonymity by coding the data as an aggregate, which meant that each course was viewed as a group. In the event that data did reveal any identifying factors of participants, the data was coded to remove these revealing factors. With these measures in place, the authors were confident that they were doing all that was necessary to protect the integrity of the data collected and the anonymity of the students who participated.

The Office of Educational Technology (EdTech) wanted to use the data collected from the survey to identify areas to provide professional development for faculty developing hybrid and asynchronous courses in order to deliver online content more effectively for students. This study could identify areas where faculty might improve their knowledge of teaching pedagogy. In addition, EdTech wanted to use the data collected to make recommendations to college administrators on needed resources. The authors have identified similar efforts to survey students in online courses but none that identified similar populations.

The authors felt that the revised instrument will provide more pertinent information for the task force, especially the EdTech office, since they oversee the development of hybrid and asynchronous courses at Hostos Community College. If better practices for the delivery of hybrid and asynchronous course can be identified by students enrolled in online courses, they can be addressed during the developmental stages of future course design with faculty members.

Results

The 198 students who participated in this survey comprised slightly less than 10 percent of the 2,003 individuals registered in online courses. They were enrolled in ten different courses across the content areas: Computer Literacy (MAT 130), Field Experience in Early-Childhood Education (EDU 113), Office Systems and Procedures (OT 104), United States History through the Civil War (HIS 210); Anthropology (ANT 101), Business (BUS 100), Business Communications (BUS 203), Psychology (PSY 101), and Sociology (SOC 101). Nearly 23 percent had no idea they had enrolled in an online course and 4.7 percent enrolled for the online course as an added section so as to be considered full-time students. Three students had a mental or physical disability that would prevent them from being on campus for class. In terms of previous experience with online learning, 42 percent reported that they had taken a hybrid course at Hostos prior to the current semester, and 3.5 percent completed one at another college. Eighteen percent of participants responded that they had taken an asynchronous course at Hostos, and four percent completed one at another college. Forty-seven percent of participants acknowledged that this was their first online class. Our total is 114.5 percent because students were allowed to check all responses that applied and may have taken a combination of online courses at Hostos and/or at Hostos and another college.

Quantitative Data

Hypothesis 1: The online learning experience is comparable to the face-to-face learning experience. The majority survey respondents indicated that online courses were the same level of difficulty (57 percent) as face-to-face courses. Nearly 20 percent found the coursework to be less difficult, and nearly 24 percent found the coursework to be more difficult. Sixty percent of respondents also stated that they spent the same amount of time in an online course as in a face-to-face course, 32 percent reported spending more time working in an online course, and nearly 8 percent reported spending less time.

Hypothesis 2: Students will access online courses from multiple devices and multiple locations. Participants overwhelmingly (87.9 percent) believe they have adequate access to technology to meet the needs of the course. A personal laptop was the most frequently selected choice (132 students), followed by cell phones (80), devices at Hostos (80), a personal desktop (70), and tablets (47). Only 23 students indicated that they used someone else's device. Students accessed their courses from home (184), work (64), the Hostos library (63), the Hostos computer lab (60), another site at school (25), or alternate site off campus (24).

Hypothesis 3: Students will indicate ease in navigating online courses. Findings indicate that students are able to locate what they need for class, such as assignments (181 students), the syllabus (169), their grades (167), the exams (156), online discussions (144), and contact information for the instructor (130). More than 100 participants also responded that it was easy to find policies, and 89 reported that it was easy to locate additional tools for the course. When

asked whether they were able to find feedback about their progress in the course, 80 students answered that they strongly agreed, and 94 students agreed with the statement.

Enrollment, Motivation, and Student Engagement

In addition to the formal hypotheses, the HOLA Task Force also wanted to examine whether students realized they were enrolling in an online course, why they enrolled in an asynchronous or hybrid course (if they knew), and how timely students perceived communication to be between themselves and faculty and themselves and their classmates. The majority of students (71 percent) realized that they were registering for an asynchronous or hybrid course and 29 percent were unaware that the course required full- or part-time online attendance.

Students indicated that they had enrolled in an online or hybrid course for the following reasons: not applicable ("I didn't realize I was signing up for a partially online or fully online course") (23 percent); work or family obligations that prevented them from being present on campus (22 percent); they could not find anything else that would fit their schedule (16 percent); the sections were full (2 percent); or the course was only offered online (6 percent). Seventeen percent of students indicated "Other." There is a discrepancy between the responses to the very first question on the survey which asked whether they realized that they were registering for an asynchronous or hybrid course, with 29 percent indicating they did not, and the fourth survey question which had had as a choice not applicable ("I didn't realize I was signing up for a partially online or fully online course"), where 23 percent of respondents chose this option.

When asked whether they interacted with their instructors in a timely fashion, 26 percent said they were "excellent," 18 percent were "above average," 37 percent said "average," and 11

percent claimed to be "below average." When asked how well they responded to peers in a timely manner on BlackBoard, 14 percent selected "excellent," 13 percent said they were "above average," 40 percent self-identified as "average," and 21 percent selected "below average." Compared with an in-person course, 32 percent of respondents strongly agreed and 47 percent agreed that they were as actively engaged in the course and with the professor. Emails were used by 91 percent of the students to communicate with the professor, followed by in-person office hours (41 percent). Video chat software (2 percent), text messages (9 percent), and phone calls (7 percent) were also ways respondents indicated they communicated with their instructor.

Qualitative Data

Of the 180 asynchronous and hybrid students who wrote in a response to the question "*What are the most useful features of the online component of this course?*," only 63 (35 percent) students responded with one or more Blackboard features (MyGrades, Discussion Forums, Blogs, Wikis, Recorded Lectures, Exams, Assignments, Calendar, Syllabus, Collaborate, and Course Content). Of the 63 students who responded with a Blackboard feature, 21 (12 percent) students listed MyGrades as the most useful online feature. Another 20 (11 percent) students responded "every part is useful or good" or a general "Blackboard/Blackboard tools."

Responses that did not include a Blackboard feature were coded as: (a) flexibility/ accessibility (time, place, and/or device); (b) self-directed learning; (c) interaction with instructor and/or peers; (d) course design; (e) a combination of the coded categories; and (f) computer skills. Thirty-eight respondents (21 percent) wrote comments that could be categorized as flexibility and/or accessibility that related to either their own time, where they could access

course material, and/or how they could access course material. Many of these responses were similar and included "you can do it in any place and time," "accessibility," "flexibility," "meet only once a week and get to do the homework online," and "the time it allows me to take other classes." Twenty-seven respondents (15 percent) wrote responses related to self-directed learning, such as "It allows me to work at my own pace," "Being able to take quizzes, tests, and discussions as my time permits," and "I am able to get the assignments done early enough so that I can finish it before the due date." Thirteen students (7 percent) commented specifically on course design. The lengthiest comments were related to course design--students decidedly wanted to talk about the positive aspects of course design of their current course, and a few even stated how prior online courses were not designed in a user-friendly manner.

Eleven students (6 percent) wrote specifically about interactions with peers and instructors, in addition to those who cited interactive spaces such as Discussion Forums, Blogs, Wikis, and Collaborate; these course-design elements included another 20 students, for a total of 31 or 17 percent. Many students commented on how much they valued being able to get timely feedback from their instructors on assignments and other grade-related items. Two students combined flexibility and course design, one student combined flexibility and self-directed learning, and one student stated course design and self-directed learning were the most important Blackboard features. Two students specifically stated "it helps you obtain better computer skills," and two comments were off topic.

Of the 95 participants who answered the question "*Do you have any suggestions for improving the online component of this course?*," 40 respondents (42 percent) responded "N/A," "no suggestions," "good as is," or specific positive comments about their professors.

Twenty-five participants (26 percent) wrote the following suggestions related to course design: content, assignments, and online tools should be broken down and/or better explained (6 participants); more time on assignments and discussions (4 students); students should be able to see their letter grade not just points earned (4 students); more videos, both professor lecturing and web-based (3 students); more time on tests (2 students); students should be able to see their test answers after the test (2 students); less work (2 students); and style and organization of the course (2 students).

Fifteen students (16 percent) suggested improving communication in the online environment, and participants made the following suggestions: live chats (5 students); more feedback and communication (4 students); more reminders (4 students); in-person recitation (1 student); and fewer Blackboard Announcements that are placed at the top instead of the bottom of the home page (1 student).

Five students suggested improvements to Blackboard. Of these, two students delineated technical difficulties with Blackboard, including system errors, two students did not like the Blackboard app, and one student did not like the scrolling required in the Discussion Forum.

Six students had miscellaneous suggestions that included online instructors coordinating due dates, improving Safe Assign, making it easier to tell that a course is hybrid on CUNYFirst (our college's registration system), making it easier to correct typos, and offering a chance to work on one's grade when it drops. There was one student who had suggestions but could not think of any at the time.

Three students recommended additional online courses, and two participants' feedback fit into more than one of the coded categories. One student wrote, "Due dates should have two sessions instead of one due to many unexpected things that can happen throughout the course. Also many assignments can't be sent until its due date. Blackboard sometimes isn't working and materials disappear." This participant indicated both technical problems with Blackboard as well as suggestions for course design. Another student wrote, "I would suggest making the 'Contact the Professor' more accessible than making the inbox hard to find. Though I'd rarely needed it for this course, I find it hard to message on Blackboard due to the way the messaging is set up." This comment makes suggestions about Blackboard, course design, and communication with the professor.

Discussion

The primary objective of the study was to ascertain student perceptions of their online learning experiences at Hostos Community College. The HOLA Task Force designed a survey aimed at measuring students' perceptions of their online learning experience. Two additional objectives were part of the study as well: to use the data collected from the survey tool to identify areas to provide professional development for faculty developing hybrid and asynchronous courses and to use the data collected to make recommendations to college administrators about needed resources.

H1: The majority of students (60 percent) perceive online courses to be similar to face-to-face courses in terms of difficulty level contradicting other literature that demonstrates that students perceive online courses to be easier (Jaggars, 2014). This could be explained by our student population, which is disproportionately remedial in comparison to other community colleges.

Additionally, the high number of English Language Learners and students who speak a language other than English at home may result in fewer students perceiving any course as “less difficult” than others.

H2: Our data shows that students access their online course from multiple devices and in multiple locations. Given the tremendous capabilities of Smartphones and laptops, it makes sense that the vast majority (90 percent) of respondents believed they had adequate access to technology; however, our survey did not specifically address issues of Internet connectivity nor did it address which devices students have access to during quizzes and exams. More specific questions such as “Did you ever lose your Internet connection during a quiz or exam?” would be helpful. Also, several students in the qualitative section made comments to the effect that the Blackboard App was not particularly useful (thus making it difficult to complete work on their phones) and/or that Blackboard posed technical problems as a course management system. Members of the HOLA Task Force have indicated that students report losing their Internet signal during a quiz or exam and many others use their cell phone for lengthy written responses on Journals, Blogs, Wikis, and Discussion Forums and also on quizzes and exams. Thus, students may have access to multiple devices but lack the appropriate device and/or stable Internet connection to succeed on a particular task.

With respect to students accessing the course from multiple devices and multiple locations, the majority of students accessed their online classes via their personal laptop from home. Moving forward, the HOLA Task Force will seek more specific data in terms of which devices are being used for what tasks and in which places are they most likely to complete

coursework. This will illuminate some of the lingering questions related to Internet access and the limitations of cellular devices with specific Blackboard features such as quizzes and exams.

H3: The quantitative findings suggest that students perceive that they generally navigate the Blackboard course site fairly well and qualitative feedback about current instructors was very positive, however, many students wrote lengthy responses about course design when asked about Blackboard features. They also referenced poor course design in their previous online courses. Thus, targeted professional development for faculty who have been teaching online for several years is recommended to help them update their course design. This coincides with larger studies of online learning that show course design is one of the most important aspects of student performance in the online environment (Jaggars & Bailey, 2010).

Enrollment, Motivation, and Student Engagement

The issue of students being uninformed that they had enrolled in online courses (29%) is still a problem in spite of the efforts of the Office of Educational Technology to initiate various methods of student awareness during the advisement and registration periods. Much discussion with, and support from, the Registrar's Office is still needed to initiate more effective methods of course identification for the student.

The findings of this survey support Jaggars's (2014) qualitative findings, which indicate distance, scheduling, and ease, were primary reasons for taking an online class; the remainder of students either didn't realize they were enrolling in an online class, or they were taking the class for other reasons. The "Other" that 17 percent of students indicated is puzzling and requires further investigation. One solution would be to allow students to write in reasons that are not

included in the list. The HOLA Task Force could also interview students to gain a deeper knowledge about their motivation for taking online courses.

Our findings coincide with Jaggar's (2014) findings in terms of similar reasons why students choose to take an online course such as flexibility, convenience, and efficiency. HOLA's findings coincide with Jaggars' reasons for taking a course, with 45 percent of Hostos students citing distance, flexibility, or time as a reason for taking an online course. Jaggars' qualitative analysis suggests that students choose online courses based on the following three factors: "(1) whether the subject area was well suited to the online context, (2) whether the course was easy or difficult, and (3) whether the course was 'interesting' and/or 'important'" (p. 13). Regarding course difficulty, Jaggars identifies that "easy" seemed to symbolize humanities-type courses as opposed to math and lab courses. Nearly 63 percent of survey respondents were in "humanities-type courses," which might be indicative of Hostos' unique student demographics, their orientation to higher education, linguistic difficulties, and/or college readiness, but only 8 percent of students registered for the course because they thought it would be easy. In contrast to our survey results, Jaggars found that most students preferred to take online courses because they thought the course would be easy for them.

The majority of the students who responded to the survey either agreed or strongly agreed that they felt actively and enthusiastically engaged with the course and the professor, thereby implying that there was equal or even greater interaction between students and faculty in the online learning environment than in the face-to-face classroom. The survey does not distinguish one-way communication (such as Blackboard Announcements, which are relayed to students' linked email accounts, written feedback on assignments, discussions, quizzes, etc.)

from two-way communication (such as emails between instructors and students, office hours, online chats, Skype, Blackboard Collaborate, text messages, and/or phone calls).

Limitations

The 10 percent participant response rate is one limitation and that 10 percent disproportionately includes students from the classes being taught by HOLA Task Force members, because all of the PIs teaching online courses in the fall of 2015 made the link available to their students. This in turn may skew the results since faculty on the HOLA Task Force are some of the more experienced faculty teaching online and also serve as mentors in the Asynchronous and Hybrid Initiative. Although a link to the survey was sent to all faculty teaching online courses, the number of courses represented in the survey mirrors the courses taught by HOLA Task Force faculty. The HOLA Task Force will brainstorm ways to engage their colleagues to encourage other faculty to make the link available to students in their online classes.

Although survey questions were developed after a pilot survey was administered and data were analyzed, our participants' responses have shown us several questions that need to be more specific and additional questions that need to be added to help us better understand student perceptions of online learning, some of which have been discussed. Additional areas to explore include: (a) Did the professor provide any type of orientation to Blackboard?; (b) Had the student ever taken another course with the professor before the online class?; and (c) Were these students high-achievers who do not usually find academic work difficult? In order to understand the specific findings such as those related to course difficulty, Internet access and ease of use, reasons for enrolling in an online course, and engagement, additional questions

should be added to the survey. Demographic information that does not necessarily compromise anonymity should be obtained, specifically, age, employment status, and college major, because certain responses might indicate the learner has had more exposure to technology in general.

The learning styles of the students were not identified during the survey. If the online environment does not support how the student learns, it is expected that that student's responses would be negative; conversely, a course would be conducive to learning and more enjoyable for a person whose strengths are addressed within a specific academic environment. Elements such as motivation and task persistence can affect student engagement and comfort, including when learning online; sociological requirements can support positive attitudes toward a course if the individual learner's need is met; and locating online tools is easier if they are presented in a perceptual modality that is complementary to that of the user (Dunn, 2003).

Conclusion

Studies of online education are in their infancy and comprehensive national studies of online learning are merely a decade old. There is a definitive lack of research specifically geared toward Hispanic-serving institutions, particularly within the community college setting. Thus, this exploratory survey and analysis highlights particular ways that participants' perceptions in a Hispanic-serving institution do not mirror those of students taking online courses nationwide and provides important data and analyses regarding student perceptions of online learning.

Most importantly, our findings indicate that Hostos participants register for online courses for different reasons than participants indicate in national surveys. Few register for an online course because they think it will be easier than a face-to-face course. The particular

challenges that community college students face, especially at Hispanic-serving institutions, are likely part of the reason why students register for an online course. Further research is needed to illuminate the "Other" (17.2 percent), as well as more detailed data regarding the 22.4 percent of respondents who indicated that they registered for an online course because of family or work commitments. What types of commitments do students have and how does the online environment help students foster non-cognitive skills such as goal setting, task persistence, and time management as a result of the flexibility and accessibility online courses provide? Our qualitative open-ended response feedback also strongly shows that students value the flexibility/ accessibility and self-directed learning that takes place in the online environment. The HOLA Task Force needs to continue work to reduce the number of students who do not realize they are registering for an online class by utilizing the data from this survey to push for urgent changes in the online registration system and to inform success coaches and advisors. In addition, the HOLA Task Force will continue to work on including an online readiness module in every course shell, which would help all students prepare for the online environment, but particularly those who are new to online learning and/or those who did not know they registered for an online course.

Participants also indicated in the qualitative responses that course design heavily impacts their experience in the online environment, which supports national research. Hostos' Online Teaching Initiative ensures that all new courses are created through a collaborative environment that includes mentoring and a final course review, however, additional professional development should be strongly encouraged and focus on new online tools and pedagogies and research-based best practices. Communication in the online environment should also be viewed as part of the course design. Many students wrote lengthy responses about the high quality communication

they had with the professor and/or other students. Further information about what types of online communication students prefer as well more specific questions about communication to distinguish one-way communication from two-way communication and individual and group communication would broaden our understanding of this crucial aspect of online learning. Areas of strength at Hostos, such as course navigation and communication with faculty and peers, should be capitalized through these professional development opportunities.

In conclusion, the HOLA Task Force will continue to work toward examining student perceptions of online learning through a modified survey instrument, as well as considering amending our research design to include focus groups in order to learn more about students' motivation for registering for an online course, course design and online communication. The Hostos Online Teaching Initiative will utilize survey results to shape professional development opportunities for faculty currently teaching online courses, as well as in developing training for faculty who are new to online course development. Also, we hope to work to make online registration more transparent so that all students make an informed choice regarding course selection and modality. By sharing our survey results with HETS and at conferences, we hope to collaborate with our colleagues at other colleges and universities and continue to expand the existing research about online education at Hispanic-serving institutions.

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Impact of a Simulated Game on Learning and Engagement

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Abstract

Today's students are digital natives who have grown up with computer technology and video games. Their constant exposure to the internet and other digital media has shaped the way they receive, process and learn information. Consequently, the traditional lecture and textbook approach to education is not as effective for this generation. We believe that students can benefit from reality based computer simulated games which are incorporated into the course curriculum. Games and computer simulations are no longer just for fun; they can be used as an effective pedagogical tool to enhance learning and foster an engaged learning environment. While there is a general consensus among educators that educational games are an effective method of motivating students, there is a lack of empirical studies relating to the impact of this teaching modality on students' academic performance and engagement. This paper reports on the effectiveness of using a computer simulated game on student learning and engagement in three different business courses.

Introduction

A new generation of students, born between 1982 and 2000, called the NetGeneration, are now enrolled in higher education, (Oblinger 2004). Studies show that they are technologically connected, demand immediate response, prefer experiential learning and require social interaction, (Rodley 2005; Prensky 2007). Further, researchers have demonstrated that today's students have a penchant for highly active and participatory experiences inside and outside their classrooms, (Oblinger, 2004). Unlike generations of past students who studied and primarily

acquired knowledge in a brick and mortar style classroom through the traditional lecture format, the NetGeneration students are accustomed to operating in a digital environment for social communication, research and information gathering. Furthermore, they may not even have to struggle to analyze situations, as many opinions are easily available online. Since technology allows for greater time and physical travel freedom, the NetGeneration student's learning is unconstrained by time, place or formal learning structures. These students are accustomed to obtaining instant access to practically all of society's questions and combined knowledge. Thus, a sense of independence is developed due to their technological connectivity. Through this connectivity the NetGeneration student actually becomes an active participant in the learning process. Simulations and educational games, represent another avenue for educators to leverage the student's desire to participate in an informal teaching method while simultaneously providing the connection to technology used and desired by the NetGeneration. Educational games can blend well with these common characteristics of the NetGeneration and can lend itself to the student's learning experience. Therefore, we find that an increasing number of educators are using simulations and gaming as a means of teaching this next generation of students.

