



UNIVERSIDAD DE QUINTANA ROO

División de Ciencias Políticas y Humanidades

ENGLISH – SPANISH TRANSLATION OF THE TEXT
CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY

TRABAJO MONOGRÁFICO

En la modalidad de traducción

Para obtener el grado de:

LICENCIADO EN LENGUA INGLESA

Presenta

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Chetumal Quintana Roo, julio de 2014.

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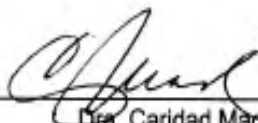


División de Ciencias Políticas y Humanidades


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ABSTRACT

The purpose of this project is to deliver to Spanish speakers an accurate translation of the text **CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY** containing the message the article portrays about the characteristics of this modern method and the impact it has had in the educational field on recent years. Even though the article is not focused on a specific learning environment, the translation of this text will help those who are interested in the language teaching field because it provides useful information regarding this latest learning theory that is based on the use of electronic technologies, e- learning materials, and the Internet in both teaching and learning areas. This project will be also useful for them because it includes a brief summary of the existing translation techniques set up by Vinay and Darbelnet (1958) as well as two important analyses based on the translation of the article. Those analyses consist of the description of the vocabulary problems encountered, the translation techniques used in the translation process and some examples of them.

INTRODUCTION

“Language is the expression of ideas by means of speech-sounds combined into words. Words are combined into sentences, this combination answering to that of ideas into thoughts.” Henry Sweet.

It was imperative to define firstly one of the most important aspects to us, human beings, that is also the basis of this project. Language has been there since we have the need to communicate among ourselves. Language then is extremely important around the world because it allows us to understand people and being understood by others. We are always surrounded by it due to the fact that wherever we go we have the need to express our feelings, concerns, necessities and emotions in some way.

According to the British Broadcasting Corporation it is estimated that up to 7,000 different languages are spoken around the world. It would be amazing to have the ability to speak and understand them all the same way we understand our native language because we would also have the key to an open door that would lead us to explore other civilization’s culture. Unfortunately that is not possible but that is when translation comes in. Peter Newmark defines the act of translating as transferring the meaning of a text from one language to another, taking care mainly of the functional relevant meaning. This project is about that process and the most important aspects that have to be taken into account to carry it out properly.

1.1 BACKGROUND

For this project the text **CONNECTIVISM: 21ST CENTURY’S NEW LEARNING THEORY** by Dorothy C. Kropf from the Walden University in The United States of America will be translated from English into Spanish. The text is about this new modern way of teaching and sharing knowledge not only from teacher to students but also from student to student and even by self-working. It is not a secret that technology and the Internet have become in recent years a powerful tool applied to academic education. During recent years new ways to implement technology in education have been developed in order to make it effective and productive for students. The article addresses this topic from a general perspective of learning and teaching strategies through connectivism. As the paper states the purpose of the article is to introduce or reacquaint readers with three of the largest reservoirs of information attributed to the principles of connectivism. In addition, it aims to examine these information reservoirs through modern empirical studies in order to determine if their findings carry sparks of likeness or alignment with the principles of connectivism.

1.2 RATIONALE

Throughout our academic journey as English Language students, our teachers and our own experience have been responsible for showing us that technology is an important piece in English teaching because by using it there is a greater retention of knowledge and the learning process becomes in some way easier and less tedious. Even though the article selected is not directly about connectivism applied in language it can be useful for those who are studying English Language because it is becoming increasingly difficult to keep the learners' attention through the classical and sometimes called old approaches. This translation will also help those who are not English speakers but want to labor in a teaching environment to understand and have more information about this innovative and nowadays necessary learning theory.

The reason I chose this text to translate is because it is a topic that concerns both parts of the academic life, the learning perspective and the teaching perspective. It is really important to me to have the opportunity to deliver such an important message like this to the students and teachers of the Masters in Education and even though this translation will be used or is mainly directed to them, other students and maybe other teachers interested on teaching/learning innovation can also have access to it. Personally, I believe that the process of translation depicts how much domain of the language you have, not only the second language but also the mother tongue because you have to manage a lot of aspects of both languages in order to deliver the same message the author wants to communicate to the audience.

OBJECTIVES

The main objective of this project is to deliver the same message the author wanted to depict in the text to Spanish speaker students and those who want to work in a teaching- learning environment as well as analyze and solve the translation problems encountered when translating the article. It is my objective and concern to do an accurate translation of this topic because I believe the more information people have about this topic the more prepared they will be to face the challenges academic life brings and will continue bringing in the future.

1.4 SIGNIFICANCE AND RELEVANCE OF THE RESEARCH PROJECT.

The importance of this topic lies on the fact that even though connectivism is a kind of new learning theory, using technology and the Internet is no longer an option for students, teachers or any kind of workers. For this reason it is important to deliver the information the text portrays to Spanish speakers because they have also the need to work and to be prepared for the already globalized present and the unknown future.

1.5 SCOPE OF THE RESEARCH PROJECT

I think this project would have a great scope because connectivism is everybody's concern. Nowadays people cannot live without technology and Internet, and it is increasing the number of people who are looking for new ways to learn and teach through this method. It is my objective to help, through the translation of the chosen article, the teachers and students of the Masters in Education of the University of Quintana Roo. Even though the article is not directed to a specific group of students or learners from a determined field, this project is mainly for those who want to innovate in the educational area.

LITERATURE REVIEW

In this section, the existing methods and translation techniques identified by some authors will be explained. Each one of them is followed by several examples in order to get a better understanding of the description.

Some authors like Vazquez Ayora (1977) and Vinay and Darbelnet (1958) set up that there are a group of translation techniques that can be applied and detected when translating from a language into another. It is important to have a vast knowledge of these procedures when translating because it may help us to avoid mistakes or misconceptions from the original text to the translated one.

ADAPTATION

Vinay and Darbelnet (1958) state that this translation technique is used to replace a cultural element from the original text to another that can be understood for the target culture. This process avoids misunderstandings so the delivered message may carry ambiguity.

English

Yours faithfully

Spanish

Atentamente

TRANSPOSITION

This process consists of changing the grammatical category of a word or message for another without changing the correct meaning of the original message. This process avoids literal translation and opens the door for the oblique face of translation. Transposition changes the stylistic of the text and makes it more natural to the target audience.

