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HETS ONLINE JOURNAL

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Message from the Chairman

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

I hope you will share the link to this Journal with your colleagues. And if you have an innovative technique or would like to share your knowledge and experience in any of these areas impacting higher education, please **consider submitting an article** for the Volume VIII spring edition **on or before March 23, 2018**. Click **here** to **download the guidelines to submit your article.** Your submission should be an **original work either in English or Spanish**. Just send it to the HETS office via e-mail to: **info@hets.org**. Through publications such as the HETS Online Journal, which is included in **EBSCO Publishing's databases,** we can share the latest and best information with others in higher education and focus a wide spotlight on the exciting work being done by our colleagues.

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

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

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

Message from the Chief Editor

Welcome to the **Fall 2017 edition** of the HETS Online Journal! We hope that you will find this edition full of useful information aimed at helping to increase student success and retention. As always, we offer some articles in Spanish and some in English. In this issue you will read about the following:

"An Online Tutorial in Support of English Language Learners", presents a new approach using technology to assist in the student success of English language learners. The article, ***"Características, preferencias e intereses de los estudiantes a distancia: Años 2013-2016"***, updates past research in education and technology by examining whether there are differences in the demographic characteristics, study preferences, and positive and negative aspects of studying for students studying solely through distance education. For your reference, you can learn more about the author's earlier research on this topic on previous issues of this Online Journal. ***"Desarrollo de Competencias Profesionales Sobre Simulación Virtual en el Profesorado de Enfermería"***, addresses assessment of faculty training. The article discusses the benefits of implementing and a training and development program for faculty. ***"Efecto del aula invertida como estrategia didáctica en el rendimiento académico"*,** evaluates and analyzes the significance and impact of the implementation of didactic methodology (flipped classroom) on academic performance in the subjects of Spanish, English and mathematics. **"Flourishing in a New Country: Resiliency among Dominican English Language Learners at Bronx Community College"**, follows two Dominican English language learners and how they used both internal and environmental strengths to overcome language, immigration, academic, and personal adversities. In the article, **"Online Learning for Higher Education to Enhance Access, Student Experiences and Course Outcomes"**, a pedagogical approach and assessment of student performance is examined in a Stellar Astronomy course taught in an both in an online class section and a traditional classroom section. Finally, in **"Promoting Academic Success through Resilience and Hardiness"**, the author provides some recommendations to educators to achieve student success and retention by creating academic environments that promote resiliency and hardiness.

We wish you much success in your efforts to help students succeed!

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An Online Tutorial in Support of English Language Learners

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An Online Tutorial in Support of English Language Learners

Abstract

This paper describes the design and implications of a content-based, interactive, online tutorial aimed at supporting English language learners (ELL) who are navigating both improving their language skills in an English as a Second Language (ESL) program and gaining content knowledge in an introductory discipline-specific course. It describes the tutorial and demonstrates how it is supported by language learning best practices; it also discusses the limitations of the tutorial and provides suggestions for the improvement of its framework and usage.

Keywords: Online Tutorial, English Language Learners, Content-based Instruction, Higher Education

The population of English language learners (ELLs) has been steadily increasing in the past few decades, and recent statistics reveal that this population in the United States will very likely continue to grow (Pereira & DeOliveira, 2015). The literature shows that more educators find themselves teaching students from diverse linguistic and cultural backgrounds (DeJong & Harper, 2005; Brice, Miller, & Brice, 2006). As such, finding ways to educate ELLs is an increasingly important task, and educational institutions are faced with the challenge of creating support tools and utilizing different resources to help teachers better provide for the linguistic and academic needs of a diverse student population. (Zimmerman, 2014).

An effective way educators can support ELLs is by designing materials that will support both content and English language development simultaneously. Harper and DeJong (2004) and Nordmeyer (2007) contend that educators should include ways to address the language demands that ELLs encounter by providing opportunities for students to develop the necessary academic

discourse and pragmatic skills which are required to succeed in content discipline classrooms.

Studies show that many [content] teachers do not realize that even the most straightforward classroom language can be perplexing for ELLs and can limit access to learning. Also, content instructors may inadvertently assume that certain communication-based behavior such as use of first language (L1) and/or codeswitching may reflect the students' inability to perform in English. Such misconceptions may be interpreted as a problem with language comprehension or language production (DeJong & Harper, 2005). Also, content-discipline texts, in addition to vocabulary demands, typically use syntactic structures which may be new, and therefore challenging, for second language (L2) learners' level of proficiency. Especially notable, DeJong and Harper (2005) mention that the national content standards describe the knowledge base of the content area and good teaching practices but fail to explain the linguistic foundation underlying these effective content classrooms.

Typically, introductory college level courses cover a large amount of material in order to prepare students for upper level courses; therefore, these courses tend to have a faster pace and can be quite challenging for ELLs who need more time to process complex concepts as they are at the same time managing the acquisition of a second language as well. This is reflected in Nordmeyer's (2007) and Zimmerman's (2014) research which concludes that ELLs face many challenges, but their biggest difficulty is learning academic content.

Online Tutorial

Because an online tutorial is an effective learning tool that can be designed to support the acquisition of both language and content knowledge, it is ideal for addressing the specific

needs of ELLs. Indeed, Bollinger and Supanakorn (2010), Ganster and Walsh (2008), and Bianco (2005) state that because online interactive tutorials can be designed to meet specific academic needs, their integration as supplements has become popular and can be successfully used. Online interactive resources can provide students with rich, learning environments that appeal to different learning styles and offer learners a chance to explore and construct their own knowledge actively and at their own pace (Bollinger & Supanakorn, 2010) and (Moreno & Meyer, 2007), and (Lambrindis, 2014). Curtin (2002) also adds that the use of technologies offers flexible delivery.

To this end, this paper describes the design and implications of a content-based, interactive, online tutorial meant to support English language learners who are navigating both improving their language skills in an English as a Second Language (ESL) program and gaining content knowledge in an introductory discipline-specific course at Eugenio María de Hostos Community College. As part of its mission, Hostos College "takes pride in its historical role in educating students from diverse ethnic, racial, cultural and linguistic backgrounds, particularly Hispanics and African Americans. An integral part of fulfilling its mission is to provide transitional language instruction for all English-as-a-Second-Language learners along with Spanish/English bilingual education offerings to foster a multicultural environment for all students" ("Hostos Mission," 2017).

Description of Process

As a direct way to both support the language and content knowledge needs of ELLs, an online content-based tutorial that students can access at their convenience was created. The project was divided into several phases. In the first phase, the introductory sociology course was

selected for the tutorial because it was very popular with ESL students as it fulfills a general education requirement for most majors at the College, and it can be taken in either the intermediate or advanced level of ESL. Once this selection was made, the overall idea of a sociology tutorial was presented to the Instructional Technology staff to assess its feasibility. The tutorial's framework was then conceptualized. The second phase of the project entailed meeting with the experts in the field of sociology. Because this discipline contains a large amount of content, sociology professors helped identify essential topics from the introductory course. Keeping ELLs in mind, particular attention was given to concepts that are taught within a structure that requires scaffolding; this refers to ideas that are fundamental and should be clearly understood before more complex concepts in the field are introduced. Once these concepts were identified, it was established that the majority of the concepts emerged from the first four chapters of the textbook ***Sociology:*** *A Brief Introduction* by Richard Schaefer; as such, a decision was made to focus on the primary sociological concepts in the introductory chapters in the textbook as these are useful for understanding material presented in subsequent chapters. These chapters were closely examined and, in consultation with the sociology experts, appropriate and meaningful readings and exercises were developed. These exercises were designed within a language acquisition context and aim to meet the specific language and content needs of ELLs. In the last phase, the online tutorial was produced with the help technology experts at the College. The tutorial appears on the Department of Language and Cognition webpage and can be conveniently accessed by all students in the College at any time and from any place. Students log on using their College identification; they can work on chapters sequentially or selectively. When students log off, they are asked to respond to an evaluation which is forwarded automatically via

email to my College inbox.

The tutorial begins with a welcome page that introduces users to its purpose and provides suggestions for usage as individuals, in pairs, or small groups. Additionally, the page describes the format of the tutorial and directs users to the table of contents, which shows its chapters with their topics, subtopics, and exercises. The tutorial also reinforces material with a review component for each topic as suggested by August, Carlo, Dressler and Snow (2005). Lastly, when students log out of the tutorial, they are directed to the aforementioned evaluation page, which contains questions aimed at collecting data related to the tutorial's effectiveness and its users. In particular, the evaluation questions address students' enrollment status and ESL level as well as their overall experience (see Figure 1).

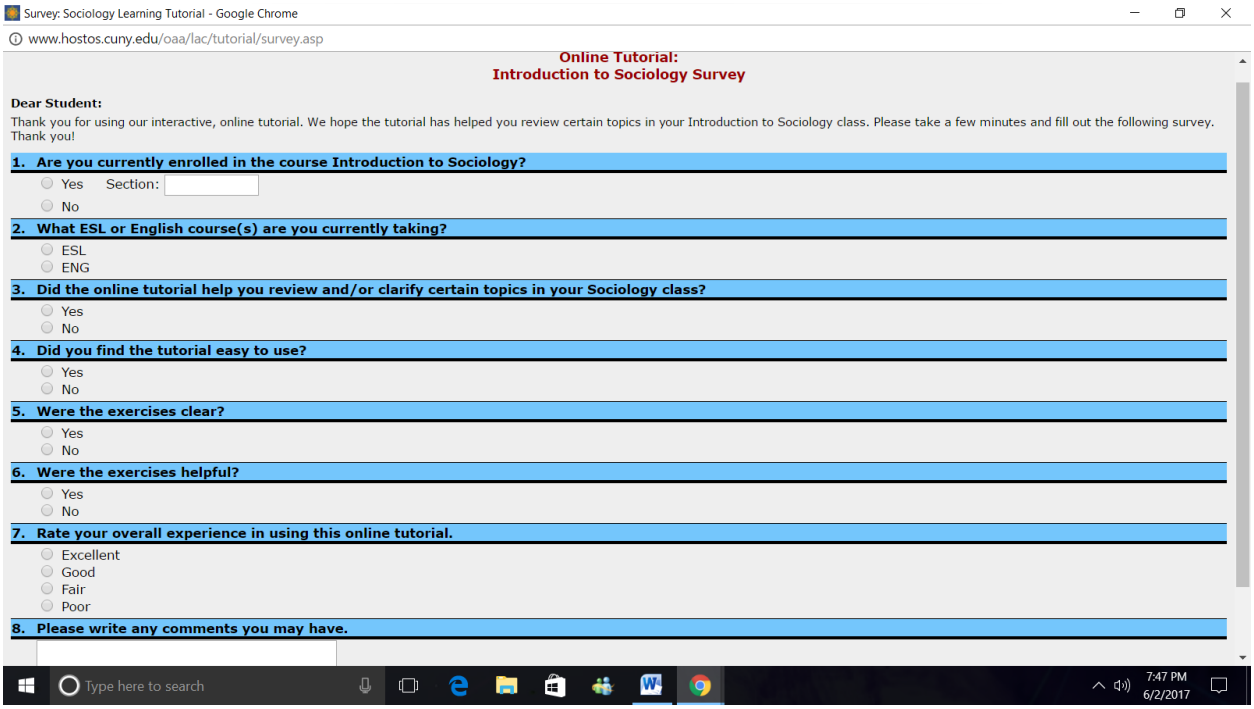

Figure 1. The evaluative component of tutorial. The depicted survey aims to collect data regarding the tutorial's users and its effectiveness.

Tutorial Samples

The tutorial incorporates many skills which are recognized as essential to helping language learners achieve academic success; these include effective reading comprehension, use of academic content vocabulary, and critical thinking. In particular, the exercises designed for the tutorial address skills such as interpreting, connecting, applying, and evaluating. The selected content topics are introduced in reading passages, which increase in length and complexity as the tutorial progresses. Students can freely navigate these reading selections, as well as the exercises that accompany them, as often and repetitiously as they want; there are no restrictions in terms of order, pace or topic selection. The tutorial, designed purposefully to allow recursive learning, is meant to be a vehicle for students to explore and learn the content material in a way that is meaningful to each individual student.

All reading selections are presented with a scrolling bar that allows students to easily navigate each reading back and forth. Also, the arrows allow students to review previous or next topics as they move through the tutorial, permitting students to move forward and back in the scaffolding process. Students click the “Start” button when they want to begin the exercises related to the reading. Figure 2 shows an example of a reading selection and illustrates the workings of a page containing a reading in the tutorial.

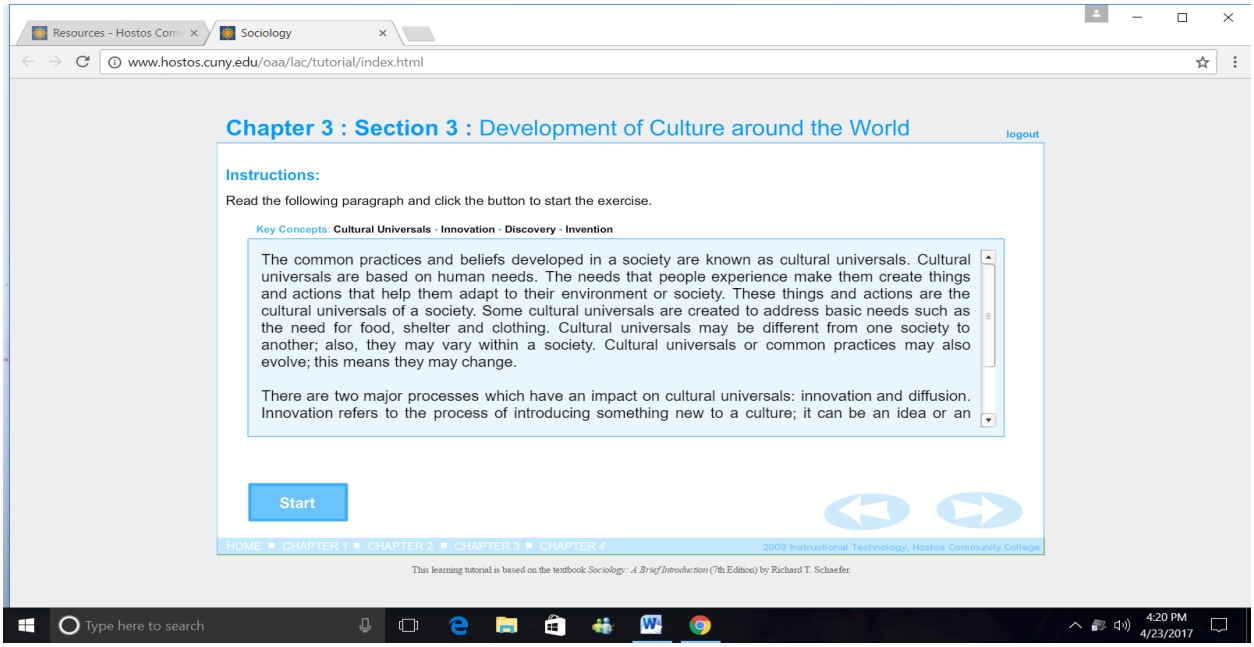

Figure 2: Sample Reading. The figure illustrates the design of a tutorial page containing a reading selection.

There are several types of comprehension exercises that accompany each reading. For example, cloze exercises are meant to measure how well students comprehend the reading passage as they required students to recall and produce details of the reading. This assessment tool provides empirical evidence regarding reading comprehension. To complete the cloze exercise, students need to click and drag responses into the paragraph in the provided spaces. They will receive immediate feedback as viewed in figure 4 and can continue the exercise if corrections are necessary.

A matching column exercise is best suited for testing both knowledge and comprehension; this type of exercise challenges students to use analytical skills including logic, process of elimination, inversion and diversion. The exercise in the tutorial has a drop-down menu to select the matching letter from the provided definitions.

Additionally, a true or false exercise helps students employ critical reading skills, helping

them differentiate between main ideas and details, recognize inferences by constructing meaning, and consider different responses; this type of exercise is designed to measure the ability of students to evaluate the accuracy of specific statements. Other comprehension tasks designed for the tutorial include exercises where students are asked to identify correct answers from drop menus. Tutorial users receive instant feedback for all exercises, allowing users to immediately assess answers. The tutorial's immediate feedback mechanism provides students with the necessary space to make iterative improvements in the learning process; instant feedback is significantly beneficial in promoting learning achievement. In some cases, explanations are provided through pop-up menus, and in all exercises, students have the opportunity to re-examine and re-try. Figures 3 through 9 illustrate examples of some the exercises and types of feedback in the tutorial.

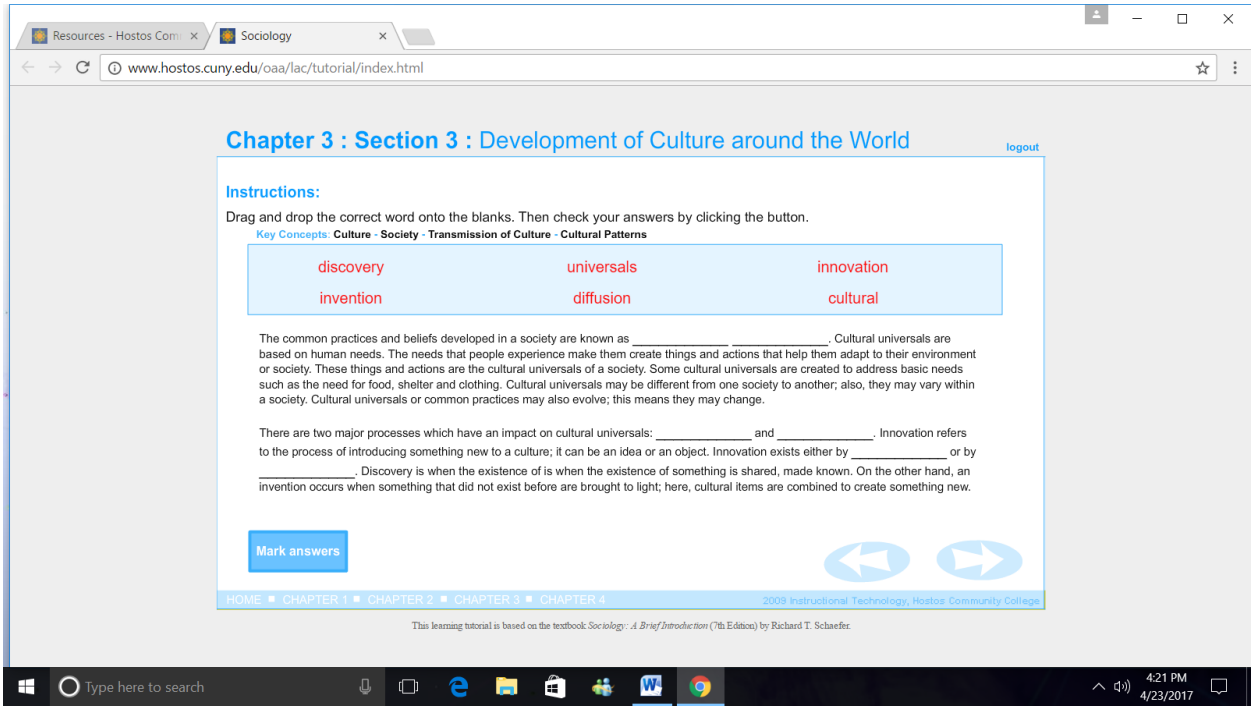

Figure 3. Sample of cloze exercise.

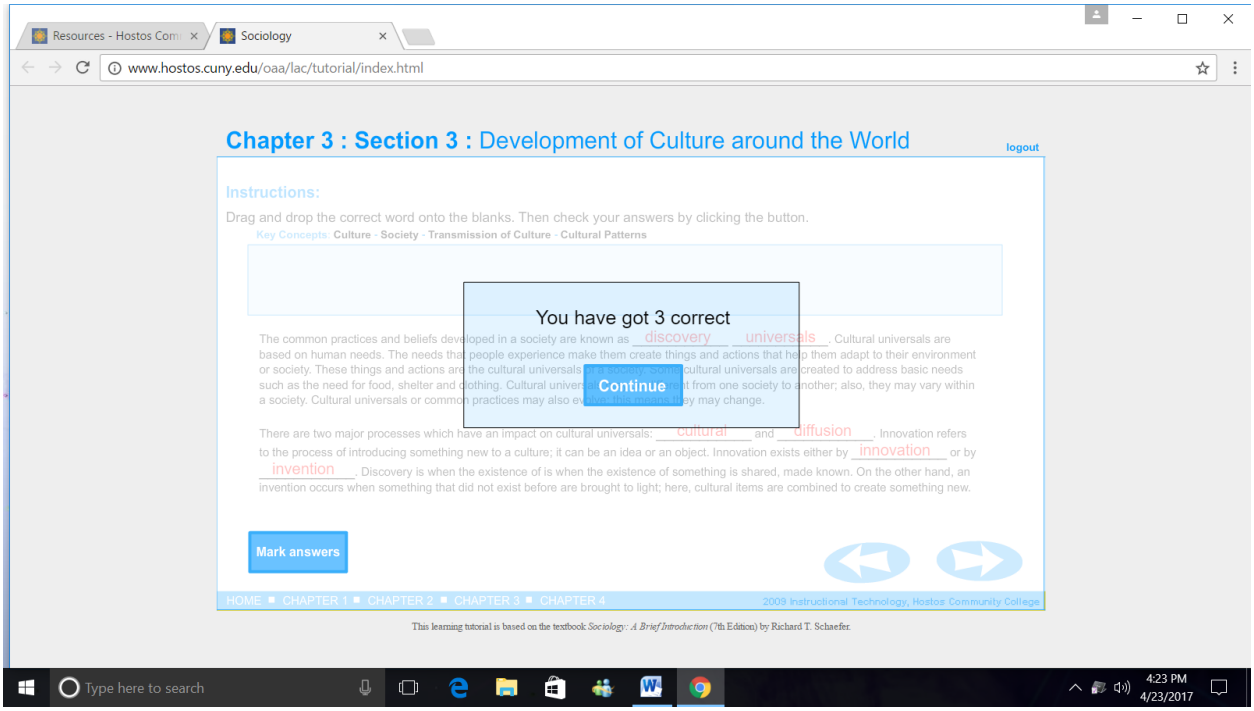

Figure 4. Sample of feedback for cloze exercise.

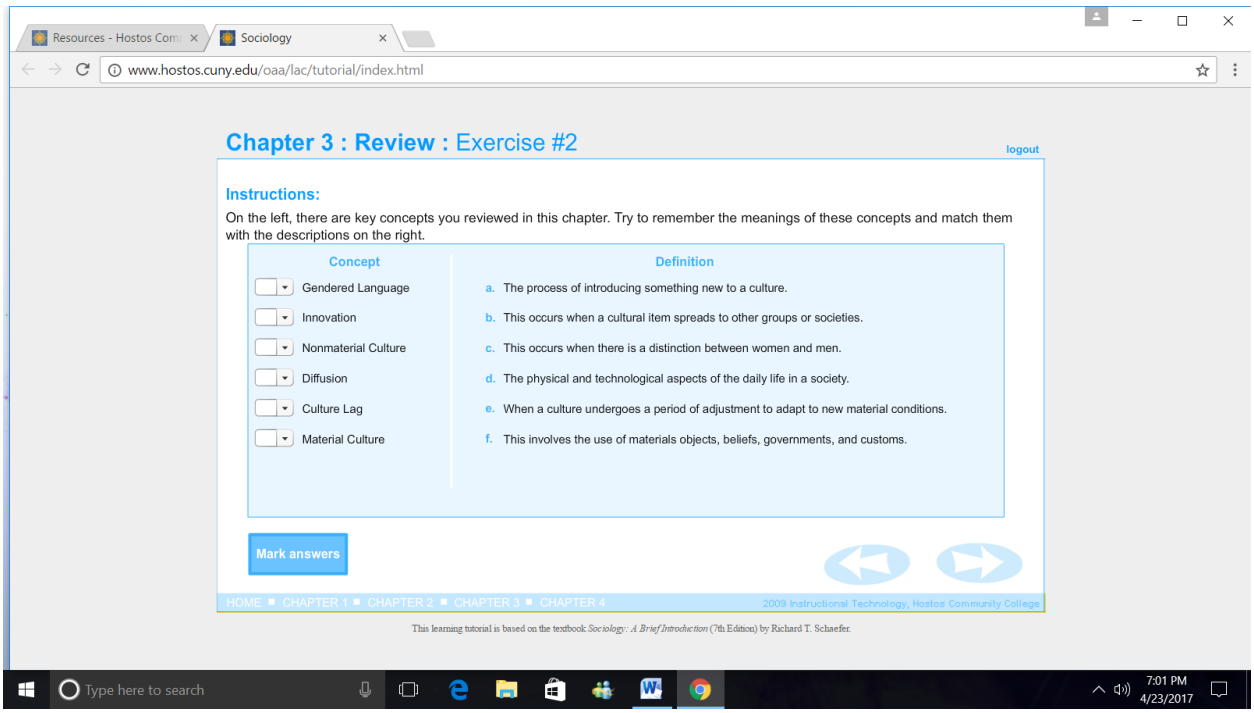

Figure 5. Sample of matching column.

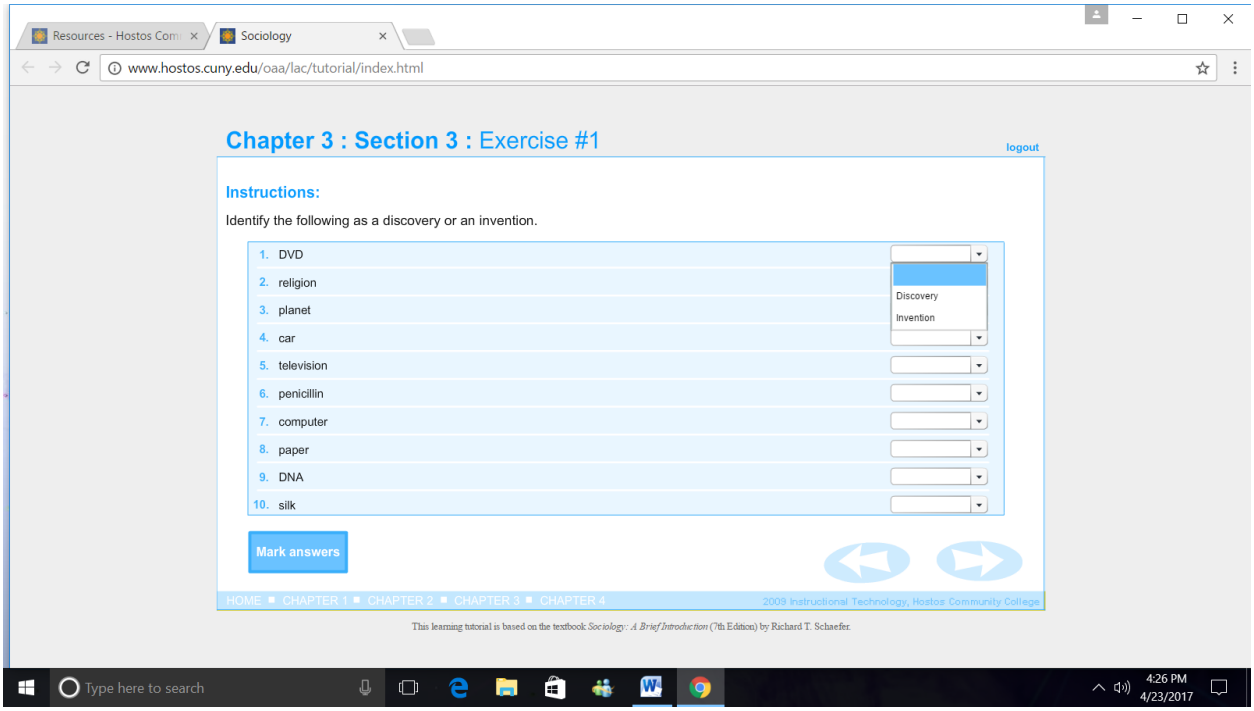

Figure 6. Sample of identify correct answer exercise with drop menu.