In an effort to connect with the NetGeneration and adapt our teaching to their learning style, we incorporated a simulated stock market investing component in our courses. We incorporated the simulated stock market game across three distinct and separate courses taught by three different professors in the Business Department of a community college. This paper reports on how we incorporated the game in our classes and the impact it has on students learning and engagement.

Using Games as a Pedagogical Tool

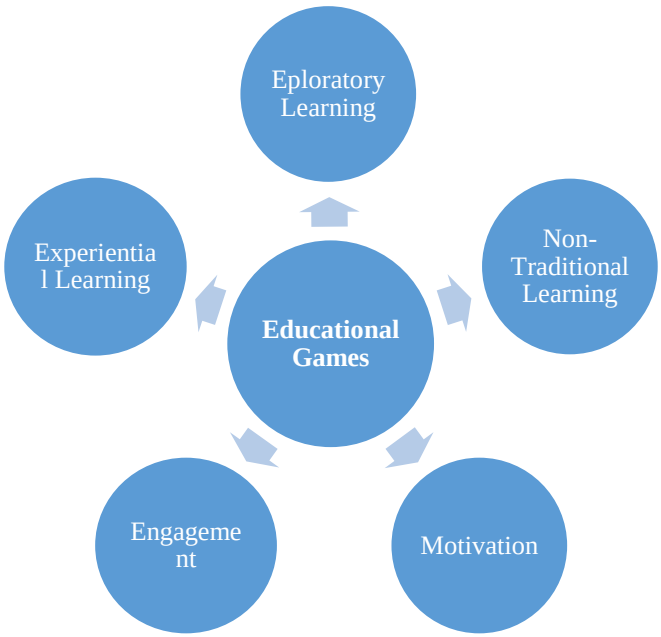
What happens when we bring games or simulations into the classroom? Typically, the first thing we might expect to see is increased student motivation. Early research on arcade-style games demonstrated that games create intrinsic motivation through fantasy, control, challenge, curiosity, and competition, (Malone 1981; Cordova & Lepper 1996). Furthermore, through engagement, games leverage the players' desire to develop new skills, participate in new roles and create a desire to better understand the world from a "professional" perspective, (Gee 2005; Shaffer, Halverson, Squire & Gee 2005). Gaming is undeniably a powerful, pervasive method of learning; indeed, most psychologists would agree that through play we test ideas, strategies, develop new skills, and participate in new social roles (Piaget 1962). Game and simulation based learning encourages motivation and student engagement, since the act of participating in games creates a type of emersion and multisensory experience by encouraging students to be present in body as well as in spirit, (Kapp 2012).

Educational games encourage students to explore and experience situations beyond the boundaries of a textbook. Being engaged in gaming not only encourages students to become proactive and exploratory but also require students to engage in decision making skills thereby teaching students to become self-reliant learners, (Taradi, Taradi, Radic & Pokrajac, 2005). As opposed to the more traditional method of the passive act of only reading, games can create an environment of experiential learning by allowing students to gain knowledge through experiencing simulated situations first hand, (Rickard & Oblinger, 2004).

Furthermore, game based learning has a broad appeal to many types of students. For example, we have all experienced those students who possess the ability to engage in meaningful

conversation or have the ability to express a new or novel opinion in class, but do not fare well on examinations. Gaming and simulations allow educators the unique opportunity to appeal to those students in a new and different way. Through gaming, educators can, reach those students who possess this non-typical learning style and typically do not respond or perform as well in the traditional teaching environment. Figure 1 illustrates the different advantages of game based learning.

Figure 1



Not everyone favors game based learning. Harp & Mayer (1998) have argued against the positive effects of game based learning. They state that gaming detracts from the primary focus of the learning experience - it creates distractions and draws the students away from meaningful learning.

Despite the controversy, there has been increased interest in gaming over the last decade. Growing numbers of educators have experimented with game based or game enhanced instruction. While there is a general consensus that gamming in the classroom increases student's interest in the subject matter and may foster motivation and encourage engagement among students, there is very little evidence which indicates that this translates to better student academic performance or even leads to deeper knowledge. Research into the effectiveness of a game based instruction is spread very thinly over a wide range of subject areas, age groups and educational settings. Canon-Bowers (2006) mentions that we are charging headlong into a game based learning without knowing if it works or not. Additionally, Mayo (2007) has argued that there are only a handful of studies that have rigorously measured the learning outcomes of immersive games compared to other teaching methods. There are only a handful of empirical studies available and none discuss the impact on learning through the use of a simulation which involves actual real time data and true market conditions in an academic setting. Therefore, due to the lack of empirical data and the scarcity of systematic investigations the timeliness of our study is underscored.

This study reports on the impact of using a computer based simulation game in three different Business courses over the period of a semester.

Game Description and Simulation Structure

This study was designed and implemented by three professors who teach three separate and distinct courses in the Business Department of a community college: Business Law, Principles of Accounting and Principles of Finance. While the three courses are very distinct in their learning objectives and outcomes, there is a common thread that weaves through all of them. All of these

courses incorporate fundamental core business concepts such as corporate profit and losses, risk and return, social justice, ethical/legal situations, time value of money, and investment diversification. One of the common outcomes of the three courses is that students will understand the relationships between today's global business environment, geo-political tensions and global inequalities and will be able to relate to real life situations.

Based on previous academic assessments over several years, we found that our students do not fully comprehend these concepts of business and investment, nor are they able to relate to these concepts, and consequently are not motivated to look beyond the textbook to further their knowledge. Moreover, as we teach our own courses and complete the required content in our syllabi, we rarely have the opportunity to further explore these concepts in depth. Therefore, in order to engage and motivate our students to develop a stake in their educational experience, we decided to incorporate a stock market simulation in our classes. We hoped, that the game would both engage and educate students across our classes, in an independent way designed to engage outside of the classroom.

In order to test our hypothesis, we designed a quasi-experimental study to attempt to measure student learning and engagement. We asked and focused on three core questions:

1. Was there an improvement in knowledge and understanding of investment and financial concepts after students played the simulation?
2. Were the students more engaged as a result of participating in the simulation?
3. Did the incorporation of the simulation have any impact on student attrition from our classes?

The simulation we use is a free web-based game called *How The Market Works*. The game simulates the real world experience of investing in the stock or equities market by using actual real time market data. Additionally, the simulation allows students to manage their own simulated portfolio prefunded with $100,000.00 of simulated cash. The game simulation is linked to live data from three separate stock markets in order to make the portfolio management as realistic as possible.

At the beginning of Fall 2015 semester, one of our faculty members set up the separate individual trading groups and then provided the login instructions, credentials and other parameters to the other faculty members and students. Students were then instructed to register for their individual course's trading group. Each student's account was funded with simulated dollars in the amount of $100,000.00. Once registered, students had the ability to make their trading elections and began investing in corporations as they chose. The game automatically provides tracking of student trades, portfolio balance, and investment performance based on the results of the student's investment choices. Since actual market information is used, students were encouraged to use real corporate financial reports, current news, actual economic data and other important indicators to make investment decisions. Each student's account was set up to allow them to conduct research, place several types of buy and sell orders such as; market, limit and stop loss orders. Additionally, transaction costs were imposed on all transactions to add an additional feel of realism. Students could track their performance throughout the simulation and compare their returns to other participants, thereby creating an additional competitive aspect to the simulation.

Students enrolled in our classes were required to register for the game, but not required to participate or trade. There was no minimum number of trades required or imposed. So if the students chose to play the game, they did so of their own free will. Additionally, the professors suggested that a prudent investment strategy included the ability to research and analyze a company's performance prior to executing a trade; however again, no specific research was required. We attempted to convey the feeling that the money in the trading account belonged to the student, so ultimately they decided their individual level of comfort in investing. We felt ownership and engagement would ultimately lead students to determine their level of trading activity. Interestingly, students became more knowledgeable about other world events and how political decisions have an impact on the markets. Research was recommended but not mandatory and the students determined how much research to conduct, and how to balance news such as current geo-political and economic developments in their decisions. The simulation lasted for 12 weeks during the semester. At the end of the semester, students were required to present an investment report with an analysis of the performance of their portfolio.

A week prior to registering for the game, students were required to complete a researcher generated pretest questionnaire that tested the domain knowledge prior to interaction with the game. At the end of the 10th week, students were given a posttest with a very similar questionnaire. Our purpose was to determine if students scored higher in the posttest, suggesting that there was an increase in knowledge of the subject matter due to their exposure to experiencing the simulation.

Students also completed a researcher generated survey designed to evaluate their feelings of immersion and engagement with the course. Further we compared retention of students in our classes with the game and without.

Impact of the Game

We used a quasi-experimental pretest/posttest design model. When utilizing these types of designs, the researcher needs to be especially concerned with internal and external validity. Internal validity is the degree to which the experiment makes a difference in the experimental setting and external validity is the degree to which treatment effect can be generalized. We used a non-randomized group, comprised of students who registered in our classes. Participants were not randomly assigned to an experimental group or a control group, rather all the students who registered for our classes were included in the experiment and therefore all the students formed the non-randomized group. There are certain advantages of a non-randomized group, (Dimitrov & Rumrill, 2003). As a result of this group being intact, it does not disturb the research setting. This reduces the reactive effects of the experimental procedure and thereby improves the external validity of the design because the participants are an intact group and there are no time sampling methods that are employed.

The study was conducted in three different Business department courses over a span of one semester. After adjusting for testing anomalies such as students answering questions multiple times, or not answering either the pretest or posttest in its entirety we had 32 paired samples. A researcher generated pretest and posttest questionnaire was administered to the students. Along with demographic questions, there were 17 questions that were designed to test

domain knowledge both prior to playing the game (pretest) and after playing the game (posttest). The mean scores on the pretest and posttest were calculated and are presented in Table 1.

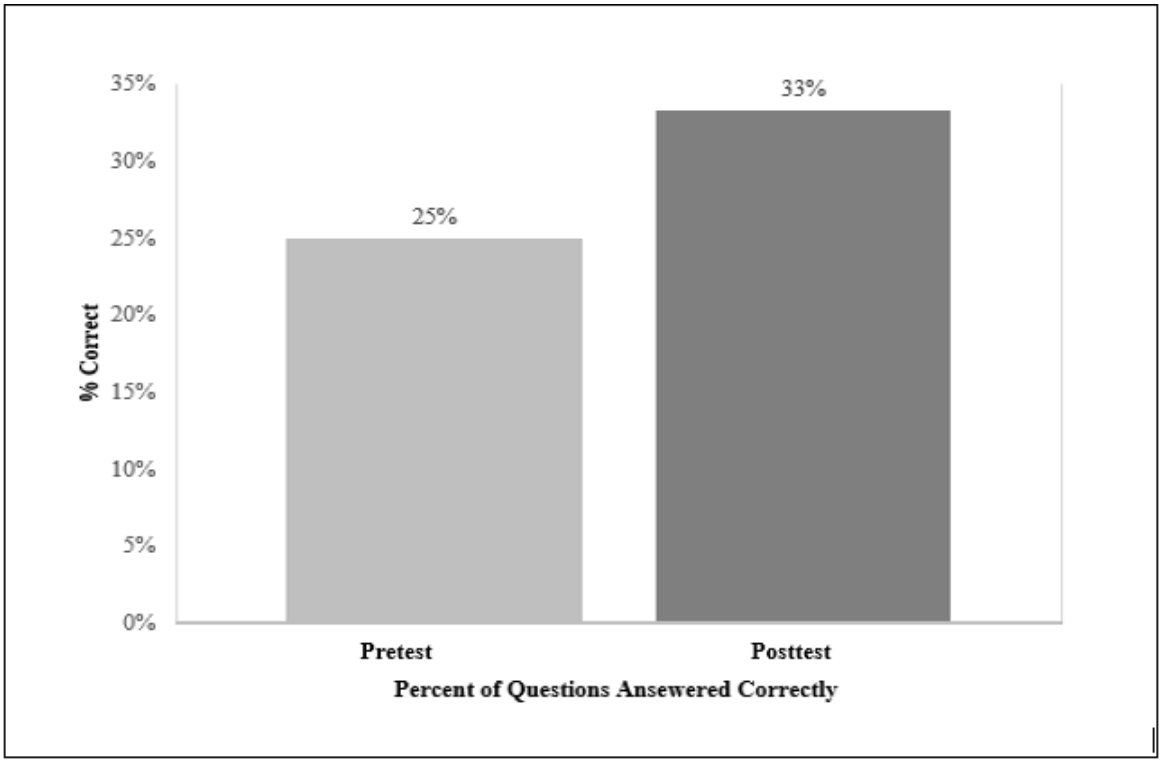
Table 1

Descriptive Statistics of Pretest and Posttest

	Discriptive Statistics			
Pretest/Posttest	Mean	Std. Deviation	N	Std. Error Mean
Pretest	25%	0.14	32	0.03
Posttest	33%	0.12	32	0.02
Difference	8%			

As seen in table one, the mean of the correctly answered questions in the pre-test was 25% with a standard deviation of 0.14, and the mean of correctly answered questions in the posttest was 33% with a standard deviation of 0.12. The average posttest score was 8 percentage points higher than the pretest score for the same grouping of 32 students.

This is shown in Graph 1 below.



Graph 1. Percent of Questions Answered Correctly: Pretest vs. Posttest (Aggregate)

Table 2 shows the descriptive statistics of the testing difference. The mean gain of .08, with a standard deviation of .15 is significant at 5%. These results suggest that there was a significant improvement in the test scores between the pretest and posttest.

Table 2

Descriptive Statistics of Testing Differences

Discriptive Statistics						
Mean of Gain	Std Dev	Std Error Mean	T	df	Significance	N
0.08	0.15	0.03	-3.04	31	0.05	32

In future studies working to quantify the effectiveness of computer simulations on learning outcomes, design modifications to the study and increased sample sizes could allow for a more robust analysis where the effect of the simulation could be separated from other factors that could affect the study outcome. In addition developing control groups and monitoring the results over a time period of several semesters vs. the various control groups would allow for the other factors that affect learning outcomes to be more easily identified and accounted for over a period of time.

A researcher generated survey was administered to the students at the end of the semester, after they had played the game to capture student's perception of learning enhancement and engagement with the course. Students were asked how much they agreed (on a 5 point Lickert scale) with various statements regarding the game. There was also an open ended comment section where students could write about their feelings pertaining to the game. Participation in the survey was voluntary, but despite that, the response rate was a high 82%. Of the survey respondents, 54% were female and the mean age was 19.7 years. The post simulation survey revealed that none of the students had ever played a stock market simulation game prior to our classes. 91.3% of the students reported that they or their family did not have any prior experience investing in the stock market. Only 9% of the students were aware of how the market functioned prior to playing the game. 87.6% of the students reported that they thought the stock market was for the "rich" only. This is not surprising because demographically our students come from lower income communities and are usually first generation immigrants.

Table 3 details the survey questions pertaining to students' level of engagement with the course and their perception of learning enhancement.

Table 3

Student Perception of learning enhancement and engagement with course

	Segmented Student Perceptions				
	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
"I enjoyed playing the game"	45.90%	37.80%	10.80%	5.40%	0%
"I looked forward to playing the game"	42.10%	31.60%	13.20%	10.50%	2.60%
"The game helped me understand the stock market better than reading a textbook"	47.10%	33.20%	9.70%	6.10%	3.80%
"I liked that the game was linked to real market data"	48.70%	32.80%	8.60%	5%	5.10%
"My decision to invest was based on word of mouth"	7.60%	11.30%	9.50%	30.20%	41.50%
"My decision to invest was based on corporate research"	46.30%	35.20%	10.10%	6.30%	2.90%
"Current affairs and news influenced my decision to invest"	36.70%	41.40%	12.50%	5.90%	3.40%
" The knowledge and skills developed with the game will be helpful in the future"	39.90%	39.80%	11.50%	5.20%	3.60%
"I am confident of my ability to apply knowledge and skills learned through the game elsewhere"	32.20%	36.80%	13.80%	10%	7.20%
"I would consider a career in investing in the future"	29.80%	37.20%	12.60%	10.40%	10%

It is important to note that while the students were required to register for the game, they were not required to play it. Furthermore, the game was not played in the classroom and was not a required part of the course. The instructors encouraged the students to play for their own learning, but it was not mandatory. If the students chose to play the game, they did so

outside of the classroom and on their own time. Almost 74% of the students reported that they agree or strongly agree that they looked forward to playing the game, and 89.1% of them reported playing the game at least once a day, even though this was not required of the course. In the comment section of the survey, students reported that it was the desire to improve their portfolio performance that lead them to gain as much knowledge as they could to earn greater returns. This suggests that the students were actively engaged with the game and therefore engaged with the course. The students were motivated to improve the performance of their portfolio and looked beyond the boundaries of the textbook and classroom lectures to do so. They conducted research and became cognizant of geo-political and economic affairs – and all on their own time and outside of the classroom. 82% agreed or strongly agreed that they liked the fact that the game was linked to real market data. This stock market simulation gave the students a sense of realism. This was also an opportunity for the instructors to engage the students in experiential learning. 67% of the students reported that they would consider a career in investing. This observation was particularly interesting when coming from our students who had no previous experience with the stock market. We found that the students were not only engaged and actively participating in the game but had become independent, self-directed and self-reliant learners. We also observed a type of immersion with the game that acted as a knowledge conduit from theoretical aspects of business, finance and accounting to the practical real life experience of actually investing. We believe that through the game we were able to weave together the fundamental concepts of business. In the future, we propose to integrate the game simulation fully with the course content, projects and activities.

In addition, the withdrawal rates were compared between courses that incorporated the game with the same courses without the game. Historically, in these courses, the withdrawal rates range between 10% to 12%. We find that the withdrawal rates in the courses incorporating the game were much lower – 4%. There was less attrition of students from our classes where the game was played.

Conclusion

Today's students are digital natives, who have grown up with computer and video games. Their constant exposure to the Internet and other digital media has shaped how they receive information and how they learn. As we move away from the Information Age to an Interactive Age, educators are increasingly taking advantage of the different educational games and simulations available for teaching. There are many attributes of games that make them a pedagogically sound learning tool which position is clearly supported by a continually expanding body of research. The use of simulations and game based literature as applied in the educational realm is continually growing.

Games engage and activate prior learning. In some cases games are based on understanding of topics such as business, mathematics, geography, science or history. Participants must use previously acquired and learned information. Thereafter, they must continue to build and learn new facts, in order to move to higher levels of gameplay.

The learning context is also very important to our understanding. In simulations and games students must acquire the necessary skill of how to contextualize the information which

they been learned before they are able to successfully apply it to their decisions. Knowing what information or techniques to apply in a particular situation is critical and enables greater success.

Games provide ample real time feedback on the player's progress. Scoring, reaching different levels and ultimately winning, or losing, provides rich feedback and assessment to the student.

Games require transfer of learning from other venues such as life, school and other experiences. Students through playing start to begin to be able to see the connection and transfer existing learning to a unique situation is part of gameplay.

Games are inherently experiential. Those who play games engage multiple senses. For each action, there is a reaction. Continuous feedback is swift and sometimes difficult to accept, however it provides needed experience. Learning is often by trial and error and hypotheses are tested and users learn from the results.

Games have many attributes of effective learning environments. They support active learning, experiential learning and problem-based learning. Games make it possible to use information in context and are inherently learner-centered and provide immediate feedback. However, there is a lack of systematic statistical study of the efficacy of this teaching methodology.