English

Before he comes back (verb)

Spanish

Antes de su regreso (noun)

MODULATION

Modulation is a variation of the form of the message, obtained by a change in the point of view. This process challenges the imagination, sensibility, expressive power and the translator's ingeniousness.

Modulation varieties according to Vazquez Ayora (1977)

- The abstract for the concrete or the general for particular

Me pidió identificación / Asked to see my papers

- The cause for the effect, the means for the result, the substance for the object:

Blind flying / pilotaje sin visibilidad.

- A part for all: Vote / votación.
- A part for another: To brush shoulders / codearse.
- Reversal of changes or the point of view:

I took the job from my friend / mi amigo me cedió el trabajo.

- The negative contrary: Don't get so excited / tranquilízate.
- Change of form, aspect and use: The size of the vote / la cantidad de votos.
- Comparison change or symbol: snail pace / paso de tortuga.

CALQUE

It is a special kind of borrowing in which the translator borrows a word or phrase from another language while translating its components so as to create a new lexeme in the target language.

English	Spanish
Skyscraper	Rascacielos

BORROWING

It consists of using a word or expression from the original text on the translated one. The word is clearly understood in both languages.

English: He is a gay man

Spanish: El es gay.

LITERAL TRANSLATION

This is the easiest process of all in translation. This happens when there is a full correspondence of structure and meaning among the two languages. Literal translation is also known as word for word translation.

English: Principal access.

Spanish: Entrada principal.

EQUIVALENCE

Equivalence is an extreme case of modulation. It is the correspondence in meaning from a word in a determined language and another. It can be also said that the equivalence is a modulation that is lexicalized: idioms, figures of speech, idioms, proverbs, sayings, phrases and all kinds of unified groups.

- To pull somebody's leg / tomar el pelo a alguien.

AMPLIFICATION/ ADDITION

Also known as contraction, this process is about adding more information to the translated text because there are some ambiguities that need more explanation in order to be completely understood.

- Adverb: To speak aloud / hablar en voz alta.

- Verb: To endanger / poner en peligro.

- Prepositions: The night express for Birmingham / El expreso nocturno con destino a Birmingham.

COMPENSATION

This technique is used by translators when they cannot find a natural and accurate equivalence. What can be lost in a part of the text can be recovered in other. The technique uses expansion and reduction to adjust the text.

English: The atmosphere in the big gambling room had changed. It was now much quieter.

Spanish: El ambiente había cambiado por completo en la gran sala de juego que ahora se encontraba más tranquila.

OMISSION

This is the opposite of expansion. It is an elimination technique that helps us to avoid pleonasm, lack of a natural translation, and repetitions. The objective of this technique is to create a more concise and stylized translation.

The high school class of 1969

La clase de secundaria del 69 (shortening of "1969")

According to Sofer Morry (2006) there are some aspects that have to be taken into account before, during, and after translating. He mentioned some aspects in The Translator's Handbook (2006) that may be very useful for translators because those aspects go from the little but very important aspects to those who are obvious and easily distinguished. These aspects are important to the translator because by following them he can avoid translation issues.

Omissions: To check if the author failed to translate a particular word, phrase or even a paragraph.

Format: To check if the format follows the original text (breaking into paragraphs).

Mistranslations: To check if a word was mistranslated.

Unknown words: To check if the words the translator was not able to translate were explored further.

Meaning: To check if the translator missed the meaning of any phrase or sentence.

Spelling: To check if any word was misspelled.

Grammar: To check if grammatical mistakes were made.

Punctuation: To check if the author mispunctuates or misses any punctuation mark.

Clarity: To check if there were failures in conveying the meaning of any particular part of the text.

Consistency: To check if we call something with different names for no good reason.

“Sound alike” words: To check if there were false cognates used.

Style: To check if the translated text sounds as the original one (for example, the original is written in a clear, direct style, while the translation sounds more complex and indirect?).

As the author mentioned, this list may seem exhaustive but these aspects must be taken into account in order to create an accurate translation.

METHODOLOGY

The text **CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY** by Dorothy C. Kropf is, as the name denotes, a wide description of this modern and increasingly used learning theory that involves the use of technology and the Internet in the everyday learning and teaching process. The author is part of the Walden University in Minneapolis, United States of America. The main purpose of the article is to introduce or reacquaint readers with three of the largest reservoirs of information attributed to the principles of connectivism. In addition, it aims to examine these information reservoirs through modern empirical studies in order to determine if their findings carry sparks of likeness or alignment with the principles of connectivism. The text also contains information about connectivism as a neutral approach, this means, it is not focused on a specific field but it incorporates the main aspects of its method and portrays directly this learning theory as a good option for those who are or want to develop their skills on the teaching field.

In order to create an accurate translation, several printed and online dictionaries that have been helping me during these five years of my major will be used.

Oxford English Dictionary: This is an English printed monolingual dictionary focused on giving the description of the world only in English. It also contains some examples that make the description more clear for those who are English learners. This dictionary will be used in order to have a clear idea of what the original article is about because the message has to be completely understood in the original language before doing the translation in the target language. Looking for English descriptions may avoid future mistakes on the clarity and sense of the translation.

Wordreference: This online dictionary is based on the Collins Concise English Dictionary. It has on its data more than 120,000 words and phrases. This dictionary has helped me to look for idioms and the grammatical category of words; it also offers the word formation of the words that are being consulted as well as the phonetic translation of those words.

Google translator: This is an automatic translation system provided by Google Inc. Even though this system does not offer grammatical rules or precise translations when it is a large text, it is a good tool when the translator is not sure about the meaning of a word or when looking for synonyms. In my opinion this translator should be used only for those who have at least an intermediate level of English because, as I mentioned before, it has a lot of drawbacks and the translator has to find out which information is useful and which one is not. For those who are on the

first step of learning English it is not a reliable tool. I will use it because it eases and reduces the time of translation.

Dictionary.com: It is an online dictionary that provides several examples of the search word besides giving an English description of it. It is similar to WordReference but this tool offers a lot of examples in different contexts which will ease the understanding of the original text.