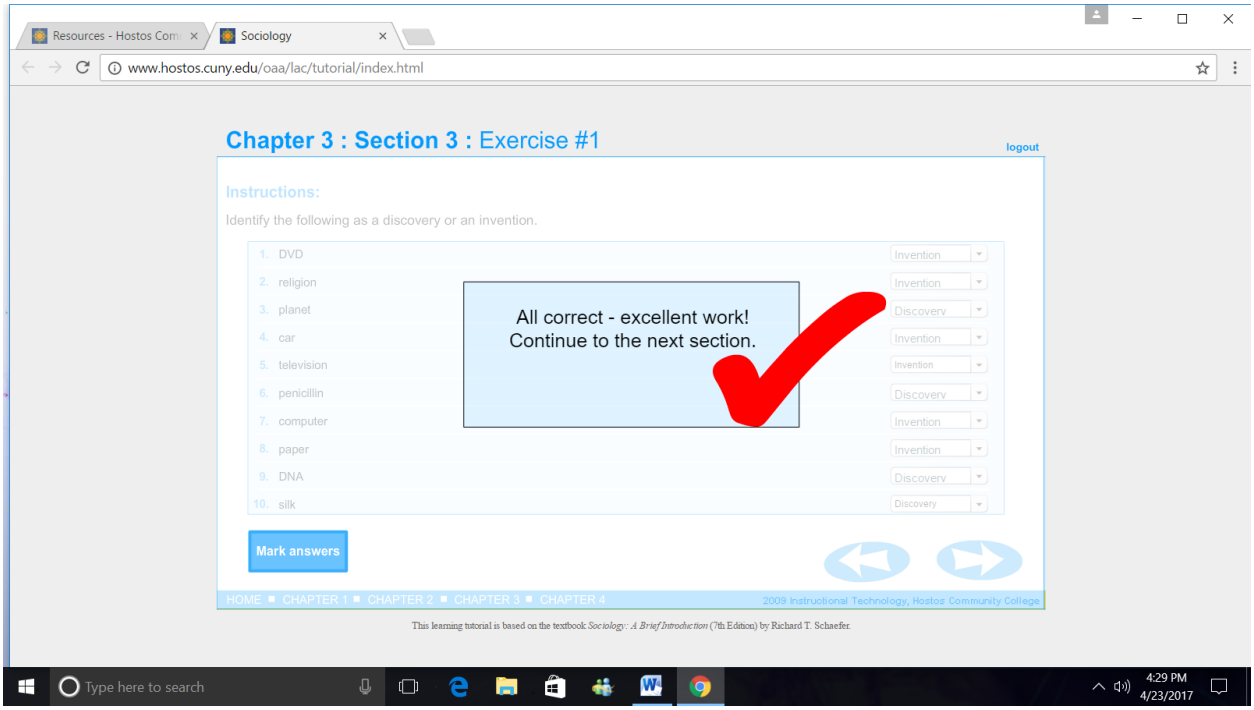

Figure 7. Sample of feedback for identify correct answer exercise.

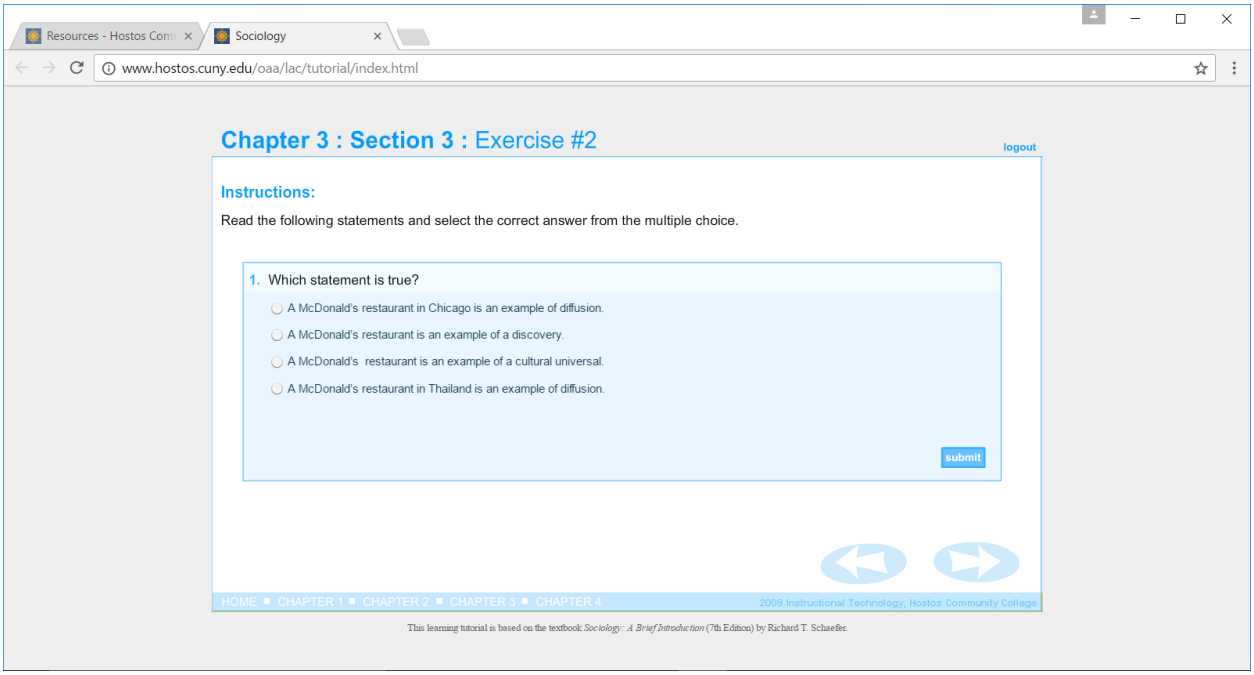

Figure 8. Sample of multiple choice exercise.

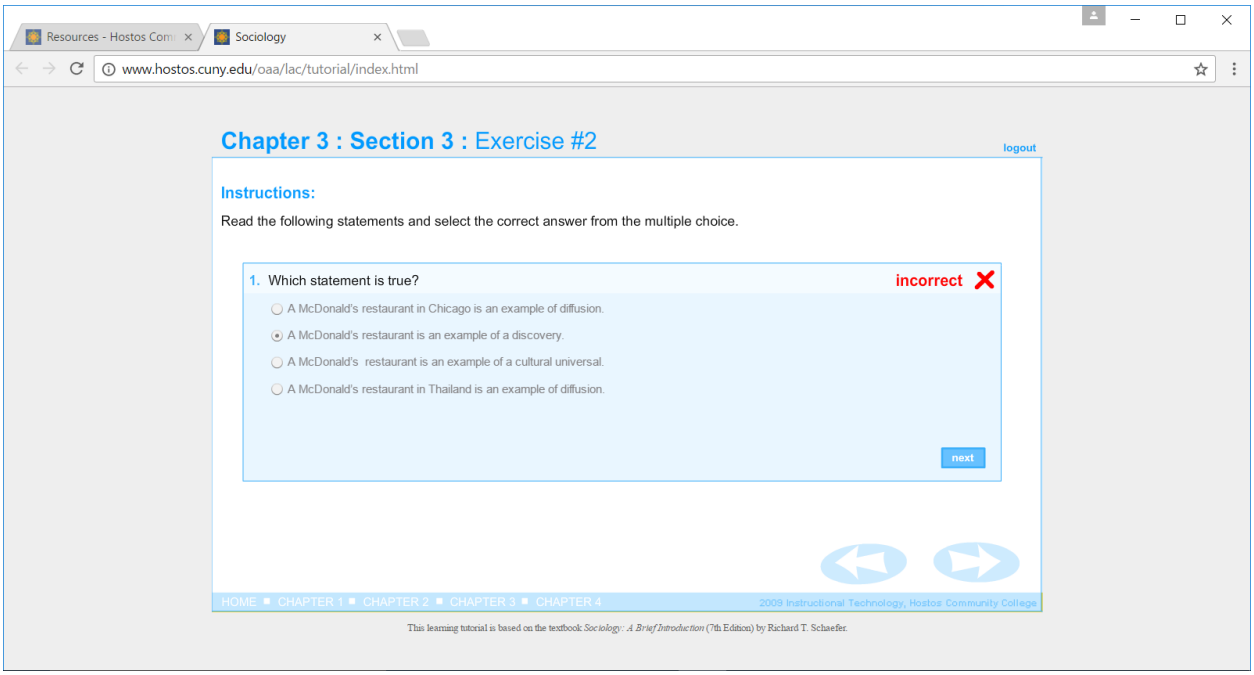

Figure 9. Sample of feedback for incorrect response in multiple choice exercise.

Discussion and Recommendations

While positive feedback has been received from tutorial users, the data is not, at this

point, sufficient to warrant formal reporting. Therefore, it is necessary to explore methods that will ensure better data collection as a way to inform any amelioration of tutorial usage as well as gain an informed understanding about the experience. The tutorial can also be enhanced by incorporating visual and audio clips to enrich the users' experience; adding these features can also serve to complement and/or accommodate different learning preferences.

Another significant consideration regards viewing the tutorial as a diverse tool that can have a variety of purposes. When the tutorial was originally conceptualized, it was constructed as a tool that students can use on their own time, but it can also be employed as an effective in-class instrument to reinforce concepts and/or assess comprehension. Considering the tutorial in this way can result in numerous innovative and successful in-class activities.

Also, when designing a similar tutorial, it is of utmost importance to consider the compatibility of the application used to construct the tutorial and the server on which it operates. This is crucial to ensure the tutorial is operational, especially when the server is upgraded. Like all technology, servers become obsolete over time and may lose their compatibility with specific applications.

Lastly, the use of online tutorials seems to have a positive effect on learning and the overall improvement on the students' level of understanding of materials. (Bollinger, Supanakorn, 2010.) As such, a consequential step would be to consistently collect and analyze all pertinent data related to the tutorial. This evidentiary information can provide insight into the usefulness, amelioration and sustainability of the tutorial. In addition to the evaluation at the end of the tutorial, a focus group may also supplement the assessment process and the analysis of its

use as it can yield additional constructive information. Another consideration in this respect would be to also collect data from the instructors as well, allowing for both educator and learner to provide perspectives about the tutorial effectiveness, thus, contributing to a more comprehensive analysis of the tutorial experience. Such information may prove instrumental in deciding to develop more tutorials in other content areas, which, in turn, will result in fostering more collaboration across disciplines.

Conclusion

The integration of technology is an important addition to traditional teaching and can be an effective learning tool. There are many advantages for using online tutorials; they can eliminate concerns about making mistakes and producing under pressure within the structure of a conventional classroom. Another benefit of an online tutorial as a learning tool is that its usage further enhances student engagement and strengthens independent learning skills, and in particular, it helps students who are learning a language meet the demands of the content classes by providing an opportunity to interact with academic vocabulary as they gain a solid base of content knowledge.

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Características, preferencias e intereses de los estudiantes a distancia: Años 2013-2016

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Características, preferencias e intereses de los estudiantes a distancia: Años 2013-2016

Resumen

Este artículo resume las características demográficas, preferencias de estudio, los aspectos positivos y negativos de estudiar, de los estudiantes totalmente a distancia del Recinto de Ponce de la Universidad Interamericana de Puerto Rico (UIPR). Este resumen compara las respuestas de estudiantes a distancia de esta unidad del sistema UIPR desde el estudio de otoño 2013 hasta el otoño de 2016. Los hallazgos revelan que los estudiantes totalmente a distancia son estudiantes adultos que en su mayoría son del género femenino, que poseen experiencia universitaria previa, además de que estudian a tiempo completo un grado universitario, principalmente en el campo de la Administración de Empresas. Asimismo, se mantiene la tendencia de que entre un 6-8% de los estudiantes a distancia son de origen latinoamericano. En estos cuatro años, no se observan diferencias importantes en las razones y motivaciones que estos estudiantes tuvieron para realizar estudios universitarios a distancia, así como los aspectos positivos o negativos de estudiar por esta modalidad o en el uso de las redes sociales, entre otros.

Palabras clave: Perfil de estudiantes a distancia, estudiantes totalmente en línea, estudios a distancia, *online students profile*, aspectos positivos y negativos de estudiar a distancia

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). Este artículo contiene los hallazgos de la cuarta fase de este estudio institucional realizado por el investigador con datos de esta creciente población universitaria para el otoño 2013 hasta otoño 2016. El primero de esta serie de estudios, se publicó en el Informe sobre Educación Virtual y a Distancia en Puerto Rico titulado: Perfil de los estudiantes totalmente a distancia del Recinto de Ponce la Universidad Interamericana de Puerto Rico (UIPR) para otoño 2013 (Meléndez, Montalvo, Rama & Calcaño, 2014). En esta serie de trabajos se describen algunas características demográficas, académicas, las preferencias e los intereses, así como las razones que tuvieron los participantes al decidir estudiar en un programa universitario de asociado o bachillerato, por la modalidad de aprendizaje a distancia.

Breve trasfondo

La Universidad Interamericana de Puerto Rico es un sistema multicampus compuesta por 9 recintos y dos escuelas profesionales que atiende a cerca de 40 mil estudiantes universitarios. Es asimismo, el principal proveedor de cursos y programas a distancia en el país. Datos de los Integrated Postsecondary Education Data System (IPEDS) revelan que, durante el otoño de 2015, el Sistema UIPR ofreció cursos a distancia a 21,823 estudiantes (55%) de los 39,827 que tomaban cursos por esa modalidad en el país (Torres-Nazario, 2016). Por su parte, el Recinto de Ponce es una unidad con poco más de 5 mil alumnos, que ofrece cursos a distancia desde el 1995 y grados universitarios desde el 2003 (Torres-Nazario, 2013). De hecho, para el otoño de 2014, esta unidad del sistema UIPR ofrecía un total de 26 programas (23%) universitarios a distancia de los niveles

de grado de asociado, bachillerato y maestría del total de 115 que se ofertaron por la modalidad a distancia en el país (Torres-Nazario, 2016). En cuanto a la matricula a distancia, el Recinto de Ponce representa poco más del 17% de la matrícula total del sistema UIPR. La singularidad de esta unidad del sistema UIPR es que más del 60% de los estudiantes toma al menos un curso en línea y al menos 1 de cada 5 estudiantes está completamente a distancia (véase Tabla 1).

Tabla 1

Matricula total, con al menos un cursor y totalmente a distancia UIPR Ponce Otoño 2013-1016

Matrícula	2013-10	2014-10	2015-10	2016-10	2017-10
Matrícula total	5,983	5,098	5,197	5,497	5,389
Al menos un curso	2,617	2,337	2,241	2,976	2,675
Totalmente a distancia	1,432	1,244	1,096	1,147	1,080

Fuente: Informes SWDRMAT, SWDISTP y SWDISTP de BANNER

Definiciones

Para este estudio, la mayoría de las definiciones relacionadas con las características de los estudiantes y las instituciones, se obtuvieron del glosario de términos de los IPEDS (NCES, s.f.). Entre estas se destacan las siguientes:

1. **Búsqueda de grado o certificado** (degree/certificate seeking) – se refiere a estudiantes matriculados en cursos por crédito conducentes a un grado o certificado o galardón formal reconocido (NCES, s.f.).
2. **Instituciones que otorgan grados** (degree granting institution) – se refiere a un colegio, universidad u otra institución de educación superior que confiere un reconocimiento oficial de la finalización con éxito de un programa de estudios (NCES, s.f.).

3. **Sistema integrado de datos de educación post-secundaria** (Integrated Postsecondary Education Data System-IPEDS) - se refiere al Sistema de recolección de datos post-secundarios que realiza el "National Centere for Educational Statistics (NCES). Todas las IES que tienen un acuerdo con la Oficina de Educación Postsecundaria del Departamento de Educación y que utilizan fondos de Título IV deben proveer información sobre los siguientes componentes: Institutional Characteristics (IC); 12-month Enrollment (E12);Completions (C); Human Resources (HR) composed of Employees by Assigned Position (EAP), Fall Staff (S),and Salaries (SA); Fall Enrollment (EF); Graduation Rates (GRS); Finance (F); and Student Financial Aid (SFA).

4. **Educación a distancia/aprendizaje a distancia** – se refiere a la educación que utiliza una o más tecnologías para ofrecer instrucción a los estudiantes que están separados del instructor y así apoyar la interacción regular y compartir materiales entre los estudiantes y el instructor de forma sincrónica o asincrónica. Hassenburg (2009, p. 7), la define como "un proceso de educación formal en el que la mayor parte de la instrucción ocurre cuando el estudiante y el instructor no están en el mismo lugar o al mismo tiempo". En este análisis es sinónimo de aprendizaje a distancia, en línea, "online" o educación no presencial.

5. **Estudiantes a distancia** – para este estudio se define como el conteo sencillo de estudiantes que tomaron al menos un curso a distancia en el otoño de 2012 y 2013. El mismo combina los estudiantes que tomaron al menos un curso (también llamados estudiantes híbridos) con aquellos que tomaron exclusivamente o totalmente sus cursos a distancia.

6. **Instituciones de Educación Superior (IES)** – término utilizado en los IPEDS para definir a una institución o escuela que está acreditada a nivel universitario por una agencia o asociación reconocida por el Secretario de Educación de los EE.UU. Estas escuelas ofrecen al menos un año de estudios conducente a un grado y son elegibles para participar de los programas de asistencia financiera de Título IV (NCES, s.f.). Para este estudio se refiere a todas aquellas instituciones de educación superior en Puerto Rico autorizadas por el Consejo de Educación de Puerto Rico (CEPR).

Métodología

Este artículo contiene los hallazgos de cuatro años en los que el investigador recopiló datos de los estudiantes totalmente a distancia de la UIPR-Ponce para otoño de 2013 a 2016. Para mantener la uniformidad y comparabilidad de resultados, se utilizó el mismo cuestionario, el cual contenía reactivos desarrollados por el investigador, así como del *Online College Students 2012: Comprehensive data on demands and preferences* de Aslanian y Clinefelter (2012). Al igual que en las investigaciones anteriores, este estudio recibió la aprobación del IRB de la UIPR. Asimismo, el cuestionario se administró en línea usando el Building Block de EvaluationKIT™ sobre la plataforma de Blackboard Learn™. Como en los estudios anteriores, el cuestionario estuvo disponible durante el segundo semestre de 2016, a todos los estudiantes matriculados totalmente a distancia del Recinto de Ponce de la UIPR. Los criterios de inclusión para este estudio eran los siguientes: 1) que el participante estuviera matriculados totalmente a distancia en otoño de 2014 y, 2) que estuviera en uno de los programas a distancia licenciado por el Consejo de Educación de Puerto Rico (CEPR) para el Recinto de Ponce. Es importante destacar que algunas de las gráficas que se incluyen a continuación, contienen datos en conteo repetido.

Igualmente, algunas de las sumatorias no totalizan el 100 por ciento, esto debido al redondeo.

Población y muestra

El total de estudiantes totalmente a distancia para el otoño de 2016 se obtuvo de la base de datos que resguarda el Decanato Asociado de Estudios a Distancia (D@ED) del Recinto de Ponce de la UIPR. La Tabla 1 revela que, durante el otoño de 2016, el Recinto de Ponce tenía una matrícula de 1,080 estudiantes totalmente a distancia (Informe SWDISTP). Esta población de estudiantes representó el 20% de los 5,389 estudiantes matriculados en ese término académico. La muestra final consistió de 209 (19%) de los 1080 estudiantes subgraduados matriculados totalmente en línea para otoño de 2016. La Tabla 2 describe el por ciento de algunas características demográficas de los estudiantes matriculados totalmente a distancia en el Recinto de Ponce.

Tabla 2: *Perfil general de los estudiantes a distancia en por ciento*

Característica	**2013 N=705**	**2014 N=392**	**2015 N=382**	**2016 N=209**
Género Femenino	73	81	75	77
Mayor de 25 años	71	73	69	72
Casado(a)	50	50	44	46
Dependientes ≥ 1	64	66	56	62
Estudia a tarea completa	71	74	74	76
Dept. Adm. Empresas	50	50	53	52

Los rasgos principales de los estudiantes totalmente a distancia son las siguientes:

- Aproximadamente 8 de cada 10 de los participantes son del género femenino, 3 de cada 4 son mayores de 25 años, 2 de cada 3 tienen al menos un dependiente y aproximadamente la mitad son casados, trabajan a tiempo completo y residen fuera de Puerto Rico. Por sus edades, una tercera parte se clasifican como Generación X y el resto, se clasifican como Generación del Milenio o "Millennials" (Kane, 2017).
- Entre el 6- 8% de los participantes son de origen suramericano. Entre estas se destacan estudiantes de las siguientes nacionalidades: colombiana, cubano, dominicano y venezolano.

Hallazgos generales

Las siguientes secciones describen la población y muestra de los estudiantes, sus características académicas, las razones que tuvieron para estudiar a distancia, algunos aspectos positivos y negativos que le adscriben a esta modalidad de estudio y el uso que le dan a las redes sociales.

Características académicas

Las características académicas de los estudiantes totalmente a distancia contemplan los siguientes atributos:

- Para otoño 2016, el 75% de los estudiantes participantes del estudio estaban matriculados a tarea completa (pe., 12 créditos o más), poco más de la mitad tiene un GPA de 3.00 en una escala de 4.00 y poco más de la mitad dedica al menos 20 horas semanales a sus estudios universitarios. Por otra parte, se encontró que 2 de cada 3

estudiantes han aprobado más de 60 créditos universitarios, de los cuales el 40% dice tener más de 90 créditos aprobados (ie. Son seniors).

- Por otra parte, al menos 8 de cada 10 indicó haber comenzado estudios universitarios de forma presencial, la mayoría de los cuales indicó provienen del sistema UIPR, de otras universidades privadas y del sistema UPR.
- También, se encontró que la mitad de todos los estudiantes estaban matriculados en un programa de asociado o bachillerato del Departamento de Administración de Empresas. Del resto, un 25% son de la concentración del bachillerato en psicología.
- La gran mayoría califica entre bueno y excelente el dominio que posee de las computadoras. Entre 8 y 9 de cada 10 estudiantes utiliza una laptop y cerca de la mitad indica utiliza el celular para monitorear sus cursos en línea (ver Figura 1).

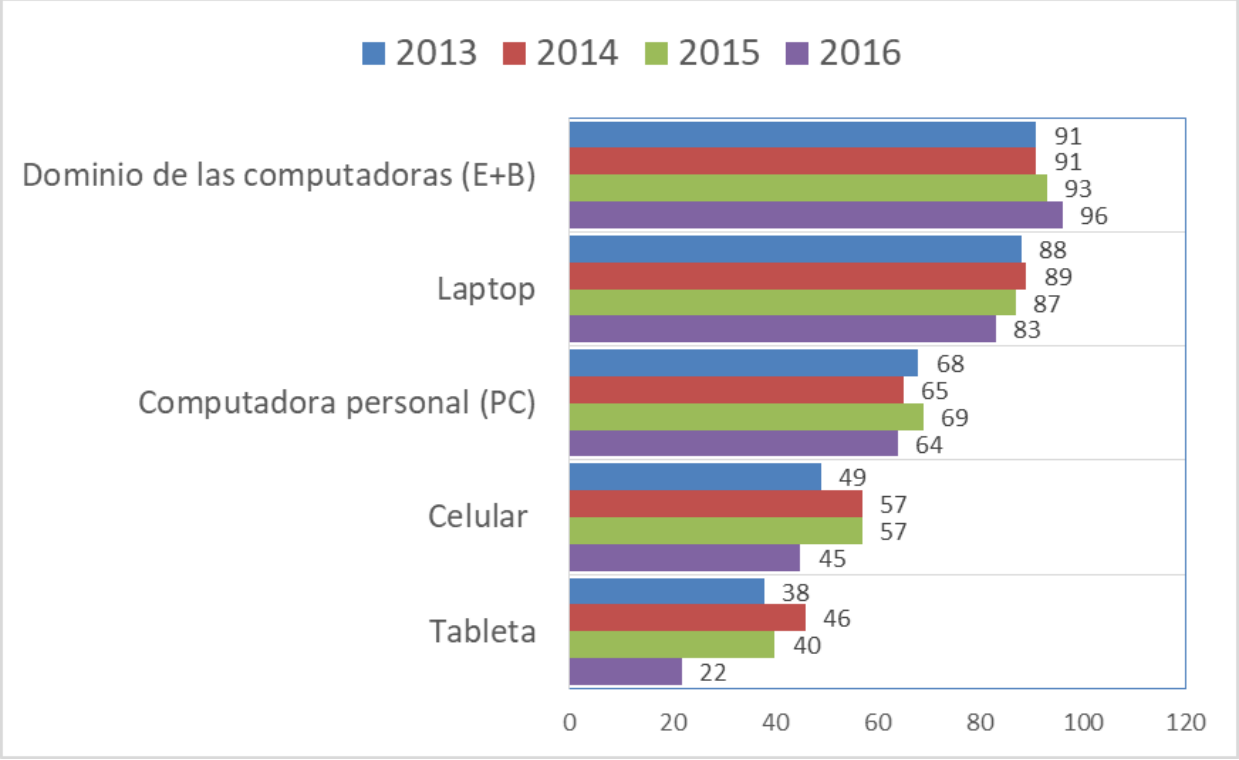

Figura 1: *Dominio de la computadora y modo de acceso a los cursos en línea*

Razones para volver a realizar estudios universitarios

Los estudiantes indican diversas razones o motivaciones para volver a realizar estudios universitarios. Estos indican que la principal razón para volver a realizar estudios universitarios se relaciona con aspectos personales que no se relacionan con el trabajo o carrera. No obstante, en orden de importancia, los otros cuatro factores ciertamente están relacionados con el ámbito laboral (véase Figura 2).