Our understanding of how people learn has evolved over time. Today we think of learning as “constructed”, an active process in which the learner develops his or her own understanding by connecting facts, experience and practice. This constructivist approach to learning is also accompanied by a growing realization that learning is an act of participation. Therefore,

experiential learning is a very important process of learning. Today's students participate in activities, as did previous generations, however those activities have changed and are now based on a platform of experiences found through technology.

The goal of learning is competence - not just awareness. Competence requires factual knowledge and reason. Facts are more likely to be remembered if they fit into a conceptual framework such as a computer based game simulation can provide. Experiential learning enables people to move beyond rote learning and acquire the competence to use and re-use knowledge in new situations.

College educators, especially in the area of business need to continue to adjust their approach to teaching while continuing to deliver the same core educational concepts central to their courses. When educators are able to connect with students, the students become more responsive and motivated, resulting in an engaged learning environment. It has also been argued that motivation and students engagement are strongly correlated to better learning outcomes, (Rowe, Shores, Mott and Lester, 2011).

Games are no longer just for fun; they offer the potential for not only creating an engaged learning environment, but also help to deepen the knowledge gained. It is possible to use games as a pedagogically sound learning tool. The evidence supporting this position continues to expand, as does the favorable literature base affirming the use of educational games. Our experience with a simulated game that motivates and engages students appears well founded.

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Mending the Broken Promise: Our Students, Our Teachers, Our Missions*

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* This article is an excerpt of the book "America's Broken Promise: Bridging the Community College Achievement Gap" that will be published by Hudson Whitman/Excelsior College Press (2016)

Mending the Broken Promise: Our Students, Our Teachers, Our Missions

Unfettered access, a major component of the democratic promise of community colleges, has, over the years, morphed from a guiding inspiration to a required mandate. Contemporary community colleges continue to offer the most generous point of entry to incoming students seeking a postsecondary education. By implicitly and usually explicitly promising to provide a home to all potential students, community colleges promise to meet their ever more widely variable academic, financial, and social needs. Community colleges promise to enable all students to meet their divergent goals for education; consequently, community colleges promise to help all students achieve their dreams.

Our contemporary colleges simply cannot meet the enormousness of this promise. While we have been able to hold open our doors to all interested students, we have not been able to provide in navigable pathways to achievement across the stunning variety of programs and courses our contemporary colleges now offer (Bailey, Jaggars, & Jenkins, 2015). This failure has obviously impacted the institution in negative ways, most glaringly in low retention and completion rates. In fact, statistics compiled by the National Student Clearinghouse indicate that about only about 40 percent of incoming students reach completion in six years. By the arguably less accurate statistics compiled by the U.S. Department of Education, that number is closer to 20 percent (Juskiewicz, 2014).

Every single one of the 13 million students who attend a community college comes to college with individual struggles, hopes, and dreams. When community colleges fail, the institutions suffer, but the students absorb the majority of the impact. Students looking to better themselves are willing to put in the work and to make the social and financial sacrifices. But after too many months or even years spent

finding their footing on an achievable path to completion that will put them on track for a higher paying job, they realize that they cannot continue making the same sacrifices. For this student, and for the many who are also in her position, completion is out of reach. Their dream is shattered.

Although community colleges are critical to the American system of postsecondary education, history has shown the incredible difficulty of aiming for both access and achievement. But of course difficult does not mean impossible. It is true that under present conditions our institutions cannot be all things to all potential students. However, by working to emphasize individualized attention and enhance academic and student support services, community college leaders, administrators, faculty members, and policymakers can repair the promise we make to the students who depend on us for a way forward.

Community colleges and community college students differ radically from traditional postsecondary schools and students. We open our doors to everybody, but because we do, we are responsible for educating students whose academic, financial, and often social needs are frankly incomparable to students at those more traditional postsecondary schools. To

implement methods for individualized attention and to enhance academic and student support services, our colleges must comprehensively change, and in some radical ways. Most extensively, our colleges must change the culture in which we operate.

At a structural level, this means that our colleges must cease emulating models that do not answer to our institutions' specific needs. First, community college leaders and administrators must cease attempts to reproduce the work of traditional baccalaureate-granting institutions. We are not selective, so why do we

have an “Admissions” office? Our students are generally not sophisticated enough to seek help on their own, so why do we have “Counselors” who sit in their offices waiting for students to make appointments? Our “Career and Transfers” offices provide advice as to how to prepare a resume and complete a transfer application. Why don’t we have an employment office instead of a career counseling office and why don’t we intercede on behalf of the transfer student to secure a place in a baccalaureate-granting college? Second, while we must cease putting our energy and resources into emulating an institution that does not address the same needs or the same challenges as do our institutions, community college leaders and administrators must also cease efforts to operate as cafeteria-style educational institutions. The cafeteria model took hold at many postsecondary institutions (community colleges and traditional colleges alike) in the 1980s and 1990s, when it was better known as the smorgasbord model. The model was designed to respond to student demands for autonomy and diversity (Smelser & Schudson, 2004).. In its ideal form, the cafeteria model was supposed to create wide institutional appeal by offering incredibly flexible options toward award or program completion. In the real world of community colleges, however, the model translated to an enormous number of courses offered in different vocational-oriented and transfer-oriented and terminal-oriented and continuing education programs. The unprecedentedly large number of courses in an unprecedentedly large number of programs overextended community colleges, overtaxed administrators and faculty members, overwhelmed students, and led, unsurprisingly, to grossly extended times in which students were capable of completing awards and programs.

The recent work of Thomas Bailey, Shanna Smith Jaggars, and Davis Jenkins (2015) makes clear that although the cafeteria model can provide mostly prepared students with options for filling out the breadth requirements that count toward a baccalaureate degree, for community college students, the cafeteria model just does not work. Over time, its pervasiveness has negatively influenced our institutions and has contributed in major and ways to the persistent poor completion, retention, and transfer rates we see

today. According to their research, community colleges have the best chance of mending the institutional promise to be all things to all potential students by installing comprehensive hands-on support services. Bailey, Jaggars, and Jenkin (2015) argue that community colleges can work toward these elements through their guided pathways approach. Such a model is excellent and absolutely necessary, but I believe that our institutions must go even further. To implement a culture of individualized attention and to enhance academic and student support services for our students, community colleges must integrate an institutional culture informed by an *in loco parentis* mandate. This requires a radical shift in community college culture toward meeting the needs of our students, but the shift to a student-centered institution is absolutely necessary to repair our schools and to make the community college promise a reality.

Many community college students (probably even most) have overcome any number of obstacles to arrive at our doors. However, the personal, financial, societal, and academic problems only scratch the surface of the perniciousness of the issues faced by our students. Too often, we forget that the journey from making the decision to attend community college to completing an award or program is an incredibly difficult, multi-step process that necessitates incomparable persistence on the part of the student and a knowledgeable, efficient, and sympathetic guiding hand on the part of community college faculty members and support staff.

Those of us who have worked in community colleges know that for most students, enrollment at community college is not an afterthought. It is instead a serious obligation undertaken after a great deal deliberation. Often, financial status is the major point of consideration. This is not necessarily because community college tuition is so very high (although—and crucially—for many students it is). It is instead because enrollment at community college generally means sacrificing both the earnings a student requires to take care of himself or his family and the short-term earning potential he might acquire. The

sacrifice requires a careful calculation that weighs an ideally short-term loss against the likelihood of long-term learning opportunities and financial gain, and it strains many students' already incredibly busy and overextended lives. The sacrifice, even though it is ideally a short-term one, can be absolutely formidable. To wit, in the colleges I have served, 80 percent to 90 percent of the students who make the decision to enter school qualify for some sort of financial aid. However, only the most needy receive financial aid packages that cover tuition and living expenses. The rest of the students, otherwise known as the working poor, do not get the same assistance. They teeter on the poverty line, but they do not have quite sufficient need to qualify for full financial aid. These students do not have the relative luxury of enrolling in community college full-time. Or, if they do pursue full-time enrollment, they do so while continuing to work. These are the students for whom making the decision to attend a community college is its own form of achievement.

Determining which courses will meet one's abilities, goals, and scheduling requirements, and figuring out how to devise navigable and efficient pathways to achievement via these courses, constitutes the next, often incredibly complicated, step. Too often, this calculation requires too much time and depends too much on a student's intimate knowledge of college-, program-, and course-level logistics. It is no wonder that setting out on a path to completion (particularly a path that will meet students' personal and professional goals) is a hurdle that students with limited time, money, and emotional support simply cannot overcome. More egregiously, the challenges that students face at this stage can be made far more difficult to navigate by unhelpful community college administrators and staff.

While we must determine substantive solutions to reactively meet the challenges faced by students, we must also begin to recognize the opportunity to proactively intervene in our students' lives before their

lives are pushed off course by circumstances that are often outside of their control. To identify these opportunities requires a radical shift in community college culture toward what I've called a culture of care. I consider this culture of care to be inspired by an *in loco parentis* mandate. To effectively implement a culture of care, community college staff and personnel must adopt an attitude that reflects the community college's promise of access.

Simply put, our institutions were founded on welcoming all, and we must embody this welcome. From the college fair, to the bursar's workstation, to the classroom, and in the president's office, we must enable students to see themselves as the rightful inhabitants of the community college's institutional home. If community college leaders, administrators, faculty members, and policymakers are going to meaningfully impact retention, completion, and graduation rates, we must recognize that effective retention strategies begin on the way in not on the way out. We must match access with a welcoming culture that is firmly in place by the time students make the decision to walk through our doors.

This culture of care is all the more important when considering the large number of our students who enter community college with low self-worth. Just as insidious as financial, academic, and social problems, low-self-worth plagues too many community college students, reminding them that they are not good enough for "real" college. Indeed the less-than status that adheres to our institutions is often reinforced by students whose teachers, family members, and even friends have reminded them in various ways that they are not—and never will be—college material. The culture that I advocate to be effective, it must go far beyond attitude and far beyond the level of administration. It must instead saturate every aspect of our schools.. Administrators can help determine and guide students to an efficient and efficacious path to success, but it is our faculty members who are best positioned to impact and intervene in students' daily lives. The impact and intervention will not happen because of a simple personal change of attitude

(although that certainly helps). It happens through the broader, systemic change that recognizes and values students with an array of needs as the proper inhabitants of our institutions. Such valuation empowers administrators and faculty members to radically change the community college institutional and classroom environment to reflect the recognition.

It will surprise no one to learn that community college teachers operate under incredibly challenging conditions. However, the extent and intensity of the challenge is seldom the center of the critical conversations about our schools. Without a clear-eyed accounting of our institution's import and without an honest discussion of the characteristics of the student populations we seek to teach and to serve, we will not be able to transform our institutions into student-centered schools dedicated to facilitating the achievement of all.

Part of this accounting recognizes that community college teachers operate in a completely different environment and must utilize completely different pedagogical strategies than teachers at more traditional postsecondary schools. First, the environment plays to our students' persistent sense of low self-worth. Community college students are incredibly resilient in some surprising contexts, but they are often much less resilient than other postsecondary students in the context of the traditional postsecondary classroom. This is often the reason they seek out the education offered at community colleges. For students with a history of low or deficient academic performance, an array of personal challenges, and persistent (if unrecognized) sense of low self-worth, the traditional classroom environment can be debilitating. Such students often perceive an initial critical encounter as validation of their inability to compete. They may question whether they are wasting money in trying to get an education or wasting time trying to attend college. Traditional pedagogical methods can fail because the

students at our institutions are generally not prepared for college level work. This is particularly the case in the remedial or developmental classroom, where the coursework does not always appear to be immediately applicable to students' future academic goals. The valuable buy-in that implicitly encourages students to continue along the apprenticeship continuum is often off the table before students even have a chance to engage.

That our faculty members work incredibly hard to expand the limits of the community college classroom and diversify their pedagogy is absolutely undeniable However, in twenty-first century community colleges, the classical delivery of relevant material is deployed to meet the most immediately obvious need, which in the community college classroom is academic. In fact, despite the varied challenges that community college students bring into the classroom, it is this deep academic need that can strong-arm the pedagogy and all but force faculty members to assume a strictly academically oriented interventionist role. This is not necessarily a reflection of the level of students' unpreparedness; it is instead a reflection of the critical mass of students who are academically unprepared. Plainly put, faculty members at community colleges must facilitate learning in classrooms in which the majority of students need a lot of academic help. Faculty members at community colleges must undertake their work at uniformly underfunded institutions that continue to be marginalized by insiders, such as students, and outsiders, such as high school guidance counselors. At community colleges across the country, faculty members undertake business-as-usual under impossible conditions: they try to engage underprepared, overextended, and unconvinced students in classrooms that do not garner the resources or the respect deserved and needed.

Consequently, at community colleges, faculty members are engaged in an uphill battle in which the hill resembles a mountain. The battle is made the more difficult because our teachers are seldom trained for

this kind of work or for this kind of environment. Instead, our teachers usually undertake the same training as other postsecondary teachers: they learn in an environment that prepares them for traditional postsecondary schools, which feature a competitive classroom environment and which favors the master-apprentice pedagogical style. Given the omnipresent model for postsecondary schools provided by baccalaureate-granting institutions, the gap in training is a given. It is, however, meaningful: our teachers must learn the nature of the battle, the slope they must climb, and the best strategies for navigation while on the job.

Ironically, community college teachers probably have the most important tasks in our institutions. Unlike most college leaders and administrators, these faculty members have the relative proximity to students that allows for opportunities for regular student interactions. Faculty members therefore have the space necessary and the justification implicitly required to rigorously interrupt the negative feedback loop that keeps so many students' perceptions of their academic ability and future worth so low. Doing so, however, depends on the full integration of a culture of care at the classroom and pedagogical level. This will not only provide the appropriate environment but will also equip faculty members with the tools of supportive individualized intervention. Faculty members must be empowered to build the kinds of classrooms and individual learning experiences in which students are encouraged and enabled to view the classroom, and thus the community college itself, as a safe academic space that will help them to meet their specific academic and life goals.

Of course, the responsibility makes the already difficult job of teaching at community colleges even more challenging. A full-scale cultural shift requires both time and money. More materially, it requires effective professional development opportunities that provide faculty members with the support and the tools to meet students' diverse needs. Although community colleges currently spend very little money providing

the type of professional development opportunities that will enable our teachers to effectively reach our students, given the near majority of adjunct or part-time faculty at our colleges, professional development is a critical investment in our institutional bottom line.

Student retention depends in no small part on classroom experience: when students feel alienated by community college administrators and by faculty members, they leave. In my experience, they only rarely return. The tremendous financial pressures under which community colleges operate make professional development a luxury, but our institutions must make such development a priority. Only by teaching our leaders, administrators, and faculty members to provide specialized, often individualized teaching and support services will we enact a culture of care that can result in student and institutional success.

Doing so is difficult, but it can be done. I know because throughout my career, I have worked to this end. Community colleges succeed when the particularity of the institution is not just understood but embraced. Community colleges succeed when the particularity of students, who so often arrive with a variety of challenges, are not just tolerated by welcomed. Community colleges succeed when the institution seeks to meet its students through a culture of care made actionable through highly individualized student services. Community colleges succeed only with a great deal of effort and resources, but when the colleges do succeed, the results are extraordinary.

The case for more comprehensive, more connected, and thus more effective remediation has been building, particularly in the last decade, thanks to research conducted at the Community College Research Center (CCRC) (Hodara, Jaggars, & Karp, 2012; Visher et al., 2012). However, the difficult task of

determining the most effective developmental education has not yet received nearly enough research attention. Of course, both research and the implementation of research necessitate funding, and the high cost of remedial and developmental programs is already staggering. By some accounts, remedial services at community colleges range from 1.9 to 2.3 billion dollars (Strong American Schools, 2008).

In the past, academic administrators worked to keep the institutional costs of remediation down by relying on new or part-time faculty to teach remedial courses. Although asking teachers with less experience to teach the colleges' neediest students is often a faulty, and in its own way, costly model, these new teachers have been responsible for an important shift. In fact, thanks in part to the influx at community colleges of young, committed faculty members who value teaching and research equally, a great deal more attention has begun to be paid to the import of remediation and developmental education.

Over the last five to ten years, I have seen many bright doctoral candidates elect to teach at community colleges over more prestigious 4-year institutions. These teacher-scholars are often attracted, like I was so many years ago, to our institution's democratic ideals and to our willingness to work toward the practical achievement of all potential students. Sometimes, these candidates hear the federal government's call that community colleges constitute America's future; sometimes, they are enticed by the difficulty of the colleges' deep and seemingly intransigent problems. Whatever the reason, these teachers and scholars feel called to contribute to the body of knowledge emerging around best practices in remediation and developmental education. I wholeheartedly welcome this trend, even when it points to problems and even when it calls for more comprehensive change and yet more funding. The passion and work of these teachers and researchers infuses our sector with excitement for engaging in serious examination of how best to reach and teach our students.

Various examples of the results of this shift already show promise. Places like the Community College of Baltimore County (CCBC) in Maryland, for example, have experimented with the Accelerated Learning Program, or ALP. ALP allows some students to bypass remediation in favor of taking modified college-level coursework. When the program allowed students whose placement-exam results fell just below the cutoff scores for remediation to take English 101 with an additional hour of extra support, those students excelled. According to research conducted by CCRC, students receiving this type of treatment did just as well as those students who were placed in Freshman English remediation (Jenkins, et al, 2010).

The current efforts developed by the Washington State Board for Community and Technical Colleges also show promise. Unlike the approach at CCBC, Washington's model is more interventionist and integrated, and thus more along the lines of my own argument. The model, called Integrated Basic Education and Skills Training (I-BEST), is designed to reach students who would otherwise merit un-integrated remedial courses. In I-BEST, such students take courses developed and taught by co-instructors. An occupational or technical instructor and a basic-skills instructor work together to integrate basic skills-level pedagogy into college-level occupational or technical coursework. The paired approach provides students with an integrated on-ramp to college-level courses. As students' progress through the program, they learn basic skills in real-world scenarios offered by the college and career portion of the curriculum (Wachen, Jenkins, & Van Noy, 2011).

Another positive development in integrated remediation, which began at City University of New York, is CUNY Start. The program responds to the premise that remedial courses too often serve as a barrier rather than a safety net. The premise is well informed. In 2010, 78 percent of all community college students entering the City University of New York required remediation in reading, writing, or

computational ability. Of these students, 23.8 percent required all remediation in all three areas (CUNY OIRA Report, 2011). Students with needs in three remedial needs are at a very high risk of dropping out. In fact, at Queensborough Community College, we found that only 5 percent of students with three remedial deficiencies graduated in 6 years.

Based in part on these dismal statistics, the City University of New York inaugurated CUNY Start as a way forward for students with broad remedial needs. CUNY Start provides intensive preparation in academic reading/writing, math, and "college success." The program enrolls prospective CUNY students with a high school or high school equivalency diploma who are not ready for college-level work according to the CUNY assessment tests. The program's most attractive feature, aside from the comprehensive safety net it seeks to provide, is its preservation of students' financial aid. Because it is delivered through the continuing education arm of the university system, the program is offered at a very low cost of $75 per semester. Subsequently, students do not have to pay regular tuition, and they preserve their financial aid eligibility when it can more meaningfully contribute to an associate degree or to future baccalaureate work.

In 2010, the Carnegie Foundation for the Advancement of Teaching created a network of colleges to examine and then reform developmental math sequences. The network and the associated initiative resulted in the Statway and Quantway accelerated courses. Statway combines college-level statistics with developmental mathematics and delivers courses focused on statistics, data analysis, and causal reasoning. Quantway, which offers quantitative reasoning coursework, fulfills developmental requirements but also aims to prepare students for success in college-level mathematics. Both methods work to reduce the amount of time it takes students at the basic-skills level to begin engaging in college-

level coursework and earning college-level credits. So far, the reported results have been impressive. According to a report by Sowers and Yamada (2015), a traditional remedial pathway in mathematics resulted in a 6 percent success rate, but for students enrolled in Statway courses, 49 percent completed the remedial course with a grade of C or better. For Quantway, the results were even more significant: after one semester in Quantway courses, students' success rate jumped to 56 percent as compared to a rate of 29 percent for students engaged in traditional remedial curriculum.