Linguee: Linguee is a unique translation tool which is divided into two parts; the first one shows the word the translation is looking for in several contexts and the second one is the translation of those statements. It is very useful because it provides the context and in this way the translator will know which word he can use in order to make an accurate translation.

The steps that are going to be followed in order to translate the text **CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY** are the following. First, the original text has to be read so I will have a clear idea of what the text is about. Second, I will look for more information about the topic in English and Spanish in order to gain knowledge about it and that will also help me to define unknown words by context. Then, I will skim the text to find unknown words and its possible meaning. Fourth, I will start the translation with the help of the online and printed dictionaries I mentioned before. Fifth, I will check the aspects that Sofer Morry mentioned on The Translator's handbook (2006) so I will correct the mistakes made. Next, I will read and compare the original and the translated text to notice if they have the same sense. Then, I will give the translated text to the person who gave me the translation so he will read it and give me the proper feedback. Finally, I will correct the mistakes.

CONECTIVISMO: NUEVA TEORÍA DE APRENDIZAJE DEL SIGLO 21

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Resumen

El Internet, al transformarse en un amplio entorno colaborativo de aprendizaje, está compuesto por repositorios de información, es decir: (a) aulas en línea, (b) redes sociales, y (c) comunidades de realidad virtual o simulada, las cuales tienen el propósito de crear, reproducir, compartir, y entregar información en las manos de educadores y estudiantes de manera pronta y eficaz. Principalmente, el Internet se ha convertido en un punto focal para una posible teoría de aprendizaje moderna y dinámica llamada conectivismo. Como cualquier otra teoría educativa, el conectivismo tiene tanto defensores como detractores, y a diferencia de otras teorías de aprendizaje, el conectivismo atribuye el aprendizaje a los nodos cibernéticos (puntos de concentración y distribución de información) que se originan específicamente en las redes sociales. El propósito de este artículo es dar a conocer o volver a familiarizar a los lectores con tres de los más grandes repositorios de información atribuidos a los principios del conectivismo; además tiene como objetivo examinar dichos repositorios a través de modernos estudios empíricos para determinar si los resultados de estos estudios son semejantes o se alinean a los principios del conectivismo.

Palabras clave: Conectivismo, aprendizaje electrónico, bases de datos, teoría de aprendizaje.

INTRODUCCIÓN

Siemens (2008) sugiere que el aprendizaje moderno se lleva a cabo a través de conexiones de red cuando las personas comparten sus intereses, conocimientos, perspectivas, experiencias, y opiniones en entornos de aprendizaje virtuales o en línea (Dunaway, 2011). Las tecnologías de Internet, que incluyen bases de datos y herramientas de búsqueda, son capaces de almacenar cientos de blogs, artículos periodísticos, pasajes de libros, artículos científicos, video clips, y podcasts (archivos de audio que pueden ser descargados). De acuerdo con (Siemens, 2008), el conectivismo es una teoría de aprendizaje que se compone de diferentes series de nodos para conectar cientos de redes con el fin de facilitar el aprendizaje sincrónico y asincrónico (Dunaway, 2011). Estas conexiones les proporcionan a los individuos acceso directo a información confiable

desde millones de fuentes para duplicar, reproducir, y compartir dentro de sus redes sociales, así como para eliminar, criticar y descartar aquella información irrelevante, imprecisa y no confiable.

Las conexiones de red contienen vías de información que fluyen constantemente con datos fundamentados incluyendo hallazgos empíricos de artículos revisados por expertos así como información subjetiva de blogs o sitios web personales (Siemens, 2008). Uno de los principios del conectivismo es cómo las habilidades de pensamiento de orden superior (analizar, evaluar, crear, aplicar, entender y recordar) se activan cuando los individuos pueden distinguir cuál de la diversa y abundante información disponible en línea es confiable y sustentada (Siemens, 2008). Este principio del conectivismo concuerda con la definición del Centro por el Progreso en Aprendizaje y Evaluación (CALA por sus siglas en inglés) que describe las habilidades de pensamiento de orden superior como habilidades alcanzadas por individuos que trabajan en ambientes que facilitan “la persistencia, el auto control, la mente abierta, y las actitudes flexibles” (King, Goodson y Rohani, 2009, p.1).

Hoy en día los estudiantes se encargan de elaborar su propio aprendizaje (Nussbaum-Bech y Hall, 2012, p.11). Una vez que los estudiantes adquieren información de una serie de nodos, el conectivismo describe el aprendizaje como una oportunidad informal que transforma a los individuos en nodos mismos, igualmente capaces de compartir su conocimiento y experiencia con otros individuos (Sangra y Weeler, 2013). Este principio es similar a las bases del constructivismo en las que la interacción cultural y social se convierte en un mecanismo desencadenante para el aprendizaje (Driscoll, 2005). El constructivismo sostiene que los individuos aprenden a través de mediadores como padres, instructores, compañeros, o incluso aplicaciones computacionales (Wertsch, 2008). Los individuos, de acuerdo con el punto de vista constructivista, aprenden de estos mediadores de la misma manera en que las personas, de acuerdo al conectivismo, aprenden de distintas series de nodos. Otra teoría clásica del aprendizaje igualmente efectiva en la transformación de individuos es el conductismo (Driscoll, 2005). Los individuos, de acuerdo a teóricos conductistas como Skinner y Thorndike, pueden cambiar o transformar su conducta a través de estímulos como lo son el castigo y la gratificación (Gould, 2008). En el caos diario de abundante información, las herramientas colaborativas en línea pueden transformar a los aprendices en individuos que son capaces de controlar su tiempo y en consecuencia, organizar sus tareas (Couros, 2009; García, Brown y Elbetagi, 2012, p.165).