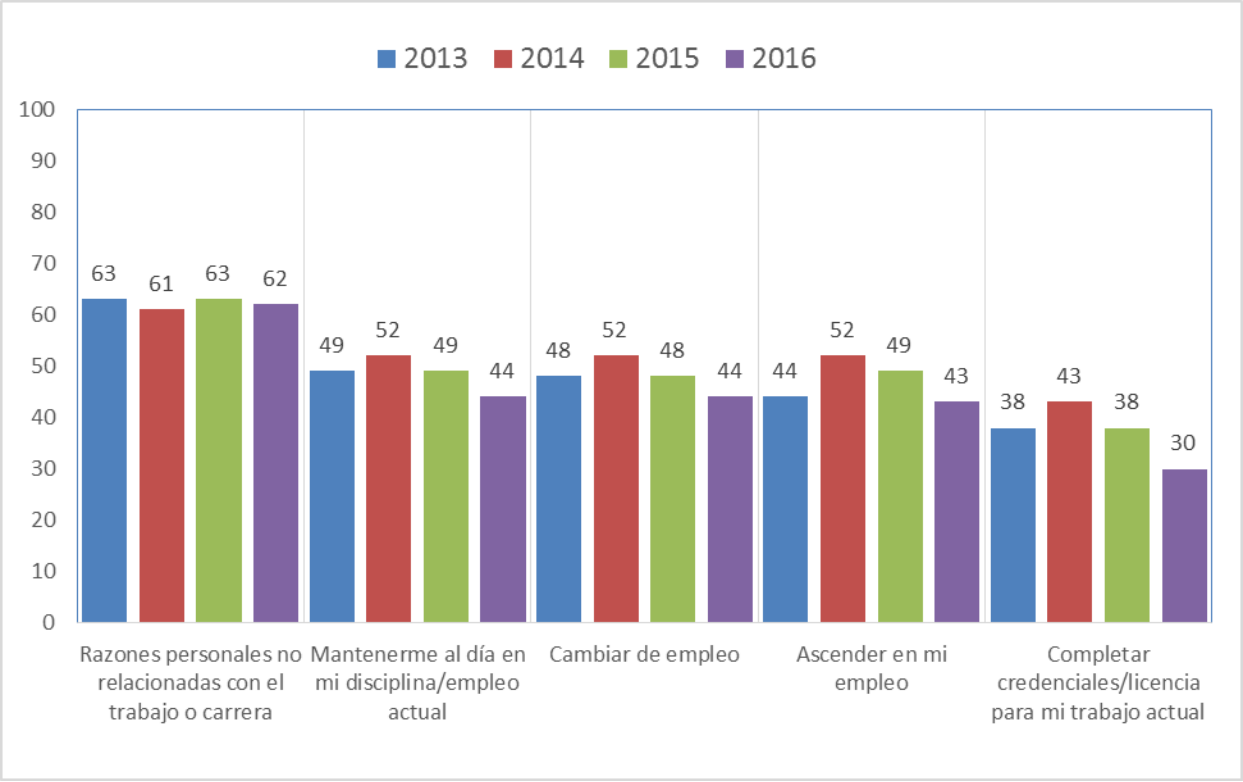

Figura 2: *Razones principales para volver a estudiar*

¿Cuáles fueron las razones para matricularse en un programa a distancia?

Los estudiantes indican variadas razones que los motivaron a realizar estudios por la modalidad de estudios a distancia. Las tres razones principales son: 1) la habilidad para realizar estudios en cualquier lugar y momento, 2) la habilidad de balancear sus responsabilidades de

trabajo, la familia y la escuela y, 3) la disponibilidad de cursos y programas a distancia (véase Figura 3). Al explorar las razones para tomar esta decisión, una estudiante señaló lo siguiente: "*Tomé la decisión de estudiar en línea por falta de tiempo. En el momento en que comencé, mis hijos estaban pequeños y aún necesitaban de mí para sus tareas* (Estudio 2016)."

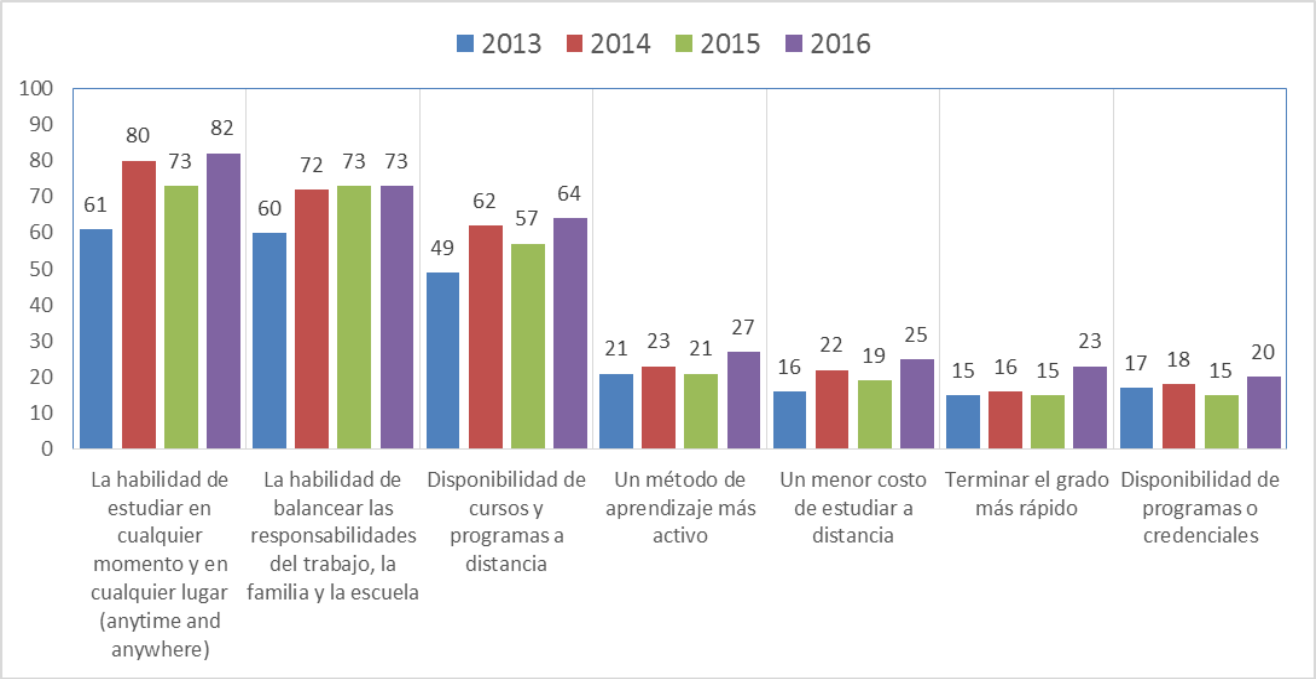

Figura 3: *Eventos que los motivaron a realizar estudios universitarios*

¿Cuáles son los aspectos positivos de estudiar a distancia?

Para los estudiantes a distancia, estudiar a distancia tiene varios aspectos positivos (véase Figura 4). A su juicio, los cinco aspectos positivos de estudiar a distancia son: 1) la capacidad de estudiar desde cualquier sitio y lugar, 2) la habilidad de estudiar a su propio ritmo, 3) habilidad de estudiar en su casa, 4) la conveniencia de los horarios y formatos y, 5) la capacidad de combinar los estudios con sus responsabilidades familiares. Los comentarios de los estudiantes durante estos cuatro años, reflejan varios de estos aspectos e incluyen algunas de sus

experiencias relacionadas con los estudios a distancia. Por ejemplo, uno de los participantes comentó lo siguiente:

> "Empecé a estudiar a distancia ya que me mude a los E.U. y aproveche el tiempo para continuar con mi carrera que por razones de trabajo había quedado incompleta. Ahora llevo tres años estudiando Psicología y ha sido una experiencia enriquecedora (Estudio 2013)"

Otro mencionó lo siguiente:

> "Escogí estudiar a distancia porque era la única forma en que lograría terminar mis estudios sin dejar de atender a mis hijos quienes tienen condiciones especiales. Estudiar a distancia no es fácil, hay que ser muy organizado" (Estudio 2014).

Asimismo, otra comentó:

> "Para mí ha sido una de las mejores experiencias académicas, yo le recomendaría a otras personas el estudiar a distancia. Para mí ha sido muy conveniente ya que lo he podido lograr en mi propio tiempo, sino hubiera tenido la facilidad de estudiar a distancia no lo hubiera logrado nunca." (Estudio 2015)

En esta misma línea de pensamiento, otra expresó:

> "Para mí el que exista Los Estudios a Distancia ha sido lo mejor de mi vida porque he podido realizar mi gran sueño de terminar mis estudios en la Universidad Interamericana que es donde tenía mis créditos y todo desde la comodidad de mi hogar en Pennsylvania. Y el que pueda trabajar full time, ser ama de casa y estudiar full time ha sido lo que yo

necesitaba. He podido lograr todo esto al mismo tiempo gracias a que existen los Estudios a Distancia." (Estudio 2016)

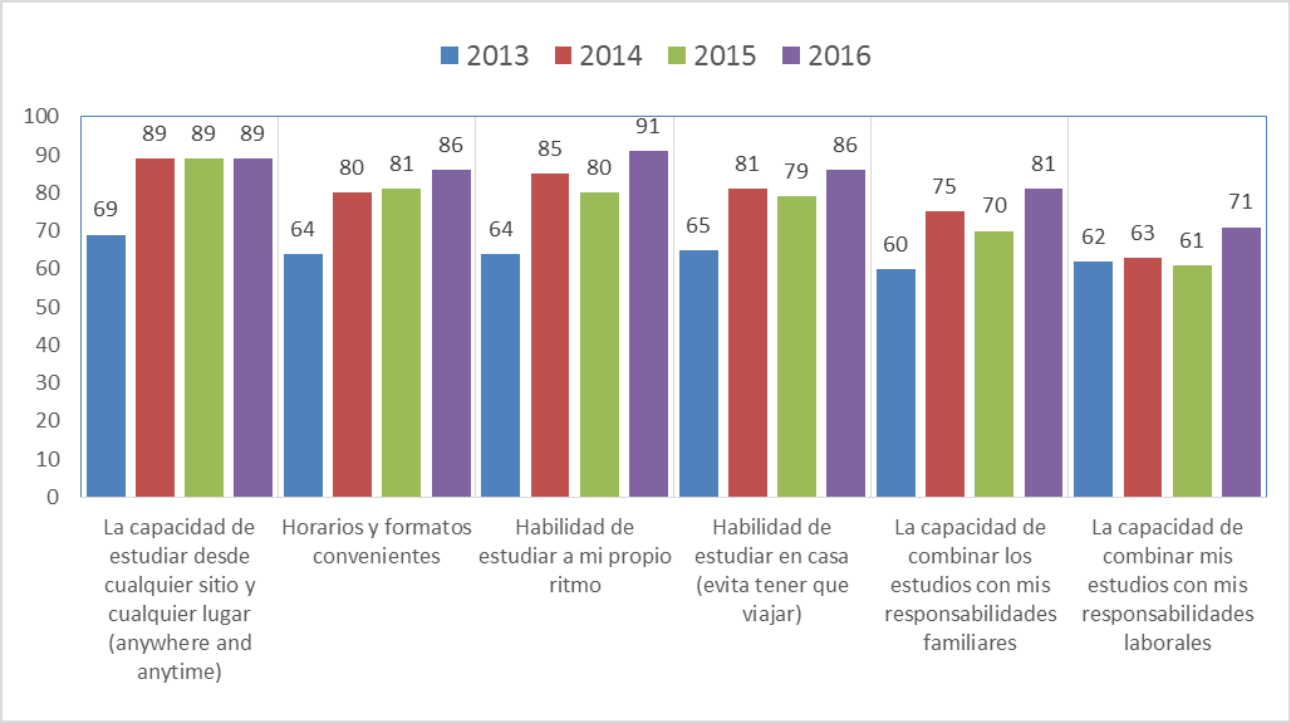

Figura 4: *Aspectos positivos del aprendizaje a distancia*

¿Cuáles son los aspectos negativos de estudiar a distancia?

Los primeros dos aspectos negativos asociados con estudiar a distancia se relacionan con la disponibilidad de la facultad. Al menos la mitad de los participantes indica que la falta de contacto con los profesores o la comunicación inconsistente por parte de estos, son los principales aspectos negativos de estudiar a distancia (véase Figura 5). Sobre estos aspectos, uno de los estudiantes señaló lo siguiente:

"Creo que el que el profesor no pueda ver los estudiantes afecta en el trato a los mismos. Yo tengo 42 años y he estado en la situación que el profesor se comunica como si yo fuera de 16 años (Estudio 2013)".

Otro señaló lo siguiente:

> "… en mi opinión la educación a distancia todavía no es para todos, con lo anterior me refiero a que este modelo de estudio exige mucha autodisciplina, constancia y compromiso (Estudio 2014).

En esta misma línea de pensamiento, otro destacó:

> "Aunque es conveniente estudiar a mi propio ritmo a veces hace falta disciplina para coordinar mi agenda. Es importante para mi terminar mi preparación y más con todos los retos que enfrento a diario en mi trabajo. (Estudio 2015).

Por último, una estudiante reclama:

> "Lo único que puedo decir negativo de estudiar a distancia es que los exámenes son más fuertes y extensos que los presenciales. Los exámenes presenciales y los online deben de ser iguales, ya que todos pagamos por lo mismo y no debe haber preferencia en como suministrar los exámenes." (Estudio 2016)

Por otra parte, un reclamo recurrente de los estudiantes a distancia se relaciona con la normativa institucional de autenticación para tomar exámenes custodiados. Esta establece que los exámenes deben ser administrados de forma que se tenga certeza de que quien lo toma, es la persona matriculado en el curso. Para estudiantes fuera de Puerto Rico, la UIPR-Ponce ha establecido que deben adquirir el "*Remote-proctor*" de la empresa "*Secure Exam*". Sobre este particular, un estudiante señaló lo siguiente:

> "La dificultad de tener que costear un equipo para poder tomar exámenes. Entiendo que

en muchas universidades puedes estudiar en línea y tomar los exámenes sin ningún problema, pero con ustedes hay que comprar un equipo. Actualmente no tengo los recursos para comparar el equipo y no tengo la facilidad de un centro de computadoras para tomarlo. He fracasado clases simplemente porque la profesora no me ayudó en hacer arreglos para poder tomar los exámenes."

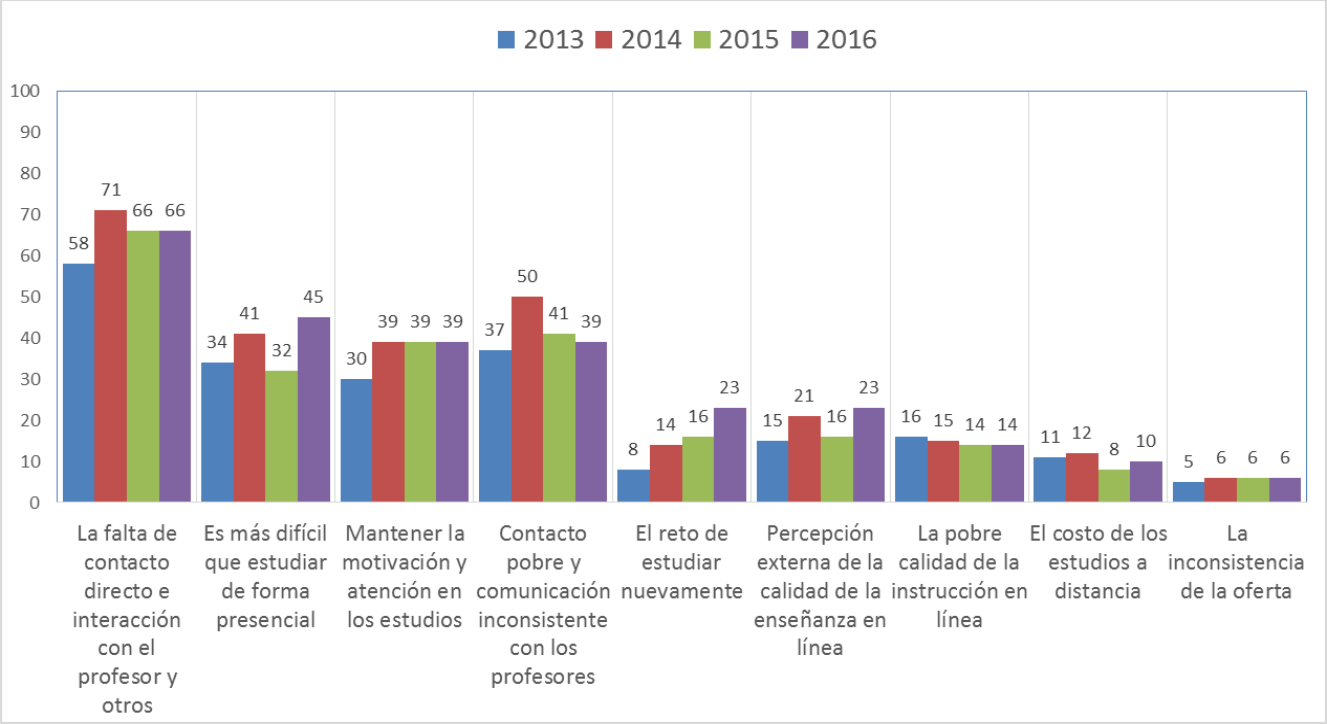

Figura 5: *Aspectos negativos del aprendizaje a distancia*

¿Cuán importantes son ciertos procesos institucionales?

De una lista de procesos institucionales, consistentemente los estudiantes de los años 2013 al 2016 destacan la importancia de aspectos como la reputación de la institución, así como la facilidad para completar a distancia y la importancia que adjudican a los procesos relacionados

con la matrícula en línea. Esto lo que implica es que los estudiantes no quieren tener que ir la institución para hacer trámites académicos o administrativos que bien se pueden realizar por otros medios. También, destacan la disponibilidad de apoyo técnico, los costos de la matrícula y cuotas, la calidad de los profesores y el no tener que ir a salón de clase, como aspectos importantes. De igual forma, el hecho de que el 80% de los estudiantes poseen experiencia universitaria previa, la posibilidad de transferir algunos de esos créditos es un aspecto que consideran importante (ver Tabla 3).

Tabla 3

Importancia que los estudiantes otorgan a los procesos institucionales

Característica	**2013**	**2014**	**2015**	**2016**
Proceso de matrícula ágil y rápido	70	77	71	76
Reputación de la institución	72	78	74	76
Que pueda hacer todos los trámites administrativos sin tener que ir al Recinto	73	79	73	74
Disponibilidad de apoyo técnico	66	72	70	70
Disponibilidad de servicios de apoyo al estudiante a distancia	68	73	70	70
La posibilidad de transferir o convalidar créditos tomados en otras instituciones	64	67	65	67
Costo de la matrícula y cuotas	67	74	70	66
Interacción positiva con el personal de asistencia económica	62	68	65	65
Lo sencillo del proceso de admisión y entrega de documentos	64	66	66	65
La calidad de los profesores que enseñan a distancia	64	72	69	64
Disponibilidad de concentraciones en ocupaciones donde hay	64	65	64	63

altas probabilidades de empleo				
No tener que ir a un salón de clase	65	69	65	61
En mi campo de estudio se reconoce a esta institución como una de alta calidad	56	60	58	52
Que los profesores posean el grado doctoral en la disciplina	55	56	56	50
La posibilidad de interactuar con estudiantes a distancia	46	46	49	43

Al abundar sobre sobre los servicios institucionales, algunos estudiantes se han quejado de aspectos tales como el cobro de cuotas, el requisito de tomar exámenes custodiados, entre otros una estudiante señaló: "…soy estudiante a distancia, aunque viva relativamente cerca al recinto no entiendo por qué debo pagar una cuota de infraestructura, ni de primeros auxilios, ya que prácticamente no voy recinto." (Estudio 2016).

Otra destacó lo siguiente:

> "Tienen que mejorar el sentido de urgencia en cuanto a contestar email y llamadas telefónicas. No contestan el teléfono en este caso me refirió a varios departamentos está el departamento a DISTANCIA que esta importante para el servicio de los estudiantes a distancia uno llama para X situación y tienen personal que no te puede ayudar porque no tiene conocimiento, quedan en devolver llamada y no responden" (Estudio 2016).

Utilización de las redes sociales

En lo que al uso de las redes sociales se refiere, los datos revelan una preferencia por Facebook y Google+ de los participantes. Los hallazgos revelan que poco más de la mitad de los

estudiantes a distancia está suscrito a las redes sociales de Facebook y Google+, e Instagram y Pinterest en mucho menor grado. Para este grupo, usar Twitter no parece ser una herramienta relevante de comunicación social (véase Figura 6).

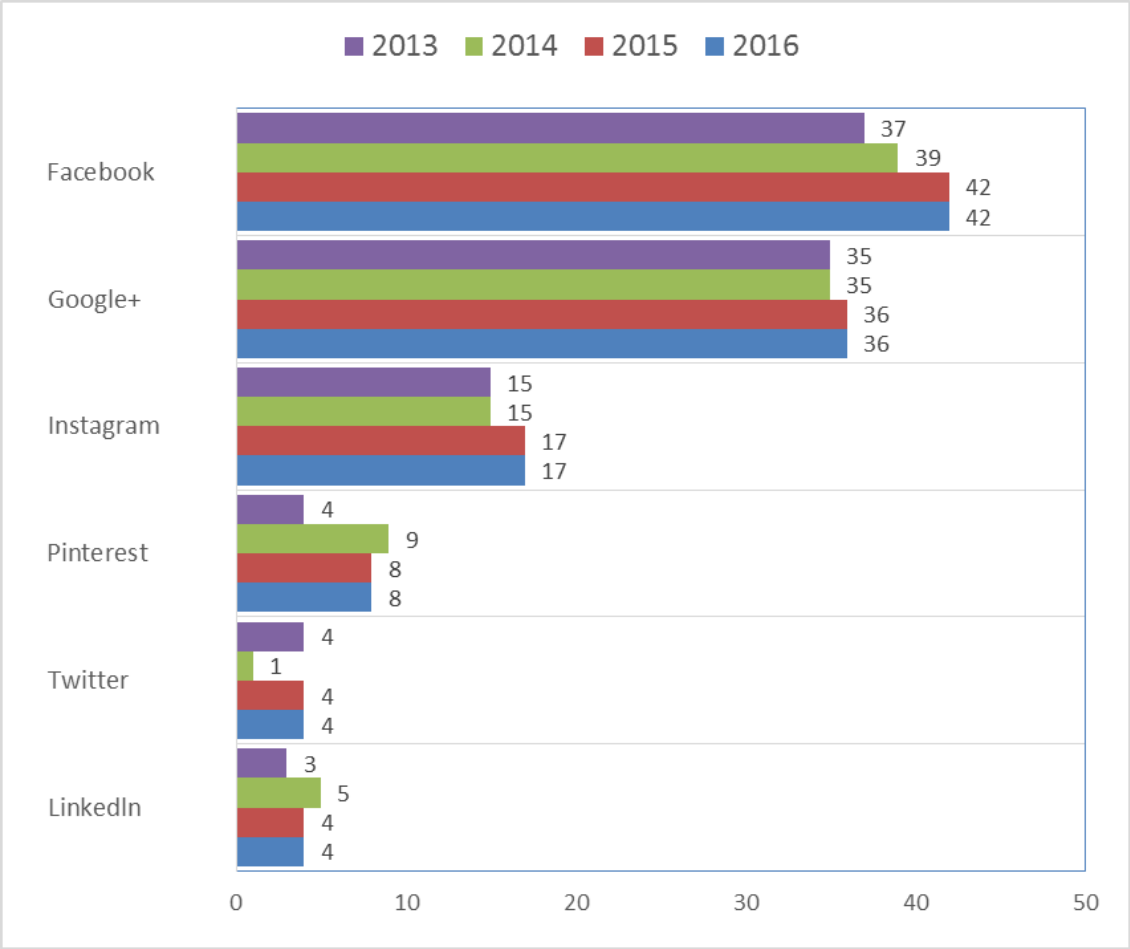

Figura 6: *Redes sociales que los estudiantes a distancia utilizan*

Discusión

En general, los hallazgos de esta investigación coinciden con los que se obtuvieron en el perfil recopilado por el investigador para los años 2013 al 2016. Esencialmente son estudiantes adultos, tanto por su edad, como por otras características de trasfondo. Por su edad, 2 de cada 3 se clasifican como Generación del Milenio o "Millennials" y el resto, son de la Generación X. Los

hallazgos también revelan que los estudiantes totalmente a distancia de la UIPR-Ponce son en su mayoría del género femenino, mayores de 25 años, la mitad reside fuera de Puerto Rico, tienen experiencia universitaria previa, estudia a tiempo completo y la mitad de ellos, está matriculado en un grado relacionado con el campo de la Administración de Empresas (Torres-Nazario, 2014; 2015; 2016). De forma similar a los estudios anteriores, se encontró que entre el 6-8 6% de los estudiantes a distancia son de origen latinoamericano. Por otra parte, en esta investigación no observaron diferencias notables en las razones y motivaciones que tuvieron estos estudiantes para realizar estudios universitarios a distancia, en los aspectos positivos o negativos que le adjudican de estudiar por esta modalidad, ni en el uso que le dan a las redes sociales.

En términos de las preferencias e intereses de los estudiantes a distancia, se recomienda que la institución fortalezca sus estrategias de mercadeo para que se fundamenten en los aspectos positivos de la educación a distancia, entre las que se destacan la capacidad de estudiar en todo tiempo y momento, la flexibilidad de los horarios y la validez de las credenciales académicas. Esto puede atender las necesidades de muchos puertorriqueños que están migrando hacia los EE.UU, cifra que se calcula en el medio millón de personas a partir del 2005 (Velázquez-Estrada, 2017). Por esto, se recomienda que la institución desarrollé actividades intensivas de mercadeo dirigidas a impactar la población de puertorriqueños que han migrado o están migrando a los EE.UU, muchos de los cuales tienen alguna experiencia universitaria presencial previa.

Por otra parte, se deben desarrollar estrategias para minimizar la percepción sobre los aspectos negativos de esta modalidad. En su mayoría, estos se relacionan con aspectos administrativos y de costos, los cuales están bajo el poder de la institución. Por ejemplo, los

argumentos sobre la validez de ciertas cuotas, así como los que se relacionan al uso del "Remote Proctor" para custodiar exámenes, puede deberse al desconocimiento de las políticas institucionales y de acreditación. De hecho, el asunto de las cuotas puede percibirse como una falta de transparencia sobre los costos de la educación a distancia. Todo esto puede corregirse divulgando a toda la comunidad universitaria de estudiantes a distancia, en el que se divulgue la validez de estos costos, así como la necesidad de utilizar los equipos de autenticación, al menos una vez al año. Esta información se puede divulgar todos los semestres por medio de la plataforma de educación a distancia o el sistema de correo institucional. Asimismo, si se encuentra que una cuota no tiene sentido, la institución debe realizar las gestiones administrativas correspondientes para que sea eliminada para todos los estudiantes que están matriculados totalmente a distancia.