Perhaps surprisingly, institutions have been somewhat slow to adopt these programs. Forty-nine institutions in 14 states have integrated the Statway and Quantway remedial mathematics delivery model into their coursework. The slow uptake is informative because it reflects some of the difficulties in adoption and implementation. In my own university system, for example, only two of seven community colleges have adopted the program models. The reluctance indicates both the paucity of uniformly positive research and the subsequent inability of leaders, administrators, faculty members, and student support staff to agree on effective approaches.

The great majority of community college students enter community colleges looking for a better way, a pathway to the middle-class. Even though tuition costs are relatively low, for students who are dependent on work and who have family responsibilities, the time constraints, the impact of lost wages, and the tuition costs together make college attendance a very serious commitment. It is hard to imagine a student coming to a community college who is not sincere about attaining an education. What sometimes prevents us from understanding the complexity of these students' needs is that many students seem to come to us with a chip on their shoulder. They are afraid of facing another potentially closed

avenue to achievement. They require, I believe, excellent entry-level services to shrug off troublesome pasts and move forward.

Excellent execution of entry-level services begins with appropriate student placement. We must stop relying on the general assessment tests, which immediately challenge students' self-worth and which often contribute to the problem of misplacing students in classrooms where they quickly become unchallenged and uninterested. We must instead refine our criteria for identifying the students who can succeed in college-level coursework and the students who require modifications. Thorough vetting for placement necessitates defining the skills necessary for college success *away* from one test for academic skills and *toward* a holistic approach that accounts for the other skills that can also signal postsecondary success, such as practical skills gained through professional or personal experience (Bailey, 2009; Bailey, Jaggars, & Jenkins 2015; Robbins et al., 2004; Scott-Clayton, 2011). More thorough evaluations require an initial investment in time and resources, but it is by far more efficient and budget-oriented than putting students in remedial coursework where their interest and ability wither and die.

Excellent execution of entry-level services also begins with front-end individualized attention to student goals. Entry-level academic advisement and personal counseling is absolutely imperative to success. Entry-level advisors have to be savvy about student behavior, understanding what might be a mask of bravado and what might indicate closely held goals; they have to be good at interviewing students; they have to be able to make a thorough diagnostic assessment of academic social and financial needs; and they must be familiar with the curricular offerings of the college and the college's ability to provide the services that each student needs.

Every student who enters community college must be able to make use of this deeply informed advisement staff. In fact, each entering student should be assigned to an advisor, a coach, or similarly positioned administrator who can help students navigate both the community college experience and the community college as an institution. The advising contact should establish an initial meeting with each incoming student to discuss the student's academic, professional, and personal goals. We often find that underprepared students have unrealistic aims that are frequently informed by a mistaken notion of academic progression and procurement. An advisor can ensure that students are able to articulate their dreams but that such discussions actually inform a realistic plan and a navigable pathway to achievement. The plan and pathway should include an explicit clarification of the student's goals, and it should be obvious to both student and advisor how each step of the plan contributes to reaching the student's desired outcome.

Clearly, this process depends on the individual clarification of goals that will enable advisor *and* student to create a reasonable academic pathway to achievement. The individualization of the service is critical. As the current status of achievement at our institutions makes clear and as recent research corroborates (Bailey, Jaggars, & Jenkins, 2015), community colleges cannot offer *either* a too basic, one-size-fits-all approach *or* a too-complicated cafeteria approach and expect students to achieve their aims. The promise our institutions make when we welcome all students is a promise to provide *each* student a path by which to achieve professional and personal ambitions. Individualized entry-level services, which include thorough, holistic assessment and personal advising services enable colleges to make good on this covenant.

Once the student and advisor together provide a prescription, the rest of the process depends on monitoring student progress through periodic check-ins and determining that each student is able to

access the support services necessary to meet goals. This entry-level process is incredibly, undeniably, hands-on and engaged, but some colleges are already effectively providing it and are able to demonstrate dramatic results.

Successful intrusive intervention gives faculty members the power to trigger the formation and involvement of an academic team. Once an academic team is activated on behalf of the student, the existing resources of the college are often placed at the team's disposal. For example, if a faculty member asks that an academic team form to intervene with a student with psychological or social difficulties, then the counseling department becomes involved as part of the student's academic team. If a faculty member forms an academic team because of a student's emergent financial problems, then members of the administration join the academic team, intervening by accessing resources via private philanthropy or federal or state resources. If a faculty member engages an academic team to aid a student with academic concerns, tutors become part of the team. If a faculty member is concerned with a student's time management skills or study habits, a success coach works with the student to access existing resources.

Crucially, the team approach to student success places the responsibility for retention on the *college* rather than on the student. While the intervention is absolutely obtrusive, it is designed to intervene on behalf of students who struggle the most. In that sense, it is not appropriate for all students; it is, however, quite appropriate for many. By creating an academic team that assists the most vulnerable students through their community college experience, the institution fulfills its promise to build a path to achievement for all students who have been accepted.

Taking a proactive stance in retaining these students ensures that the community college provides an individualized service similar to what is provided at many private schools. This can be very beneficial. The extra attention signals to the student that their success is important to the school and to the community the school seeks to serve. In my experience, when this kind of intensive intervention is successful, students come to realize that an entire community is behind them and that the community, through their taxes, has provided the resources necessary for students' success. The transition toward seeing resources as an *entitlement to scholarship* is important. Through this transition, students are empowered to view themselves as valued members of society, not as second-class academic citizens. This in turn places a responsibility on students to do well and to make a contribution to the public good.

Intrusive intervention offers students—particularly low-performing students or students who face particularly intense challenges (that is to say, *our* students)—the chance to succeed. It does this in large part because it situates these vulnerable students more firmly in the larger culture of the community college. However, intrusive intervention in the form of academic teams is just one of the options utilized by colleges working to enhance student support. In addition, institutions also rely on cohort education as a method for deepening and intensifying student assistance.

Learning communities (Buffingon, 2003), also known as communities of practice, emphasize collaborative learning between and among peers. Although they manifest in different ways, a learning community is generally a small group of students who possess varied skill levels. The small group takes a variety of introductory classes together and/or orientation sessions together. Whatever the manifestation, learning communities are used to foster hard skills in the classroom, such as subject fundamentals, and soft skills outside the classroom, such as study habits. Ultimately, learning

communities offer underprepared students more individualized attention while allowing proficient students the chance to practice their skills.

We can consider learning communities a different means by which to achieve the same results of academic teams: the communities function as an institutional method through which students create an academic family. For students who attend community colleges, the approach is successful because it is guided by an instructor and provides students with natural, peer-based positive reinforcement. It is also successful because the communities offer the opportunity for supportive familiar interaction through which students can begin to develop (and see reinforced) an academic identity. Additionally, when cohorts of students at a community college are identified by curricular affinity, they develop stronger ties to the college community and may have a better chance of completing than other students.

With effective accompanying support services, learning communities can serve many students well. However, traditionalists (and I refer here to both administrators and faculty members) still express suspicion of a model in which students are coached by faculty members and allowed to participate in teaching at a more collaborative level. Administrators and faculty members who prefer the more traditional classroom model, in which a faculty member imparts knowledge while students passively receive information, are often resistant to the concept of learning communities.

Learning communities and cohort education can be achieved and intensified through high-impact practices. High-impact practices join curricular and extracurricular concerns through activities that draw on students' time and attention. They require a commitment on the part of the student, but they offer

the student closer, more immediate access to peers and to college resources. Learning communities and various manifestations of cohort education are considered high-impact practices, as are service learning opportunities and first-year seminars.

In my experience, high-impact activities can boost student involvement, aid retention, and impact student experiences. Queensborough Community College Academies depend on such activities to effectively reach students. Similar to the academies themselves, the curricular-based activities have been developed by the faculty and take a variety of forms. Some consist of service learning projects, others utilize technology to create electronic-portfolios, others create collaborative assignments, others conduct original research, and others address global and diversity issues. The common denominator for all of these activities is the group-centered structure. Although engaging students in high-impact group-based activities means that instructors may only be able to cover part of the syllabus, when the activities result in impactful learning processes that carry over to other courses, the sacrifice can be worth it.

All of the methods that I've described in this article are united by their practical delivery of the culture of care through an *in loco parentis* mandate. Community colleges must provide more than access and more than a passive environment where already-interested or already-engaged students can learn. Community colleges must also meet the needs of those students who have secured access but who are not adept, interested, or engaged in the complexity of postsecondary success. Community college support services must be prepared to provide an appropriate diagnosis of students' needs, must be able to create academic maps that delineate the steps that must be taken to achieve academic, professional, and personal success, and must provide careful monitoring as students' progress through their studies. Meanwhile, teachers and support staff must be ready and able to develop and deploy different

methodologies to enhance classroom learning. This is what we promise our students. This is only way we will significantly impact our retention and graduation rates.

In fact, although it may be an unpopular opinion, I would argue that community colleges must go even further. Today's community colleges routinely enroll students who aren't likely to succeed and therefore fail to produce what has become the expected outcome of either graduation or better employment. However, these outcomes are not necessarily informed by the expectations of community college students. They are instead informed by the expectations of leaders, administrators, and policymakers who are steeped (and often for good, funding-related reasons) in a need for measurable accountability and who are by and large informed by a postsecondary sector overwhelmingly focused on the baccalaureate degree.

I believe that reaping the rewards of shifting community college academic offerings closer to the guided pathways model proposed and advocated by Bailey, Jaggars, and Jenkins (2015) means redefining student success *away* from the standards imposed by the SRK and *toward* student-led definitions that privilege progression. Our institutions can enroll and engage students in academic teams, restructure student experiences and programs through learning communities, provide ample opportunities for high-impact activities, and generally provide advising and support services that offer obvious and easily graspable opportunities to continue onto pathways toward completion. However, if our institutions don't *also* redefine success through the achievements that our own students recognize as valid, our institutions *and* our students are unlikely to experience meaningful change in any data attesting to achievement.

A better determination of success and achieved outcomes must first take into account the accomplishments and the valid professional experience that many students bring to their community college studies. Former and current members of the military, for example, should be able to secure credit for the on-the-job learning they have acquired. Similarly, students who bring a variety of skills acquired in languages other than English should also be recognized with credit that corresponds to their professional proficiencies.

In addition, those of us associated with community colleges must recognize that for many students, *progression* and *acquisition* may be as or more important than *completion*. Not all community college students are recent high school graduates who seek postsecondary graduation. In fact, it is widely recognized that community college enrollment soars during economic downturns. Many of our students attend community college to wait out an economic slough, or turn to community colleges to acquire relevant skills in their industry, or simply seek the skills that will allow them to change careers. Companies also approach community colleges with contract-based proposals through which to train individuals in needed skills. While our institutions must offer a navigable pathway to postsecondary completion and graduation, we must also meet the needs of the many students interested in progression and acquisition. This is another way community college leaders, administrators, faculty members, support staff, and policymakers can put student need first. By providing individualized programs of study, our institutions can help facilitate the broadest possible range of student success.

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Re-inventing Remedial Reading in the 21st Century

A Review of the Benefits and Challenges of a Hybrid Remedial Reading Course

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Abstract

Remedial courses have been the center of attention over the past decade. More students enter college and take at least one remedial course because they have failed the entrance exams that determine if students have the basic skills to take credit bearing courses. The increase in enrollment for these courses has left administrators to find other sources and programs to accelerate the process. Students who are not accelerated through the remedial courses are sometimes left with taking more than one remedial in a semester. This setback can potentially delay the student's matriculation and eventually cause the student to drop out of college. This paper examines a first year pilot hybrid remedial reading course offered in the Fall of 2015. Further, this small-scale study illustrates the benefits and effects of a hybrid remedial reading course and provides future recommendations for achievement. Using qualitative and quantitative data, the hybrid remedial reading course was determined to provide positive outcomes when comparing the treated and non-treated groups. It was further observed that the students found the course to be innovative and spark their interests. The promise of a new alternative to remedial reading in the 21st century has the potential to boost student attainment, matriculation, and progress.

Introduction

The Rapid Increase in Technology and Meeting the Needs of our Students

Meeting the needs of all of our learners has been a topic for educators for years. Beetham and Sharpe (2013) contended that technology should not direct learning, but rather learning should alter what technology has to offer. More so, Betham and Sharpe (2013) affirmed that technology is rapidly moving forward, and to keep abreast of the direction in which digital technology is moving, educators must rethink their pedagogy. Technology is now moving beyond integration in the classroom and more towards a digital online learning environment. According to Allen and Seaman (2010), online learning has increased extensively and traditional college enrollment has decreased. Further, Allen and Seaman (2010) reported that in the Fall of 2008, 4.6 million students were taking, at a minimum, one online course. Since that time, there has been a 17 percent increase. More than one in four students enrolled in a college are taking at least one online course.

Shih and Allen (2007) asserted that 21st century students rely on technology in their everyday and busy lives. With work, school, and family, students are enrolling in more online courses to meet their pressing needs. Due to the accessibility that comes with iPhones and iPads, students expect immediate feedback on assignments (Jackson & Helms, 2008). Students have become accustomed to a disconnect with human contact and do not desire a human connection (Turkle, 2012). Jackson and Helms (2008) stated that students are enrolling in more online courses, but are faced with difficulties in terms of technology, content, and management. However, Ally (2004) noted that online courses are beneficial to the student, and that the curriculum needs to

be altered to foster critical thinking, active engagement, and lifelong learning. Further, online courses grant students the opportunity to complete degrees and attend college, where face to face learning may be arduous due to life positions. Similar to Ally (2004), Betham and Sharpe (2013) noted that technology is rapidly developing, and educators will soon re-design curriculum to meet the needs of the 21st century learner.

This paper defines the hybrid approach and highlights the benefits and challenges of hybrid instruction in a remedial reading course in the Fall semester of 2015. Further, it analyzes the effect hybrid learning has on remedial reading students in a community college and ponders whether there is potential for remedial courses in the future to be hybrid. Using end of the semester grade summary data, the Fall 2015 "treated groups" are compared to the "non-treated groups" and final grades were examined to determine if a reading hybrid course had a positive effect on student's final assessments. Prior to the implementation of the hybrid course, four students were selected to participate in a pre- and post-course survey. These surveys were conducted in an interview format and students were asked questions based on their feelings and experience with technology. Based on the student's responses and end of term data, evaluation of the hybrid course was determined and suggestions for future implementation were given.

Hybrid Learning

Jackson and Helms (2008) proclaimed that college students find internet and digital technology more mundane than in years prior. The majority of college students today have been using technology from an earlier time than students of the past. Even if institutions do not have a large amount of online learning, courses are being delivered through online learning management

systems, such as Blackboard. The learning management system provides students with access to course material, virtual discussion boards, and online assignment submission (Jackson & Helms, 2008). The Hybrid approach has been defined as *blended learning* (Bersin, 2004; Mackay & Stockport, 2006), where students are using technology to complete course work. In a hybrid course, the class is divided into both face to face and online learning. Students still have the connection with their professors in a traditional style and online learning environment (Betham & Sharpe, 2013).

In previous research, the incorporation of online learning into a course has shown that students are more motivated and engaged in a hybrid class (Burgess, 2009). Further, Burgess (2009) contended that students begin to critically think and independently construct their own knowledge when participating in online course structures. However, Noble (2003) proclaimed that there are still arguments regarding student cooperation and engagement of hybrid learning.

Hybrid learning seems to be more successful than online learning alone. This is so, because part of the course is online and allows flexibility for students who have busy work and personal lives, while the other part of the course still allows students to have the face to face instructional traditional classroom.

Remedial Reading Students

Students who do not have the basic skills in reading are placed into remedial reading courses, which often cover areas of comprehension, vocabulary development, and critical thinking (Elder & Paul, 2004). Conley (2010) defined the student who lacks basic reading skills as the "ill prepared college student." An "ill prepared college student" will likely find other life challenges

to be difficult due to inadequate reading skills. Hodara, Jaggers, and Karp (2012) stated that more than half of remedial reading students are English Language Learners (ELL's) and that this population of students becomes discouraged in remedial courses. Further, Hodara, Jaggars, and Karp (2012) highlighted the importance of providing sufficient and meaningful content to the ELL student to further their language development and progression in remedial course work. Burgess (2009) and Hodara and Jaggars (2014) affirmed that college remedial students show higher success rates when they feel connected to college course work, as opposed to the isolation they may feel in remedial courses.

"Montana" (pseudonym) made the following statement after a semester in the first remedial reading sequence:

> "I know I haven't been in school in a while, but I felt that this course was too elementary for me, it felt like I was taking a course in how to speak English, rather than learn reading skills. I was excited to enroll in college and begin my college courses, but this remedial reading course discouraged me and I wanted to drop out."

There are many students like "Montana" who are excited about entering college, but are deterred because they fail their placement exams and are consequently placed in remedial courses. Currently, Bronx Community College is taking action on re-developing their remedial reading courses to better meet the needs of entering college freshman.

Researchers predict that students who complete remedial reading courses will find greater success in their college academics, unlike students who did not receive remedial instruction (Burgess, 2009). Remedial courses are non -credit bearing and are prerequisites for future academic courses. For instance, students who are placed in remedial reading are unable

to enroll in a credit bearing English course until they pass the reading sequence. The remedial reading student sometimes finds himself or herself repeating the course, eventually becoming discouraged and dropping out of school (Hodara & Jaggars, 2014). The second sequence of the student's remedial reading sequence at Bronx Community College declares that the student enrolls in three days of course work for a total of six hours per week. Most courses at Bronx Community College only meet twice a week for a total of three hours; if the student is taking another course that requires a lab or is writing intensive, they may meet an extra hour per week. Requiring that the student attend six hours per week of remedial reading affects that student's schedule for the semester. For example, the student may not be able to take other courses due to the burden of the remedial reading course and the time requirement, which does not allow room for other courses in the schedule.

"Paige" (pseudonym), who is a first year freshman at Bronx Community College, was unable to take an Art course this semester because remedial reading required that she attend three days per week and it did not fit into her schedule. Paige is a full time working mom, who is also pursuing her college degree. Paige stated the following:

> "I only failed the placement exam by one point, I was so upset that I still had to take remedial reading. I can't attend school at night because I have my children to take care of and I also work in the afternoon, so I can only come to school in the morning. I had to also take remedial math, which is also three days per week, so this semester I am only taking remedial courses. I will be in college forever and I can't do that. I have to graduate as quick as I can, but it doesn't look that way. I will now have to stay an extra semester or even two extra semesters to finish my degree."

Like Paige, there are many students who are unable to take certain courses because remedial courses engulf their schedule. Taking our student's needs into consideration, I decided to re-invent remedial reading.

Remedial Reading Goes Hybrid

In the Summer of 2015, Bronx Community College accepted instructors into an online course development program funded by the Center for Technology, Learning and Teaching. Instructors who were enrolled in the program were expected to create a hybrid course for one of the classes they would be teaching in the Fall of 2015. This course was designed to assist professors in developing and implementing either a hybrid or fully online course. Since I was only going to teach remedial reading in the Fall of 2015, I was asked to pilot the first remedial reading hybrid course. Due to the diverse level of students enrolled in remedial reading, a hybrid reading course can be challenging, and was not offered prior to my pilot.

Rivera (2013) stated that offering online remedial classes is becoming increasingly popular in moving students out of basic skills classrooms and placing them in credit bearing courses. Further, Rivera (2013) asserted that the ultimate goal is to get more students to graduate faster as hybrid learning allows students flexibility of studying on their own and to skip lectures containing content with which they are already familiar. Like Rivera (2013), Hodara and Jaggars (2014) asserted that remedial reading students become lost in the process of the remedial sequence, and offering students another option to assist them in completing their course work would be beneficial. Hybrid remedial courses have not been fully utilized in remedial education, but are expected to grow (Johnson, 2008). Reading competency and self -motivation are required for students to be successful within such learning platforms. According to Littleton (2000), remedial students have a tendency to have low self-esteem, are typically not confident and experience high anxiety. These combined factors create significant barriers to students successfully completing hybrid or online courses (Littleton, 2000). Being that remedial students

were already identified as struggling learners, I designed the hybrid course with easy navigation and management tools. Students were guided through the learning management system (Blackboard) to learn its features. After two full weeks of guidance, the course was ready to become hybrid.