La transformación más radical ocurre en la educación superior (Hogg y Lomicky, 2012). La transformación de las instituciones de educación superior, de proveedores principales de educación tradicional de prestigio a facilitadores de entornos virtuales e informales de aprendizaje sorprendió a numerosas organizaciones de investigación, incluyendo al Centro de Investigaciones Pew (Hogg & Lomicky, 2012). En el año 2002, El Centro de Investigaciones Pew señaló que a pesar de la popularidad de los cursos masivos abiertos en línea (MOOC por sus siglas en inglés),

los estudiantes universitarios prefieren sus cursos tradicionales (Hogg y Lomicky, 2012). Contrario a esta predicción, en el 2010 seis millones de estudiantes se inscribieron a clases en línea. En el 2011, el treinta y tres por ciento de los estudiantes universitarios en aulas tradicionales tomaron al menos un curso en línea (Allen y Seaman, 2011 como se cita en Hogg y Lomicky, 2012). En consecuencia, algunos de los planes estratégicos que las instituciones de educación superior han emprendido son la creación de más módulos de aprendizaje y ofertas de cursos masivos abiertos en línea (Hogg y Lomicky, 2012).

Es evidente que el aprendizaje se realiza a través de procesos internos en la teoría clásica cognitiva (Discroll, 2005). De acuerdo a Piaget y otros teóricos cognitivistas, los individuos aprenden a través de procesos internos como “intuición, procesamiento de información, percepciones, y memoria” (Gould, 2008, p.2). Los principios del cognitivismo permiten a los individuos entender lecciones abstractas y darle sentido al mundo alrededor de ellos (Gould, 2008). En el cognitivismo, los individuos adquieren el conocimiento a través de ejercicios de reflexión tales como la escritura de diarios.

Reid (2003) llevó a cabo un estudio para profesionales de la salud sobre la conciencia plena. La conciencia plena, una habilidad importante para los profesionales del cuidado de la salud, implica “cultivar la conciencia del momento presente” (Brown y Ryan, 2003; Kabat-Zinn, 2005; Shapiro, Carlson, Astin, y Freedman, 2006 como se citó en Reid, 2013). “Se distribuyeron módulos de contenido de grabaciones de meditaciones guiadas” (Reid, 2013, p.44. Este curso de conciencia plena fue el primero en su tipo para todos los participantes que admitían sentirse nerviosos y escépticos. Al final del estudio, los participantes afirmaron que los materiales electrónicos de aprendizaje descargables y los artículos en línea los ayudaron a incrementar su conocimiento sobre la conciencia. El curso en línea ayudó a los estudiantes a aprender diversas técnicas de meditación y respiración, además de enseñarles a controlar su propio bienestar y ayudarlos a alcanzar habilidades de pensamiento de orden superior que, de acuerdo con King, Goodson y Rohanni pueden ser desencadenadas cuando los estudiantes se enfrentan a nuevas problemáticas e incertidumbres. El conectivismo expone cómo los individuos usan sus procesos internos para activar el aprendizaje a través de una serie de nodos originados por el instructor. Ser conscientes es un proceso interno único, que puede generar aprendizaje instintivo y reflexión.

El aprendizaje y las teorías de enseñanza.

Los críticos del conectivismo como teoría de aprendizaje, incluyendo a Bell (2010), se refieren al conectivismo como una teoría de enseñanza, no de aprendizaje. Una teoría de enseñanza es un marco conceptual basado en hallazgos empíricos y fundamentado en las teorías de aprendizaje, el

cual recomienda el diseño de materiales de aprendizaje, recursos, o situaciones para ayudar a los estudiantes a alcanzar sus resultados y maximizar su potencial de aprendizaje. Los individuos aprenden a través de estrategias de enseñanza elaboradas por los maestros, con el objetivo de “motivar a los estudiantes a aprender y a pensar a niveles más altos” (King, Goodson y Rohani, 2009, p.43). Aprender es la adquisición del conocimiento y las teorías del aprendizaje explican como aprenden los individuos (Discroll, 2005). La evidencia primordial de aprendizaje es el cambio en el desempeño de un individuo (Driscoll, 2005, Gould, 2008).

PRINCIPALES REPOSITORIOS DE INFORMACIÓN DEL SIGLO VEINTIUNO

¿Usar? ¿Guardar? ¿Borrar?