Por último, es importante destacar que estos hallazgos solo son válidos para los estudiantes del Recinto de Ponce de la UIPR. Se recomienda desarrollar un estudio a mayor escala, que permita desarrollar un perfil general del estudiante a distancia del país. Por otra parte, debido a los cambios poblacionales que están pasando en el país, se estima que la migración de personas a los EE.UU. seguirá aumentando.

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Desarrollo de Competencias Profesionales sobre Simulación Virtual

en el Profesorado de Enfermería

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Desarrollo de Competencias Profesionales Sobre Simulación Virtual en el Profesorado de Enfermería

Resumen: Para que el uso de la simulación virtual sea efectivo y alcanzar los objetivos de aprendizaje los docentes requieren conocimientos y destrezas en tecnología. El marco teórico de novicio a experto de Patricia Benner puede ser utilizado para adiestrar a los docentes porque comienzan en la categoría de novicios cuando aprenden como enseñar usando la simulación. A través de la aplicación de un estudio de investigación de diseño mixto transformativo concurrente (DISTRAC), se pretende conocer las competencias tecnológicas de los docentes de enfermería de una universidad en Puerto Rico y como desean ser adiestrados. El análisis de los datos y los resultados muestran las competencias requeridas por el docente y cuáles son sus preferencias en los estilos de aprendizaje. Los resultados presentan como la Escala de Benner ayuda en la clasificación según sus competencias y permite visualizar como aumenta en clasificación según va desarrollando las destrezas de la competencia

Palabras claves: desarrollo profesional, competencia profesional, enseñanza, aprendizaje, ambientes de aprendizaje, simulación virtual, enseñanza en enfermería, *online*

Introducción

La simulación en el campo de la salud tuvo su comienzo en la década de los sesenta y se ha ido perfeccionando según su aplicación. Un escenario de simulación trabaja con los problemas clínicos con alta autenticidad, sintetiza el componente teórico y fomenta la toma de decisiones críticas. Ademas, la simulación y la virtualización tienen el poder de reformar los procesos de enseñanza-aprendizaje más que ser una fuente de información o un recurso para adquirir una destreza. El estudiante se convierte en un aprendiz activo y abandona la memorización como método de acceder al conocimiento (Garver, McGonigle, Mahan y Bixler, 2011).

Según la *National League of Nursing* (NLN en sus siglas en inglés, 2009) indica que la educación de enfermería tiene que ser renovada en orden de preparar personal de enfermería

capaz de practicar en un ambiente de cuidado de la salud donde la tecnología continúe en aumento y sofisticación. A su vez, la *Commission on Collegiate Nursing Education* (CCNE en sus siglas en inglés, 2008) en su postulado en el Esencia IV: Manejo de información y aplicación de la tecnología en el cuidado al paciente indica que todos los cursos y las experiencias clínicas deben proveer al graduado de bachillerato en enfermería con el conocimiento y las destrezas en el uso de la tecnología para ofrecer cuidados efectivos y seguros. El programa de enfermería del recinto donde se llevará a cabo la investigación está acreditado por la CCNE. Para cumplir con este postulado los docentes de enfermería requieren manejar este tipo de tecnología. Es por esto que se ha identificado como problema de investigación que los docentes no posean las competencias profesionales necesarias que se asocian con el uso de la simulación virtual como estrategia didáctica en la enfermería.

La CCNE recomienda asumir una postura de apertura al aprendizaje continuo e innovador y al uso de estrategias de enseñanza–aprendizaje tales como el uso de recursos tecnológicos de práctica basada en la evidencia, plataformas de educación a distancia y tecnologías de simulación para ofrecer cuidado a paciente y monitoreo de forma virtual. (Commission on Collegiate Nursing Education, the Essentials of Baccalaureate Education for Professional Nursing Practice, 2008). Lo expuesto justifica la necesidad de investigar qué competencias profesionales se asocian con el uso de la simulación virtual como estrategia didáctica en la enfermería. El propósito de esta investigación es determinar qué competencias profesionales se asocian con el uso de la simulación virtual como estrategia didáctica en la enfermería. Para comenzar este estudio se establecieron las siguientes preguntas de investigación:

1. ¿Cuáles serán las expectativas que tienen los docentes de enfermería sobre la simulación virtual?
2. ¿Cuáles son las competencias profesionales que necesita el docente de enfermería para usar la simulación virtual como estrategia de aprendizaje?
3. ¿Cuáles serán las competencias profesionales desarrolladas después de tomar el curso de capacitación para los profesores de enfermería sobre el uso de la simulación virtual diseñado ex profeso para esto?

Definición de Términos

Desarrollo profesional. Todo intento sistemático de mejorar la práctica laboral, las creencias y los conocimientos profesionales, con el propósito de aumentar la calidad docente, investigadora y de gestión (Imbernón, 2002).

Competencia profesional. Configuración psicológica compleja que integra en su funcionamiento formaciones motivacionales, cognitivas y recursos persono lógicos que se manifiestan en la calidad de la actuación profesional del sujeto, y que garantizan un desempeño profesional responsable y eficiente (González, 2010).

Enseñanza. Es el proceso mediante el cual se comunican o transmiten conocimientos especiales o generales sobre una materia. Este concepto es más restringido que el de educación, ya que esta tiene por objeto la formación integral de la persona humana, mientras que la enseñanza se limita a transmitir, por medios diversos, determinados conocimientos. En este sentido la educación comprende la enseñanza propiamente dicha (Edel, 2004).

Aprendizaje. Es parte de la estructura de la educación, por tanto, la educación comprende el

sistema de aprendizaje. Es la acción de instruirse y el tiempo que dicha acción demora. También es el proceso por el cual una persona es entrenada para dar una solución a situaciones; tal mecanismo va desde la adquisición de datos hasta la forma más compleja de recopilar y organizar la información (Edel, 2004).

Ambientes de aprendizaje. Estructura de cuatro dimensiones claramente definidas e interrelacionadas entre sí. Estos son: (a) dimensión física, qué hay en el espacio y cómo se organiza; (b) dimensión funcional, para qué se utiliza y en qué condiciones; (c) dimensión temporal, cómo y cuándo se utiliza y (d) dimensión relacional, quién y en qué condiciones (Iglesias, 2008).

Simulación virtual. Construcción de un ambiente que recrea la vida real y donde la computadora es utilizada como una ventana para accesar este mundo (Garver, et al. 2011).

Revisión de Literatura

Define Garver et al. (2011) define la simulación virtual como la construcción de un ambiente que recrea la vida real y donde la computadora es utilizada como una ventana para accesar este mundo. Mientras que, Cataldi, Lage y Dominighini (2013) definen simulación virtual como unos programas que buscan reproducir un fenómeno natural mediante la visualización de los diferentes estados que el mismo puede presentar. También, Fornet y Caballero (2013) lo definen como una representación de un cuadro real con técnicas y herramientas que deben ser conocidas y aprendidas por los académicos, que permitirá ser un aporte a las competencias del perfil del egresado. Los autores mencionados y Díaz, (2010) coinciden en definir simulación virtual como una representación imaginaria de un escenario real donde se pueden realizar

actividades sin riesgo a lesión o error

Griffin et al. (2010) menciona que muchos docentes no poseen el conocimiento o las destrezas técnicas para seleccionar el equipo y los programas tecnológicos adecuados para incluir la tecnología en sus estrategias de aprendizaje. Refiere que se requiere un cambio en los modelos que ofrezcan apoyo a los docentes. Merla (2012), en un estudio realizado en la Universidad de Nova, identificó 11 competencias críticas que requiere el docente para usar efectivamente la tecnología: (a) uso de plataformas académicas, (b) habilidad comunicativa, (c) dominio del tema, (d) soporte técnico, (e) dominio de estrategias de comunicación sincrónica y asincrónica, (f) comunicación interpersonal, (g) dominio de estrategias de aprendizaje, (h) trabajo en equipo, (i) conocimientos de las Tecnologías de la Información y la Comunicación (TIC), (j) uso de las TIC y (k) diseño de materiales de trabajo.

El marco teórico de novicio a experto de Benner (1984) puede ser utilizado en los currículos para adiestrar a los docentes de enfermería. El docente puede ser un especialista clínico experto en su área, pero es un novicio en el uso de la simulación como estrategia de aprendizaje. El modelo de Benner es aplicable en el adiestramiento de los docentes porque comienzan en la categoría de novicios cuando aprenden como enseñar usando la simulación. Los entrenadores de simulación pueden ser enfermeros expertos en el escenario clínico, pero pueden ser novicios cuando aprenden a escribir y desarrollar escenarios de simulación. Estos entrenadores necesitan apoyo y recursos para ser diestros al usar un programado de simulación virtual, desarrollar guiones gráficos para crear escenarios y conducir una sesión de *debriefing* (Waxman y Telles, 2009). El modelo de Benner también puede ser utilizado cuando se desarrollan escenarios y su complejidad puede armonizar con los niveles de aprendizaje de los alumnos.

Metodología

Se utilizó un diseño mixto transformativo concurrente (DISTRAC). Este diseño conjunta varios elementos de los modelos cuantitativos y cualitativos en un mismo momento (concurrente) y puede darse o no mayor peso a uno u otro método, pero la recolección y el análisis son guiados por una teoría, visión, ideología o perspectiva por un diseño cuantitativo o cualitativo. Su finalidad es hacer converger la información cuantitativa y cualitativa, ya sea, anidándola, conectándola o logrando su confluencia (Hernández, Fernandez y Batista, 2010). Los descubrimientos de ambas etapas se comparan y se integran en la interpretación y elaboración del reporte del estudio.

Se obtuvo la autorización de las autoridades de la Universidad y del Comité de Derechos Humanos. Se aplicaron dos instrumentos, el primero conocido como Cuestionario de Competencias Tecnológicas del Profesorado (Cabero, Llorente, Marín, 2009) que consta de setenta premisas que identifican siete dimensiones y que medirán el nivel de competencia tecnológica de los docentes de enfermería de una universidad de Puerto Rico. Se utilizó una escala de cero a diez donde cero hace referencia a sentirse completamente ineficaz para realizar lo que se presenta y el diez representa a la creencia de dominarlo completamente. Esta escala será ubicada a su vez, dentro de la Escala de Novicio a Experto de Patricia Benner (1984). Ella propone que una persona puede ganar conocimiento y destrezas “conociendo como” sin conocer la teoría de “conociendo que”. Conceptualiza que las destrezas de enfermería como experiencia son un pre requisito para convertirse en experto. Esta escala es utilizada dentro de la profesión de enfermería para estimar la cantidad de conocimiento y experiencia que tiene el profesional dentro del escenario en el cual se desempeña. Consta de cinco criterios que clasifican las

destrezas y el conocimiento en novicio, principiante, competente, perito y experto. En este estudio se clasificaron los valores del primer cuestionario de cero a dos en novicio, tres y cuatro en principiante, cinco y seis en competente, siete y ocho en perito y nueve y diez en experto.

El segundo instrumento se conoce como la encuesta sobre la Adquisición de Destrezas en Simulación (Anderson, Bond, Holmes y Cason, 2009). Consiste de cinco premisas de selección múltiple donde los participantes contestarán si desean participar en un plan de desarrollo de personal, cómo clasifican sus competencias en el uso de la simulación, cuál es el método preferido para aprender sobre simulación y cuál es el estilo de aprendizaje de su predilección. Los resultados de esta encuesta se utilizarán para construir el plan de desarrollo del personal.

Resultados

Los resultados obtenidos por el Cuestionario de Competencias Tecnológicas del Profesorado en la administración previa al taller de capacitación y posterior al mismo se adquirieron de manera electrónica y la identidad de los participantes se codificó con una letra para mantener su anonimato. Estos resultados fueron colocados en un archivo Excel 2013 para Windows 10. En la Tabla 1 se observa la escala utilizada para la medición de los datos.

Tabla 1

Escala para la medición

Medición	Codificación
10	Dominarlo completamente
9	
8	
7	
6	
5	Moderadamente competente para realizarlo
4	

3	
2	
1	
0	Completamente ineficaz
N/C	Se desconoce lo preguntado

Luego estos resultados fueron clasificados utilizando la Escala de Novicio a Experto de Benner (1984, 2001) usando los cinco criterios que clasifican las destrezas y el conocimiento en novicio, principiante, competente, perito y experto. En la Tabla 2 se observa como los valores obtenidos el Cuestionario de Competencias Tecnológicas del Profesorado se clasifican dentro de estos cinco criterios.

Tabla 2

Escala de Clasificación de Novicio a Experto de Patricia Benner (1984, 2001)

Medición	Clasificación
0 - 2	Novicio
3 - 4	Principiante
5 - 6	Competente
7 - 8	Perito
9 - 10	Experto
N/A	Desconoce lo que se le está preguntando

Para presentar los resultados del cuestionario cuantitativo se utilizó el programa Statistical Package for Social Science (SPSS) y así obtener resultados estadísticos. Las preguntas se agruparon según la aplicación de la competencia y así calcular datos estadísticos descriptivos inferenciales tales como distribución de frecuencias, promedios y porcientos.

Se realizó una prueba T dependiente para establecer que a mayores competencias en el uso de la tecnología mayor será el uso de la simulación virtual como estrategia de enseñanza (Hernández, 2010).

Los datos obtenidos en la encuesta sobre Adquisición de Destrezas en Simulación (Anderson, Bond, Holmes y Cason, 2009) también se obtuvieron de manera electrónica. Estos resultados fueron analizados en el Programa de Análisis Estadístico Atlas Ti para crear los códigos y las categorías según las alternativas de cada una de las cinco preguntas de la encuesta y realizar las comparaciones.

El instrumento de Competencias del Profesorado se organizó según las áreas de competencia que se querían explorar para facilitar el análisis de los datos obtenidos antes y después del taller. En la Tabla 3 se observa la distribución de las preguntas del cuestionario según la aplicabilidad de la competencia. El cuestionario de Adquisición de destrezas se organizó según el tema de las preguntas y las respuestas se agruparon según la frecuencia en que se repetía la misma respuesta. De esta manera se obtuvo el tema (código), las respuestas (categorías) y la frecuencia en que se repetía la misma respuesta (número).

Tabla 3

Distribución de las preguntas según la aplicabilidad de la competencia

Competencia	Preguntas
Aplicación técnica (AT)	1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16,56,57,65
Aplicación pedagógica (AP)	18,19,24,35,36,37,38,50,51,52,53,66,67,68
Sociales, éticos y legales (AS)	22,40,41,42,43,44
Gestión y organización escolar (AGE)	21,40,41,42,43,44
De comunicación con nuevas herramientas de comunicación (AC)	17,20,26,54,55,58,61,62,63,70
De desarrollo profesional (ADP)	47,48,49,59,60,64,69
Relacionado con la aplicación de las TIC en el RCM (ARCM)	27,28,29,30,31,32,33,34,39

Luego de analizar los resultados de los cuestionarios cuantitativos, se procedió al análisis de los resultados del Cuestionario de Adquisición de Destrezas de Simulación administrados a los

participantes. Este cuestionario sirvió para identificar como los docentes desean ser adiestrados para adquirir las destrezas necesarias para el uso de la simulación virtual. Los resultados de los cuestionarios fueron introducidos al programa de análisis cualitativo Atlas Ti que crea códigos por preguntas y respuestas e identifica las que más se repiten.

Al observar las respuestas del segundo cuestionario se pudo determinar que las preferencias en los estilos de aprendizajes verbalizados por los docentes participantes. Sus estilos de aprendizaje preferidos son; los talleres; práctica con retroalimentación y observando a otros. Estas preferencias deben ser consideradas al momento de redactar el Plan de Desarrollo de Docentes de la Escuela.

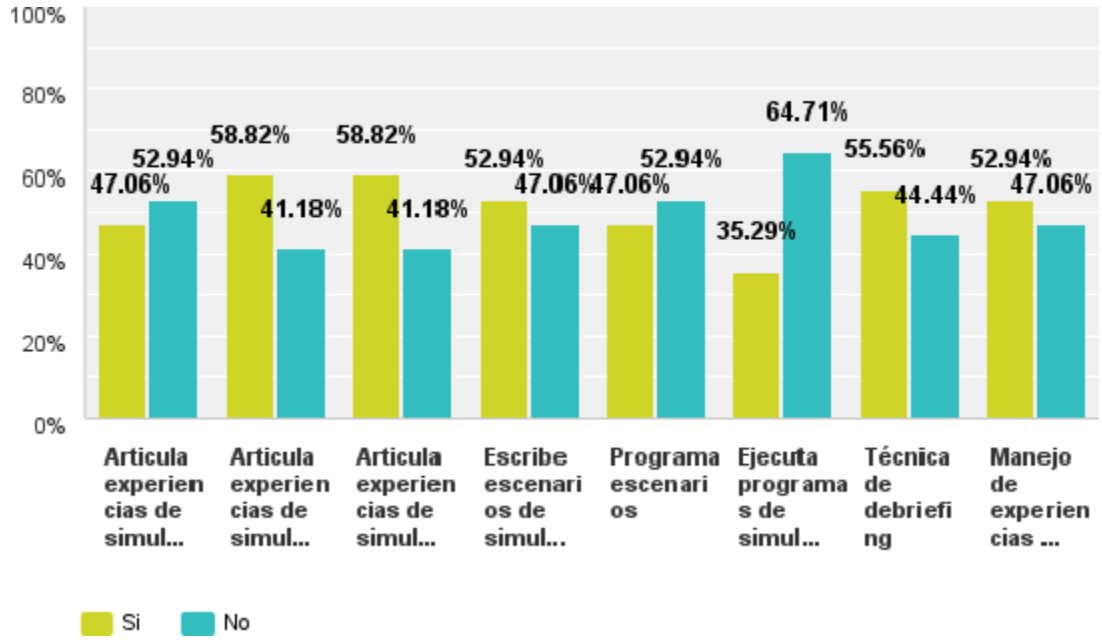
A través de los resultados obtenidos en esta investigación se puede establecer la necesidad que tiene los docentes de enfermería para desarrollar competencias tecnológicas que les ayuden a utilizar la simulación virtual como estrategia de enseñanza en la educación de enfermería. Esta estrategia es utilizada para garantizar que el estudiante pueda practicar las destrezas de enfermería en un ambiente seguro sin necesidad de amenazar la seguridad del paciente y les permite repetir todas las veces que quiera la destreza hasta adquirir dominio de la misma. Esta investigación tiene tres preguntas de investigación que se contestarán a continuación.

1. ¿Cuáles son las expectativas que tiene los docentes de enfermería sobre la simulación virtual?

   Los docentes tienen la expectativa de integrar la simulación virtual como estrategia de enseñanza a través de los objetivos de los diversos cursos que tienen el componente de práctica clínica dentro del programa subgraduado de enfermería. En la figura 1 se muestran

las respuestas de los docentes del Cuestionario de Adquisición de Destrezas de Simulación donde indicaron las áreas en que se sienten competentes.

Figura 1: Áreas donde los docentes se consideran competentes

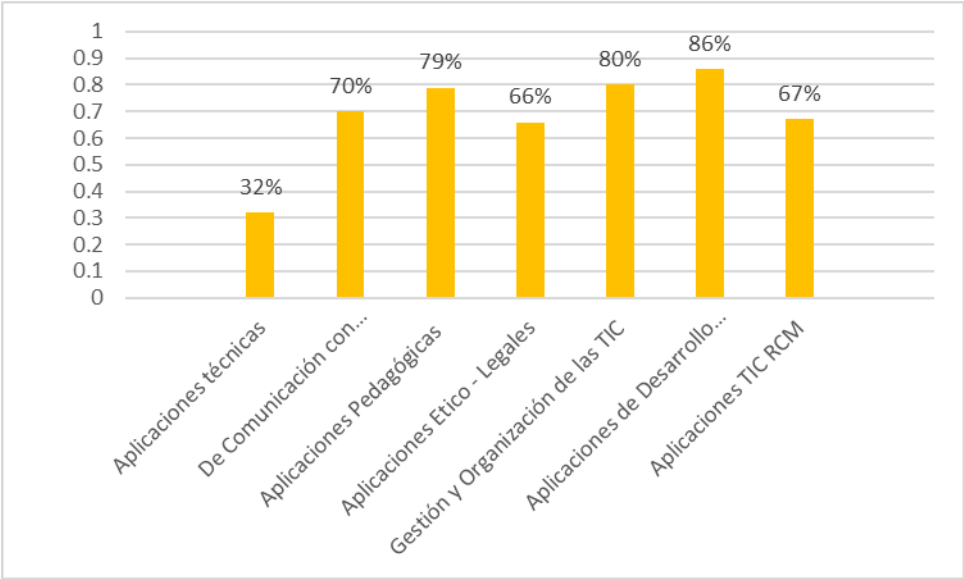


Luego de obtener estos resultados se puede establecer que es importante desarrollar sus competencias docentes en tecnología para que esta integración sea efectiva y exitosa.

2. ¿Cuáles son las competencias profesionales que necesita el docente de enfermería para usar la simulación virtual como estrategia de aprendizaje?

El Cuestionario de Competencias Tecnológicas del Profesorado (CTP) está dirigido a valorar siete competencias asociadas al uso de la tecnología y que apoyan el uso correcto de las tecnologías de información y comunicación (TIC). La simulación virtual es una de las herramientas usadas en las TIC como estrategia de aprendizaje. En la gráfica 2 se muestra las áreas donde los docentes evidenciaron tener la necesidad de adiestrarse.

Gráfica 2: Áreas de competencia que necesitan adiestramiento



Con los resultados obtenidos en esta investigación se identifican estás siete competencias como las necesarias para usar la simulación virtual en la enseñanza de la enfermería. Estas competencias son las siguientes: 1. Competencias técnicas en el funcionamiento básico de un computador; 2. Competencias de comunicación usando herramientas TIC; 3. Competencias pedagógicas en la aplicación de las TIC como estrategia de aprendizaje; 4. Competencias ético–legales en el uso de las TIC; 5. Competencias de gestión y organización de las TIC; 6. Competencias de desarrollo profesional en destrezas del uso de las TIC y 7. Competencias de aplicación de las TIC propias del recinto donde se ubica la escuela de enfermería.

3. ¿Cuáles serán las competencias desarrolladas después de tomar el curso de capacitación para los profesores de enfermería sobre el uso de la simulación virtual diseñado ex profeso para esto?

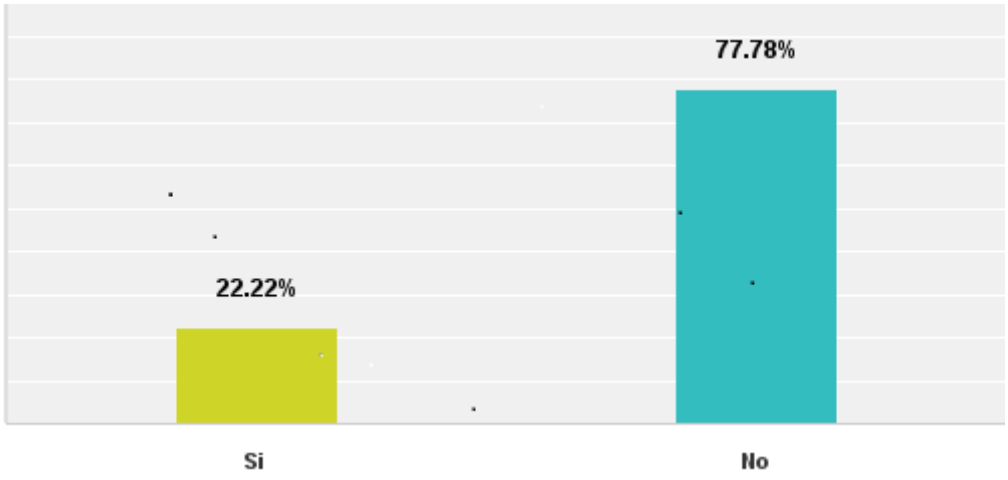
Como parte de la investigación se ofreció un curso de capacitación a todos los docentes de la escuela. Los docentes que participaron en la primera administración del CTP tuvieron la oportunidad de beneficiarse del mismo. El diseño del curso estuvo basado en los datos obtenidos de la primera administración del cuestionario. El mismo tuvo una duración de veinticuatro horas y combinaba talleres presenciales apoyados con actividades en línea a través de la plataforma de Moodle.

Luego de ofrecer el taller se administró nuevamente el CTP y los resultados obtenidos identificaron las competencias que desarrollaron los docentes. Al usar la clasificación de Novicio a Experto de Benner (1984) se pudo evidenciar aquellas competencias donde hubo mejoría, pero hay que continuar ofreciendo talleres donde se refuercen las destrezas adquiridas.

Las competencias que se identifican como las desarrolladas por los docentes son; 1. Competencias técnicas; 2. Competencias ético–legales en el uso de las TIC; 3. Competencias de aplicación de las TIC propias del recinto donde ubica la escuela.

En la gráfica 3 se muestra la respuesta que ofrecieron los docentes a la primera pregunta del Cuestionario de Adquisición de Destrezas de Simulación que se refiere a si existe un plan de desarrollo docente para adquirir estas destrezas.

Gráfica 3: Existe un plan de desarrollo docente para adquirir destrezas en simulación virtual



Luego de estos resultados se hace evidente la necesidad de desarrollar un plan de desarrollo para los docentes de enfermería, tomar en consideración los resultados obtenidos en el cuestionario de adquisición de destrezas, desarrollar estrategias basadas en las preferencias de estilos de aprendizaje de los docentes, continuar con los adiestramientos dirigidos a desarrollar las competencias tecnológicas de los docentes y reforzar el conocimiento adquirido para promover el uso de la simulación virtual.

A los participantes se les aplicó simultáneamente el Cuestionario de Competencias Tecnológicas del Profesorado (CTP) y el Cuestionario de Adquisición de Destrezas de Simulación (AOSS) de manera electrónica y luego se les ofreció un curso hibrido de veinticuatro horas y, posterior al mismo, se les aplicó nuevamente ambos cuestionarios en versión electrónica. Los resultados obtenidos en el CTP se analizaron usando estadísticas descriptivas de porciento, promedio, media y mediana para medir el nivel de conocimiento en las competencias técnicas, de pedagogía, sociales, ético y legales, de comunicación con TIC, de desarrollo profesional, de

gestión y organización de las TIC y de aplicación de las TIC propias del recinto donde laboran. Los resultados obtenidos en cada pregunta fueron clasificados en experto, perito, competente, principiante y novicio usando la Escala de Benner (1984).