The remedial reading course was scheduled to meet three days a week, for two hours each session, resulting in a total of six hours per week. Instead, during the hybrid course, students met face to face in the classroom twice a week for two hours each session and once a week was designated as the hybrid time. Students were only required to attend class two times per week, as opposed to three. The online day was scheduled for a Thursday, and the class met on two other days, namely, Monday and Wednesday morning. Assignments and exams were posted on Blackboard on Tuesday evening, and students were expected to complete all work by Thursday evening. Students who did not have access to a computer had the opportunity to use the department's computer lab or any available lab on campus. Other forms of technology used were iPads and iPhones, which most of the students owned, instead of a desktop computer. Students were expected to complete every online assignment. If a student missed such assignment, it counted as a class absence. Time management skills were needed by the students to successfully complete assignments and exams, as such work was required to be finished within a certain time period.

Students submitted the assignments electronically through the college's online learning system, Blackboard. Assignments were multiple choice, short answers, or fill in the blanks. Notifications of new assignments were sent through email as announcements were posted on Blackboard to make students mindful that a new assignment was

available. Assignments were created based on learning outcomes proposed by the department and the skills learned during the face to face classroom meeting. Miller and Husmann (1996) stressed the importance of maintaining effective instructional implementation when designing an online course. Creating assignments that were motivating and revolved around student participation was the goal.

Quality in Education Using the Hybrid Approach

Miller and Husmann (1996) affirmed that the attainment of the quality of online course instruction depended on the course implementation, active participation of the student, instructional quality, system management and administration, and culture of the learning community. Reading is a struggle for most ELL students, and careful consideration needs to be given when assignments are created in an online course. Doering (2006) stated that hybrid learning opens the pathway for all students to become active learners. More so, Doering (2006) affirmed that students become involved in their learning since they are held accountable for their outcomes in the hybrid course. The following questions arose during the hybrid remedial reading online course development: *How would you determine if the student was in fact completing the work? How will assistance be provided to the student who struggles with reading? Will students participate or be driven away from the course due to lack of face to face interaction? How can reading be taught online?* Each question was carefully examined and used in creation of assignments and assessments.

Pre-Survey for Hybrid Instruction

To gain a better understanding of student' attitudes towards a hybrid course, a small focus group was developed prior to the implementation, to gain a better understanding of the various needs and concerns students may have in a hybrid course and their comfort with technology. The group was selected by the instructor based on individual needs. Table 2 gives a brief overview on the participants and their backgrounds. To create a course that better meets the needs of the students, analysis of student backgrounds, placement scores, and first language spoken were prudently examined. Table 2 illustrates student responses to the pre-survey interview. Students' identities were concealed for examination.

Table 3 provides student responses on the post-survey interview. The students were interviewed individually to better understand each student's needs and to optimize confidentiality.

The last chart is a final grade analysis sheet where end of the semester grade results were compared to the non-treated group. This chart further displays student achievement in the hybrid pilot course and an increase in percentage from the semester prior where hybrid learning was not implemented.

Table 1:

Pre-Course Survey

1. What experience do you have with computers and or technology?
2. Do you know what an online course is?
3. Have you ever heard of a hybrid course?
4. What are your thoughts about taking a hybrid course?
5. What might be some challenges you have with taking a hybrid course?
6. What might be some benefits of you taking a hybrid course?
7. Do you know how to use blackboard?
8. Do you know how to access your student email account?
9. Why are you taking this reading course?
10. What do you think you may learn this semester in our reading course?
11. How do you feel about reading?
12. What grade do you think you will receive in this class

Table 2:

Student Background, Demographics and Pre-Course Survey Responses:

Student A: African American male student. 19 years of age. First year college freshman. English is the primary language spoken at home.

1. *I have an iphone I always use. I know how to use computers and can use the internet. I have a lot of experience.*
2. *A course that is on the computer*
3. *No*
4. *I am lazy and probably won't do the work. I don't like online courses.*
5. *I am lazy*
6. *I don't have to come to class, this class is too many days a week and I don't have time to come all three days for a remedial reading class. I can take another course on that day and still take remedial reading*
7. *Not really, I tried to get onto it and I don't have a password*
8. *Yes*
9. *I failed the ACT*
10. *How to read and pass the ACT*
11. *I'm not very good at reading and I don't like to read*
12. *C*

Student B: Hispanic female student. 25 years of age. Second semester in college. Mother of young child. From Puerto Rico, Spanish is the primary language spoken at home.

1. *I'm not good with computers, I'm scared to use them*
2. *No*
3. *No*
4. *I don't speak English good or read English good, I am afraid*
5. *I don't know if I will have a computer to do the work*
6. *I have a little boy at home and no husband it will be easier to come to reading class only two days a week instead of three.*
7. *No*
8. *Yes*
9. *I don't read English very good and I failed the ACT*
10. *Help me with my reading*
11. *I can't read good in English*
12. *C*

Student C: Hispanic Male student. 22years of age, second semester in college. From Dominican Republic and Spanish is the primary language spoken at home.

1. *I know how to use computers good. I have an ipad and computer at home.*
2. *Going to school online*
3. *No*
4. *I like to see the teacher and I don't know if I will do well being by myself.*
5. *Not seeing the teacher*
6. *Being able to work the extra day to make money and not have to come to reading class three days a week just two.*
7. *Yes*
8. *Yes*
9. *I hate reading and failed the ACT*
10. *To learn how to read*
11. *Ok, but don't like to read textbooks*
12. *B*

Student D: African American Female, 18 years of age, first semester at college. English is the primary language spoken.

1. *I'm good on the computer. I have an ipad, iphone, and two computers at home. I buy everything on the computer, I love online shopping.*
2. *Yes, when you take a course online*
3. *Not really, I think it's like an online course.*
4. *I'm not sure, maybe I would like it*
5. *Probably not participating face to face in class.*
6. *Not having to come to remedial reading class three days a week.*
7. *I haven't used it before but I will learn*
8. *Yes*
9. *I thought I was good at reading but I failed the ACT and now I feel like I can't read*
10. *To pass the ACT*
11. *I do like to read*
12. *A*

Table 3:

Post Course Survey Questions and Responses:
December 2015: Final Interview Questions:

1. How did you do this semester compared to how you thought you were going to do in the beginning of the semester?

2. What is the most important thing you learned this semester?

3. What was your favorite lesson/activity?

4. Where do you feel you improved the most in reading?

5. What were some of the benefits of the hybrid course?

6. What were some challenges you faced this semester in this hybrid course?

7. What are some things you liked about the hybrid course?

8. What didn't you like about the hybrid course?

9. Would you take another hybrid or online course in the future?
10. What are some suggestions for changes or revision

Student A:

1. I did really good, I got a B+ and I thought I was going to fail the class.
2. I learned how to be a good college student. I learned how to manage my time and do the assignments by myself and how to be a good thinker.
3. When we learned about Pearl Harbor. I liked reading the president's speech and watching it. I never knew about this and it was very interesting.
4. I learned how to read my textbooks and take notes. I also learned how to research information better.
5. I was able to keep my job and do all the work for the class.
6. I can be lazy sometimes and I wouldn't do some of the assignments because I'd forget, but I then got myself to do the work and didn't miss anymore assignments.
7. I liked the tests that were on there, I was able to take them more than once and it helped me with my vocabulary.
8. Blackboard didn't work sometimes and I couldn't get logged in.
9. Yes
10. Go over how to use blackboard at the beginning of the semester and practice.

Student B:

1. I got a B, I was happy about that.
2. How to be independent and use the internet
3. Learning about Pearl Harbor and President Roosevelt.
4. How to understand the reading and words
5. I didn't need a babysitter for my son I didn't know the reading class was three days
6. I don't have a computer at home
7. I liked learning to use the internet and look up information
8. I don't have a computer and had to do the work at school, blackboard didn't work every time on the phone.
9. Maybe
10. Give us a laptop to bring home to do the work

Student C:

1. I got an A, I didn't think I would get that grade.
2. How to read English better
3. Looking at all the pictures from other countries and talking about them
4. How to read English and answer questions
5. I didn't have to come to school every day and pay for the bus
6. I don't read English good and I had trouble with blackboard
7. Made me learn to use the computer and read blackboard
8. I had to learn how to use blackboard and I always had to get a new password
9. Yes
10. Show us how to use blackboard more

Student D:

1. I got a B, I never get good grades
2. How to manage my time
3. Reading the speech by Roosevelt and Hitler and comparing them
4. How to understand what I am reading and to define words I don't know
5. I didn't like that I had to come to a reading class 3 days a week because I don't get credit for the class and I felt like I was wasting my time. I liked that I was able to do some work at home and only go to class twice a week.
6. I didn't like blackboard, it didn't work all the time and I was confused how to use it
7. Helped me learn to work on my own and to use blackboard in my other classes. I felt better asking my reading professor how to use blackboard then my other professors because they think we should already know it.
8. Sometimes I wanted to ask my teacher something while I was completing an assignment but I couldn't because I was online, we were able to text her or email her.
9. Yes
10. Take a longer time explaining how to use black

RDL 02 A1:L24Fall 2015 Final Exam SMT Data: Impact of Hybrid Learning

Semester	RDL 02 Section	Final SMT Average	Instructor	Spring '15 Avg.
Fall 2015	D02- 71260	81.4	T. Hernen	80.8
Fall 2015	D09- 71267	80.2	T. Hernen	
Spring 2014	D09- 76349	77.1	T. Hernen	

EDUCATION & READING

RDL O2 DATA: PASS RATES

SPRING 2015

Professor	Section	# of Students	Data Available For	*Passed*	*Failed ("F" or R")*	INC, W, WU, WN, or --	Pass Rate (Data: YES)	Pass Rate (Overall)	Failure Rate	W, WU, WN, INC, -- Rate	Final SMT Average
Non-Treated Group	D01- 71259	26	23	*17*	*6*	1	73.9%	65.4%	35.6%	-	69.7
Treated Section	**D02- 71260**	**21**	**20**	**19**	**1**	**1**	**95.0%**	**90.5%**	**4.8%**	**4.8%**	**81.4**
Non-Treated Group	D03- 71261	20	11	*8*	*3*	9	72.7%	40.0%	15.0%	45.0%	70.5
Non-Treated Group	D04- 71262	27	23	*16*	*7*	4	69.6%	59.3%	25.9%	14.8%	71.5
Non-Treated Group	D07- 71265	27	23	*17*	*6*	4	73.9%	63.0%	22.2%	14.8%	72.0
Non-Treated Group	D08- 71266	26	19	*17*	*2*	7	89.5%	65.4%	7.7%	26.9%	77.9
Treated Section	**D09- 71267**	**27**	**23**	**23**	**0**	**4**	**100.0%**	**85.2%**	**0.0%**	**14.8%**	**80.2**
Non-Treated Group	D13- 71282	25	19	*7*	*12*	6	36.8%	28.0%	48.0%	24.0%	59.2
Non-Treated Group	D14- 71284	19	14	*6*	*8*	5	42.9%	31.6%	42.1%	26.3%	60.1
Non-Treated Group	E01- 71276	23	18	*16*	*2*	5	88.9%	69.6%	8.7%	21.7%	77.9
Non-Treated Group	E02- 71277	29	21	*18*	*3*	8	85.7%	62.1%	10.3%	27.6%	77.4
Non-Treated Group	E03- 71278	23	18	*6*	*12*	5	33.3%	26.1%	52.2%	21.7%	63.8
Non-Treated Group	E04- 71279	17	8	*8*	*0*	9	100.0%	47.1%	0.0%	52.9%	62.3
Non-Treated Group	S01- 71280	22	14	*13*	*1*	8	92.9%	59.1%	4.5%	36.4%	82.4
TOTALS		**306**	**231**	**174**	**57**	**75**	**75.3%**	**56.9%**	**18.6%**	**24.5%**	**71.88**

Data Compiled By: Education & Reading Data Specialist

Statistics (Spring '15)	
Section Classification	SMT Avg.
Treated Sections	80.8
All RDL-02 Sections	71.88
All non-Hernen Sections	70.4

Course Design and Methodology

A quasi-experimental design was used and data was collected from the remedial reading final examination given at the end of the semester. Students who were enrolled in remedial reading course for the Fall of 2015 semester for the hybrid pilot were told in detail how the course would work. Students who participated in the focus group were asked to complete a pre- and post-course survey. The treated group was compared to the non-treated group's using course grade summary sheets distributed to instructors at the end of each semester. I then analyzed results

to determine if the hybrid course had any effect on students' learning using the calculated data collection. The focus group was also interviewed before and after the course to gain a better understanding of the effects hybrid learning had on students for future recommendations.

For this remedial reading course, best pedagogical practices were drawn from the ideology of constructivism, where students are critically evaluating their own learning, and building on learning experiences from a student centered model (Bailey & Card, 2009). The course was designed to enhance the students' critical thinking skills and help them become active in their own learning. Online assessments with direct feedback were provided to allow students to individually evaluate their learning and discover where their strengths and weaknesses were in terms of reading skills. More so, students were given online projects where research was needed to organize and develop ideas. The ELL student, who may encounter difficulty with online research, was compelled to seek the assistance needed to develop these skills. Oxford (1994) asserted that ELL students were more likely to achieve success when motivated in the task. Specifically for the hybrid course, the ELL students were able to navigate through strategies that worked for them at their own pace. ELL students did not feel overwhelmed with time and were able to complete tasks at their own measures. Bailey and Card (2009) discussed the importance of accountability in learning; the hybrid remedial course was designed to shift from teacher centered to learner centered practice.

The Effect of Hybrid Learning on the Remedial Student

The question, whether hybrid learning would be beneficial to the remedial student, was the focal point of this pilot course. The initial response by instructors, who already taught

remedial reading, was that it could not be done. Based on Hodara and Jaggars (2014) and Conley (2010), remedial students succeed more when accelerated throughout this process. Hybrid learning is one step to ensure that remedial students are engaged and are completing college course work in a sufficient time manner. Further, hybrid learning allows the student to work at their own pace, during the time that is best for them (Yang, 2012). ELL's who may find it difficult to keep up with the stride of the class can complete assignments independently and at their own speed to ensure accuracy and proficiency.

Based on the post survey questionnaires and informal observations during class time, it was obvious that students became more motivated to attend class and the attendance rate increased. Students were able to take an extra credit bearing course in place of the extra day of remedial reading, which gave them confidence that they were not being kept behind because of the remedial course. The ELL students found themselves improving their vocabulary because they did not feel obligated to finish assignments at an accelerated speed. Accuracy on exams improved because the tests on Blackboard were offered multiple times to improve test taking skills and comprehension development. Part of being a college student requires efficient time management skills and accountability for individual work (Conley, 2010). This course assisted students with developing time management as they had to balance the demands of their personal schedules with the demands of completing their assignments on time. More so, because assignments had no time limit, students were held accountable for completing their work. If an assignment was incomplete, the student was unable to blame lack of time for not submitting the work. One feature on Blackboard that was beneficial to students was the grade center. This feature grants students the opportunity to self-assess their development in the

course by viewing their grades online. The grade center provides students with grading history and their area of weakness. It was an accurate determination of how the student was progressing and if intervention was needed. Based on area of weaknesses and low grades on assessments, tutoring was provided for the student who was deemed as "not meeting course standards." Immediate feedback was given to the student to better assist in reading development.

Prior to and during implementation of hybrid learning, students faced obstacles and were slightly discouraged. For a first time freshman, Blackboard is a new system and in depth training is needed to navigate through the tools and resources. I only provided students with two weeks of guided work before putting the course in complete hybrid learning. At the beginning, students who registered late or had difficulties logging onto Blackboard found themselves behind in course work and exams. Intervention was immediately provided; however, students became frustrated to continue. For future courses, it is imperative to guide students at a moderate pace and ensure that everyone is acclimated to the system prior to beginning the complete hybrid learning.

Using end of the semester grade analysis, the treated group was compared to the non-treated group using basic Excel spreadsheet calculations. Based on this data, there was a 10.4% marginal difference in course outcomes. The treated group, where hybrid learning was used, saw an increase in final averages when compared to the non-treated groups. Further, grade data was provided from the Spring of 2014 where hybrid learning was not implemented for the same instructor. Based on end of the year data analysis, there was a 3.7% marginal difference between the hybrid and non-hybrid remedial reading course. The hybrid courses seemingly produced higher end of the year results based on grade summary analysis.

Can Remedial Reading be Re-invented and What Does the Future Hold?

Research has asserted that remedial courses aid success when students are accelerated and motivated throughout these courses (Conley, 2010; Hodara & Jaggars 2014; Hodara, Jaggars & Karp, 2012). Although students in this hybrid remedial reading course were not accelerated through the program, students were seemingly motivated throughout the course. Attendance rates increased, test scores were elevated, and there were higher passing rates for the semester. Students were able to complete course work at their own convenience. Also, replacing the hybrid class time with a credit bearing course provided them with the opportunity to begin college with courses other than remedial. Doering (2006) asserted that remedial courses can in some ways hinder the student's progression through college. Hybrid learning can become the gap between remedial reading and student proficiency (Yang, 2012). Whether or not motivation plays a major factor in determining the success of the remedial student is left for future examination. The purpose of this review was to examine if remedial reading lends itself to becoming hybrid in the future. The study was minimal due to time constraints, and further research is suggested using more student participants and close observations on the development of the Blackboard course. Further, incorporating the Blackboard grade center in the data is essential to determine the success of a hybrid remedial reading course.

Conclusion

This was the first semester at Bronx Community College that remedial reading went hybrid. Due to the population and the large amount of ELL's enrolled in the course, it seemed unimaginable for students to succeed in a hybrid reading course. Based on observational,

qualitative, and quantitative data, hybrid remedial reading is hopeful. There were significant setbacks that occurred at the beginning of the course, but once students were accommodated and guided, the rest of the semester flowed efficiently. If we want to re-invent remedial reading, instructors will need to understand that our students are discouraged in this course, and teaching our students to become college ready is one step in the reinvention. Hybrid learning is our future, and motivating our remedial students to complete this sequence will positively encourage matriculation.

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Strategies to Make Program Assessment Simple in a Digital Era: A Case Study

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Strategies to Make Program Assessment Simple in a Digital Era: A Case Study

Abstract

The assessment process of an undergraduate program is used as a case study to share some strategies to simplify the assessment process during a period where faculty members initiated the use of Tk20. Some strategies to establish an organized, and systematic academic program assessment process for the development and improvement of the academic program while implementing TK20 are identified. The strategies identified may help others to move forward in the assessment process and make it permanent and sustainable.

Introduction

The Metropolitan Campus (MC) is the largest academic unit of the Inter American University of Puerto Rico (IAUPR). IAUPR is a private, Hispanic-serving institution with nine academic units or campuses and two professional schools (School of Law and School of Optometry). MC was established in 1960. It is licensed by the Puerto Rico Council of Education (PRCE) and accredited by the Middle States Commission on Higher Education (MSCHE). It also has specialized professional accreditations for several programs. MC offers 106 higher education programs.

Since 2003, assessment became a priority at MC, yet by 2013 the assessment process was still in a beginning phase (Self-Study Report, 2013). Several actions were taken to ensure a systematic, continued and sustained assessment process. Among others, the level of responsibilities on assessment was clarified. To support academic unit in 2010, IAUPR acquired the Tk20 platform for the management of institutional and academic assessment. Tk20 platform implementation is coordinated by the Associate Vice President for Student Affairs of IAUPR, who is the Unit Administrator. Among other responsibilities, the Unit Administrator provides campus access to

the Tk20 account, produces reports, reviews information from academic campuses, trains the trainers (mainly, the Campus Administrators), and provides follow-up activities.