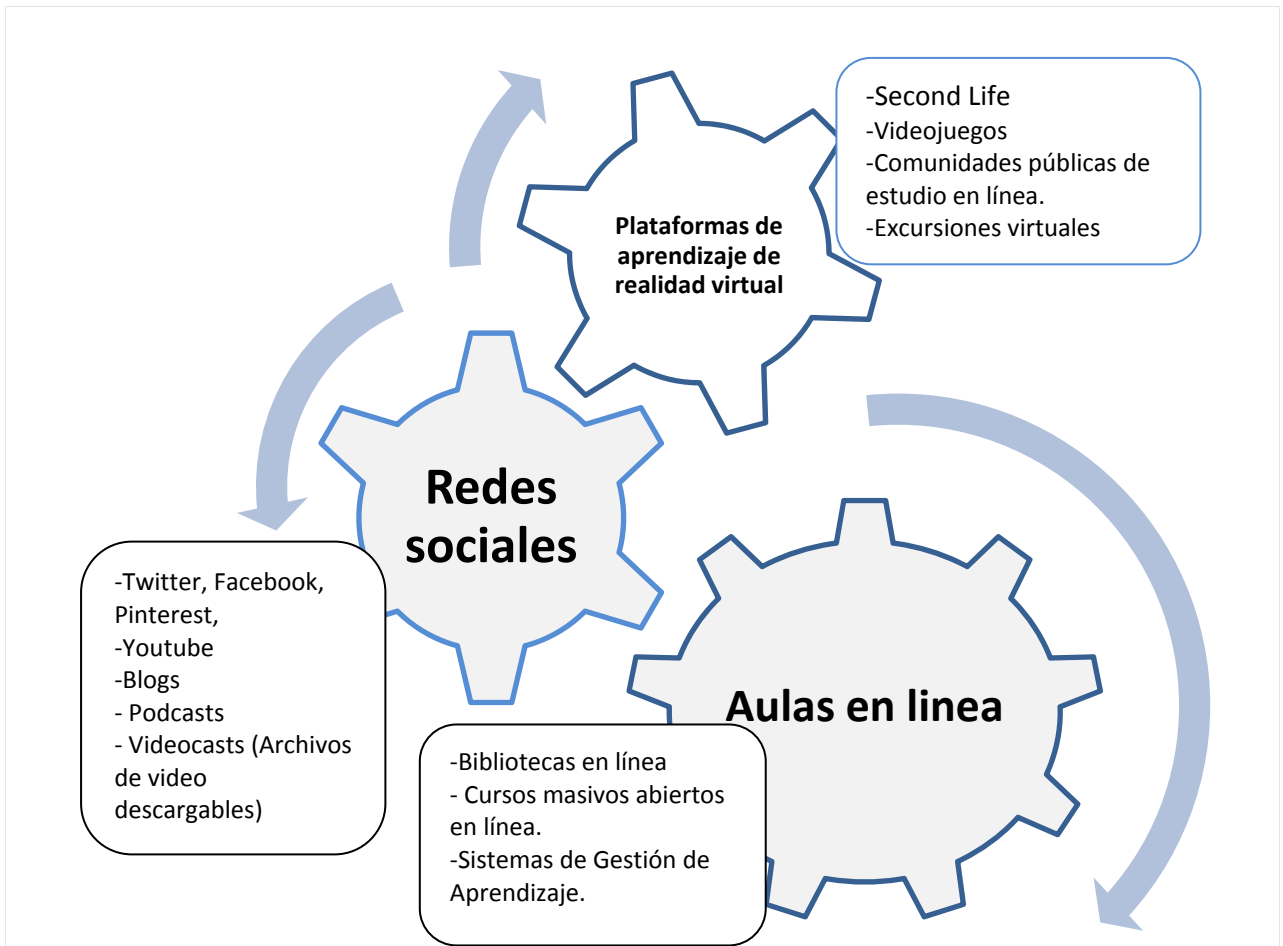


Figura 1.

De acuerdo con los principios del conectivismo, los individuos adquieren información a través de modernos repositorios informativos. Actualmente existen tres repositorios importantes de donde los individuos pueden obtener información: (a) aulas en la red, incluyendo cursos masivos abiertos en línea (MOOC), (b) redes sociales incluyendo podcasts y video clips, y (c) plataformas de realidad virtual, incluyendo 'Second Life' y videojuegos tridimensionales. El artículo examina distintos estudios en los que los investigadores realizaron hipótesis sobre los cambios en el desempeño de los participantes al usar alguno de los principales repositorios de información.

Cursos en línea

El aprendizaje en esta era digital consiste en cursos en línea distribuidos de manera sincrónica y asincrónica. La oferta de cursos masivos abiertos en línea (MOOC) se incrementa a medida que cientos de aprendices de distintas asignaturas disfrutan de la comodidad y rentabilidad que estos ofrecen. Varios institutos y universidades ofrecen cursos en línea para atraer más estudiantes. Sin embargo hay investigadores que continúan supervisando los efectos perjudiciales de estos movimientos de cursos en línea (Salas, 2013).

Estudiantes de ingeniería de Malasia

Como muchos de sus homólogos europeos y asiáticos, el gobierno de Malasia enfatiza la importancia de producir estudiantes graduados de educación superior que sean independientes, y que estén, además de tecnológicamente bien informados, preparados para competir contra el resto del mundo (Subramaniam, Nordin y Krishnan, 2013). Investigadores llevaron a cabo un estudio sobre la disposición y las necesidades de los estudiantes malasios de ingeniería en los cursos en línea impulsado por el anuncio del gobierno malasio de que el 50 por ciento de los materiales de aprendizaje de la nación deberían incluir contenido electrónico para el 2015 (Subramaniam, Nordin y Krishnan, 2013). Cuarenta y seis estudiantes de ingeniería participaron en el estudio; todos con una amplia experiencia en plataformas de Sistema de Gestión del Aprendizaje (LMS por sus siglas en inglés) similares a la plataforma Blackboard. Los estudiantes descargaron materiales de aprendizaje electrónicos incluyendo diapositivas de PowerPoint y se conectaron con sus amigos y profesores en línea (Subramaniam, Nordin y Krishnan, 2013).

Los resultados del estudio demostraron un cambio significativo en el desempeño de los estudiantes (Driscoll, 2005). Cerca del 90 por ciento se consideran especialistas en conocimientos técnicos y de estos casi un 50 por ciento admitió usar sus smart phones para navegar en la red (Subramaniam, Nordin y Krishnan, 2013). Ochenta y siete por ciento de los estudiantes prefirió tener acceso a más material de aprendizaje en línea, y arriba del setenta por ciento afirmó que los cursos en línea aumentaron significativamente sus conocimientos (Subramaniam, Nordin y Krishnan, 2012). Por último, estos se sintieron seguros y preparados para tomar sus cursos de ingeniería en línea (Subramaniam, Nordin y Krishnan, 2013); las habilidades de pensamiento de orden superior se desarrollaron hasta que los estudiantes aprendieron cómo trabajar de forma autónoma (King, Goodson, Rohani, 2009).

Los resultados no son nada sorprendentes debido a que los estudiantes de Malasia están acostumbrados al aprendizaje en línea. Una vez que los estudiantes han tomado cursos de ciencia tales como física a nivel universitario, biotecnología, e incluso psicoterapia en línea, su acceso al

contenido electrónico, a los debates y ejercicios en línea sigue activando sus habilidades de pensamiento de orden superior (Donnelly y Fitzmaurice, 2005; Poikela y col. 2007 como se citó en Subramaniam, Nordin y Krishnan, 2013, p.286).

Cursos en línea de salud pública ambiental

“En el 2007 se asociaron la Escuela de Salud Pública de la Universidad de Alabama en Birmingham, el Departamento de Salud de Jefferson County en Alabama, y los Centros nacionales para la salud ambiental conjuntamente con el Centro Para el Control de Enfermedades.” (McCormick y Pevear, 2013, p.52). El objetivo de esta alianza era el producir un “amplio paquete de cursos en línea para practicantes de la salud pública ambiental” (McCormick y Pevear, 2013, p.52). La iniciativa incluía cursos gratis utilizando la plataforma de Sistema de Gestión del Aprendizaje (LMS) operada por la “Asociación Central de Salud Pública del Sur para el Desarrollo de Fuerza Laboral” (McCormick y Pevear, 2013, p.52). La falta de mano de obra calificada y de materiales para capacitación y la escases de instructores en el 2007 dieron lugar a una serie de clases en línea llamadas “Cursos en línea de Salud Pública Ambiental (EPHOC por sus siglas en inglés)” (McCormick y Pevear, 2013, p.52). Datos generados de “355” encuestados (McCormick y Pevear, 2013, p.52).