Los resultados analizados en el CTP evidenciaron que en el área de aplicación técnica hubo mejoría en la adquisición de las destrezas luego del curso, sin embargo, no se obtuvo el mismo resultado en las demás competencias medidas en el cuestionario. En los resultados analizados al aplicar la Escala de Benner se observa un incremento mínimo en la adquisición de la competencia. Sin embargo, al analizar los resultados de la prueba t-dependiente estadísticamente no se reflejó ninguna diferencia. Así mismo, en los resultados analizados en el AOSS se observa que los docentes indican que no hay un Plan de Desarrollo de Docentes que les permita adquirir destrezas en simulación. Adicional a esto, se observa que se sienten competentes para integrar actividades de simulación virtual dentro de los objetivos de los cursos y del currículo de enfermería. Finalmente se observa que prefieren ser adiestrados usando talleres donde puedan observar y realizar las destrezas y que luego se les provea retroalimentación de su desempeño.

Conclusión

Los resultados permitieron la identificación de las siete competencias necesarias para trabajar con la tecnología. Las competencias identificadas son las siguientes: (1) competencias técnicas en el funcionamiento básico de un computador, (2) competencias de comunicación con herramientas TIC, (3) competencias pedagógicas en la aplicación de las TIC como estrategia, (4) competencias ético–legales en el uso de las TIC, (5) competencias de gestión y organización de las TIC, (6) competencias de desarrollo profesional en destrezas del uso de las TIC y, (7) competencias de aplicación de las TIC propias del RCM.

Estas competencias identificadas coinciden con varias de las identificadas por Merla (2012) en su estudio realizado en la Universidad de Nova, donde identificó 11 competencias críticas que requiere el docente para usar efectivamente la tecnología. Merla encontró que estas competencias son: (a) uso de plataformas académicas, (b) habilidad comunicativa, (c) dominio del tema, (d) soporte técnico, (e) dominio de estrategias de comunicación sincrónica y asincrónica, (f) comunicación interpersonal, (g) dominio de estrategias de aprendizaje, (h) trabajo en equipo, (i) conocimiento de las TIC, (j) uso de las TIC y (k) diseño de materiales de trabajo.

En este sentido, además, Domínguez, Bárcenas, Estrada y Tolosa (2015) identificaron los elementos fundamentales que requerían los profesores para tener competencias digitales y aplicarlas en sus actividades docentes. Es su estudio identificaron los siguientes elementos: (1) manejo de información y creación de contenidos digitales, (2) comunicación mediada por tecnología, (3) el trabajo colaborativo en ambientes virtuales, (4) construcción de un entorno personal para el autoaprendizaje y, (5) infraestructura, conectividad y funcionamiento. Como se puede observar, estos elementos coinciden con los hallazgos de esta investigación. La planificación del Plan de Desarrollo del Profesorado de la escuela debe ir dirigida al desarrollo de las siete competencias identificadas en esta investigación.

De los datos obtenidos en el cuestionario de Adquisición de Destrezas en Simulación los resultados obtenidos arrojan que los docentes desean ser adiestrados en esta destreza a través de experiencias prácticas donde puedan observar y repetir lo observado. Merla (2012) en el mismo estudio, recomienda la capacitación profesional de los docentes y que esté apoyada por modelos de competencia con un enfoque holístico. Recomienda que esta capacitación incluya la formación y evaluación de las competencias imprescindibles para el proceso de enseñanza –

aprendizajes mediados por las tecnologías de información y comunicación: saber, saber hacer y saber ser. Según Rozo (2015), dentro de los modelos de capacitación docente que han sido recomendados e implementados efectivamente por la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (UNESCO) está el que toma en consideración el área de interés particular de cada docente.

Se puede concluir que el desarrollo de las competencias tecnologías necesarias para usar la simulación virtual depende de que exista un Plan de Desarrollo de Docentes que, a través del adiestramiento continuo, pueda transformar al profesor novicio en uno experto de la simulación virtual y de otras herramientas de las tecnologías de información y comunicación que están disponibles tanto en la institución como en los currículos de enseñanza. Este proceso continuo permitirá obtener resultados estadísticamente confiables que puedan reflejar la adquisición de la destreza. Se hace necesario también tomar en consideración las preferencias en los estilos de aprendizaje del docente para desarrollar este plan con el fin de promover la adquisición del conocimiento.

La aplicación de la Escala de Benner (1984,2001) facilita la identificación de la mejoría en la adquisición de competencias ya que en la misma se evidencia el progreso en las destrezas según se aumenta en la clasificación de la escala. El desarrollar competencias tecnológicas permite integrar la simulación virtual y otras herramientas de las TIC en los objetivos instruccionales de los cursos de enfermería.

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Efecto del Aula Invertida como Estrategia Didáctica en el Rendimiento Académico

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Efecto del Aula Invertida como Estrategia Didáctica en el Rendimiento Académico

Abstracto

En los últimos años, con el avance tecnológico, se han experimentado cambios trascendentales en la educación, donde el docente poco a poco ha ido adaptándose a nuevos desafíos de enseñanza, con ello ha tenido que aprender a implementar nuevas técnicas de enseñanza-aprendizaje tecnológicas como el uso de PowerPoint, videos, proyectores, programas computacionales, entre otros. Sin embargo, estos elementos no han sido suficientes para evitar la falta de motivación y el déficit de atención en los estudiantes, lo cual representa una gran preocupación entre los docentes de hoy en día.

El objetivo de esta investigación ha sido evaluar y analizar la significancia e impacto en el rendimiento académico por medio de la nueva implementación de metodología didáctica llamada Aula invertida en las asignaturas de español, inglés y matemáticas dirigidas en un colegio de enseñanza superior en Los Ángeles, California.

De acuerdo a los resultados, el estudio fue orientado principalmente a conocimientos de recursos virtuales de aprendizaje y a los nuevos mecanismos de las tecnologías de la Información y Comunicación (TIC). La medición de los resultados fueron diseñados por medio del sistema de análisis estadístico de t de student y alpha de Cronbach para una mayor fiabilidad.

Introducción

Desde el punto de vista de las nuevas corrientes educacionales, existe una brecha digital y generacional entre los Inmigrantes Digitales y los Nativos Digitales. Ahora tenemos una generación con una mezcla de habilidades cognitivas diferentes los cuales han nacido y compartido buena parte de sus experiencias de aprendizaje y comunicación con distintos tipos de sistemas computarizados basados en la tecnología digital de forma permanente y cotidiana. Este nuevo alumnado, que ha poblado nuestras aulas, parece tener un modo de procesar la información, de aprender y de enfrentarse a la resolución de problemas manifiestamente distinto de la generación que nos educamos con los textos impresos. (Monereo, 2004; Prensky, 2004). Desde hace una veintena de años, la educación en general, y los procesos de enseñanza y aprendizaje, en particular, son ámbito relevantes en los que se desarrollan proyectos y experiencias de aplicación de las TIC. Los conceptos de "Informática Educativa", "Educación Multimedia", "Tecnología Educativa", "Enseñanza asistida por ordenador", "Nueva tecnologías aplicadas a la educación", "E-Learning", "Sofware Educativo", "Educación Virtual", entre otros, representan la ejemplificación del interés en aplicar y usar las tecnologías digitales con fines pedagógicos (Area, 2002).

Actualmente, casi todos los alumnos tienen un acceso más directo y rápido a la información mediante los diversos dispositivos digitales (ordenadores, tabletas, móviles, entre otros), por los que nuevas tecnologías pueden provocar un acercamiento entre los niños y el docente, a la vez que aumenta la motivación y predisposición de ambos. Es por ello que lo que cada día se da con mayor importancia es la metodología de enseñanza tecnológica que convierten al alumno en el autor principal de su aprendizaje (Achutegui, 2014).

De hecho, para que los alumnos/as lleven a cabo las tareas de estudio es preciso que desarrollen otros tipos de mecanismos cognitivos complejos, para aquellas habilidades específicas que generen estrategias y técnicas de aprendizaje. Es decir, que para llevar a cabo las diferentes tareas de estudio, el estudiante debe adquirir, procesar, recuperar y transferir con eficacia la información, siendo de gran ayuda para ello, la aplicación de estrategias de aprendizaje tecnológicos (Maquilón y Hernández, 2011).

Las aulas escolares tenderán a transformarse en aulas multimedia conocidas también como aulas inteligentes, por el software que utilizan para captar, procesar y distribuir información y conocimiento en formato multimedia (texto escrito, gráfico, audio y video). Serán espacios educativos que funcionen como auténticos laboratorios de aprendizaje, donde los alumnos realicen investigación y desarrollen proyectos en los cuales apliquen los conocimientos adquiridos en el proceso educativo (Andión, 2011).

Como una tendencia hacia las TICs en la enseñanza educativa, una técnica educativa que ha sido utilizada, es la "Metodología de aula invertida". El termino Flipped Classroom llamado en español, aprendizaje inverso, o aprendizaje volteado, aprendizaje "al revés", un enfoque atribuido a los creadores y profesores de esta metodología Jonathan Bergmann y Aaron Sams.

El Aula Inversa, permite invertir la forma tradicional y presencial de entender, asimilar y comprender el contenido teórico, transfiriéndolo a una enseñanza y apoyo fuera del aula de clase por medio de distintas herramientas digitales como: material elaborado por el docente y publicado en línea, blogs escritos o grabaciones de audio o video (podcast, videocasts, videoblogs, redes sociales, etc.) o sencillamente internet. Por medio de este proceso, el alumno establece un nivel de reforzamiento y comprensión en casa como un facilitador de conocimientos

que guie y oriente al alumno durante la adquisición de sus competencias y así el tiempo en clase queda dedicado a la elaboración de actividades como ejercicios prácticos, tareas, resolución de problemas y/o dudas, debates, trabajos en pequeño o grandes grupos, lo que permite la coevaluación y autoevaluación del estudiante mediante el aprendizaje cooperativo, cognitivo y dinámico entre los estudiantes. (Fortanet, González, Mira, y López 2013; García-Barrera, 2013).

Aula invertida establece un marco que asegura a los estudiantes recibir una educación personalizada adaptada a sus necesidades. Es este caso, se espera que los docentes encuentren la manera de ayudar a los estudiantes con sus necesidades diferentes, la personalización de la educación ha sido propuesta como una solución (Bergman y Sams, 2012).

De acuerdo a Moreno (2015) sobre el Flipp Learning, menciona que aunque frecuentemente nos referimos a aula invertida como "hacer el trabajo de la escuela en casa y la tarea en la escuela", éste permite a los docentes implementar una o diversas metodologías en su salón de clase.

El potencial de esta perspectiva radica en que el tiempo en explicar la materia de manera registral, queda relegado al trabajo que el estudiante realiza tranquilamente en casa a través de la explicación estratégica en grabaciones de video. Dichos materiales son estudiados por los estudiantes en su casa, con la ventaja de que pueden hacerlo cuantas veces consideren necesario. Las tradicionales tareas que el docente explica en clase y que luego son realizadas por el estudiante en casa, pueden ser llevadas a cabo en el salón de clase con el beneficio que esto tiene para el estudiante, debido a que las dudas, opiniones, y resoluciones de las mismas se pueden llevar a cabo mediante la interacción entre compañeros y docente, posibilidad que no se presenta al realizar este tipo de actividad en casa (Paz, Serna, Ramírez, Valencia y Reinoso, 2014).

Con el aula invertida, el rol del alumno y el profesor cambian. La adquisición de la formación la realiza ahora el alumno de forma autónoma y a su ritmo, a partir de los materiales docentes propuestos. La labor del profesor consiste por un lado en diseñar actividades tanto para el estudio previo como para ser realizadas en clase utilizando diferentes técnicas que fomenten el aprendizaje activo y cooperativo de los alumnos y por otro lado en convertirse en facilitador y conducto del proceso de enseñanza-aprendizaje. De esta manera, se pone en valor la actividad del profesor con los alumnos en el aula pues las competencias genéricas y específicas, que aquí se trabajan de forma conjunta, difícilmente se pueden alcanzar en un contexto virtual (Jordán, Pérez y Sanabria, 2014).

El poder fácilmente diseñar diferentes actividades, materiales y lecciones para su uso fuera del contexto escolar, abre un sinfín de posibilidades para que los estudiantes puedan adaptarse a las capacidades, características, intereses y necesidades educativas concretas que puedan surgir a cada alumno durante su aprendizaje. En este sentido, invertir el aula es una metodología sencilla que nos permite dedicar un mayor tiempo a atender a la diversidad presente en nuestras clases, entendiendo por ello a las diferencias individuales e interdividuales que presentan nuestros alumnos. Cada estudiante es diferente de otro y tiene sus propias características, capacidades, habilidades, competencias, intereses, motivaciones, conocimientos previos, ideas e ideales, metas, sueños y estilos de aprendizaje (García-Barrera 2013).

Por otro lado, ya que cada estudiante es diferente de otro y tiene sus propias características, capacidades, habilidades, competencias, intereses, motivaciones, metas, sueños, conocimientos previos y estilo de aprendizaje, etc., las expectativas del aula inversa se constituyen básicamente en que cada estudiante se convierte en parte activa, central y

responsable de su propio tiempo y ritmo de estudio en su formación académica.

Otra ventaja que se ve involucrada en el método inverso, es que para los docentes, permite aprovechar el tiempo que habitualmente destina el profesorado a la elaboración del material que ha diseñado para la clase. El docente puede atender de forma más personalizada las necesidades de cada alumno y así poder establecer diferentes itinerarios de aprendizaje en función de los conocimientos y capacidades del alumno, proporcionar distintos materiales a cada uno, destinar contenidos de dificultad viable, diseñar distintas actividades en función de sus intereses entre otros. De igual manera, el aula inversa podría contribuir a que la labor del docente no sea tan individual o aislada, ya que puede incentivar el trabajo colaborativo entre profesores a la hora de implementar sesiones, diseñar materiales o intercambiar actividades, lecciones y experiencias educativas (Tourón y Santiago, 2015).

Con respecto al procedimiento para la metodología invertida, de acuerdo a la Facultad de Economía y Negocios de la Universidad de Chile (2013, p.1), existen diez principales procesos para los docentes en la realización de aula invertida en sus salones de clases, siendo éstos los siguientes:

1.- Seleccionar una sesión de planificación o syllabus para comenzar a trabajar. Cualquier clase es susceptible de “voltear”. Se aconseja utilizar una clase en la que los contenidos consideren una aplicación, integración o uso.

2.- Escoger los conceptos claves del contenido o aprendizaje de la sesión que se seleccionó, los que serán producidos en video. Pensar en los estudiantes si estos serán adecuados para su curso o nivel?, ¿Serán útiles y significativos en su formación para realizar un trabajo práctico al interior del aula? También seleccionar un conjunto de conceptos que sean claves,

relevantes y que den una visión comprehensiva del contenido.

3.- Sintetizar cada concepto escogido. Para cada concepto seleccionado, se debe elaborar un video entre tres y ocho minutos de duración. En su elaboración, se debe generar explicaciones claras y precisas, apoyadas de ejemplos que fortalezcan el concepto. Las dudas y consultan que surjan de los videos, tendrán un espacio de resolución a través de actividades virtuales como foros, wikis, papers, entre otros.

4.- Diseñar material para apoyar su presentación en el video y facilitar el aprendizaje de sus estudiantes. Es importante usar materiales de apoyo que facilite a los estudiantes su comprensión por medio de imágenes, videos, fotos, gráficos, entre otros.

5.- Ensayar y preparar la presentación para los videos de clase que se grabaran. Una vez seleccionado los conceptos claves, se desarrollará el contenido y diseño del material de apoyo, y se preparará la grabación del video. Para ello, es importante ensayar la interacción con los recursos, de manera de gestionar su tiempo teniendo en cuenta la extensión y la precisión en la entrega de los contenidos.

6.- Ser preciso en la grabación. Procurar exponer los contenidos con claridad, ocupándose del ritmo, la modulación y la comunicación oral y corporal.

7.- Procurar que todos los estudiantes reciban y vean los videos antes de la clase. Es crucial que los estudiantes obtengan con anticipación los videos para que estudien el contenido; enviarlo con al menos una semana de anticipación. Al tener el control sobre el contenido, los estudiantes podrán pausar y repetir lo que no entiendan, incluso ver los videos varias veces.

8.- Asegurarse de la utilización y comprensión de los videos por parte de sus estudiantes antes de las clases presenciales: para asegurar el éxito de esta metodología, se requiere diseñar

un sistema de control. Esto debe estar acompañado de una actividad virtual que permita certificar el estudio de los recursos de apoyo disponibles en línea (ensayos, documentos de apoyo, noticias, artículos, entre otros.

9.- Asumir el rol de un “facilitador” o “coach” del aprendizaje en la clase presencial: recordar que los contenidos ya fueron profundizados virtualmente, y durante la clase presencial los protagonistas serán los estudiantes. Para ello deberá planificar actividades de aprendizaje que impliquen la aplicación e integración de los conceptos desarrollados en los videos, poniendo a prueba lo que aprendieron y retroalimentar el desempeño de sus estudiantes.

10.- considerar que, como resultado de la aplicación en aula, el estudiante deberá producir algún tipo de trabajo o tarea que integre tanto lo virtual como lo presencial: este producto deber ser capaz de integrar los aprendizajes presenciales y virtuales que han sido asociado a esta metodología. A la hora de la evaluación y según la complejidad del trabajo, podrán considerarlo de manera aislada o como parte de un conjunto, pero nunca dejar de calificarlo.

1. Metodología

Diseño

El tipo de metodología que sustenta este estudio es de carácter cuantitativo con naturaleza experimental. Como variable independiente, el investigador aplicó la metodología didáctica de Aula Invertida en los grupos experimentales. Dentro de esta dinámica se aplicaron diferentes medios de comunicación facilitados por el uso de las TICs, tales como: videos, bibliotecas electrónicas, presentaciones en PowerPoint, páginas didácticas de webs sobre el

tema a estudiar, lo que basado a su introducción ayudó al reforzamiento y apoyo del aprendizaje.

Estudiando estas variables, se intentó identificar si existe un impacto significativo de influencia positiva con el uso de las TICS y la metodología de aula invertida hacia el mejoramiento del rendimiento académico de los estudiantes.

Con referencia a las herramientas tecnológicas utilizadas en los salones de clases, se tuvo acceso a servicio de Internet, proyectores de imagen y dispositivo para Apple TV. Se permitió el uso de teléfonos inteligentes, Ipads y tabletas electrónicas de los estudiantes para las actividades requeridas. Cada docente contó con un ordenador portátil.

Población y muestra

La muestra estuvo compuesta por estudiantes que cursaban el noveno y onceavo grado en las asignaturas de español (43 estudiantes), inglés (42 estudiantes) y matemáticas, (31 estudiantes) siendo un total de 116 estudiantes.

De esta muestra, 51 estudiantes (44%) compuso el Grupo Experimental (Aula Invertida) y 65 estudiantes (56%) compuso el Grupo Control (Educación Tradicional).

Instrumento

Para llevar a cabo el estudio de manera eficaz y fiable y poder realizar inferencias a partir de los resultados de la investigación, se realizaron como instrumentos, pruebas académicas tanto al comienzo (pre-prueba) como al final (post-prueba) de cada unidad, en las asignaturas de español, inglés y matemáticas tanto para los grupos controles (metodología de enseñanza tradicional) como experimentales (metodología de enseñanza de aula invertida), con el fin de medir la variable dependiente de Rendimiento Académico.

Procedimiento

La investigación tuvo una duración de 10 semanas. Comenzó el día 5 de octubre del año 2016 y finalizó el 15 de diciembre del mismo año.

En la primera etapa, se administró una carta a los padres de los estudiantes para solicitar autorización de la aplicación de la metodología de Aula Invertida en las clases experimentales. En conjunto con esto, se realizaron tres reuniones con los docentes participantes para discutir tanto de forma escrita como oral, el procedimiento de la investigación, dando indicaciones específicas a seguir y los pasos necesarios para obtener los mejores resultados.

En la segunda etapa se eligieron los grupos experimental y control. En los grupos experimentales, se les dio una pequeña introducción y explicación a los estudiantes del por qué los docentes aplicarían por dos meses, la metodología invertida y como los beneficios de este novedoso sistema de aprendizaje les contribuiría en la capacitación de su educación. También se les informó que la participación sería de forma voluntaria. Tanto los estudiantes como los docentes aceptaron participar sin ningún problema.

En las clases experimentales, los docentes, para poder acreditar el entendimiento de los estudiantes, integraron antes de comenzar con las unidades, una o dos clases de orientación con respecto a las ventajas de la metodología de aula invertida y el uso de la plataforma Edmodo y página Web (en el caso del docente de inglés). Aquí los estudiantes manifestaron sus inquietudes, preocupaciones y preguntas en general. También, en la mayoría de las secciones del grupo experimental, al principio de cada clase, se contó con una reflexión y revisión general del material expuesto en las plataformas virtuales como tarea, para poder visualizar el conocimiento y el propio aprendizaje del estudiante para así, ser compartido en clase.

En la tercera etapa, se les otorgó una pre-prueba y post-prueba académica tanto en la primera unidad como en la segunda unidad a los grupos control y experimental de las clases de español, inglés, y matemáticas. A la vez, se comenzó a realizar la unidad de aprendizaje a los grupos control y la introducción de la metodología de aula invertida a los grupos experimental.

Análisis de datos

Se llevó a cabo un análisis estadístico descriptivo para las variables categóricas por medio del instrumento de IBM SPSS y se utilizó el análisis estadístico de t de student y Alpha de Cronbach.

Para mayor entendimiento, los estudios descriptivos miden, de manera más bien independientemente, los conceptos o variables a los que se refieren. Aunque, desde luego, pueden integrar las mediciones de cada una de dichas variables para decir cómo es y cómo se manifiesta el fenómeno de interés, su objetivo no es indicar como se relacionan las variables medidas (Hernández, Fernández y Baptista, 1998).

En referencia a la variable, la comparación se realiza sobre una variable. Si hay diferentes variables, se efectuarán varias pruebas "t" (una por cada variable), aunque la razón que motiva la creación de los grupos puede ser una variable independiente. Por ejemplo: un experimento con dos grupos, uno al cual se le aplica el estímulo experimental y el otro grupo el de control (Hernández et al., 1998).

2. Resultados

Resultados de pre-pruebas y post-pruebas

Hipótesis $H_0$1: No existieron diferencias estadísticamente significativas en el rendimiento

académico promedio entre los estudiantes de español, inglés y matemáticas que cursaron metodología educacional de Aula Inversa en comparación con el grupo que curso bajo la Metodología Tradicional

Se calcularon muestras independientes de prueba t de student para comparar las puntuaciones en la pre-prueba académica de los estudiantes en el grupo de enseñanza tradicional y en el grupo de instrucción de aula invertida para identificar cualquier diferencia inicial en las pruebas académicas en el módulo 1 (unidad 1) y módulo 2 (unidad 2). Las Pruebas t de student de muestras independientes se calcularon por separado para cada área de clase (español, inglés y matemáticas).

Para una mayor claridad, en cada tabla se indicó la siguiente información : módulo 1 y módulo 2 que representan las unidades estudiadas por cada mes, valores: n = que representa el tamaño de la muestra (número de estudiantes), $\bar{X}$ = que representa los intervalos de confianza relacionados a las diferencias entre medias, S = que representa la desviación estándar; IC = que representa el Intervalo de Confianza al 95%, Diff, representa la diferencias, t = representa el valor de estadística de prueba t de student y *p* = que representa la probabilidad mínima de rechazar la hipótesis Ho:

Con respecto a las clases de español, no se observaron diferencias estadísticamente significativas entre los grupos de las clases de español en la pre-prueba. Los estudiantes en el grupo de enseñanza tradicional ($\bar{X}$= 17.14) y en el grupo de instrucción de aula invertida ($\bar{X}$ = 17.14) evaluaron de forma similar en el primer módulo (unidad 1 de enseñanza), t(41) = -. 003, *p* =.30. Del mismo modo, no hubo ninguna diferencia estadísticamente significativa entre el grupo de enseñanza tradicional ($\bar{X}$ = 6.82) y el grupo de instrucción invertida ($\bar{X}$ = 5.81) en el segundo

módulo (unidad 2 de enseñanza) t(41) = -.59, *p* = .56. Según los resultados en la tabla 1, la media de los niveles de las pre-pruebas de los estudiantes de instrucción tradicional e instrucción de aula invertida no reflejaron diferencias significativas.

Existe evidencia suficiente para no rechazar la hipótesis Ho1, antes de implementar la estrategia de aula invertida en conjunto con el aprendizaje basado en competencia en las clases de español.

Tabla 1

Clases de español. Pre-prueba de intervención académica

	n	$\bar{X}$	s	IC 95% Diff	t	*p*
Módulo #1						
Tradicional	22	17.14	6.65			
Aula Invertida	21	17.14	7.32			
Diff		0.00		-4.31 – 4.21	-.003	*p* = .30
Módulo #2						
Tradicional	22	6.82	5.07			
Aula Invertida	21	5.81	6.04			
Diff		1.01		-2.42 – 4.44	.59	*p* = .56

Con respecto a las clases de inglés, no se observaron diferencias estadísticamente significativas entre los grupos en la pre-prueba. Los estudiantes en el grupo de enseñanza tradicional ($\bar{X}$ = 15.52) y en el grupo de instrucción de aula invertida ($\bar{X}$ = 15.47) fue muy similar en el primer módulo (unidad 1 de enseñanza), t(40) = .12, *p* =.90. Del mismo modo, no hubo ninguna diferencia estadísticamente significativa entre el grupo de enseñanza tradicional ($\bar{X}$ = 15.52) y el grupo de instrucción invertida ($\bar{X}$ = 15.94) en el segundo módulo (unidad 2 de enseñanza) t(40) = -.98, *p* =. 33.

Según los resultados en la tabla 2, la media de los niveles de la pre-prueba de los estudiantes de instrucción tradicional e instrucción de aula invertida de las clases de inglés no reflejaron diferencias significativas. Existe evidencia suficiente para no rechazar la hipótesis nula, Ho1, antes de implementar la estrategia de aula invertida en conjunto con el aprendizaje basado en competencia en las clases de inglés.