Tk20 is an integrated assessment planning and reporting system to collect and manage data to be used in institutional decision processes. It facilitates systematic data collection and generates detailed reports for accreditation compliance, program improvement, and the evaluation of institutional effectiveness. Data from several sources (departments and academic or service programs) are organized in a single location. It allows for demonstrated evidence on how the academic activities and student services contribute to the achievement of campus goals.

Several issues delayed the full implementation of Tk20 across programs in the Faculty of Sciences and Technology: among them, were a lack of a common language (program versus classroom assessment, evaluation versus assessment, metric versus grades), discrepancies in how to measure expected learning outcomes, and faculty members' resistance. This article explains five strategies adopted by the authors during the implementation of a Tk20 platform for the assessment of an undergraduate academic program and presents them as a case study to guide others.

Case Study

The Bachelor of Sciences in Natural Sciences (BSNS) program was licensed by the PRCE in 2012. The students' competencies (Graduate Competence Profile) are listed in Table 1, below.

Areas	Competencies
Knowledge	Describe the basic concepts of the natural sciences and technology. Demonstrate the processes related to the administration, analysis and interpretation of data.
	Critically evaluate a scientific article of a primary source. Analysis, synthesize and communicate concepts effectively from a multidisciplinary point of view.

Skills	Compose written works using scientific information. Use basic scientific equipment properly. Carry out statistical analysis of experimental data and reach conclusions about these.
Attitudes	Recognize the impact of the natural sciences and technology by identifying their responsibilities, purposes and usefulness.

Table 1. Students' Competencies (Graduate Competence Profile)

The program was conceived with an interdisciplinary approach. A total of 120 credit-hours are required for graduation. These credits are distributed as follows: 48 General Education, 29 core courses, 31 major courses selected from a group of disciplines (Biology, Chemistry, Computer Sciences and Mathematics), and 12 electives.

Faculty started collecting data for program assessment purpose in 2014. At least, five strategies were identified during the BSNS program assessment process related to: duties at different MC assessment organizational levels, documents worked in advance, common language, clear standards, and information sharing. These strategies may contribute to the achievement of assessment tasks and emerge from the utmost lesson learned: To make assessment simple (Suskie, 2009; Walvoord, 2010).

Strategy #1: State clearly the duties for different assessment organizational levels

Academic program assessment, or simply, program assessment, is a faculty-driven activity. Professors are the members of the academic community best positioned to drive the assessment processes, to use results meaningfully in order to improve student learning, and to determine recommendations for academic decisions. However, administrative support is essential to achieve results and keep program assessment as an ongoing process. MC administrative representatives at different organizational levels are committed to the support of assessment efforts.

In order to ensure success in a systematic timely manner for the accomplishment of tasks at hand, duties at different Tk20 assessment organizational levels must be clearly defined and assigned (Monitoring Report to MSCHE, 2015). Accordingly, MC revised the academic assessment duties organizational structure by level, as described below, in Table 2.

Campus Administrator level

Dean of Academic Affairs
☐ Provide leadership for chairperson, faculty, office directors, and assessment coordinators
☐ Oversee that the approved mission and goals of the academic unit are incorporated into Tk20
☐ Oversee goals and objectives of academic programs
☐ Generate different types of reports available in the system, as needed or requested
☐ Help design and coordinate assessment training activities (to academic deans, chairpersons, and assessment leaders) across programs
☐ Assure compliance with campus and IAUPR norms and regulations, as well as with licensing, and accrediting agencies standards
Assessment Monitor
☐ Coordinate, collect, analyze, and organize data across programs
☐ Report results to the Institutional Assessment Committee and to the Dean of Academic Affairs (DAA)
☐ Verify that the approved mission and goals of the academic unit are incorporated into Tk20
☐ Generate different types of reports available in the system, as needed or requested
☐ Offer assessment training activities (to academic deans, chairpersons, and assessment leaders) across programs
☐ Provide support to academic deans, department chairpersons, program coordinators, office directors, and faculty members on assessment process, tools and Tk20 platform

Assessment leader level

Faculty Deans, Chairpersons, Office Directors and Program Assessment Coordinator
☐ Coordinate with faculty the assessment activities, data entry and report activities
☐ Collect data and share results with program faculty and administrative personnel
☐ Coordinate with the assessment monitor the data entry process on Tk20 platform

- ☐ Enter into Tk20 goals, objectives and competencies for the academic or service programs
- ☐ Design the curricular map with the faculty members of the academic program
- ☐ Design with faculty members, incorporate and edit in Tk20 the Assessment Plan for the academic program or office
- ☐ Recommend the appointment of assessment subcommittee members

Faculty members level

- ☐ Participate in departmental committee (and subcommittees), assessment meetings and decision making
- ☐ Conduct classroom assessments
- ☐ Incorporate instructional strategies for direct and indirect measurement methods that support improvement of student learning
- ☐ Choose, develop and revise instruments for program assessment
- ☐ Report at least annually the results of assessment, in order to share ideas and strategies with peers
- ☐ Engage and support institutional and accreditation efforts
- ☐ Participate in planning and conducting program assessment and work with peers to improve program outcomes
- ☐ Review the Assessment Plan in Tk20 and its metrics
- ☐ Incorporate into Tk20 assessment results requested by the assessment leader
- ☐ Define the metrics for success

Table 2. Academic Assessment Duties Organizational Structure by Level

If the assessment leader is a professor (faculty member), then the Chairperson (Director of School or Director of Department) must share with the coordinator the following duties:

- ☐ Supervise and collect assessment and data reports
- ☐ Provide leadership to faculty and assessment coordinators
- ☐ Communicate findings to department or academic division
- ☐ Close the loop: analyze data, revise recommendations, and take actions for improvements

Strategy # 2: Use a common language

To move forward in the assessment endeavor, it is necessary to adopt a common language. Some terms may be confusing, mainly for those who are starting to work in the assessment field. It is important to choose and define the basic concepts necessary for the assessment process, leaving others for later on. A glossary may also be developed and available for all campus personnel directly involved in assessment. For example, at the beginning of BSNS assessment work, Graduate Competence Profile was rapidly used as a synonym for "competencies" or "student learning outcomes". Although they may not mean the same, professors needed to move forward with what was available at the moment. Competencies refer to the knowledge, skills and attitudes that the student must demonstrate upon completion of their study program. There is a "direct link between the competencies required for the practice of the profession and the contents of the academic programs" (Guide, 2016). Moreover, course objectives laid out in the syllabi should align with student competencies.

Strategy # 3: Have in advance, and available, four key assessment elements

Faculty members are better prepared to accomplish tasks in assessment if prior to start the use of Tk20 they have developed and available in a common format: (1) program competencies, (2) a curricular map, (3) metrics, and (4) an assessment plan. A simple curricular map represents an alignment of different curricular components, such as, goals, program objectives, competencies and courses (Guide, 2016). It shows where program assessment activities will take place.

The BSNS simple curricular map served as a guide for assessment planning; the courses where the assessment of a specific competence will be measured are distributed in this map. As

shown in Figure 1, each competence will be measured in at least one course. As a result of continuous

Course Number	1. Describe the basic concepts of the Natural Sciences and Technology.	2. Demonstrate the processes related to the administration, analysis and interpretation of data.	3. Critically evaluate a scientific article of a primary source.	4. Analyze, synthesize and communicate concepts effectively from a multidisciplinary point of view.	5. Compose written works using scientific information.	6. Use basic scientific equipment properly.	7. Carry out statistic analyzes of experimental data and reach conclusions about these.	8. Recognize the impact of the natural sciences and technology by identifying their responsibilities, purposes and usefulness.	9. Manage processes and related data, guided by ethical principles and a responsible vision of their implications in the field of Natural Sciences and Technology.
BIOL 1101	✓				✓			✓	
BIOL 1102			✓	✓				✓	
BIOL 1103					✓		✓		✓
CHEM 1111		✓		✓			✓		
CHEM 2212		✓				✓			✓
MATH 1511	✓								
MATH 1512	✓								
PHYS 3001				✓		✓	✓		
PHYS 3002		✓			✓	✓			

Figure 1. Simple Curricular Map in Tk20 format

collaboration, faculty members have developed working documents to facilitate collecting data, such as the Metrics on One Document (Table 3). The expected learning outcomes are defined as the percentage of student population enrolled in the program (metric %) that achieves the expected minimum percentage (assessment %) using the assessment instruments approved by faculty members. Following this definition, an expected learning outcome for BSNS students should read: "75% of students will get at least 65% in the rubric used to score a question in the second exam (CHEM1111)".

Program: BS in Natural Sciences	Expected Learning Outcomes		COURSE
COMPETENCE (SLO)	METRIC (%)	ASSESSMENT (%)	
1. Describe the basic concepts of the natural sciences and technology.	70	70 70	BIOL 1101

Program: BS in Natural Sciences	Expected Learning Outcomes		COURSE
COMPETENCE (SLO)	METRIC (%)	ASSESSMENT (%)	
		70	MATH 1511 MATH 1512
2. Demonstrate the processes related to the administration, analysis and interpretation of data.	70	65 75 75	CHEM 1111 CHEM 2212 PHYS 3002
3. Critically evaluate a scientific article of a primary source.	70	70	BIOL 1102
4. Analyze, synthesize and communicate concepts effectively from a multidisciplinary point of view.	70	65 65 65	BIOL 1102 CHEM 1111 PHYS 3001
5. Compose written works using scientific information.	70	70 65 75	BIOL 1103 BIOL 1101 PHYS 3002
6. Use basic scientific equipment properly.	70	70 65 70	BIOL 1103 PHYS 3001 PHYS 3002
7. Carry out statistical analyzes of experimental data and reach conclusions about these.	70	70 65 65	BIOL 1103 CHEM 1111 CHEM 2212
8. Recognize the impact of the natural sciences and technology by identifying their responsibilities, purposes and usefulness.	70	70 70	BIOL 1102 BIOL 1102
9. Manage processes and related data guided by ethical principles and a responsible vision of their implications in	70	70 65	BIOL 1103 CHEM 2212

Program: BS in Natural Sciences	Expected Learning Outcomes		COURSE
COMPETENCE (SLO)	METRIC (%)	ASSESSMENT (%)	
the field of natural sciences and technology.			

Table 3. Metrics in One Document

Since competencies articulate with course content, establishing a precise timetable for assessing the students´ competencies allows professors to fulfill the programmatic assessment requirements and to incorporate data into Tk20. In order to establish an assessment plan that can be easily followed, several factors should be taken into consideration. The trimester academic calendar and the professor teaching workload are conditions that may pose restrictions to the assessment process activities, including training in Tk20. To cope with external factors that faculty does not control, a simple assessment plan is established in which the assessment cycle can be accomplished within a three year (nine trimester terms) period, starting in 2014 (Table 4).

	Year Calendar/ Trimester								
Profile of the Competencies of Graduates	**2014-2015**	**2015-2016**			**2016-2017**			**2017-2018**	
	2015-33	2016-13	2016-23	2016-33	2017-13	2017-23	2017-33	2018-13	2018-23
1. Describe the basics concepts of the Natural Sciences and Technology.			X						
2. Demonstrate the processes related to the administration, analysis and interpretation of data.		X							

Profile of the Competencies of Graduates	Year Calendar/ Trimester								
	2014-2015	**2015-2016**			**2016-2017**			**2017-2018**	
	2015-33	2016-13	2016-23	2016-33	2017-13	2017-23	2017-33	2018-13	2018-23
3. Critically evaluate a scientific article of a primary source.						X			
4. Analyze, synthesize and communicate concepts effectively from a multidisciplinary point of view.	X								
5. Compose written works using scientific information.					X				
6. Use basic scientific equipment properly.							X		
7. Carry out statistical analyzes of experimental data and reach conclusions about these.									X
8. Recognize the impact of the natural sciences and technology by identifying their responsibilities, purposes and usefulness.				X					
9. Manage processes and related data guided by ethical principles and a responsible vision of their implications in the field of natural sciences and technology								X	

***Table** 4. BS in Natural Sciences Simple Assessment Plan (2015-2018)*

As stated in the assessment plan, gathering results or evidence about student learning at different points in time, is articulated to course offerings. While, one-time measures taken from

one to three courses per competence may not address the full range of the competence, professors have some outcomes to determine whether students are achieving the expected outcome. To carry out the actions needed for closing the loop for each competence, a subcommittee is activated (Figure 2). Faculty members do not have to wait three years for changes to take place, if needed. Continued efforts are established and intensity of work is reduced if faculty addresses one competence per trimester. As stated before and according to the plan, results from all nine competencies can be analyzed within a three-year period and action can be taken to close the loop.

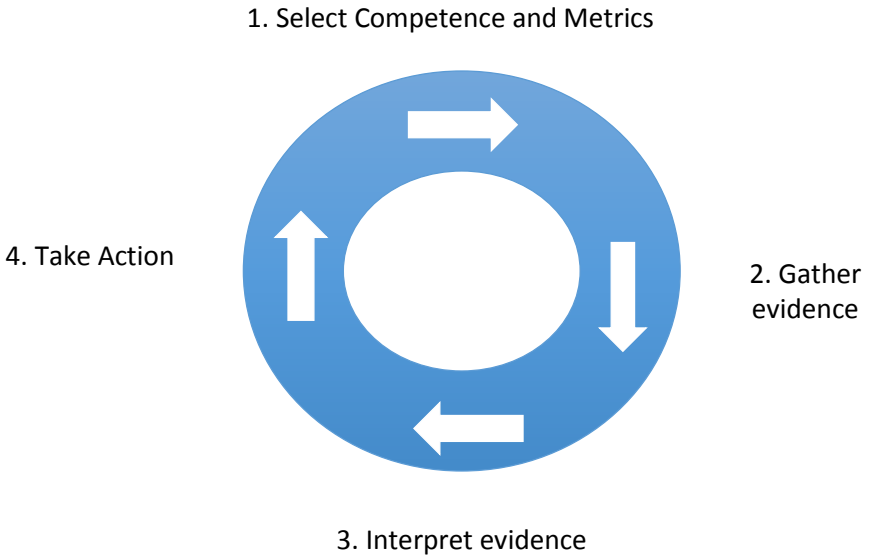

Figure 2. Assessment Cycle for each competence (Adapted from Maki, P. L. (2010)).

Strategy # 4: Be clear and set standards

When setting standards, it is very helpful to work in teams. For instance, it may be necessary to delineate what is being asked for and what it is not: the target is academic program assessment and not classroom assessment. Although classroom assessment may be part of the whole assessment project and can be included in discussions, decisions related to program assessment

should be taken by faculty members as a group, not individually. As a group and in consensus, analysis provided by the faculty is the base for the actions to be taken.

Academic assessment is not intended to be an experimental research activity. Although it is systematic, it may not have the accuracy expected for experimental research. For example, in this kind of activity, it is not necessary to establish cohorts. Decisions are based on discussions related to specific assessment results, together with the experiences shared among faculty members.

The assessment process allows faculty to discuss ways in which the program can improve students learning. Further, higher education institutions are frequently called to demonstrate accountability (Ewell, 2009). Institutions must gather information to provide evidence that graduates demonstrate the knowledge, skills and attitudes described in their program. The assessment process provides professors the opportunity to openly discuss issues related to improving the student learning outcomes, which otherwise might be hidden. Through assessment, faculty members determine ways to inform curricular improvement and demonstrate student academic achievements, and move toward a different teaching engagement, from an individualized classroom assessment culture to a more collaborative academic assessment culture.

Strategy # 5: Share information

It is essential to promote teamwork to develop an effective assessment process. The BSNS faculty members meet weekly to share and analyze assessment results, determine if they meet expected learning outcomes, make decisions for improvement, and report progress in the Tk20 implementation. Technical pitfalls related to Tk20 as well as issues related to the program under

study are also addressed. It is crucial to convey clear instructions and avoid misinterpretations that may delay the process. Assessment Committee members or faculty members should show the rationale used for decisions taken and promote cooperation among peers.

Concluding Remarks

Academic program assessment may become a frustrating and time-consuming activity. In this article, authors have briefly explained five strategies to help assessment coordinators and other leaders overcome these and additional challenges. By adopting a "make it simple" approach and applying at least the five recommended strategies, the authors have initiated the use of Tk20 platform in the implementation of the BSNS program assessment plan. Furthermore, a sustainable and systematic culture of assessment has been raised. Specific pitfalls have been identified regarding issues such as multiple measures competences, and course selection for the curricular map.

Since 2013, MC organizational infrastructure has improved to further support assessment endeavors. As an example, the recruitment of an assessment monitor has been a very meaningful action taken. The assessment monitor is the day-by-day liaison for deans and faculty members and works closely with program assessment coordinators. Further, revised duties at different organizational levels have provided a sense of a common commitment towards the achievement of student learning (Strategy 1).

Performing academic program assessment as a non-research activity does not reduce its relevance. Assessment can be defined as "the systematic collection of information about student learning, using the time, knowledge, expertise, and resources available, in order to inform decisions that affect student learning" (Walvoord, 2010). "A good assessment is one whose

results are used to improve teaching and learning and inform planning and budgeting decisions" (Suskie, 2009). The authors agree that assessment has two main purposes: improvement students' performance and support accountability. In addition, research in assessment, which was not the goal of this case study, may further support the results achieved and give rise to further study. Research results may provide new insights into the relationship between the complex and many factors embedded in the assessment cycle (Strategies 2 and 4).

The authors recognize two advantages in using Tk20 platform for assessment initiatives. First, data information collected and analyzed related to a specific program assessment is filed and available electronically (Strategy 3). Second, diverse instruments to measure students' learning outcomes can easily be shared among different academic programs and academic units (Strategy 5). Weekly meetings of the program assessment committee has been a crucial activity during this Tk20 implementation phase. Professors actively engaged during this phase have learned substantially more about how to assess student learning at the program level. Assessment is a dynamic process and, as stated by Suskie (2009), it is a work in progress. As professors learn more about the benefits of digital systems management, additional strategies will be identified to make the assessment enterprise more manageable.

Acknowledgements

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Uso de herramientas de interacción en la enseñanza de estadísticas en línea: Retos y posibilidades

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Uso de herramientas de interacción en la enseñanza de estadísticas en línea: Retos y posibilidades

Resumen

En este artículo, se describe la utilización de variadas herramientas de interacción en dos cursos de estadística sub-graduados que se ofrecen por la modalidad de cursos a distancia. Estas herramientas permiten aumentar el diálogo en los cursos a distancia, lo que a su vez permite disminuir la distancia transaccional entre profesor y estudiante. Se describe cómo el investigador utiliza varias herramientas de interacción y comunicación, así como la preparación requerida para proveer actividades de interacción y comunicación, para estimular la integración de los estudiantes en las sesiones que ofrezco por esta modalidad, incluyendo el uso de métodos de comunicación complementarios y redundantes, entre otros.

Descriptores:

Distancia transaccional, enseñanza de estadísticas en línea, teaching statistics online.

Introducción

El aprendizaje a distancia provee acceso a la educación a grupos o estratos poblacionales que de otra forma, estarían excluidos de su derecho a la educación (Delgado García y Oliver Cuello, 2010). No obstante, entre los aspectos negativos asociados a estudiar a distancia, se destacan la falta de contacto con los profesores, así como al comunicación inconsistente por parte de éstos en los cursos en línea (Torres-Nazario, 2015). Respecto a la enseñanza de estadísticas, Mills y Raju (2011) señalan que enseñar un curso de estadística puede llegar a ser una tarea retadora, labor que se complica aún más si este curso se ofrece por la modalidad de estudios a distancia. De hecho, Régnier (2003, según citado por Salcedo, 2008), encontró que los estudiantes a distancia tienen problemas similares a los de los estudiantes de curso cara-a-cara (por ejemplo, obstáculos para aprender y entender conceptos y técnicas de la Estadística, actitudes hacia la Estadística), problemas que se amplifican debido a la ausencia de la mediación directa del docente. En este punto, es importante destacar que típicamente, la tasa de aprobación de los cursos de matemáticas y estadísticas varía según el nivel, pero pocos sobrepasan el 50% de aprobación, ya sea que se ofrezcan por la modalidad presencial (F2F) o en línea (OL).