El estudio indicó que el 73.73 por ciento de los encuestados estaban satisfechos con la serie de cursos en línea de salud pública ambiental. Cerca del 65 por ciento de los encuestados afirmó que dichos cursos incrementaron la posibilidad de conocer mejor sus trabajos. Cuando se les preguntó si la serie de cursos era relevante y estaba relacionada con su trabajo diario, el 51.06 por ciento calificó los cursos con 8 o mejor calificación, siendo 10 el más relevante. Los resultados del estudio indicaron cambios significativos en su desempeño laboral. Antes de tomar esta serie de cursos en línea, solo el 60.41 por ciento aprobó el examen para Especialista Certificado en Salud Ambiental (REHS por sus siglas en inglés). Sin embargo, después de tomar estos cursos, más del noventa por ciento de los estudiantes aprobó los exámenes.

La información temática en la serie de videoconferencias incluye “Salud General Ambiental, Protección Alimentaria, Materiales Peligrosos, y Calidad del Aire y Ruido Ambiental” (McCormick y Pevear, 2013, p.53). “Las aplicaciones de conocimiento procedimental que involucran análisis y síntesis de dos o más conceptos” se refieren a habilidades de pensamiento de orden superior” (King, Goodson y Rohani, 2009, p.12).

Redes sociales

Las redes sociales son nodos generadores de ideas (Kijkuit y Van Den Ende, 2007) y están basadas en el entendimiento mutuo, que es “la habilidad de entender y ampliar la base de conocimientos en cada uno” (Kijkuit y Van Den Ende, 2007, p863). Los negocios y las instituciones educativas utilizan las redes sociales en sus esfuerzos de comercialización, particularmente en sus procesos de creación de marcas. Los esfuerzos de comercialización de una organización se basan en campañas de anuncios tradicionales y campañas en redes sociales. Su presencia constante en la web es crucial para mantener un conjunto de posibles clientes.

Remix World

“Remix World, una red social educativa, funciona como un componente interactivo en línea para la Red Digital Joven en Chicago, Illinois” (Zywica, Richerds y Gomez, 2011, p.33). El estudio Remix World necesitó que estudiantes de sexto a doceavo grado se unieran al sistema al crear sus perfiles (Zywica, Richerds, y Gomez, 2011). El propósito del estudio era analizar el uso de redes de aprendizaje en la comunidad educativa y su capacidad de generar la colaboración entre los estudiantes (Zywica, Richerds y Gomez, 2011). La hipótesis de los investigadores fue que la red comunitaria para los estudiantes aumentaría su creatividad y los ayudaría con la adquisición de conocimientos. En el espacio web previsto para ellos, los estudiantes se comunicaron con sus amigos, maestros, y otros miembros de sus comunidades. Ellos podían agregar comentarios y otros materiales que hayan creado o encontrado en Internet. El estudio señaló que había 252 usuarios registrados en Remix World con 4883 visitas, y un promedio de 31.3 visitas por día. Existían 1965 fotos, 355 videos, 222 blogs, y 3800 comentarios en los debates compartidos entre la comunidad (Zywica, Richerds y Gomez, 2011).

Se les dio flexibilidad a los maestros para incorporar su curriculum a Remix World y de esta manera tanto mentores como maestros visitaron las páginas personales de los estudiantes, lo que les daba más oportunidades de darles retroalimentación. Remix World demostró que su sistema impulsado con contenido de red social creó un sentimiento de comunidad para los estudiantes, mentores y maestros. Actividades colaborativas como “debates estudiantiles, tutorías entre compañeros y aprendizaje cooperativo son efectivas en el desarrollo de las habilidades de pensamiento” (King, Goodson y Rohani, 2009, p.2). Por otro lado, las habilidades creativas como pensamiento divergente y convergente producen nuevas ideas (Crow y col., 1997 como está citado en King, Goodson y Rohani, 2009, p.13) además de ser desencadenantes de habilidades de pensamiento de orden superior.

Sitio NING

Peck llevó a cabo un estudio en la Universidad Nacuarie de Australia, usando el sitio NING; sitio web de redes sociales. Su hipótesis fue que dicho sitio podía motivar a los estudiantes a interactuar, hacerlos participar en conferencias de clase, leer tutoriales, incrementar la confianza en sí mismos, y mejorar su educación social (Peck, 2012). Participaron cincuenta estudiantes de Lingüística, de edades entre los 18 a 23 años. Veinte de estos participantes eran estudiantes de diversas partes del mundo como China, Corea, y Japón; los estudiantes locales tenían distintas etnias: británicos, griegos, asiáticos, polacos, y libaneses (Peck, 2012). El estudio señaló que para el final del primer semestre, el sitio NING tenía 61 blogs y 52 comentarios en los foros.

Los maestros seleccionaron un tema para promover los debates mientras que los estudiantes añadían comentarios en estas discusiones. Los estudiantes ciertamente sintieron que pertenecían a una comunidad cultural (Peck, 2012). Peck (2012) observó que los estudiantes que más publicaban en línea eran los que normalmente eran introvertidos en las aulas. Usar un blog requiere de educación social con la cual no están familiarizados muchos estudiantes. Sin embargo el estudio produjo amistades y los estudiantes estaban menos escépticos sobre el mismo. Vigotsky, teórico en aprendizaje social, notó que la interacción social con compañeros, maestros y padres contribuye al desarrollo cognitivo y del aprendizaje (King, Goodson, y Rohani, 2009, p.13).