Tabla 2

Clases de inglés. Pre-prueba de intervención académica

	N	$\bar{X}$	S	IC 95% Diff		t	*p*
Módulo #1							
Tradicional	25	15.52	1.26				
Aula Invertida	17	15.47	1.28				
Diff		0.49		-.757	.856	.12	*p* = .90
Módulo #2							
Tradicional	25	15.52	1.05				
Aula Invertida	17	15.94	1.75				
Diff		-.42		-1.29	.45	-.98	*p* = .33

Como en el caso de las clases de español e inglés, no se observó diferencias estadísticamente significativas en las puntuaciones de las clases de matemáticas, entre el grupo de enseñanza tradicional y el grupo de instrucción invertida. Los estudiantes en el grupo de enseñanza tradicional ($\bar{X}$ = 8.78) y el grupo de instrucción invertida ($\bar{X}$= 9.15) obtuvieron puntuaciones similares en el módulo #1, t (29) = -.30, *p* =.76. Las puntuaciones de matemáticas de los estudiantes en ambos grupos también fueron similares en el módulo # 2. En el grupo de instrucción tradicional la puntuación media para el grupo de enseñanza tradicional fue de ($\bar{X}$= 4.56), mientras que la puntuación media para el grupo de instrucción invertida fue de ($\bar{X}$ = 4.38).

La diferencias entre grupos no fueron estadísticamente significativas t(29) =.26, *p* =.80.

Según los resultados en la tabla 3, la media de los niveles de la pre-prueba de los estudiantes de instrucción tradicional e instrucción de aula invertida no reflejaron diferencias significativas. Existe evidencia suficiente para no rechazar la hipótesis Ho1, antes de implementar la estrategia de aula invertida en conjunto con el aprendizaje basado en competencia en las clases de matemáticas.

Tabla 3

Clases de matemáticas pre-prueba de intervención académica

	n	$\bar{X}$	S	IC 95%	Diff	t	*p*
Módulo #1							
Tradicional	18	8.78	2.94				
Aula Invertida	13	9.15	3.98				
Diff		-.37		-2.91	2.16	-.30	*p* = .76
Módulo #2							
Tradicional	18	4.56	1.54				
Aula Invertida	13	4.38	2.10				
Diff		.18		-1.17	1.51	.26	*p* = .80

De acuerdo a los resultados, de la muestras independientes de prueba t de student, no hubo diferencias en las pre-pruebas de rendimiento académico entre la enseñanza tradicional y el grupo de enseñanza de aula invertida. El rendimiento académico de los estudiantes en ambos grupos fueron similares en todas las tres asignaturas de español, inglés y matemáticas. Existe evidencia suficiente para no rechazar la hipótesis Ho1.

Se calcularon pruebas t de student a muestras independientes para comparar las

puntuaciones en la post-prueba académica de los estudiantes en el grupo de enseñanza tradicional y en el grupo de instrucción de aula invertida para identificar cualquier diferencia posterior en las pruebas académicas en los módulo 1 (unidad 1) y módulo 2 (unidad 2). Las Pruebas t de student de muestras independientes se calcularon por separado para cada área de clase (español, inglés y matemáticas).

De acuerdo a los resultados en las clases de español, no se observaron diferencias estadísticamente significativas entre los grupos. Los estudiantes en el grupo de enseñanza tradicional ($\bar{X}$ = 29.00) y en el grupo de instrucción invertida ($\bar{X}$ = 26.67) su puntuación fue similar en el desarrollo de lapost-prueba del primer módulo de instrucción, t(41) = 1.42, p =.16. Del mismo modo, no hubo ninguna diferencia estadísticamente significativa entre el grupo de enseñanza tradicional ($\bar{X}$= 46.27) y el grupo de instrucción de aula invertida ($\bar{X}$= 41.67) en el segundo módulo de instrucción de español, t(41) = 1.51, p =.14.

Según los resultados en la tabla 4, la media de los niveles de la post-prueba de los estudiantes de instrucción tradicional e instrucción de aula invertida no reflejaron diferencias significativas. Existe evidencia suficiente para no rechazar la hipótesis Ho1, después de implementar la estrategia de aula invertida en conjunto con el aprendizaje basado en competencia en las clases de español.

Tabla 4

Clases de español. Post-prueba de intervención académica

	n	$\bar{X}$	S	IC 95%	Diff	t	*p*
Módulo #1							
Tradicional	22	29.00	6.12				
Aula Invertida	21	26.67	4.48				
Diff		2.33		-.98	5.65	1.42	*p* = .16
Módulo #2							
Tradicional	22	46.27	8.75				
Aula Invertida	21	41.67	11.10				
Diff.		4.60		-1.53	10.75	1.51	*p* = .14

Con respecto a las clases de inglés, la prueba t de student de muestras independientes revelaron una diferencia estadísticamente significativa entre el grupo de enseñanza tradicional y la clase de aula invertida en el módulo 1 (unidad 1) de las clases de inglés. En la tabla 5 se demuestra que los estudiantes en el grupo de enseñanza tradicional ($\bar{X}$ = 17.60) obtuvieron significativamente mayor puntuación que el grupo de aula invertida ($\bar{X}$ = 16.29), t(40) = 2.05, *p* = < .05. Por el contrario, en el segundo módulo de instrucción, unidad 2, no se observó ninguna diferencia estadísticamente significativa en las puntuaciones de post-test entre el grupo de enseñanza tradicional ($\bar{X}$ = 16.48) y el grupo de aula invertida ($\bar{X}$ = 16.29), t(40) =.24, *p* =.82.

De acuerdo a los resultados en la tabla 6, la media de los niveles de la post-prueba de los estudiantes de instrucción tradicional e instrucción de aula invertida si presentaron cambios significativos en comparación al módulo 2 que no reflejaron una diferencia significativa. Sin embargo, no existe una diferencia estadísticamente significativa entre ambos módulos. Existe

evidencia suficiente para no rechazar la hipótesis Ho1, después de implementar la estrategia de aula invertida en conjunto con el aprendizaje basado en competencia en las clases de matemáticas.

Tabla 5.

Clases de inglés. Post-prueba de intervención académica

	n	$\bar{X}$	S	IC 95%	Diff	t	*p*
Módulo #1							
Tradicional	25	17.60	2.08				
Aula Invertida	17	16.29	1.93				
Diff		1.31		-.021	2.59	2.05	*p* = < .05
Módulo #2							
Tradicional	25	16.48	2.84				
Aula Invertida	17	16.29	1.90				
Diff		.19		-1.41	1.78	.24	*p* = .82

Con respecto a las clases de matemáticas, Las puntuaciones de ambos grupos fueron similares en ambos módulos (ambas unidades de enseñanza). No hubo ninguna diferencia estadísticamente significativa entre el grupo de enseñanza tradicional ($\bar{X}$ = 12.28) y el grupo de instrucción de aula invertida ($\bar{X}$ = 11.00) en el primer módulo de instrucción, t(29) = 1.00, *p* =.33. Resultados similares fueron evidentes en el segundo módulo de enseñanza de matemáticas. No hubo ninguna diferencia estadísticamente significativa en las puntuaciones del post-test de los estudiantes en el grupo de enseñanza tradicional ($\bar{X}$ = 6.61) y el grupo de instrucción de aula invertida ($\bar{X}$ = 7.38), t(29) = -. 71, *p* =.48.

De acuerdo a los resultados en la tabla 6, la media de los niveles de la post-prueba de los estudiantes de instrucción tradicional e instrucción de aula invertida, no presentaron cambios

significativos entre módulos. Existe evidencia suficiente para no rechazar la hipótesis Ho1 después de implementar la estrategia de aula invertida en conjunto con el aprendizaje basado en competencia en las clases de matemáticas.

Tabla 6

Clase de matemáticas. Post-prueba de intervención académica

	n	$\bar{X}$	S	IC 95%	Diff	t	*p*
Módulo #1							
Tradicional	18	12.28	3.20				
Aula Invertida	13	11.00	3.92				
Diff		1.28		-1.34	3.89	1.00	$p = .33$
Módulo #2							
Tradicional	18	6.61	3.07				
Aula Invertida	13	7.38	2.87				
Diff		-.77		3.00	1.45	-.71	$p = .48$

Como análisis general, tanto la enseñanza tradicional como la enseñanza de aula invertida en los grupos de clases de español, inglés y matemáticas, no se observaron mayores cambios significativos en el rendimiento académico de las post-pruebas. De acuerdo a los resultados se ha comprobado que la metodología de aula invertida no ha producido un mayor impacto en la enseñanza durante los dos meses de investigación, Incluso, se pudo constatar que en la clase de inglés, los estudiantes del grupo de enseñanza de instrucción tradicional hicieron mucho mejor en sus pruebas a comparación que el grupo de aula invertida en la primera unidad (módulo 1). En conclusión, la instrucción de aula invertida no ha mejorado de forma significativa los grados de los estudiantes.

3. Discusión y conclusiones

Debido al cambio educacional y la brecha digital y generacional entre los docentes "Inmigrantes Digitales" y estudiantes "Nativos Digitales" dentro de la enseñanza-aprendizaje de hoy en día, la investigadora estableció como objetivo principal, la aplicación de una nueva técnica educativa al uso de la metodología didáctica de aula invertida en las clases de inglés, español y matemáticas de un colegio particular con la finalidad de comprobar si existió un impacto significativo en el mejoramiento del rendimiento académico de dicho establecimiento.

En segundo lugar, la investigadora intentó promover la metodología de aula invertida, con la finalidad de otorgar nuevas oportunidades cognitivas de enseñanza-aprendizaje a los docentes para que en un futuro, fuese discutido y adaptado en las aulas de clase para ampliar una mayor comunicación, interacción entre estudiantes y docentes y aplicar nuevos estándares de comprensión hacia el aprendizaje

Como herramientas de comparación y comprobación de resultados, se aplicaron pre y post pruebas a grupos control y experimental en las áreas de español, inglés y matemáticas con la totalidad de 116 estudiantes.

De acuerdo a los resultados presentados, se pudo constatar que a pesar del desarrollo de capacitación, adquisición y transferencia de los procesos de información por medio de técnicas digitales y tecnológicas en los grupos experimentales, no se observó un impacto significativo con la aplicación de la metodología didáctica de aula invertida en comparación a las clases de español, inglés y matemáticas que obtuvieron la enseñanza de metodología tradicional.

Limitaciones

En este estudio no se pudo hacer un análisis más detallado y profundo de investigación, debido a que el tiempo fue limitado, sólo se contó con dos meses.

El objetivo de estudio sólo se enfocó en un grupo de estudiantes de un solo establecimiento escolar y a un solo género siendo todos varones. Esto no permitió que los resultados sean generalizables ni extrapolable a grupos análogos de otras instituciones de Los Ángeles, California. Los instrumentos aplicados y los resultados obtenidos pueden ser empleados a otras investigaciones con población semejante.

Debido a la magnitud de trabajo que conlleva la preparación de las clases en los docentes. No se contó con el tiempo previo necesario de instrucción para que tanto los estudiantes como docentes desarrollaran de forma más efectiva y eficaz sus lecciones de enseñanza-aprendizaje.

Tanto la falta de la velocidad de internet (WiFi) como la disponibilidad al acceso material didáctico por YouTube, fueron limitados durante la jornada de clase.

El número considerable de actividades extracurriculares (deportes, proyectos, reuniones, entre otros) minimizó (por medio de fatiga y cansancio) el desarrollo total de estudio en los estudiantes.

La ausencia de conocimiento tecnológico de aula invertida en los docentes, más el tiempo de dedicación de la creación de nuevos videos, obstaculizó el diseño de más alternativas didácticas para los estudiantes.

Propuesta de continuidad

La investigadora consideró que este estudio es el comienzo para desarrollar una mejora de investigación en la aplicación de aula invertida con el apoyo de nuevos cuestionarios,

programas, actividades y metodologías didácticas basado en competencia.

A su vez, sugiere realizar nuevas encuestas no sólo a los estudiantes sino también a los docentes con la finalidad de identificar las habilidades formativas tecnológicas y presentar un programa de capacitación tanto presencial como modular para establecer un modelo estructurado basado a las necesidades detectadas previamente por los docentes con el fin de establecer un modelo estándar en la enseñanza-aprendizaje en el establecimiento educacional**.**

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Flourishing in a New Country: Resiliency among Dominican English Language Learners at Bronx Community College

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Flourishing in a New Country: Resiliency among Dominican English Language Learners at Bronx Community College

This study examined how two Dominican English language learners attending Bronx Community College tapped into internal and environmental strengths to overcoming language, immigration, academic, and personal adversities. Using an oral history methodology, the life stories of two English language learners from the Dominican Republic were recorded and analyzed. The results indicated that the participants experienced the following set of barriers: separation from family members, difficulties with the English language, and financial difficulties. Despite the overwhelming challenges these participants experience, they were able to graduate from Bronx Community College and overcome setbacks by employing the following resiliency strategies: reliance on psychological strength to cope effectively with their challenges, connecting with supportive family and friends, establishing supportive relationships with faculty and staff and developing a bi-cultural ethnic identity.

Introduction

The major challenge faced by community colleges is how to increase student success, whether success is defined in terms of graduating with a degree or certificate, transferring, or retaining a job. Most community college students are first-generation college students and are not familiarize with navigating the campus environment. Further, many community college students are academically underprepared and need to complete a series of developmental courses prior to talking college-level courses. These students often come from impoverished communities with

a high crime rate and limited educational opportunities. For these types of students, community colleges are seen as their last resort to a better life. The deficit model has been used extensively to understand the factors associated with poor academic performance among minority college students. In contrast, this study examined Dominican students who achieved academic success. Using a strength-based perspective is more beneficial in understanding and finding ways to help Latino community college students become successful. In order to increase the success rate of minority college students, institutions of higher education need to focus on creating an environment in their campuses which fosters resiliency among their students. Two English language learners from the Dominican Republic who were interviewed to better understand how they achieved academic success despite cultural and sociocultural obstacles. The results yielded the following resiliency factors which influenced their success in college and in life: utilization of psychological strength to cope effectively with challenges, connecting with supportive family and friends, establishing supportive relationships with family and friends, and developing a bi-cultural ethnic identity.

According to the Census, Hispanics are the largest ethnic or racial minority group in the United States. They currently represent 17 percent of the total U.S. population. As of 2000, over a million Dominicans lived in the United States, with more than half a million in New York City alone. Dominicans in the United States play a crucial role in sustaining the Dominican Republic by sending remittances to family members, investing in the Dominican Republic, and traveling back and forth on a regular basis. Like other immigrant groups, Dominicans have a variety of reasons for leaving their homeland. Dominican immigration has been transformed by political and economic changes both in the United States and in the Dominican Republic. Most

Dominican immigration began after the assassination of Trujillo in 1961. The Trujillo dictatorship, which lasted from 1930 to 1961, was followed by a period of political and economic instability. Those who were not politically connected had difficulty finding jobs, which meant that elections could lead to economic upheaval for many families. The 1980's were particularly difficult. By 1989, more than half of all families were living below the poverty level. The economy in the Dominican Republic continues to falter, while Dominicans arriving in the United States now may also experience difficult financial circumstances here.

Dominican English language learners face socio-economic and cultural barriers and they also confront a series of other challenges that native students do not face. For many Dominicans entering community colleges, learning proficiently the English language seems to be their biggest obstacle. Because the Dominican community is a transient community where individuals go back and forth between the native country and the United States, many Dominican children experience great difficulties learning the English language. Often, Dominican children grown up attending schools both in the Dominican Republic and in the United states. This instability often results in academic difficulties for Dominican students.

Adjusting to a foreign country is also a great burden for Dominican students. Specifically, for Dominican students who have lived most of their lives in the Dominican Republic, it is extremely difficult to adjust to the American culture. These students often report experiencing acculturation stressors due to their immigration to the U.S. Dominican families are temporarily separated by the immigration process. The family separation is a great challenge for many Dominican families. The father is usually the first one who migrates and the mother stays back in the homeland with the children. Then, the mother reunites with her husband and the children

are often left in the native country in the care of a relative, usually the grandparents, or with aunts and uncles. The children reunite with their parents in the United States several years later. Little research exists on the long term psychological effects of such separation on Dominican children.

Dominican children often report having experienced great anxiety as a result of separating from loved ones during the immigration process. Younger children specifically, have a harder time when their parents immigrate to the U.S. and are left behind in the Dominican Republic. It often takes several years before their visas are granted and their parents are settled economically in the U.S before they reunite with them in the U.S. While some children may adjust smoothly to their new environment, others may experience great difficulties in adjustment. Even though they are reuniting with their parents, these children often feel sad because they leave behind their friends, extended family and familiar surroundings.

When Dominicans arrive in the United States, they have to learn a new language, meet new friends and adjust to a new way of life. In addition, as newly arrived immigrants, they have to work many hours for low wages to pay their living expenses. Despite these barriers, Ingris and Junior, both Dominican English language learners at Bronx Community College, were able to flourish and achieve academic success. What factors made these Dominican students resilient? Understanding resilient Dominican students can be beneficial in teaching other students resiliency skills that will optimize their potential in college. A positive psychology theoretical framework was used in this study. Positive psychology is concerned with the scientific study of human flourishing. It consists in the following areas of study: character strength, positive emotions, engagement, meaning and purpose, and positive relationships (Hefferon & Boniwell,

2011).

In order to have a better understanding of the construct of educational resiliency, it is important to understand the origin and development of the construct of general resilience. The term resilience is considered a broad term which encompasses physical and mental health. Researchers have defined resiliency differently. Resiliency is "the ability to thrive, mature, and increase competence in the face of adverse circumstances or obstacles" (Gordon, 1996, p.63); or alternately "Resilience in an individual refers to successful adaptation despite risk factors and adversity" (Masten, 1994, p.3). Being able to successfully overcome obstacles is a general theme of most definitions of resiliency.

Protective mechanisms modify the individual's response to a risk situation (Winfield, 1991). Resilient individuals are able to overcome adversities because there are protective factors in their lives, which mitigate the effects of risk factors. For non-resilient individuals, there is often an absence of protective factors. Masten, Best, and Garmezy (1990) write:

> Resilience concerns behavioral adaptation usually defined as internal states of well-being or effective functioning in the environment, or both. Protective factors moderate the effects of individual vulnerability or environmental hazards so the adaptation trajectory is more positive than would be the case if the protective factors were not operational (p.426).

It is still not clear how protective factors interact with risk factors and how they help students to achieve despite overwhelming odds. Protective factors are categorized as support systems, family ties, and disposition attributes (Werner, 1989).

Providing adequate college resources can also promote academic resiliency among at-risk students. The term resource includes a wide range of things that are thought to enhance students' learning: physical facilities (laboratories, classrooms, libraries, audiovisuals aids), human resources (well-trained faculty members, teaching assistants, counselors, and support personnel), and monetary resources (financial aid, endowments, extramural research funds). In effect proponents say, if adequate resources are brought together in one place, student learning and development will occur (Astin, 1987). Resilient students utilized college resources to the fullest extent. Essential college support services include tutoring, counseling services, computer laboratories, and extra-curricular activities.

Maintaining strong family relationships can have a positive influence on fostering educational resiliency among at-risk students. Parental influence plays a significant role in determining a child's academic success or failure (Bronferenbrenner, 1978). Family members often provide support and motivation, which promote academic resiliency among at-risk students (Arellando, 1996).

A child's parents are the first protective agents in the child's environment (Masten, 1994). Parents provide the nurturing which is essential for healthy development. At-risk children who are raised in a nurturing environment are more likely to perform better academically than children who lack a supportive environment. The family provides stimulation and high expectations, which also have an influence on the development of academic resiliency among at-risk students (Williams, 1976). First-generation college students are usually ambivalent about

attending college. When they do attend college, it is a family member who usually provided the motivation and encouragement to do so.

For Hispanic community college students, the extended family plays a vital role. Due to the fact that many community college students have young children, an extended family member, like the grandmother, often takes care of the children while the student attends classes. Most immigrant families that come to the United States for the first time have to perform unskilled jobs. Yet, many of these immigrant families place a high value on education and encourage their children to do well in school. In short, the literature indicates that the family serves as a protective mechanism, which has a positive influence in the lives of resilient at-risk students.

Disposition factors are considered protective factors, which resilient individuals utilize to buffer against psychosocial stressors. Resilient students exhibit personality characteristics which are associated with achievement. For example, high self-esteem and self-efficacy are prevalent characteristics of resilient individuals. Rutter asserts, "The available evidence suggests that it is protective to have a well-established feeling of one's own worth as a person together with conviction that one can cope successfully with life's challenges" (Rutter, 1987, p.36).

Throughout the literature, researchers argue that resilient individuals are able to turn life's difficulties into growth and opportunities (Salvatore, 2013). The two participants in this study were able to overcome adversities in college and in their lives outside of college and enhanced their performance and sense of fulfillment. Resilient individuals possess the following personality characteristics: strong locus of control, exceptional ability to plan, ability to alter life

experiences, strong interpersonal skills, and good problem solving skills. (Salvatore, 2013).

Methodology

An oral history interview methodology was used to examine the reasons for immigration among by Dominican immigrants to New York City. Many social scientists today still believe that quantitative methods are the only way to acquire evidence. However, Yow (2015) claims that qualitative research methods such as oral history, can also provide reliable and valid evidence. As a research method, oral history has critical and evaluation procedures that can help us understand how we understand and interpret research.

The material in this research study was part of the Dominican Oral History Project at Bronx Community College of the City University of New York. Life histories in English and Spanish from more than twenty-five Dominican immigrants in the New York City area were collected. In the present study two life stories of Dominican migrants were analyzed. While many immigrants leave the Dominican Republic to rejoin family, this study examined what prompted the initial immigration that started the chain of migration. The most common reasons are economic, often an economic crisis at the individual and family level. The author conducted the interviews of the two participants in this study.

Setting and Participant Selection

This study was conducted at Bronx Community College of the City University of New York. Bronx Community College is located on 44.6 green acres in New York City. BCC enrollment grew 10% from 10,740 in Fall 2010 to 11,783 in Fall 2015. The BCC study body is as richly diverse as the community it serves. The ethnic background of students enrolled in the Fall 2016 semester

consisted of: 65.3% Latino/Hispanics, 28.9% Black, 3% White and 1.4% Asian/Pacific Islander 3.7 and American Indian 07 %. (CUNY Office of Institutional Research and Assessment).

Participants were English language learners from the Dominican Republic who enrolled at the college to earn an Associate's degree. The two participants in this study arrived in this country without any English proficiency. This qualitative research project attempted to capture their educational and life story. The challenges that they encountered were explored as well as their resiliency skills. Their story is one of success and achievement despite cultural, language and financial adversities. Junior and Ingres provide a model for helping other community college students achieve academic success despite overwhelming odds. In the following section, I provide a brief background of each participant. Then in the next section, I explore the key strategies used by participants to mitigate obstacle and achieve academic and personal success.

One objective of qualitative research such as this is to obtain a clearer understanding of human experience (Bogdan & Biklen, 1992). The meaning people give to their experiences and the process by which they make interpretations are important elements of constructing reality. Qualitative research provides a tool to better understand Dominican immigrants and to obtain a historical account of their experience. Exploring their perspectives of immigration and their educational and vocational experience provide insight into how Dominican immigrants make connections to their new environment in the United States while maintaining close ties to their homeland.

Interviews are effective techniques to obtain descriptive data which can help the researcher to understand how participants interpret the world. Scholars have written about

Dominican history from their theoretical lenses. The purpose of the qualitative interviews is to capture the stories of Dominican immigrants from their own perspectives and provide an account of their reality. In this way, qualitative research is better suited for examining their perceptions of immigration, their education, and their vocational experience than quantitative research.

Educational attainment and resiliency was the focus of this study because according to the latest census, Latinos have one of the lowest rates of educational attainment of any group in the country. In 2000, only 51% of Dominicans in the United States over the age of 25 had completed high school and only 10.6% had completed college, as compared to the overall population, where more than 80% completed high school and 24.4% finished college.

This study addressed the problems of Dominican immigrants by helping us to better understand their achievement and successes in their own words. Gaining a better understanding of successful Dominican immigrants can provide community colleges and other educational and vocational training institutions with important information which can be utilized in the development of effective and innovative retention and recruitment programs.

Data Collection

The two-hour audio taped interviews were completed with each participant. The interviews were conducted in Spanish. The interviews consisted of open-ended questions in order to let the participants tell their stories in their own way. Questions covered the following topics: family background, education, labor history in the Dominican Republic, immigration experience, and labor history in the United States, current identity, and transnational migrant experience. (See Appendix A-Sample interview topic questions).

Ingris

The first individual whose story I would like to tell is Ingris. Ingris was born in the town called Las Ezperanza, in the Dominican Republic. At the time of the interview, she was 25 years old and in her last semester at Bronx Community College. She migrated from the Dominican Republic with her father when she was 17 years old. Her father's sister, who lived in New York City, helped her brother come to the U.S. Since Ingris was a minor, her father could also include her in his immigration petition. Both made little money and had to work many hours to support the family in the Dominican Republic. Ingris attended elementary and secondary school in the Dominican Republic. She was a good student. She attended a technical high school which prepared her well academically. She learned practical computer skills which helped her when she arrived to the U.S. Ingris's two older siblings were not included in the petition request because they were already adults. Her mother also stayed behind.

Prior to coming to New York, Ingres lived with her parents and with her older sister and older brother. Her family is very religious. Ingris attributes her success to her hard work and strong religious values. For Ingris, family values are the most important elements of her identity. She asserts:

Mi familia es importante. Esos valores familiares son lo que me hacen ser Ingris.[1]

Ingris's father was the first to migrate to the United States. When Ingris finished high school, he

[1] *My family is very important. These family values are what make me be Ingris*.

filled the immigration papers to bring her and her younger brother to reunite with him in New York City. Upon arriving in the United States, she enrolled at the English language Immersion Program at Bronx Community College. The Language Immersion Program is designed for newly arrived immigrants with limited English proficiency. She stayed at the Language Immersion Program for one year and then enrolled in the criminal justice liberal arts program at Bronx Community College.

Her parents had very little education; her mother worked as a housekeeper and her father was an electrician. According to Ingris, her parents have always supported her in everything. They are an inspiration to her and have motivated her to achieve academically and to overcome difficulties. Her older sister served as her role model. Her older sister graduated from college in the Dominican Republic and currently works as an auditor in the Dominican Republic. According to Ingris, her sister pushed her to excel in college. At the time of this interview, Ingris had graduated from Bronx Community College with a 3.0 GPA and had completed one year at John Jay College with a 3.3 GPA, majoring in criminal justice. She recently completed her bachelor's degree and was pursuing he master's degree. She married and has two children.

Junior

Junior's story is a testament to the human spirit of perseverance. Only in a country like the United States can someone move up the latter of success like Junior. Junior Corniel was born out of wedlock in 1975 in Amapola, Tenares, in the Dominican Republic. He grew up picking coffee beans since he was small, attended school but dropped out after the 8th grade, at age of seventeen. Even though his father was not married to Junior's mother, he made sure that Junior

was well taken care of. Junior worked in his father's farm from a very young age. In 1990 his father began the process of petitioning for Junior to come to the United States. Junior arrived to New York City in 1995.

Shortly after he arrived, he began working as a dishwasher at Carmine's restaurant in Manhattan. He worked long hours and worked his way up as chief dishwasher and busboy. Yet, Junior felt that something was missing in his life. His wife encouraged him to take the high school equivalency exam (GED) so that he could apply to college to learn English and become a radiological technician.