En este artículo, describo mi experiencia con el uso varias herramientas para aumentar el diálogo o interacción en dos cursos sub-graduados de estadística, y por consiguiente, la consecuente disminución de la distancia transaccional que resulta de estos esfuerzos. Además, es importante destacar la preparación que se requiere para proveer las actividades de interacción y comunicación, incluyendo el uso de métodos de comunicación complementarios y redundantes, entre otros. Finalmente, comparto los resultados de estos esfuerzos y su relación

con la tasa de pase de estos cursos. Las siguientes definiciones proveen un vocabulario técnico uniforme en la descripción de las actividades que se describen. Estas son:

- **Distancia transaccional (DT) –** Se refiere a la separación que existe entre profesor y alumnos en la educación a distancia (López Lira, 2013). Según Moore (2013), la distancia transaccional es una función del diálogo y la estructura.
- **Diálogo** - los espacios de diálogo, están siempre definidos por la relación con otra persona o personas, sean estos docentes, ayudantes, tutores, otros estudiantes, etc. Siempre se interacciona con otras personas, en espacios físicos (aula) o mediados tecnológicamente y, en este último caso, con tiempos sincrónicos o asincrónicos (Zangara y Sanz, 2012).
- **Comunicación sincrónica o asincrónica –** Según Cuba (2010), cuando en un proceso de comunicación, caracterizado en su forma clásica por un emisor, un medio y un receptor, tanto el emisor como el receptor están presentes de manera simultánea, se da un proceso **sincrónico** de comunicación. Si por el contrario, el emisor y receptor no están presentes de manera simultánea, se conoce como un proceso **asincrónico** de comunicación.
- **Blackboard Collaborate™** - es una herramienta de comunicación interactiva (sincrónica y asincrónica) que está integrada a Blackboard (Bb). La misma permite realizar actividades sincrónicas y asincrónicas dentro de los cursos. Es la plataforma oficial de la UIPR.
- **Curso de estadística -** se refiere a los cursos de estadística descriptiva (PSYC3001 & MAEC2221) y estadística inferencial (PSYC3002 & MAEC2222) que son requisito del bachillerato en empresas o psicología de la UIPR. El contenido de los cursos de estadística descriptiva e inferencial son muy similares.

- **Tasa de probación** – se refiere a los candidatos que aprueban el curso de estadística con calificación mínima de "**C**".

¿Qué es la distancia transaccional y cuál es su importancia?

Moore (2013), define la teoría de distancia transaccional (DT) como la separación que existe entre el profesor y el alumno en la educación a distancia. Según Zangara y Sanz (2012), "este modelo permite comprender el fenómeno de la enseñanza mediada como un espacio de comunicación, en el que la distancia geográfica o física no es un elemento fundamental a la hora de planificar e implementar una propuesta de enseñanza". Señala además, que esta separación puede conducir a brechas en la comunicación y a potenciales malentendidos entre el profesor y el alumno. En su teoría, Moore describe tres elementos: 1) la estructura, 2) el diálogo y 3) la autonomía. Zangara y Sanz (2012) describen los tres elementos de la teoría de DT de Moore en los espacios de educación mediada con tecnología. Estos son:

1. **La estructura** – lo definen como el espacio de prefiguración, de diseño en los niveles de curso, materiales, actividades y evaluación. Este elemento ocurre antes de iniciado el curso.
2. **El diálogo** es el elemento transaccional de interacción entre personas e interactividad con los materiales. Este elemento ocurre durante el ofrecimiento del curso a distancia.
3. **La autonomía**, se define como la competencia metacognitiva de autorregulación del estudiante que le permite, entre otras cosas, hacer uso óptimo de los dos elementos que le proporciona la propuesta.

Combinando estos tres elementos en un diseño tridimensional, se puede determinar la distancia transaccional (véase Figura #1).

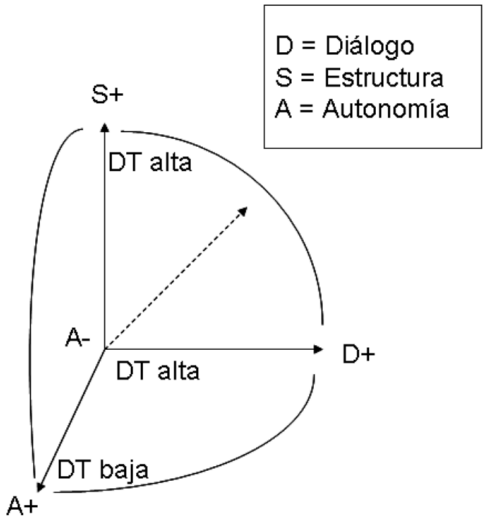

Figura #1: ***Modelo tridimensional de la teoría de distancia transaccional de Moore (2013)***

No obstante, las variables que el investigador discute en este artículo son el diálogo (D) y su relación con la distancia transaccional (DT) en los cursos a distancia. En la Figura #2, se observa que a mayor estructura (+S) del contenido (individualización) en el curso, incrementa la distancia transaccional (+DT). Por el contrario, si tenemos un mayor diálogo (+D) o interacción en los cursos a distancia, la distancia transaccional está más cerca del origen (-DT), disminuye.

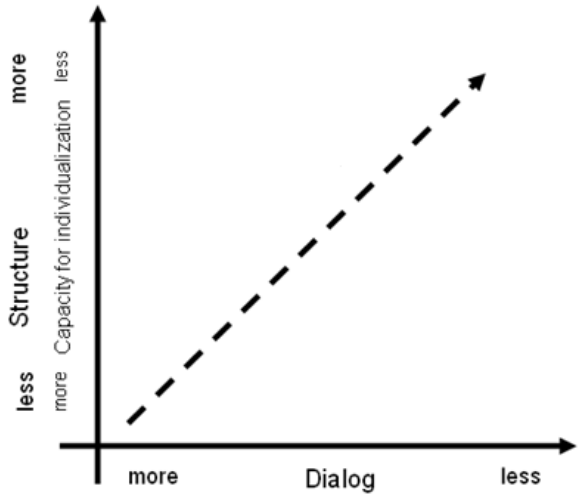

Figura #2: ***Relación entre dialogo, estructura y distancia transaccional (Moore, 2013)***

En la teoría de DT, los espacios de diálogo, están siempre definidos por la relación con otra persona o personas, sean estos docentes, ayudantes, tutores, otros estudiantes, etc. Siempre se interacciona con otras personas, en espacios físicos (aula) o mediados tecnológicamente y, en este último caso, con tiempos sincrónicos o asincrónicos (Zangara, Sanz y Manresa-Yee, 2013). Según Moore (2013), los programas a distancia varían enormemente en la extensión de términos de la estructura y el diálogo. Cursos muy estructurados, tienen mayor DT. Por el contrario, cursos donde hay espacios de diálogo (+D) o interacción, disminuye la distancia transaccional (-DT). Destaca además, que la principal causa del fracaso de que los cursos a distancia, o que al menos, no cumplan con las expectativas, es la falta de balance entre la estructura y el diálogo apropiado para una población particular de estudiantes y campo de estudio.

En sintonía con esta teoría, Boettcher (2013) describe 10 mejores prácticas que a su juicio contribuyen a una experiencia efectiva, eficiente y satisfactoria, tanto para los profesores como

para los alumnos a distancia. Señala además, que utilizar estas prácticas puede ayudar a desarrollar confianza, comodidad y experiencia para enseñar a distancia. Todas estas mejores prácticas tienen en mayor o menor grado, contemplan el elemento de diálogo o interacción entre el profesor y sus alumnos. Estas son:

1. Este presente en el curso.
2. Cree una comunidad de apoyo en el curso.
3. Compartir una serie de claras expectativas para sus estudiantes y para usted en los siguientes aspectos: (1) cómo se comunicarán y (2) cuánto tiempo los estudiantes deben trabajar en el curso cada semana.
4. Utilice una variedad de trabajos o experiencias con grupos grandes, pequeños e individuales.
5. Use tanto actividades sincrónicas como asincrónicas.
6. Temprano en el curso, cerca de la tercera semana, pregunte a los estudiantes de manera informal “¿cómo les va en el curso? y ¿tienen alguna sugerencia para mejorarlo?
7. Prepare foros de discusión que inviten a hacer preguntas, discusiones, reflexiones y la búsqueda de respuestas.
8. Enfóquese en el uso de recursos, contenido y acceso a eventos recientes, así como ejemplos que el estudiante puede acceder fácilmente desde su computadora.
9. Combine el aprendizaje de conceptos importantes con el aprendizaje individualizado y personalizado.
10. Planee una buena actividad de clausura o cierre para el curso.

En conclusión, no siempre es viable aplicar las 10 mejores prácticas en todos los cursos, pero como destaca Moore (2013), lo que se busca es un balance entre la estructura del contenido del curso y el diálogo o interacción, con el fin de que la mayor cantidad de alumnos, aprueben los cursos. Es por esto, que cada semestre establezco los siguientes retos (u objetivos) para cada uno de mis cursos de estadística que se ofrecen por la modalidad a distancia:

1. En primer lugar, debo conocer ***las características de los estudiantes*** que están matriculados en mis cursos (Quiénes son, dónde están, cuál es su contexto, etc.).

2. Desarrollar ***actividades de interacción sincrónica y asincrónica*** que estimulen la participación de los estudiantes en el curso (se discute más adelante).

3. Obtener ***tasas de aprobación*** de los cursos que sean comparables o superiores a los cursos presenciales (que consistentemente, el 50% o más de los estudiantes aprueben el curso con C o más).

¿Cuáles son las herramientas que utilizo para fomentar el diálogo en mis cursos OL?

La Tabla #1, describe las diferentes herramientas tecnológicas y el tiempo de cada una de ellas, que utilizo en mis cursos a distancia para facilitad la interacción con los estudiantes. De las siete herramientas tecnológicas que se describen en esta tabla, cinco están integradas a Blackboard y las últimas dos son herramientas externas complementarias y redundantes a Bb.

Tabla #1: ***Herramientas y tipo de comunicación***

Herramienta	Comunicación sincrónica	Comunicación asincrónica
Blackboard Collaborate	X	X
Anuncios en Bb		X
Mensajería en Bb		X
Foros de discusión		X
Perfil de estudiantes		X
TextNOW	X	
Facebook		X

Blackboard Collaborate ™ es la herramienta de comunicación interactiva (sincrónica y asincrónica) que más utilizo en mis cursos. La misma está integrada a Blackboard 9.1 y tiene la ventaja de que permite 1) realizar clases o sesiones de temas particulares, 2) discutir trabajos o repasar contenidos antes de tomar un examen, 3) facilita el que los alumnos pueden interactuar en el curso con el profesor y con otros estudiantes de forma sincrónica, 4) ayuda a compartir pantallas, cómputos, documentos y demostrar el uso de programados, usando la computadora del profesor, 5) permite grabar las sesiones para que estudiantes que no pueden acceder a la hora acordada, vean y escuchen la sesión (comunicación asincrónica), entre otros. Al inicio de cada semestre, utilizo Bb Collaborate para actividades como la discusión del prontuario y los criterios de evaluación al inicio de cada curso (véase Figura #3).

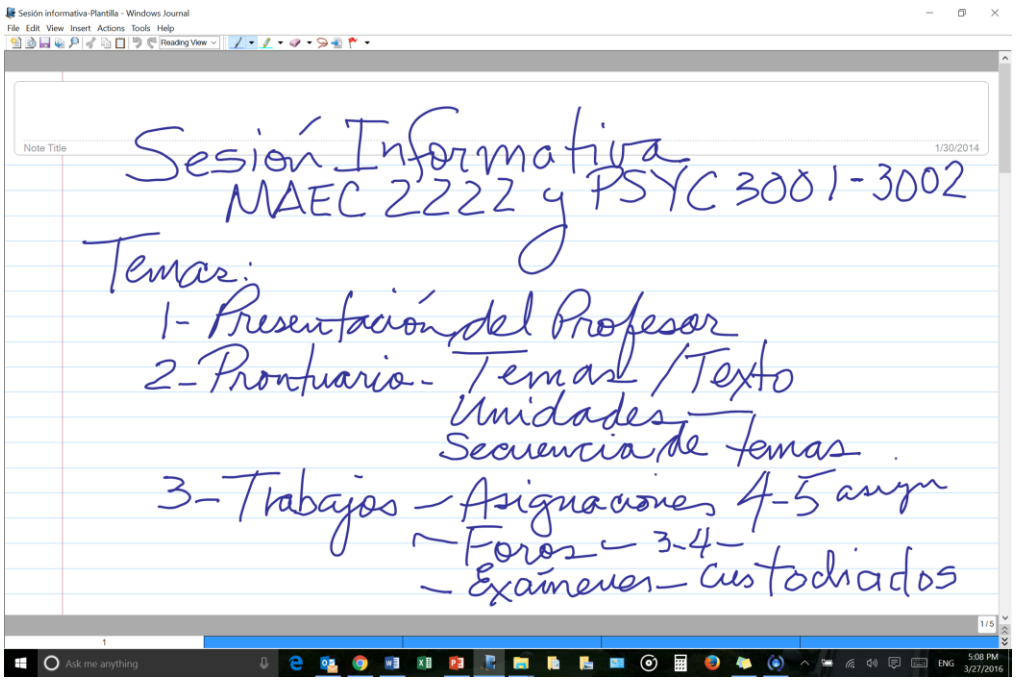

Figura #3: ***Ejemplo de discusión de temas y actividades en un curso a distancia***.

También, utilizo el programado Microsoft Journal y una computadora "touchscreen" con estilete (pen) para realizar tabulaciones y cómputos estadísticos (véase Figura #4), así como la discusión de ejercicios de las asignaciones, tareas, entre otros (véase Figura #5).

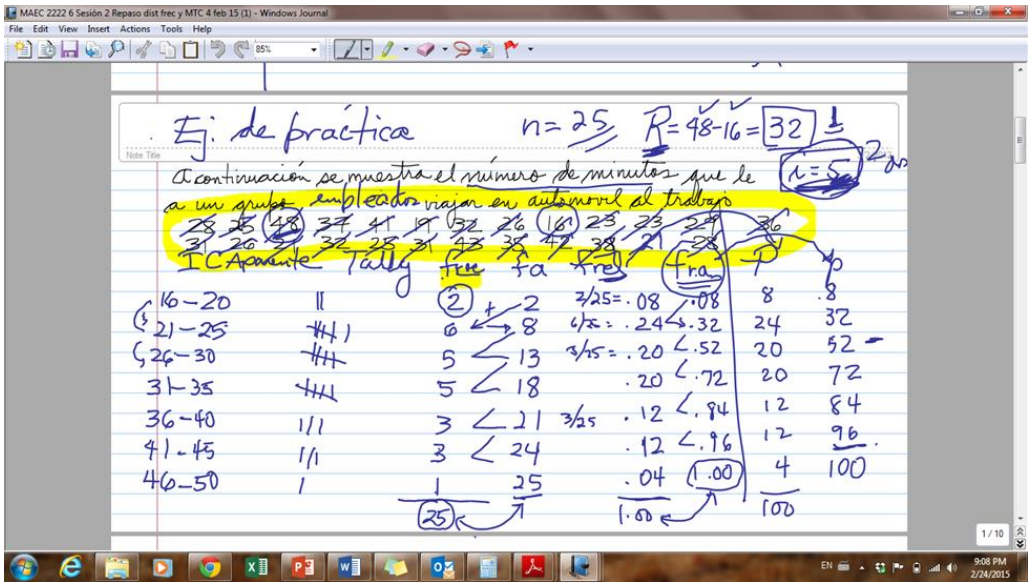

Figura #4: ***Ejemplo de tabulaciones y cómputos estadísticos a distancia***.

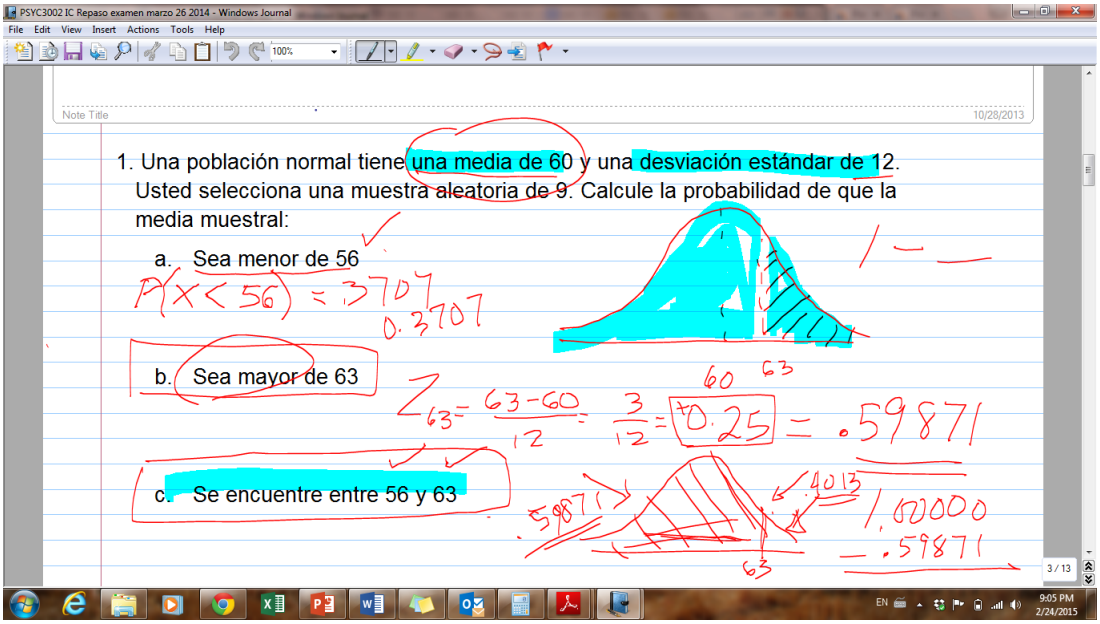

Figura #5: ***Ejemplo de la discusión de ejercicios de las asignaciones y tareas.***

De igual forma, se demuestra el uso de aplicaciones y materiales desde la computadora de los profesores, incluyendo Word, PowerPoint, Excel, SPSS, Adobe PDF, entre otros (véase Figura #6).

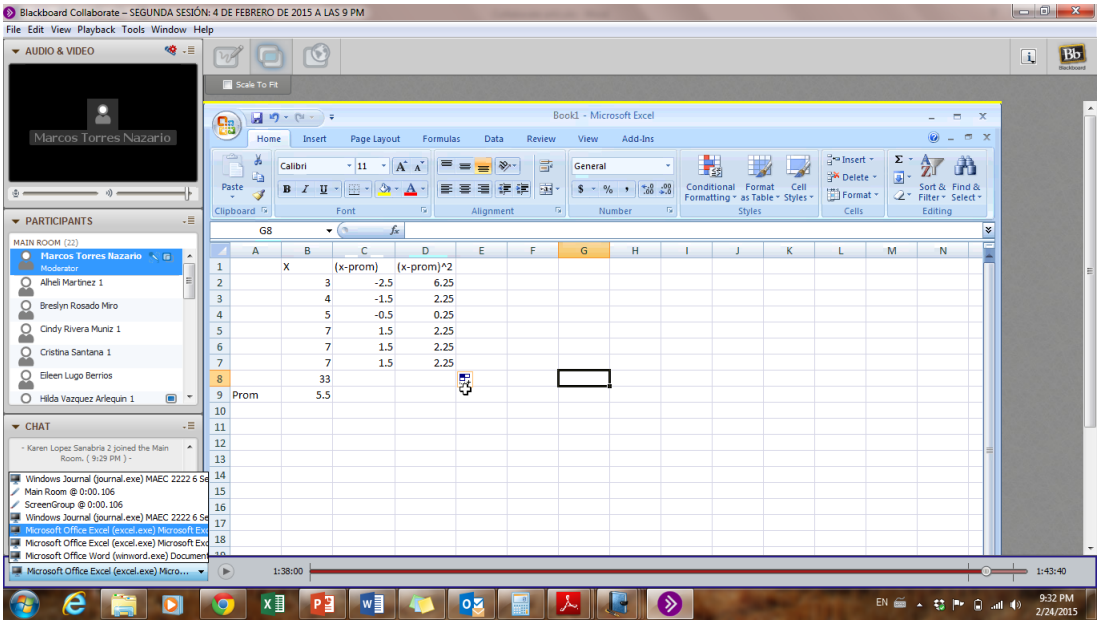

Figura #6: ***Ejemplo de la discusión de un ejercicio usando Excel.***

Es importante destacar que preparar cada una de estas sesiones es similar a la preparación de un curso presencial. Cada sesión toma entre una a dos horas y tiene un inicio, un desarrollo y un cierre.