Estudio de podcast para estudiantes de enfermería

Vogt, Schaffner, Rivar y Chavez (2010) plantearon como hipótesis que los estudiantes que recibieran conferencias a través de podcast obtendrían resultados más altos en sus exámenes comparados con aquellos que recibieron estas conferencias en clase. Los investigadores también manejaron la hipótesis de que los estudiantes preferirían las conferencias en línea sobre las conferencias en el salón (Vogt, Schaffner, Rivar y Chavez, 2010). Los investigadores llevaron a cabo un estudio con 63 estudiantes de enfermería de los años 2007 al 2008, que tomaron conferencias en el salón y 57 estudiantes que las tomaron en línea. El primer examen incluía temas sobre el fomento de la salud, el segundo examen sobre crecimiento y desarrollo, y el tercero fue inmunización (Vogt, Schaffner, Rivar y Chavez, 2010, p.40). Los resultados del estudio no marcaron diferencias significativas entre ambos grupos de estudiantes en el primer examen. Sin embargo, hubo un incremento en los resultados del segundo examen por parte de los estudiantes que tomaron conferencias en línea sobre los que lo hicieron en el aula. En cuanto al tercer examen, los estudiantes que tomaron conferencias en línea tuvieron peores resultados que el otro grupo. En conclusión, solo el 44% prefirió tomar conferencias en línea, la mayoría optó por las conferencias en el salón.

De acuerdo con Vogt y col. (2010) los estudiantes no estaban familiarizados con la tecnología de podcast, y por lo tanto, prefirieron sus conferencias tradicionales en el aula. Debido a que el estudio se realizó en el periodo del año 2007 al 2008, el autor recomienda realizar más estudios usando podcasts y videocasts (audios y video clips reproducidos simultáneamente) para dar conferencias. Sin embargo, el estudio falló en arrojar cambios en los resultados de los exámenes y generó percepciones negativas de los estudiantes hacia las conferencias a través de podcast.

Podcasts para estudiantes de biología general

White (2009) ha estado impartiendo lecciones de Biología General a estudiantes universitarios desde 2005. Comúnmente tiene entre 150 a 200 estudiantes inscritos en sus clases de biología. Desde el año 2005, ha realizado 39 conferencias en línea, permitiéndoles a los estudiantes escuchar sus podcasts para incrementar su adquisición del conocimiento. El registro del investigador indicó que 1333 archivos de audio de conferencias fueron descargados desde 288 diferentes direcciones IP (Protocolo de Internet). Durante las semanas 1, 2 y 3 anteriores a los exámenes hubo un 76%, un 70%, y un 98% de descargas respectivamente. Para la fecha del examen final, el 100% de los estudiantes había descargado sus redifusiones multimedia. De acuerdo con White (2009) muchos educadores temen que las conferencias en línea mantendrán alejados a los estudiantes de asistir a clase. Sin embargo, en este estudio, los datos no indicaron una diferencia significativa en la asistencia de los alumnos. Este “control ejecutivo de la conducta” también conocido como metacognición, donde “las actitudes, el compromiso, y la atención” es demostrado por individuos considerados como pensadores de alto nivel (King, Goodson y Rohani, 2009, p.22). El estudio demostró cambios consistentes en la participación y desempeño de los estudiantes.

Plataformas de aprendizaje virtual

En el mundo virtual, un “entorno de aprendizaje en la red se transforma en un espacio compartido de aprendizaje en tercera dimensión en el que los aprendices se identifican con avatares y los avatares identifican a los estudiantes (Lin, Chou y Kuo, 2007, p.100 y 101). Las plataformas de aprendizaje virtual estimulan la creatividad de los estudiantes y los educadores y también la colaboración virtual a través de actividades que permiten a los avatares hablar, caminar, moverse, y también señalar objetos para crear fuertes interacciones sociales e intelectuales (Lin, Chou y Kuo, 2007, p.100).

Manual en chino para Second Life

En este estudio, los investigadores, también maestros de idiomas, utilizaron la plataforma virtual Second Life (SL) para mejorar la adquisición del conocimiento. El estudio que se llevo a cabo en China, requirió que estudiantes de ese país utilizaran Second Life para la creación de un manual en su idioma (chino) para el uso de esta plataforma (Wang y Shao, 2012, p.15). El estudio demostró que la plataforma les dio a los estudiantes “tareas efectivas de aprendizaje de lenguaje” (Wang y Shao, 2012, p.15). También se demostraron habilidades en distintas áreas, incluyendo habilidades lingüístico-verbales donde los participantes eran capaces de distinguir significados y orden de palabras correctos (King, Goodson y Rohani, 2009, p.29). La actividad también desencadenó la creatividad a la vez que los participantes aprendían a “usar principios básicos o reglas en esta nueva situación” a la vez que trataban de “acomodar las piezas para hacer un sistema que integrara nueva información con lo que ya un individuo sabe” (Sternberg y Davidson, 1995; Crowl y col. 1997 como se citó en King, Goodson y Rohani, 2009, p.14)

Estudiantes de la Maestría en Administración de Negocios y la plataforma virtual Second Life

En el estudio de Schiller (2009), los estudiantes de la Maestría en Administración de Negocios especializados en sistemas de información, participaron en un proyecto utilizando Second Life para mejorar sus experiencias en cuanto a comercio y para perfeccionar sus esfuerzos en cuanto al trabajo grupal. A través de ensayos reflexivos y charlas en línea, el estudio indicó que los estudiantes percibieron el proyecto de Second Life como aplicable al contenido de sus cursos (Schiller, 2009). Los estudiantes disfrutaron esta clase y describieron el proyecto como divertido y atractivo. Es importante mencionar que “el tono emocional de una persona resolviendo problemas” afecta las percepciones (Sternberg y Davidson, 1995, p.11 como se citó en King, Goodson, y Rohani, 2009, p.16). Los procesos internos que activaron el aprendizaje en este estudio fueron similares a los del estudio de “conciencia plena” llevado a cabo por Reid (2013). Los estudiantes aprendieron a partir de sus ejercicios de reflexión, al adquirir conocimientos sobre varias maneras distintas de resolver problemas.

Geología y realidad virtual

En este estudio, “estudiantes de Geología en la Universidad del Norte de Arizona utilizaron entornos virtuales en el sistema de proyección de tercera dimensión Geowall” (Kelly y Riggs, 2006, p.158). Los investigadores crearon la hipótesis de que el panorama de realidad virtual

incrementaría en los estudiantes la “confianza y el desempeño en las prácticas de campo de nivel introductorio” (Kelly y Riggs, 2006, p.158). A menudo los estudiantes del primer año de geología encuentran que aprender “habilidades básicas en análisis de terrenos” es un reto (Kelly y Riggs, 2006, p.158). El proyecto incluyó “prácticas y ejercicios para elaborar mapas del terreno” (Kelly y Riggs, 2006, p.158) El programa Geowall fue diseñado para mejorar el conocimiento espacial sobre terrenos.