While he continued working, he earned a GED, attended Bronx Community College (BCC) Language Immersion Program. To learn the new language, he enrolled in the English language Immersion Program, an intensive twenty-five hours per week program at Bronx Community College. He continued working at the restaurant part-time while he pursued his education. After one year in the Language Immersion Program, Junior enrolled in developmental courses and two years later then entered the Radiology program at Bronx Community College. He graduated with his degree in radiology in 2007 and was hired as a radiological technician in a major hospital in New York City. He and his wife purchased a home in New Jersey and live with their two children and his mother.

Data Analysis

The analysis process began with the development of a single coding scheme based on the transcription of the interviews (Bogdan & Biklen, 1992). The interviews were analyzed and categories were developed from the data. As additional interviews were transcribed and

analyzed, the coding schemes continued to evolve. Patterns, categories, and themes further emerged from this analytical process.

Results

Immigration and Separation

Immigrating to another country is frequently a stressful event. For Ingris it was especially difficult. As the youngest of three children, Ingris was always treated as the baby of her family, but when she came to the United States with only her father, she had to grow up quickly. Her mother would do everything for Ingris. She would prepare for her meals, do her laundry and clean. In the United States, however, Ingris had to learn to do things on her own.

> *Being the youngest, it was very hard to separate from my mother and family. I was spoiled. My mother did everything for me. I had to mature very fast when I arrived to the United States. I had to change. I was sick one day with the flu. In the Dominican Republic my mother would take care of me. I had to wake up and I realize that I had to take care of myself. It was a radical change. I was 18 years old when I arrived.*

Junior's first weeks in the United States was difficult. For Junior, not being able to speak English and being unable to find work right away ware extremely difficult for Junior. He had to stay in his cousin's home until he found a full-time job. Even though it was not easy, he was determined to prosper in America. During that time, he met his present wife who was according to Junior, "*The one who helped me to achieve my goals*."

Junior left behind his mother, sisters and brothers. He called them on a regular basis, but

missed them dearly. For many Dominican immigrants, separating from loved one can present challenges that often they are not prepared to deal with. As a result, many Dominicans become vulnerable to experience acculturative stress and report other difficulties. However, Junior was fortunate to surround himself with nurturing family members who had migrated to the United States prior to him.

Fear of Speaking English and other academic adversities

For Ingris and for many other English language learners, speaking in English is a major stressful challenge. Many English language learners do not excel in college because they have fears of speaking in English. Those students who are able to successfully manage their fear of speaking English can succeed in college. In Ingris' case, her cousin was able to assist her to overcome her fear of speaking English by gently assisting and teaching her how to pronounce the words in English and encouraging her to practice.

Ingris's case provides insights for developing an intervention program to help other English language learners overcome their fear of speaking English. Colleges can develop a peer English speaking program designed to provide English language learners with opportunities to converse with English proficient students in a relaxed environment. What this study suggests is that English language learners can overcome the fear of speaking English by having a supportive individual who can assist and teach them how to pronounce words in English. Often, English language learners feel isolated and do not establish connections with students who speak English proficiently. As a result, they do not have an opportunity to practice speaking English outside of their English classes.

Junior confronted a series of obstacles both on campus and off campus. The findings suggest that he was able to successfully overcome academic challenges. For junior learning how to write English proficiently was a major academic challenge. While Junior was a student at Bronx Community College, it was a college requirement that all students had to pass the CUNY Writing Proficiency exam in order to graduate. The first time he took the writing exam, he failed. He enrolled in a writing workshop to improve his writing skills and retook the exam a second time. Unfortunately, he failed it again. According to Junior, he was very frustrated because he was close to graduating and needed to pass the writing proficiency exam.

Even though he had successfully completed all the courses for his major in radiologic technology, he would not be able to take the state license exam until he passed the writing proficiency exam. Many students often drop out of college when confronted with academic problems such as the one that Junior experienced. However, Junior was determined not to give up and he kept taking the exam. He finally, passed the CUNY writing exam in his third attempt. He was very excited. Her stated:

> *I have not stopped fighting and I have received assistance. We need to continue moving forward and take advantage of the many opportunities that this country offers us. If I want to achieve something, I do it with love. I do it slowly, but I know that I will achieve it.*

Junior's strong sense of determination helped him pass the CUNY writing proficiency exam. He was determined not to let anything stand in his way of achieving his overall goal at Bronx Community College. Similarly, Ingris also exhibited a strong sense of determination to overcome her own obstacles to and achieve her academic goals. Student who have a strong desire and

commitment to achieve their goal are able to persevere despite encountering barriers. Persistence and the ability to persevere despite difficult circumstance are key factors of resiliency.

Tapping into their Personal Strengths

Ingris and Junior both relied on personal strengths to overcome academic and social cultural obstacles. Among the many strengths that they identified as significant in overcoming obstacles and achieving academic success were: a high level of persistence, an ability to adapt to change, utilization of effective problem-solving strategies, utilization of superior people skills, a high level of self-confidence and commitment to achieve academic and career goals, and a high level of hope, engagement and well-being.

Junior started working in his father's farm when he was only five years old. He was expected to help around the farm after school. Junior attributes his success in college to the work value that his father instilled in him at a very your age. He asserts:

> *When you come from a family that has a farm, you are expected to work from a young age. He started working at the age of five. As I got older, my responsibilities in the farm increased. I learned the value of hard work by working in the farm. It was very difficult work but it taught me the meaning of hard work. My father had cows and other animals. I also milked the cows.*

Junior was able to rely on his strong work ethics successfully navigate the demands of college. While a student at Bronx Community College, he found enough time to study for his classes and he also worked on a part-time basis.

Ingris's story also reveals that she was able to use personal strengths to overcome difficult life's challenges. She states:

> *Perseverance is very important. If you get tire, keep going. You have to use all the survival tools in your toolkit to overcome obstacles in life. It is not easy but if you want to really achieve something, you have to believe that you can do it. There is nothing that can stand in your way. You are the only person that can prevent you to not achieve your goals. You have to move forward despite the problems and difficulties.*

Ingris's ability to persist despite facing overwhelming barriers propelled her to use personal strengths to motivate and inspire herself not to give up on her career and life goals. She also relied on her strong spiritual beliefs to help her keep moving forward. She adds:

> *While in college I experienced a very personal and challenging issue. I had to withdraw from college for one semester. It was very hard for me but I returned to college the following semester. God gave me the spiritual strength to keep moving to achieve my goals.*

Religious beliefs can also contribute to the well-being of college students and buffer the stressful circumstances that they face. In Ingris's case, having a close relationship with God helped her to overcome difficult life challenges.

Overcoming Financial Adversities

In general, Latino/a college students confront many financial adversities that often affect their retention in college. A significant number of Hispanic students drop out from college, not

because of poor academic performance, but due to financial issues. Resilient student like Ingris and Junior were able to overcome financial obstacles.

Ingris gained strength and was motivated to excel academically by her parents' financial difficulties. She adds:

> *One thing that motivates me to learn is my parents. They did not get an education. Education is the key to move ahead. They went through financial problems. This motivated me.*

Ingris's story, like that of Junior exemplifies the financial difficulties that many immigrants experience, but most importantly demonstrates a strong determination to move forward by obtaining an education. Education becomes the major source for climbing the ladder of success. These participants also derived a source of strength that propelled them to achieve their goals in spite of multiple academic and personal challenges. Their high motivation and having family support sustained them though difficult challenges that they faced as they pursued their dreams.

Part of achieving a goal involves hard work and commitment. Ingris exemplifies this by her hard work and strong desire to achieve her goal and overcome any obstacles that stand in her way:

> *Learning the English language is the major barrier. I could not communicate. It would take me one hour to read several paragraphs. I was always asking myself, "What does this mean." Perseverance is very important. Use all your tools to overcome your obstacles. If it's in your mind nothing can get in the way. The only obstacle you have is you. You have*

to be optimistic. Tú pasa por vientos y mareas.[2] *Put your trust in God. Persevere. Don't stay down, but try to overcome those obstacles. Say, Yes I can; I can do it. I had to drop out one semester due to a personal problem. I felt down. I kept going. It was hard. I am still standing. Give the best of yourself. This is about you.*

Approaching a problem from a positive perspective can reduce anxiety and strengthen individuals to cope better to adversities in life. Positive psychology principles state that human can flourish despite experiencing difficult life-changing situations. By focusing on their personal strengths rather than weaknesses, human beings are able to flourish and thrive in stressful life situations (Seligman, 2003).

Overcoming Academic Barriers

Many English language community college students drop of college due to their inability to overcome academic challenges. Learning how to read and write English proficiently is particularly difficult for most English language learners. Junior's difficulties passing the ACT writing exam and the CUNY English Proficiency Examinations illustrate the challenges that English language learners confront in higher education. He had to repeat the CUNY English proficiency exam three times before passing it. Junior was extremely concerned because passing the CUNY writing proficiency exam was a requirement for graduation. He would have not earned his degree in radiology if he had not passed the CUNY proficiency exam on his fourth attempt.

[2] You go through wind and waves, depicting the difficult hardship that she experienced.

A major obstacle that I experienced at Bronx Community College was obtaining a passing score on the ACT Writing Examination. The first time that I took the exam I failed; then I took it a second time and failed by one point. You need a score of 7 in order to pass and I got a 6. I took it a third time and finally passed it with an 8. Now I have to pass the CUNY Proficiency Writing Exam. This exam has also been a problem for me. Grammar has always been hard for me. There is a lot of pressure on students with this exam. You are only given one hour to complete the test. The test itself is not student friendly. There has to be a better way to demonstrate your writing abilities than this test format. You also feel scare because you have three or four observers watching you while you are taking the exam. They treat you as if you were a criminal. They think you are going to cheat. It is impossible to cheat because every student has a different essay to do. I should not be required to take additional writing assessments. I should not have to proof to the college that I am a proficient writer. I passed my freshman writing composition course and I completed the Language Immersion Program. I just took the CUNY Writing Proficiency exam. I hope I passed it.

All these writing assessment exams can prevent students from graduating. I am supposed to graduate in June but if I don't pass the CUNY Writing exam, I will not be graduating because my academic standard is not adequate. ¿Do you think that a person that successfully passes six classes and seven radiology courses where you are writing regularly, working with patients, does not have the basic academic standards? This test is biased and affects particularly the Hispanic students.

English language learners experience similar academic challenges that can derail their aspirations. In Junior's case he was able to persevere and did not give up even though he encountered difficulties with passing the required standardized writing exams. In many instances students drop out of college before completing their degree because of their inability to pass these standardized exams. Junior's expressed frustration with the writing standardized examination typifies the multiple academic challenges experienced by English language learners. Educators and administrators need to take into account the biases in the standardized exams currently being used to assess students' reading and writing abilities and develop better measures to assess the writing abilities of English language learners.

Maintaining Strong Family Ties Facilitates Resiliency

The findings revealed that Junior and Ingres both relied on their family as a source of motivation and inspiration to achieve success, despite the challenges that they experienced in college. In the Dominican culture, the family plays a vital role and members support each other. The extended family also is involved in looking out for the well-being of family members. The Dominican family is very close and supports each other. Throughout the interview, Junior frequently returned to the themes of family unity and hard work. These appear to be at the core of Junior's identity.

Junior specifically, relied on his family when he first came to the United States. As a new arrival in this country, he did not find a job right away. He stayed with a relative temporarily. Junior was able to find a job as a dishwasher at Carmine's restaurant in New York City. For Junior

his family taught him the importance of hard work and sacrifice. These two character strengths helped him to do well in his job and in college. He asserts:

> *I am a person that when I start working in a new job, I like to focus on my work and do things right. At the restaurant, they noticed that I was doing my job well, and they promoted me. In college I also try my best to do well.*

The participants in this study reported that they had one or more significant others who motivated and inspired them to attend college and to do well in college. They also reported that they could not have finished college without the support of a family member. For Ingres, having her cousin work at Bronx Community College helped her to overcome barriers and achieve academic success. She says:

> *When I arrived in the U.S., I met my oldest cousin Shirley. She is my role model. She overcame obstacles and became successful. She motivates me. I first thank God and then her for what I have achieved.*

Ingris's cousin worked at the college and offered her a part- time job when she started as a freshman. According to Ingres, her cousin helped her overcome the language barrier that she experienced when she arrived in this country. Prior to enrolling at Bronx Community College, Ingres attended the Language Immersion Program, an intensive English language program designed to prepare English language learners for college level work. Ingres reported that she made great progress in improving her English skills at the Language Immersion Program. However, when she registered as a freshman at Bronx Community College she was placed in an English as a second language course. Although she had made significant progress while at the

Language Immersion Program, she was not proficient in English. Ingres encountered language barriers when she enrolled at Bronx Community College. She did not know enough English. She adds:

> *When I started, I did not know enough English. When I started working with my cousin as an assistant at registration, she encouraged me to talk to people in English. I was very afraid. She would pronounce all the words in the sentence that I had to say and I would repeat them with her. I lost the fear of speaking English.*

For Ingris, the emotional support she received from her cousin at Bronx Community College motivated her to improve her English proficiency. It is important to provide a supportive and enriching experience for English language learners. The emotional support provided by Ingris's cousin was a crucial component which facilitated the transition to college life for Ingres and contributed to her academic success at Bronx Community College.

Forming Connections with Faculty and Staff

The two participants in this qualitative study reported the important contribution of faculty and staff in their success at Bronx community college. The college experience for many English language learners can be very stressful. Many students are not able to adjust to college life and are often marginalized. Helping English language learners to establish connections with faculty and staff can provide a sense of emotional security and facilitate the adjustment process.

Junior established a supportive relationship with his counselor at Bronx Community

College. His counselor assisted him in enrolling in the Language Immersion Program and motivated and inspired him to persevere despite facing financial and psychosocial challenges. Junior also enrolled in a freshman success seminar, taught by his counselor. In this class he learned how to manage his time in college, how to study effective, and how to manage life's stresses. The course provided a foundation that helped Junior acclimate to college life. His counselor also advised Junior every semester to ensure that he registered for the right courses in his major.

Junior asserts:

> *I am very grateful for all the help my faculty advisor gave me. He was always there when I needed him. He motivated me when I was feeling down. I could have not achieved my academic goal without him. He was extremely helpful. He also helped me get into the radiologic Program. I will forever be grateful to him.*

Having supportive faculty is extremely important for retaining minority students. To facilitate the student-faculty relationship it is best to have faculty members who are also from the same culture as the students. The percentage on minority faculty is relatively low nationwide when compared to the Anglo faculty population. Institutions of higher education need to do a better job at recruiting and retaining faculty of color.

Developing a Bicultural Identity

Ingris and Junior both reported the importance of maintaining a bi-cultural ethnic identity to their success in college. Even though, they had become proficient in English, and had graduated from college, they derived guidance and strength from their ethnic identity by

remaining closely connected to ethnic and cultural traditions. Both reported that they had acquired aspects of the American culture, but had maintained their Dominican identity.

For Junior, for example, adjusting to the American culture was hard at the beginning when he first arrived, but as he learned the English language, he began to acquire some of the American customs and traditions. He had a deep commitment to fit in and learn about American culture. He was also not afraid to take risks. While working at the restaurant, he never turned down opportunities to move up. He would watch American television to learn about the American culture and its traditions. He was also interested in becoming a better person and learning as much as possible about America.

He felt so connected and appreciative of the American culture, that he became a U.S. citizen. He considers himself to be a Dominican-American citizen. Because dual citizenship is recognized by the Dominican Republic, Dominicans who become U.S. citizens do not have to give up their Dominican citizenship.

> Junior: *I consider myself Dominican but also American since I am living here. I am thankful to this country because I have been able to obtain an education, a profession, and been able to purchase a house. Soy Americano y Dominicano.*[3]

Junior's drive to achieve and to graduate from college was also motivated by his strong ethnic identification with both the Dominican and American cultures. As he became more successful in

[3] *I am American and Dominican.*

the host country, his affinity to the American culture increased. According to Junior, he owes a lot to this country. In the U.S. he was able to make his dreams a reality.

For both participants, living between two worlds provided the opportunity to gain insight and motivation that allowed them to experience a transformation leading to their success as English language learners from the Dominican Republic.

Conclusion

Matti (2013) claims that in times of life setbacks, resilient individuals are able to turn life difficult moments into growth and opportunities. Ingris and Junior clearly embraced life's setbacks and were able to flourish as human beings. Resilient students like Ingris and Junior were able to achieve academic success at Bronx Community College because they were able to dig into their toolkit of resiliency strategies to deal successfully with adversities. For instance, Ingres used all the tools at her disposal to overcome language and personal obstacles. She utilized tutoring for example, to help her overcome her language problems. She found the tutoring services at Bronx Community College very helpful. For both participants, supportive relationships inspired and motivated them to achieve academic success and overcome barriers. This has implications for college staff member involved with developing retention programs for English language learners. In order to foster resiliency, community colleges need to provide opportunities for English language learners to establish supportive connections on campus. Too often, college representatives expect students to establish supportive relationships on campus automatically. In this study, we can see the value that having a supportive connection can do to promote resiliency and academic achievement.

As this study revealed, English language learners can experience difficulties learning a new language and sometimes experience fear of speaking in English. Colleges need to pay close attention to English language learners and develop appropriate programs to assist them in adjusting to college and coping with the challenges involved in learning a new language. English language learners need to have opportunities to practice their English skills in a safe environment. Colleges can offer selected workshops on coping with the stress of learning a new language. Most importantly, Colleges need to foster resiliency by helping English language learners to acquire strategies to cope effectively with adjusting to a new culture and learning English. English language learners should not have to suffer alone. Colleges need to step up to the plate and create programs to serve this growing population in the nation's community colleges.

Maintaining close family ties also promoted resiliency among both of the students in this study. Often, English language learners feel isolated in community colleges. They feel that they don't belong. Colleges can assist student to feel that they are part of the campus community. Services need to be in place that assist student in strengthening family ties. Especially for Dominican English language learners, the family can assist student when they encounter difficulties. Social workers can provide supportive family services to ensure that families stay connected, even under period of transition caused by the immigration process.

As both Ingris and Junior demonstrated, maintaining a bi-cultural identity was also a factor that contributed to their resiliency and academic achievement. Traditionally, immigrants were encouraged to acculturate to the main culture and to give up their traditional heritage. This may not be the right path to take. Colleges need to encourage their English language learners to

maintain their heritage and their native language. Students should not have to feel pressure that they need to give up their culture to become successful. In fact, as the participants have demonstrated, it is possible to become successful by maintaining their ethnic identity while acquiring to dual identity. America becomes a richer country when citizens express and share their heritage while also acquiring American traditions.

Maddi (2015) asserts, "The mental work of hardy coping, he or she is lead to using what has been learned to formulate an Action Plan which could help in resolving the stressful circumstances. Actions Plans are comprised of an overall goal, and the instrumental steps that need to be taken to reach the goal" (Maddi, p.35). The evidence in this study suggests that Ingris and Junior were able to cope with the academic and cultural adversities by also having an Action Plan. Ingris's and Junior's stories shed light into how resiliency can help individuals achieve their dreams, despite overwhelming odds. They both endured difficulties for long period of time. Yet, they persevered and never gave up. They derived resiliency from their inner and spiritual self. During tough times, they never lost the sense of hope, but moved forward and took control of their lives. They learned and derived positive outcomes from their difficulties and became better people as a result of their difficulties. By all accounts both Junior and Ingris have achieved the American Dream.

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Appendix A

Sample Questions/Topics for Open-Ended Interview

Family Background

- Demographics: where and when they were born, description of family, marriage, etc.
- Family labor history (parents' jobs, unpaid work, etc.)
- Childhood chores and activities of daily life
- What they did for fun
- What was the town/area like
- Memories that stand out: negative and positive life experiences
- What were important issues: difficult life events

Education

- Educational history: where and when they went to school, how successful they were, differences between schools in the U.S. and the D.R.
- Attitudes towards school: What did they think of school? What areas of study did they like or dislike? What was the family attitude towards school?
- Were classmates of the same background? (ethnic, socio-economic, religious) What about teachers?
- Language history: hold old were they when they started to study English, bilingual classes or not, etc.

Labor History in the Dominican Republic

- First job: How did they get it? What did it involve? What did they do with the money? What did they think of the boss? What was the best thing about the job? What was the worst thing about the job?
- Work experience, paid and unpaid
- Vocational training
- Relation between educational training and job

Immigration Experience

- What was happening in the D.R. when they decided to emigrate; what event in the D.R. influenced their decision to leave
- Where and when did they first come to the U.S.?
- Immigration experience: What was it like to leave the Dominican Republic, who they left behind, etc.?
- Challenges experienced as an immigrant from the Dominican Republic
- Experiences with prejudice or hostility as a new immigrant
- Most difficult part of fitting in to the American culture

Labor History in the United States

- First job in the U.S.: How did they get it? What did it involve? What did they do with the money? What did they think of the boss? What was the best thing about the job? What was the worst thing about the job?
- Work experience, paid and unpaid
- Work experience, legal and illegal

- cational training
- Relation between educational training and job

Current Identity

- Current feelings about country of origin and native language now
- Customs from the country of origin that are still observed
- Language attitudes: where do they speak English or Spanish? How do they feel when speaking English? How do they feel when speaking Spanish?
- If they have children, what language do they speak with their children? What language do their children speak when they talk with them? How do they feel about that?
- Identity: Which of the following terms would they use to describe themselves: Dominican, Dominican-American, American, Dominican-York, immigrant? Which terms have others used to describe them? Are there any other terms they identify with? Which do they prefer? Why?

Transnational migrants

- How did going back and forth between the D.R. and this country affect them? How did it affect their schoolwork? How did it affect their ability to read and write in Spanish? How did it affect their English?
- Challenges as a transmigrant
- Which country would they prefer to live in
- Which country do they see themselves living in later in life

Online Learning for Higher Education to Enhance Access, Student Experiences, and Course Outcomes

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Online Learning for Higher Education to Enhance Access, Student Experiences, and Course Outcomes

Abstract

This paper presents a pedagogical approach and assessment of student performance in a Stellar Astronomy course taught in an online class section and a traditional class section at the Bronx Community College of the City University of New York. The two-year Associate in Arts and Sciences degree program at Bronx Community College offers an astronomy course to fulfill the core science course requirement. The use of an online learning environment in Astronomy for the core science course requirement offers many advantages for students, especially for working students, to enhance their science learning experience. The use of smart technology for a quicker assessment of students' performances in promptly graded weekly submissions and access to technology-rich Smartwork Astro tours, Astro dictionary, and Nebraska simulations overcomes the various pedagogical challenges of face-to-face classroom settings. Access to online learning allows more students to be reached within a limited time as well as the maintenance of detailed records of student interactions, weekly submissions, and the comprehensive assessment of student performance. Online learning access for a core science course requirement in undergraduate education mitigates barriers to higher education, encourages student-centered learning, and advances teaching in the digital age of the 21st century.

Keywords: online learning, pedagogy, assessment

I. INTRODUCTION

Online education is critical to the long-term strategies of higher education institutions in the United States. By fall 2011, the number of students taking at least one online course increased to 6.7 million – 32% of all college students – including community college students (Allen & Seaman, 2013). Community colleges are pathways to higher education for many minority students who are academically and financially challenged (Mendoza, Mendez, & Malcom, 2009; Rajasekhara & Hirsch, 2000) and for first-generation college students. Many community college students attend college classes, work, and care for dependents while juggling tough financial, academic, and personal challenges (Goldrick-Rab, 2012). The 2011 Community College Institutional Survey (CCIS) reported that 67% of full-time students and 78% of part-time students work at least part-time while taking classes, and 53% of full-time students and 60% of part-time students also care for dependents (CCCSE, 2012). The completion rate of learning online by nontraditional students aged twenty-five and older, overcoming challenges related to work schedules or dependent care at two-year community colleges, was found to be higher than that of traditional student groups aged 17-21 (Newell 2007). Online courses allow students to study course materials on their own time and at their own pace (Bjork, Dunlosky, & Kornell, 2013). Access to online resources has also redefined traditional learning interactions (Anshari, Alas, Yunus, Sabtu, & Hamid, 2016). Online learning can promote self-learning (Rausch & Crawford, 2012), greater student-instructor interaction (York & Richardson, 2012), innovative instructional strategies (Lally & Wallington, 2002), and varied learning styles (Wichadee, 2013), which can lead to better learning outcomes.

The Bronx Community College (BCC) of the City University of New York (CUNY) is a Hispanic-

serving Institution located in Congressional District 15, one of the most impoverished districts in the United States. Based on the BCC Spring 2017 survey data from the CUNY Institutional Research Database (IRDB), BCC-CUNY serves a student population comprising 98% ethnic minorities; 55% of students were first-generation college students, 51% were employed, and 25% were supporting children. The Liberal Arts and Sciences curriculum in the Associate in Arts (AA) and Associate in Sciences (AS) degree programs at Bronx Community College require a core science course. Stellar Astronomy (AST 111), offered by the Department of Engineering, Physics and Technology, satisfies the core science course requirement and is offered in a traditional classroom setting as well as an asynchronous (100% online) course offering.

This paper presents the design, content, and innovative instructional strategies used in the online and traditional classroom sections of the Stellar Astronomy course to improve course outcomes. This paper discusses the assessment results of the core competencies – the use of mathematics, the scientific method approach, reasoning, and analysis – in the Stellar Astronomy course using assignments and exams as assessment vehicles in both the online section and the traditional classroom section.

II. MOTIVATION

The author's primary motivation for teaching an online course was to reach students who were not able to register in the popular Astronomy course due to schedule conflicts, class timings, or other reasons that make it difficult for them to commute to campus during class time. The author received training in online course development conducted by BCC in 2015-16, developed this asynchronous AST 111 Stellar Astronomy course as part of the training, and has been teaching

online every semester since.

Best practices in online learning and teaching strategies for educational productivity are well-documented in the pedagogical literature (Pelz, 2004; Kim & Bonk, 2006; The Hanover Research Council, 2009; U.S. Department of Education, Office of Educational Technology, 2012). In his latest book *Improving How Universities Teach Science: Lessons from the Science Education Initiative*, Carl Weiman, a physicist at Stanford University and 2001 Nobel Prize winner in Physics, discusses the way in which access to information technology provides obvious opportunities for dramatically changing teaching methods in colleges and universities, and in the process, making higher education far more effective and efficient (Weiman, 2017). As the online course was created, the author realized the need to reinvent the traditional classroom section that was not working in all practical senses. Students' engagement and excitement about learning new materials were limited in the lecture-based methodology that involved the use of a whiteboard, PowerPoint lectures, and standard tests during lectures. Online learning tools were also introduced into the traditional classroom section to supplement lecture-based pedagogy in classroom teaching. Student-centered learning on computers using the digital platform of Smartwork by Norton publishers was implemented during the recitation period, a shorter class to review the lecture material. The Smartwork digital platform provided an opportunity to put students in the driver's seat and encouraged self-learning by using technology that goes beyond lecture-based learning. The online AST 111 Stellar Astronomy course was created, and at the same time, changes were made in the traditional classroom section of AST 111 to encourage self-learning among students during the recitation time.