Por otra parte, Bb tiene integradas otras herramientas de comunicación asincrónica que están tienen un uso complementario en mis cursos. Las herramientas de anuncios, mensajería y los foros, así como el uso del correo institucional de cada estudiante, se usan como medios complementarios y redundantes. Por estos medios se anuncian las asignaciones, se discute el repaso de exámenes y los foros, entre otros (véase Figura #7).

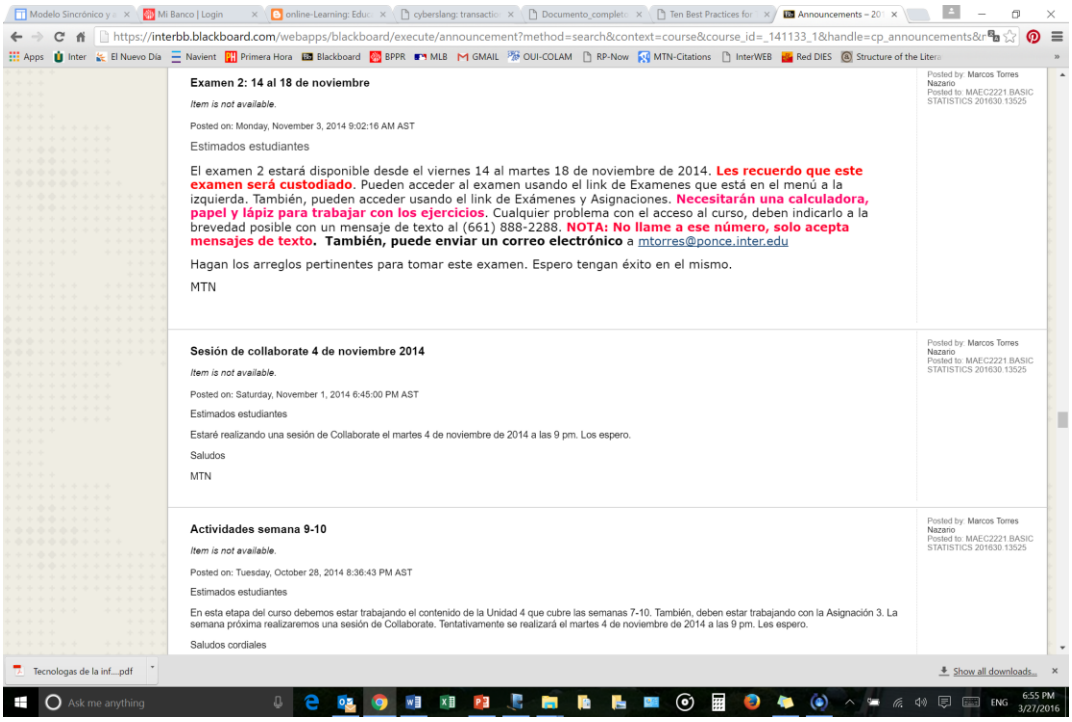

Figura #7: ***Ejemplo de la comunicación usando el área de anuncios en Blackboard.***

Por último, entre las actividades que realizo cada inicio de semestre, está la administración del perfil de los estudiantes a distancia de cada uno de mis cursos. Los resultados de este cuestionario de por sí no es una herramienta de comunicación, pero el breve perfil que

se comparte se discute con los estudiantes en un foro general y sirve de ejemplo de construcción de gráficas. En esta actividad, se les solicita que establezcan cuánto este perfil los describe. De esta forma, los estudiantes reconocen como comparan con el grupo en el que están matriculados. Para muchos es interesante la cantidad de estudiantes que residen fuera de Puerto Rico, así como los lugares en que están localizados y otras complejidades de sus vidas. La Figura #8, contiene un ejemplo del perfil de uno de los cursos de estadística descriptiva (MAEC2221).

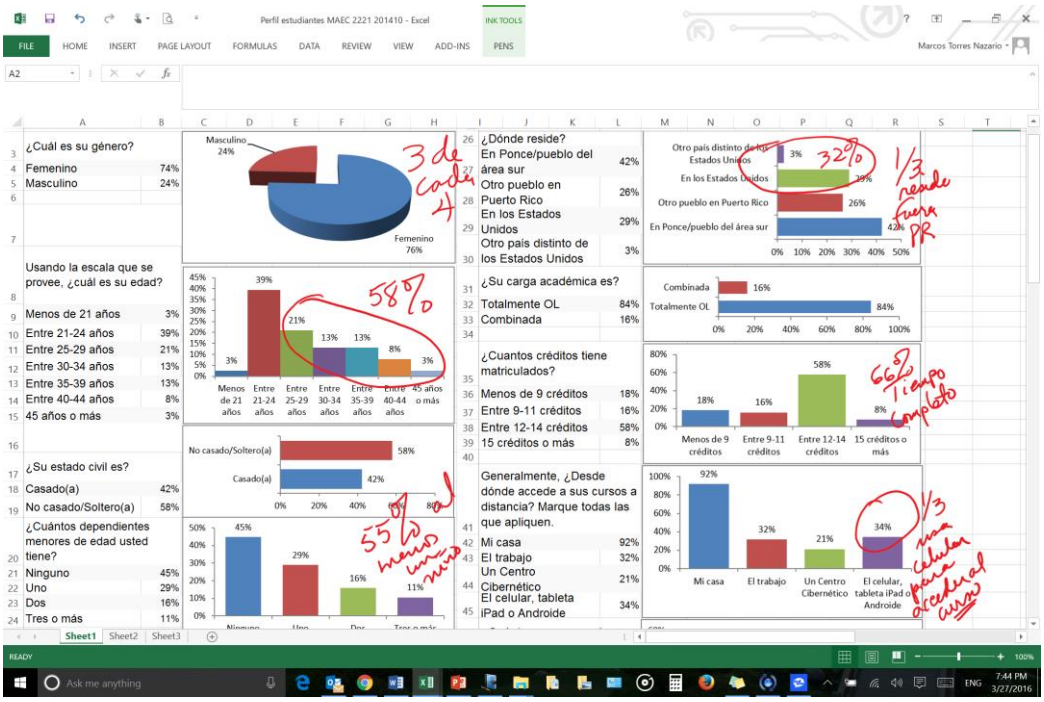

Figura #8: ***Perfil de los estudiantes de uno de los cursos de estadística***.

Las herramientas presentadas anteriormente (ie. Collaborate, anuncios, mensajes, foros y cuestionarios) están disponibles en la plataforma de Blackboard. Todos los profesores que ofrecen cursos con la plataforma de Blackboard de la UIPR, tienen disponibles estas herramientas. Algunos solo utilizan las herramientas asincrónicas, descartando las actividades sincrónicas porque conllevan una preparación adicional y tener que realizar actividades en

horario nocturno o en los fines de semana. Esta actitud responde a un modelo educativo industrial (ie. horario de entrada y salida) que no es compatible con el estudiante que toma cursos a distancia. Por otra parte, las siguientes dos herramientas son externas a Blackboard, pero a su vez pueden utilizarse de forma complementaria en los cursos. La primera es el app de TextNOW, el cual permite recibir mensajes de manera inmediata en un celular o en una computadora (ver Figura #9). Esta herramienta no utiliza el número de celular del profesor y es muy útil para atender situaciones inmediatas, tales como que el examen no abre, el sistema no acepta la tarea, coordinar sesiones individuales en Bb Collaborate, entre otras.

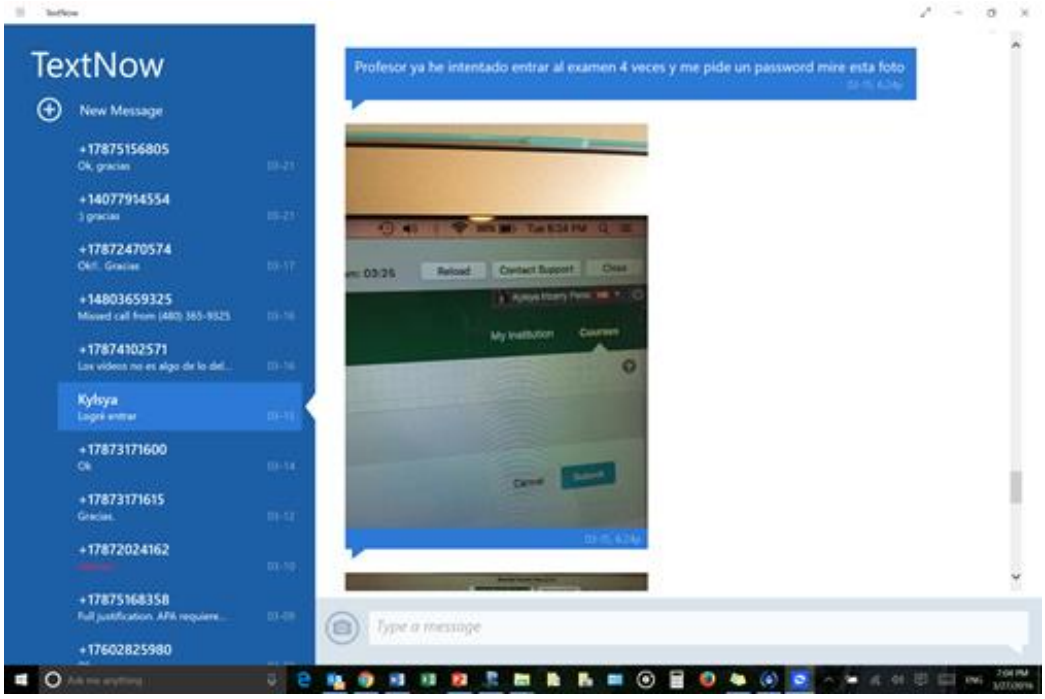

Figura #9: ***Ejemplo de pantalla de TextNOW***

La última herramienta externa que utilizo es Facebook y la página Hablemos de estadística en la que comparto la información relacionada con el curso (ver Figura #10).

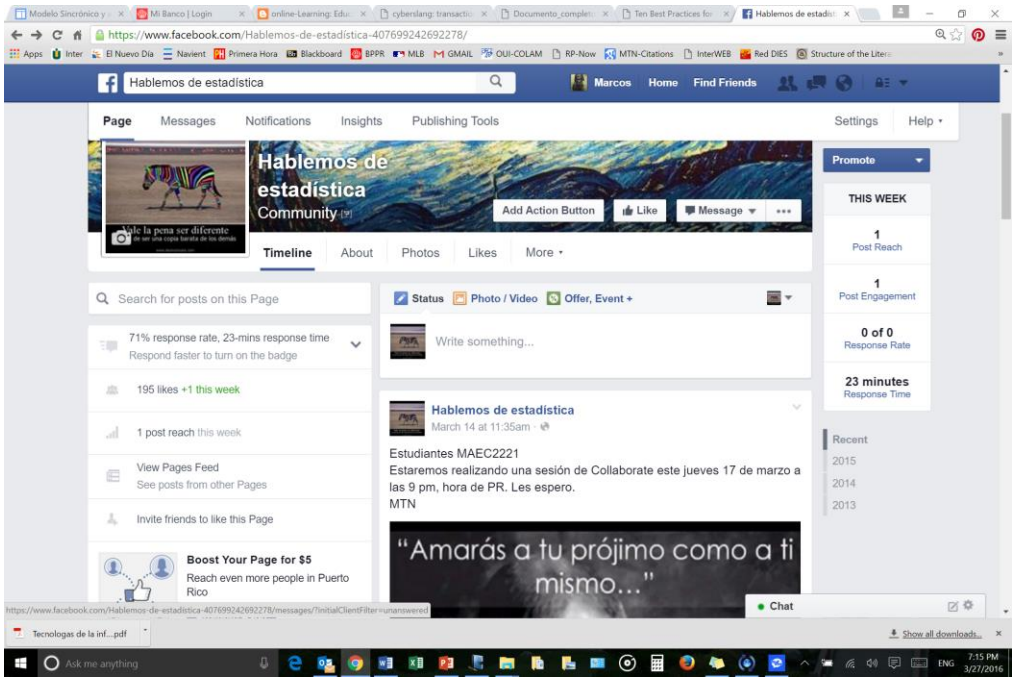

Figura #10: ***Ejemplo de pantalla de la página Hablemos de estadística en Facebook***.

Ahora bien, para determinar si todo este esfuerzo ha valido la pena, en la siguiente sección comparto información sobre los resultados que hasta el presente he alcanzado en mis cursos por el tiempo que he utilizado estas herramientas tecnológicas en mis cursos.

Resultados alcanzados hasta el momento

Por dos semestres, recopilé información agregada de los resultados de los cursos que son impactados por estas herramientas y que también se ofrecen por la modalidad de curso a distancia. La Figura 11, ilustra los desglosa los resultados agregados por tasa de aprobación y uso de la herramienta Blackboard Collaborate.

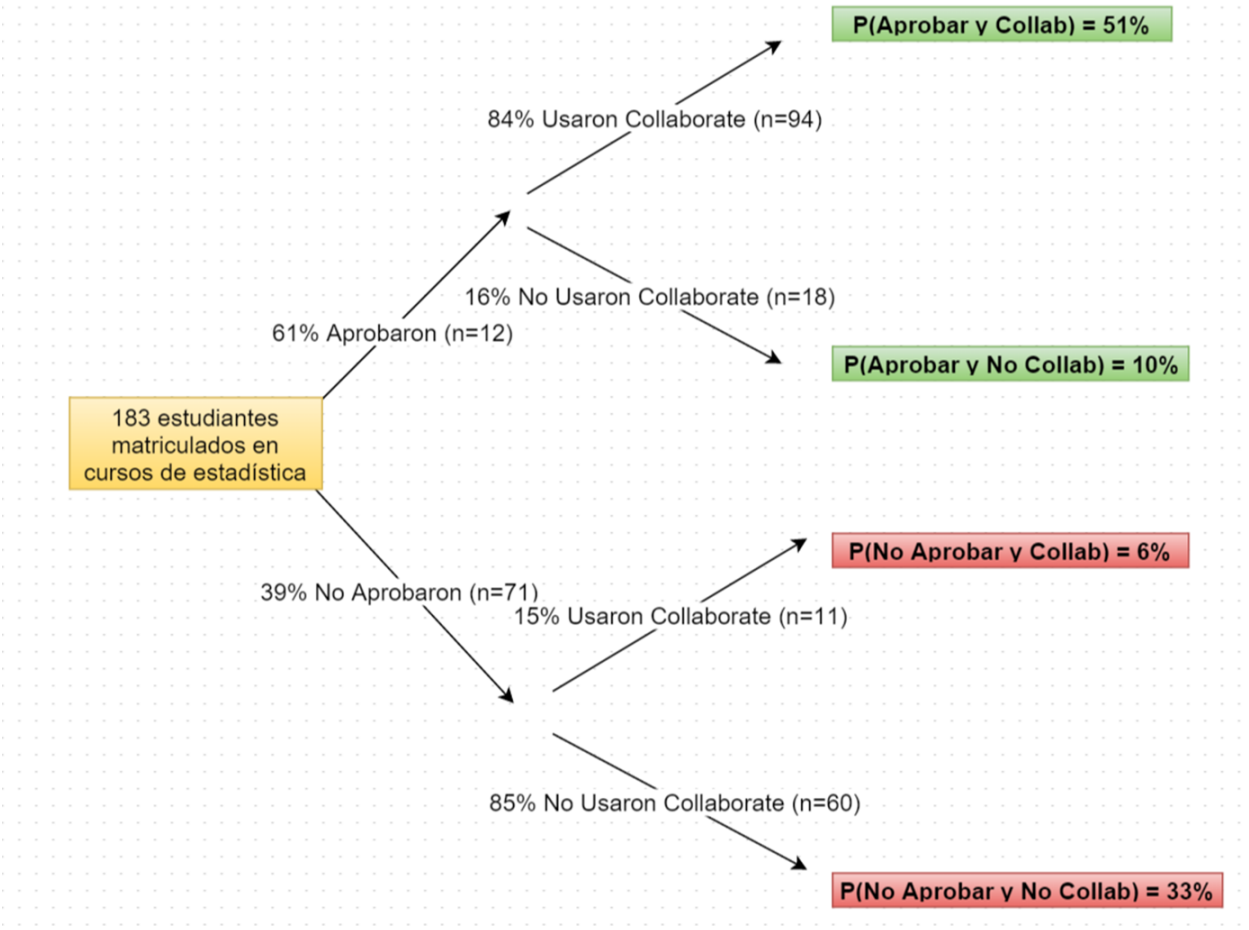

Figura #11: ***Probabilidades de aprobar el curso y el uso de Collaborate***

En general, los datos recopilados revelan que:

- De los 183 estudiantes matriculados en las seis secciones ofrecidas en ese período, 105 (57%) participaron en al menos dos sesiones de Collaborate. En promedio, los estudiantes participaron en 5 sesiones durante el semestre.
- Al menos seis de cada diez estudiantes que aprobaron el curso con calificación mínima de satisfactorio o “C”.
- Entre los que aprobaron el curso, el 84% participó de al menos dos sesiones de Collaborate durante el semestre.

- Se encontró que existe una probabilidad de 51% de aprobar el curso si también participa de las sesiones de Collaborate (véase Figura #11).

En este artículo, se presentan varias herramientas tecnológicas que se pueden utilizar para fomentar el diálogo y la interacción en los cursos a distancia. Los ejemplos aquí descritos se han utilizado por dos semestres académicos con seis secciones de estadística de nivel sub-graduado. Los resultados obtenidos con este esfuerzo destacan la importancia que tiene el uso de estas y otras herramientas en el logro académico de los estudiantes a distancia de los cursos de estadística de nivel sub-graduado.

Reflexiones finales y posibilidades para el futuro

En general, los hallazgos permiten establecer que el uso de estas herramientas en los cursos a distancia, al menos, tiene un efecto acumulativo en la tasa de pase de los estudiantes que se matriculan en estos cursos. Todavía falta realizar investigaciones sobre este aspecto que vincule el uso de esta y otras herramientas al logro académico. No obstante, algunas posibilidades para el futuro están relacionadas con:

- La necesidad de capacitación de la facultad en el uso de estas herramientas tecnológicas. Esto puede requerir un cambio de paradigma de profesores que fueron capacitados usando el modelo educativo de la “era industrial”. De hecho, los profesores que enseñen por esta modalidad, deben evolucionar hacia una fuerza laboral no tradicional donde no hay horarios rígidos, como ocurre en el contexto presencial.
- Es importante fomentar la participación de los estudiantes en actividades sincrónicas que se ofrezcan en los cursos. Los datos recopilados hasta el momento, evidencian que

aproximadamente 4 de cada 10 alumnos matriculados en mis cursos a distancia, no participan de estas actividades.

- El desarrollo de integración de nuevas tecnologías y herramientas a los cursos a distancia, presenta retos y oportunidades, tanto para el contexto a distancia como el presencial.

Descargo de responsabilidad (Disclaimer)

- Las situaciones y actividades que se describen a continuación, no necesariamente representan los procesos que realizan otros profesores de otros cursos de la institución.
- Blackboard ha desarrollado una nueva versión de Collaborate basado en Google Hangouts. Esta herramienta todavía no está disponible en el hosting de Blackboard de la UIPR. El investigador no ha tenido la oportunidad de corroborar si estas actividades y otras adicionales, pueden ser desarrolladas en esta nueva versión.

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About HETS

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