Section III describes the methodology applied in the provision of online learning and the pedagogical approach to students' learning experiences. Section IV describes students' performance and assessment results in core competencies related to the use of mathematics, the scientific method, and reasoning and an analysis of learning outcomes. Section V provides a discussion of the results, followed by the conclusion in Section VI and future directions in Section VII.

III. METHODOLOGY

Course overview: The AST 111 Stellar Astronomy course covers early astronomy; astronomical coordinate systems; the structure and evolution of the sun, stars, and stellar systems; spectroscopy; the Milky Way and external galaxies; and cosmological models and implications. AST 111 Stellar Astronomy is a 3-credit course scheduled with 2 hours of lectures and a 50-minute recitation period. The AST 111 course requires prerequisites concerning basic math proficiency.

The asynchronous AST 111 Stellar Astronomy course was taught entirely online apart from two in-person class periods. The online course plan, including the lecture content, audio, videos, Nebraska simulations, Astro tours, and Astro dictionary was delivered using the CUNY Blackboard online platform and Smartwork digital system by Norton publishers. The textbook *Stars and Galaxies* by Norton Publishers (Kay, Palen, & Blumenthal, 2016) was followed in the AST 111 Stellar Astronomy course. The Nebraska simulations used in the astronomy course are the interactive simulations from the University of Nebraska that allow one to manipulate variables and see how physical systems work. The Astro Tours are interactive animations that use art to help students visualize important physical and astronomical concepts. The Astro dictionary

provided the meaning of words and concepts used in the field of astronomy.

Learning outcomes: The following learning outcomes expected in this course were clearly explained to the students during the first class:

- Identify principles governing astronomical phenomena, interpret astronomical evidence to characterize applicable physical laws, construct diagrams indicating correlations of the physical properties of stars, and classify and predict star evolutions according to intrinsic properties, such as stellar mass.
- Use algebraic calculations and graphing to predict, measure, and verify that physical principles apply to astronomical phenomena.

First, the in-person class provided an overview of the course plan, learning outcomes, grading policy, lesson plan, and instructions regarding how to navigate on Blackboard and Smartwork to access the syllabus, course materials, and assignments. A demo exercise comprising a homework assignment, web-based writing assignment, and online discussion link was created for submission during the first in-person class to establish the flow of online instruction.

Weekly folder: The weekly folder as per the BCC academic calendar was named according to the lecture date in the respective courses, for example, "Week 1_27 August 2016," and was provided on Blackboard. The weekly folder comprised two separate folders containing the lecture notes and assignment submissions. The lecture notes included lectures in PowerPoint and word documents, audio, video, Astro tours, flashcards containing astronomy vocabulary, Nebraska simulations, or astronomy news of the day. Figure 1 shows a sample of "Astronomy news of the

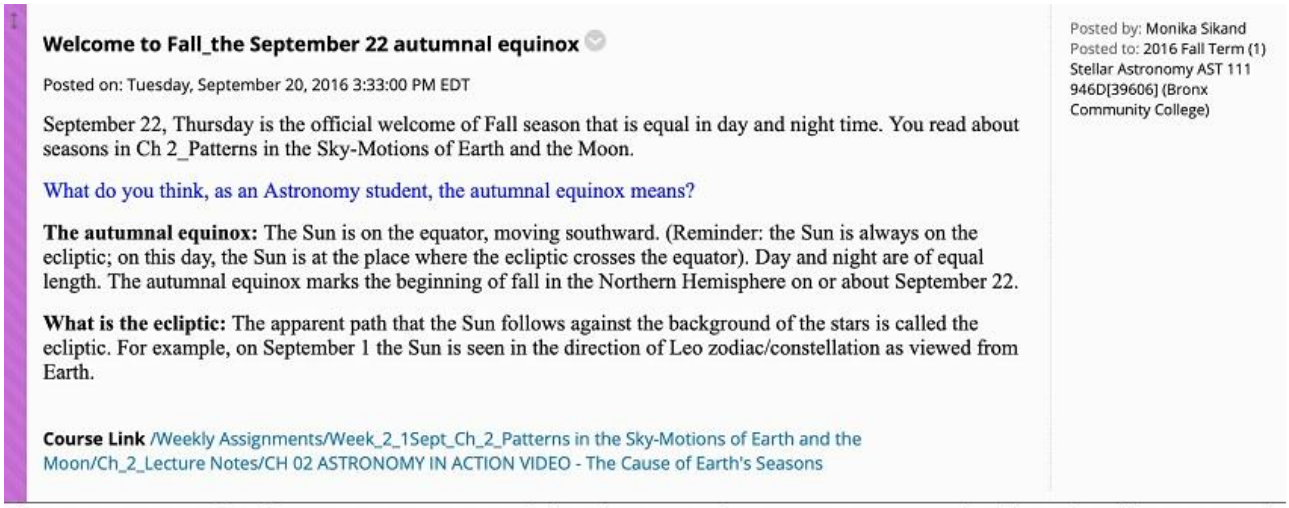
day," which introduced students to current exciting news relevant to the subject of astronomy or content in the syllabus. The assignment submissions folder included an electronic link (e-link) to submitting Blackboard web-based writing assignments, online discussions, or Smartwork assignments "Test your Understanding" and "Process of Science" depending upon the lesson plan of the day.

Weekly assignments were provided to both the online section and the traditional classroom section on the CUNY Blackboard and Smartwork online system. However, in the traditional classroom section, the computer lab was used to supplement lecture-based teaching with Smartwork class assignments, Nebraska simulations, Astro tours, and Astro demonstrations in person. The course textbook and supporting resources were the same for the online section and the traditional classroom section. The online section had slightly more Smartwork homework assignments than the traditional classroom section. The Smartwork assignments for the traditional classroom section were split into homework assignments and classwork assignments to be attempted during the recitation period. The tests for the online section were restricted in time using the online time limit settings on Smartwork, whereas traditional classroom sections took tests in class. The weekly Smartwork assignments included multiple-choice questions, numerical questions, match the following, fill in the blanks, true or false, and drag-and-drop items that provided comprehensive practice on quantitative and analytic skills. The Smartwork system provided students with a user-friendly computer experience, promptly graded assignments, and allowed instructors to place more focus and time on the analytics of student performance. Student-instructor and student-student interactions were encouraged with writing assignments and discussions graded by the instructor on Blackboard.

Grading: The grading distributed between the weekly assignments, the midterm exam, and the final exam were included in the syllabus. The traditional classroom section had a slightly different grading policy that included class assignments using the Blackboard and Smartwork online system in the grading distribution.

The last class: The last in-person class conducted during the final class of the semester provided a review of the course plan, clear instructions for the final exam, and collected student feedback on the course evaluation.

The two in-person classes, at the beginning and end of the semester, provided an opportunity to connect as a class, between students, and between instructor and students.



Welcome to Fall_the September 22 autumnal equinox

Posted on: Tuesday, September 20, 2016 3:33:00 PM EDT

Posted by: Monika Sikand
Posted to: 2016 Fall Term (1) Stellar Astronomy AST 111 946D[39606] (Bronx Community College)

September 22, Thursday is the official welcome of Fall season that is equal in day and night time. You read about seasons in Ch 2_Patterns in the Sky-Motions of Earth and the Moon.

What do you think, as an Astronomy student, the autumnal equinox means?

The autumnal equinox: The Sun is on the equator, moving southward. (Reminder: the Sun is always on the ecliptic; on this day, the Sun is at the place where the ecliptic crosses the equator). Day and night are of equal length. The autumnal equinox marks the beginning of fall in the Northern Hemisphere on or about September 22.

What is the ecliptic: The apparent path that the Sun follows against the background of the stars is called the ecliptic. For example, on September 1 the Sun is seen in the direction of Leo zodiac/constellation as viewed from Earth.

Course Link /Weekly Assignments/Week_2_1Sept_Ch_2_Patterns in the Sky-Motions of Earth and the Moon/Ch_2_Lecture Notes/CH 02 ASTRONOMY IN ACTION VIDEO - The Cause of Earth's Seasons

Figure 1: A sample of "Astronomy news of the day" posted on BCC-CUNY Blackboard online system in Fall 2016 semester.

IV. RESULTS

The assessment of learning outcomes provided students with feedback to guide their learning. Assessment was also helpful for faculty to guide their teaching and implement successful

strategies to improve learning outcomes. One of the learning objectives in astronomy is for students to be able to understand the structure, dimension, and content of the universe. Overall student performance in the AST 111 Stellar Astronomy course in the online and traditional in-class sections was evaluated in three core competencies: use of mathematics, use of the scientific method, and reasoning and analysis. Table 1 highlights the assessment of these core competencies in both the online and traditional classroom sections of the AST 111 Stellar Astronomy course in fall 2016.

The final exam administered to both online and traditional classroom sections was used as an assessment vehicle. The sample size in the online course was smaller than that in the traditional classroom section due to different enrollment caps in these two courses. A benchmark of 70% in all the core competencies was used as a criterion of success, that is, 70% of the students will score 1/1 point in multiple-choice, analytic, or numerical questions related to core competencies or 3.5 points out of 5 points or better in the writing question. The overall student performance in AST 111 during the semester was also assessed using assignments and tests as assessment vehicles.

Figure 2 highlights the class performance of the AST 111 online and traditional classroom sections in Fall 2016 and the online section in Spring 2017. The class performance in Smartwork weekly online assignments was averaged at 84% in the AST 111 online class section and 81% in the AST 111 traditional classroom section in Fall 2016. The midterm for the online section was provided online and restricted in time using Smartwork online settings. The traditional classroom section took the midterm exam in class. The midterm contributed 20% towards the final grade in both

sections. The average class performance on the midterm exam in the online section was 19% higher than that of the traditional classroom section in Fall 2016. The average class performance on the final exam in the online section was 13% higher than that of the traditional classroom section. The overall class average performance was distributed between the assignments, midterm, and final exam. The overall class average performance was 7% higher in the online section than in the traditional classroom section in Fall 2016. The maximum number for student enrollment is capped at 20 in online course sections and 24 in traditional Astronomy classroom sections at Bronx Community College. A total of 3 out of 19 enrolled students in the online section and 2 out of 23 enrolled students in the traditional classroom section withdrew from the course during the Fall 2016 semester.

The average class performance in the online section of AST 111 Spring 2017 was also comparable to the Fall 2016 online section in Smartwork assignments, the midterm, and the final exam (figure 2). Of the 20 students enrolled in the AST 111 Spring 2017 online section, two students withdrew and the overall average class performance was 3% less than the Fall 2016 online section, but the average class performance in the online final exam was 5% higher than the Fall 2016 online section.

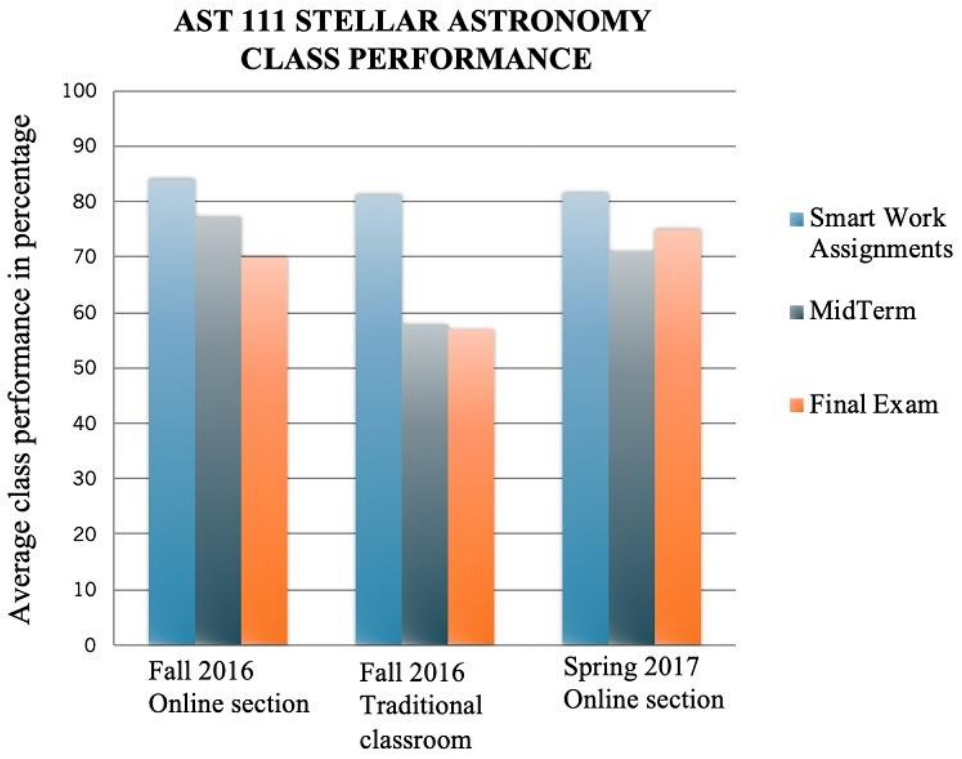


Figure 2: The average class performance in AST 111 Stellar Astronomy course during Fall 2016 and Spring 2017 semester. The average class performance in weekly Smartwork assignments (blue bar), the midterm (grey bar), and the final exam (orange bar) during the semester is compared in three sections – Fall 2016 Online Section, Fall 2016 Traditional Classroom Section, Spring 2017 Online Section.

V. DISCUSSION

The average class performance in Smartwork weekly online assignments was 3% higher in the online section than in the traditional classroom section of AST 111 Fall 2016. The online section was relatively more proactive than the traditional classroom section in submitting weekly homework assignments on time. The automated due dates set up in accessing the weekly homework assignments and penalties for failing to submit work on time could be a contributing factor to timely submissions. The traditional classroom section was keener on submitting in-class assignments completed during the recitation period in the computer lab.

The average class performance on the midterm was 19% higher in the online section than in the traditional classroom section. The higher performance could be the result of the open-book possibility in the online section. The online class was provided with relatively less time to attempt the midterm online to accommodate the possibility of open-book access by students during the exam. The exam, once started, had to be finished in one sitting within two hours in the online section. In comparison, the traditional classroom section took a closed-book midterm exam within 2 hours and 50 minutes. The 13% higher final exam performance of the online section than the traditional classroom section could also be due to the open book possibility during the exam. The final exam assessment in the online section shows that only 61% of students responded correctly to the mathematics equation-based question, and 48% answered correctly to the unit conversion question in the final exam (Table 1). On the other hand, the traditional classroom section was able to perform better in mathematics skills. The traditional classroom section received more in-person attention to practice mathematics skills during lecture time, which could be a contributing factor in this performance. The performance in mathematics skills in the online section did not meet the benchmark of 70% despite regular assignments, including practice in mathematical skills.

TABLE 1: AST 111 STELLAR ASTRONOMY COURSE ASSESSMENT IN FALL 2016

Course	AST 111 (Online Section)	AST 111 (Traditional Classroom Section)
Learning outcomes aligned with BCC's General Education Student Learning Outcomes	• Use of mathematics • Use of the scientific method • Use of reasoning and analysis	• Use of mathematics • Use of the scientific method • Use of reasoning and analysis
Assessment Vehicle	Final Exam in AST 111	Final Exam in AST 111
Benchmark	70 %	70%
Sample Size	16	21
Results	1. Use of mathematics: All three outputs: 57% • 61% mathematical equation • 48% mathematical unit conversion • 61% graphical information 2. Use of the scientific method: 65% 3. Reasoning and analysis: 70%	1. Use of mathematics: All three outputs: 68% • 71% mathematical equation • 90% mathematical unit conversion • 43% graphical information 2. Use of the scientific method: 67% 3. Reasoning and analysis: 76%
Interpretation of Results & Action Plan	1. Use of mathematics needs regular practice and improvement. 2. Use of the scientific method approaching benchmark. Continue to monitor the use of the scientific method. 3. Reasoning and analysis meeting benchmark.	1. Improved result in deducing information from the math equation but deducing information from the graph needs help. 2. Use of the scientific method approaching benchmark. Continue to monitor the use of the scientific method. 3. Reasoning and analysis meeting benchmark.

The online section performed 18% better in deducing information from graphs. The relatively higher use of digital course materials such as Astro simulations, Astro tours, and other online study aids for conceptual understanding of astronomy could have contributed to this higher performance. The traditional classroom section, on the other hand, relied more on textbook reading and lecture time to develop their conceptual understanding. The use of the scientific

method in developing conceptual understanding approached the benchmark in both the online and traditional classroom sections. This area needs to be further monitored to improve the outcomes of the astronomy course. The reasoning and analysis successfully met the 70% benchmark in this course.

TABLE 2: STUDENT EVALUATIONS IN AST 111 STELLAR ASTRONOMY FALL 2016 ONLINE CLASS SECTION ON A 4-POINT SCALE WITH 1=LOWEST AND 4= HIGHEST.

Item	Question	Survey count	Section mean	Course mean
1	Course requirements were clearly stated in the course outlines/syllabus.	13	3.8	3.6
2	The instructor encouraged students to ask the questions.	13	3.8	3.6
3	The instructor used appropriate examples to get points across in class.	13	3.8	3.6
4	The instructor encouraged class participation.	12	3.8	3.6
5	The instructor stimulated the intellectual curiosity	12	3.9	3.6
6	The instructor's explanations were clear	13	3.9	3.5
7	The instructor followed his/her stated outline/syllabus	13	3.8	3.7
8	The instructor gave tests and quizzes that covered material assigned/presented in the course	13	3.9	3.7
9	The instructor's methods of evaluating my work were explained clearly.	13	3.9	3.6
10	The instructor reviewed exams and assignments with comments so that learning was reinforced	12	3.8	3.5
11	The instructor made my responsibility for success in this class clear to me	13	3.8	3.6
12	My overall impression of the instruction offered in this section is satisfactory	13	3.9	3.6

Student Evaluations in the Course/Faculty Report

Student ratings of instruction are widely used in universities to measure teaching effectiveness (Dresel & Rindermann, 2011). Table 2 highlights some of the students' responses in the course/faculty report administered by BCC-CUNY at the end of the Fall 2016 semester. The

course/faculty report provides data on a 4-point scale with 1=lowest and 4=highest. Table 3 highlights some of the students' comments related to enhanced student learning experiences in the course/faculty report of the Fall 2016 online section.

VI. CONCLUSION

Online learning in higher education is an important alternative to traditional classroom learning and provides students with potential savings in costs and time. The availability of an online learning environment for a core science course requirement offers many advantages for students, especially working students, to enhance their science learning experiences. The use of ubiquitous technologies to improve knowledge and skills is imperative in the digital age of the 21st century. The assessment of this astronomy course showed that students performed as well in an online section as they did in a traditional classroom section, and that online pedagogical elements could be integrated into the traditional classroom section. It is important that colleges recognize the potential of online learning for requisite core courses as an integral part of colleges' functions and mission in providing access to enhance students learning experiences and improve course outcomes.

TABLE 3: SOME OF THE STUDENT COMMENTS FROM COURSE/FACULTY REPORT OF FALL 2016 AST 111 STELLAR ASTRONOMY ONLINE SECTION

Student Comments from Course/Faculty Report of Fall 2016 AST 111 Stellar Astronomy Online Section
The online course was excellent, very self-explanatory and the communication from the instructor was great and useful.
Smart Work is a great way for me to learn. I am more of a visual learner so the videos are extremely helpful. I understand Astronomy better online than in class.
I really enjoyed this online class. It has allowed me to become comfortable working with computer. I would recommend this class to others.
I was scared in the beginning but after a while getting the hang of it being able to work on my own time frame is amazing.

VII. FUTURE OUTLOOK

Students' performance in one of the core competencies – mathematical skills – did not meet the benchmark despite regular assignments that included practice in mathematics skills. Innovative strategies must be included in practice to improve students' performance in mathematics. Norton's "At Play in the Cosmos" video game for Introductory Astronomy is one such hands-on activity that may be utilized in upcoming semesters. A lesson plan based on quantitative reasoning and involving unit conversion in mathematics could be infused into this course at the beginning of the semester. The assessment of student performance in the lesson plan will help set the pace of numerical efficiency and mathematics skills for the rest of the semester.

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Promoting Academic Success through Resilience and Hardiness

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Promoting Academic Success through Resilience and Hardiness

There is no doubt that life itself is ever-changing. In fact, we are changing from the minute we are conceived. Some of this is part of our natural maturation process – or the unfolding of developmental changes across our lifespan. Life events and situations can also force us to change and, at times, can be stressful. Researchers have identified characteristics related to our personality that indicate how well we adapt – or don't – to these changes. Studies on resiliency and hardiness (Bonnano, 2004; Maddi, 2002) have shown that those individuals high in resilience or hardiness are better equipped to handle this stress. Furthermore, some individuals have been shown to thrive under stressful circumstances.

College life includes academic, financial, and social demands which can place excessive stress on students. Some students may lack the coping or problem solving skills necessary to meet these new demands. Students who have a hard time coping may be at risk for academic failure and drop-out. According to Fentress & Collopy (2011), one contributing factor can be a low academic self-efficacy (i.e., their perceptions of their own academic ability). They found that higher dropout rates of first generation college students may be linked to low academic self-efficacy, whereas high self-efficacy may be linked to high retention and resiliency. Maddi (2002) also found that academic success was related to a construct he called hardiness.

Academic Performance

Research has found a relationship between academic success and hardiness (Sheard & Golby, 2007), academic success and resiliency (Fentress & Collopy, 2011), and academic success and other personality factors (Wagerman & Funder, 2007). Essentially, these studies have identified two contributing factors: self-efficacy and personality.

If academic self-efficacy is low, this can inhibit student functioning because the student may not feel "smart" enough to ask the right questions in class, may not feel that he or she contributes enough to a study group, or may be reluctant to approach a professor for help. In contrast, students who are high in self-efficacy may be better able to identify their shortcomings and seek the appropriate help. It is believed that the latter student will be better off academically.

Personality factors can interact with self-efficacy to affect academic performance. Personality hardiness has emerged as one of those factors. Hardiness has been proposed as a pathway to resilience (Bonnano, 2004; Maddi, 2002). Hardiness involves not only resilience (maintaining your performance under stress) but includes thriving as well (i.e., using stressful circumstances to motivate or enhance performance). Thus, hardiness can stimulate our problem solving capabilities including seeking support from social or significant others.

Maddi also concluded that these hardiness skills could be learned at any point in life. This may be an important point to consider. If educators acknowledge that some of the students they interact with every day may lack the self-efficacy or the hardiness to successfully navigate college life, they may be able to offer the support and mentoring that these students need.

Demonstrating problem-solving, providing supportive social interactions, and offering experiential feedback can help students learn hardy attitudes (Maddi, 2002).

Student Retention

Financial strain can be one factor that influences student retention. In addition to academic performance, it appears that the use of problem solving strategies can be helpful in reducing the stress of financial strain experiences by college students. Students can perceive financial strain in various ways. Those who experience recurrent monetary concerns may find themselves unable to focus on their schoolwork. Others, however, may see financial stress as a motivating factor and propel them to graduate earlier or seek an academic major that is more marketable.

It turns out that "social capital" is another factor that may play a role in student retention. Portes (1998) defined social capital as consisting of one's social network and the knowledge and access that network provides. Sources of social capital such as peers, technology-based resources, and families all provide different types of social capital. However, the students' personalities influenced the use of this social support.

One study found that feeling respected by faculty and staff was an important factor effecting student retention (Fentress & Collopy, 2011). Furthermore, access to information provided by resident assistant, peers, and technology-based resources (i.e., internet, campus-wide emails) were equally important, especially for non-traditional students. Personality characteristics such as shyness and an insistence on doing everything oneself inhibited students' access to this information.

Suggestions for Educators

The factors for student success and retention are varied and interact with each other. Research suggests that as educators, we must be create academic environments that promote resiliency and hardiness. This includes promoting caring and supportive relationships, providing opportunities for participation, and offering access to technology-based resources and knowledge. The following are some specific suggestions:

1. Faculty and staff need to make students aware of the structure of the university, available programs and sources of support. Professors can offer face-to-face, paper, and technology-based resources.

2. A peer or faculty mentoring program can provide individualized support and assistance. Mentors can offer strategies to teach self-efficacy and hardiness.

3. Universities can train faculty and staff to be aware of the many factors influencing student success and retention.

4. Teaching strategies can include promoting general problem solving skills that can increase student development of transferable skills outside of the classroom.

5. Encouraging students to demonstrate creative problem solving challenges students and can motivate them to seek out additional resources (Judkins et al., 2005).

6. Faculty can encourage open communication with students. This has been shown to increase student confidence.

7. Student commitment and dedication (which significantly predicts academic achievement) can

be obtained by offering semester-long projects.

8. Semester-long projects can also help students embrace (rather than avoid) challenges and setbacks and can promote mastery over the subject matter.

9. Collaborative assignments can increase social behaviors. This has also been shown to increase student motivation (Sheard, 2009).

10. Team-building partnerships also help develop a sense of confidence and control over academic accomplishments and endeavors (Judkins et al. 2005).

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Article 1: An Outline Tutorial in Support of English Language Learners

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Article 2:
Características, preferencias e intereses de los estudiantes a distancia

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Article 3:
Desarrollo de competencias profesionales sobre simulación virtual en el profesorado de enfermería

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Article 4:
Efecto del aula invertida como estrategia didáctica en el rendimiento académico

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Article 4:

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Article 5:
Flourishing in a New Country

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Dr. Reynoso has worked at Bronx Community College of the City University of New York since 1996. During his tenure at Bronx Community College, he has served as Director of Counseling and as an Associate Professor in the General Counseling Department. Dr. Reynoso has experience teaching freshman seminars in the learning community program at Bronx Community College. Dr. Reynoso currently teaches a freshman seminar entitled, "Positive Psychology: Fostering Resiliency and Academic Achievement among College Students." Dr. Reynoso has extensive knowledge of Latino studies, research and teaching. He has infused Latino culture in his courses.

Dr. Reynoso developed and taught an experimental psychology course entitled, "Latino Psychology" at the City College of the City University of New York. Students found the course extremely beneficial. As a founding member of the Dominican Studies Institute at the City College, he has conducted research on the Dominican Diaspora. Dr. Reynoso recently deposited in the Dominican Studies Archives a collection of oral history interviews documenting the immigration experience of Dominican immigrants. He has published numerous articles on the immigration and resiliency of Dominicans in higher education. He has presented his research findings at numerous conferences both locally and internationally.

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Article 6:

Online Learning for Higher Education to Enhance Access, Student Experiences, and Course Outcomes

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Article 7:
Promoting Academic Success through Resilience and Hardiness

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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.