Los investigadores crearon la hipótesis de que este proyecto aumentaría las habilidades espaciales y la confianza de los estudiantes en sí mismos. Estos ingresaron a un entorno virtual donde se exploraron actividades de laboratorio de geología y datos tridimensionales de la tierra. Sin embargo, los estudiantes afirmaron que el programa no los ayudó a adquirir mejores imágenes visuales que claramente podrían explicar alturas, distancias, laderas y otros conocimientos espaciales necesarios para dirigir un estudio topográfico (Kelly y Riggs, 2006). En conocimiento situacional, los estudiantes lograron habilidades de pensamiento de orden superior cuando se enfrentaban a contextos reales para resolver problemas y superar obstáculos (King, Goodson y Rohani, 2009, p.37). No está claro el hecho de que los investigadores se percataron que la exposición constante de los participantes a más materiales dinámicos tridimensionales audiovisuales, que incluyen video juegos o entornos simulados como Second Life, podría haber afectado la manera en la que los estudiantes percibieron Geowall. No obstante, los conceptos geológicos comprenden habilidades de pensamiento crítico y creativo al igual que análisis complejos que constituyen a habilidades de pensamiento de orden superior.

Dispositivos móviles

Actualmente, se puede tener acceso a todos los repositorios de información a través de los dispositivos móviles. Por lo tanto, una parte de este artículo está dedicado a analizar estudios en los que los investigadores utilizan dispositivos móviles para encontrar conexiones entre el aprendizaje y la versatilidad. Debido a que el conectivismo empieza con el individuo, el conocimiento personal consiste en una red propia del individuo que esta echa de varios repositorios de información en línea (Mackey y Evans, 2011), lo que puede desencadenar el aprendizaje. Una práctica común para los estudiantes es navegar en la web y adquirir datos de estos repositorios en línea usando sus dispositivos móviles como celulares, iPads, y iPods. Estos no solo se usan para propósitos sociales y de entretenimiento, los dispositivos móviles son esenciales en ayudar a los individuos a adquirir habilidades de pensamiento de orden superior.

Nintendo DS Lite para incrementar el estudio individual.

El autor tiene la atención de los lectores en cuanto a dispositivos móviles, que usa la mayoría de los estudiantes para navegar en la web. Estos dispositivos incluyen smart phones, iPads, iPods, y video juegos portátiles. De acuerdo a Kondo, Ishikawa, Smith, Sakamoto, Shimomura y Wada (2012) los estudiantes universitarios japoneses prefieren recibir materiales de aprendizaje en sus dispositivos móviles, y no en sus computadoras personales (Thornton y Houser, 2005 como se citó en Kondo y col., 2012). El estudio de Kondo y col. (2012) utilizó el Nintendo DS Lite para determinar si los estudiantes pasarían “más tiempo estudiando por su cuenta” (p.172). Incluso después de haber completado los módulos, Kondo y col. (2012), los investigadores crearon la hipótesis de que los estudiantes continuarían enganchados en el “estudio independiente” (p.172). Otra de sus hipótesis fue que con una mayor participación en sus estudios, los resultados en los exámenes también aumentarían. Los cursos de habilidades de lenguaje fueron incluidos en estos dispositivos móviles con módulos que fomentaban el estudio independiente (Kondo y col., 2012, p.173).

El estudio señala que los resultados de los exámenes de “leer y escuchar” del 99.4% de los estudiantes que utilizaron dispositivos móviles aumentaron significativamente. Los estudiantes manifestaron que disfrutaban el aprendizaje a través del ‘Nintendo DS’. El estudio también indicó que los estudiantes dedicaron 104.18 minutos a la semana para ver o descargar material electrónico de aprendizaje. Al ochenta y uno por ciento de los estudiantes le gustaría seguir aprendiendo inglés a través del Nintendo DS. El comportamiento de estudio independiente ha incrementado significativamente y evidentemente ha motivado a los estudiantes a participar activamente en sus estudios. “El aspecto lúdico, la creatividad, y la habilidad de unir elementos aislados son partes principales de la percepción que contribuyen a las habilidades de pensamiento de orden superior (King, Goodson y Rohani, 2009, p.15).

Sociología y m-learning

McConatha, Praul, y Lynch (2008) llevaron a cabo un estudio sobre m-learning (aprendizaje electrónico móvil). De 112 estudiantes de sociología, 42 eligieron usar sus smart phones para estudiar para dos exámenes programados mientras que el resto de los estudiantes eligió estudiar utilizando sus computadoras (McConatha y col., 2008). El programa utilizado fue el Hotlava Software’s Learning Mobile Author (Autor móvil de aprendizaje del programa Hotlava) (McConatha y col., 2008). URLs (Direcciones de localizadores uniformes de recursos) les fueron proporcionados a ambos grupos de estudiantes y se les distribuyeron en línea materiales de aprendizaje como folletos, exámenes de práctica, y sesiones de revisiones. Este programa para los celulares puede

monitorear el acceso al sitio, la frecuencia de acceso y “la retroalimentación de los resultados de los exámenes” por parte del instructor (McConatha, 2008, p.19). Los resultados del estudio señalan que el promedio de las calificaciones de los dos exámenes para los que utilizaron sus teléfonos celulares fue de un 89% comparado con el resultado promedio de 84% del otro grupo de estudiantes.

Los resultados de este estudio son similares a otros que indican que el uso de los dispositivos móviles puede activar el aprendizaje e incrementar el desempeño de los estudiantes.

Vocabulario a través de mensajes de texto

El estudio de Katz y Yablon (2011) constó de 241 estudiantes universitarios de primer año en Israel inscritos a un curso de inglés. Ochenta y uno de estos adquirió vocabulario a partir de mensajes de texto en sus celulares; ochenta y cinco por ciento de ellos adquirió vocabulario de mensajes de correo electrónico en sus computadoras personales, y setenta y cinco estudiantes obtuvieron vocabulario vía correo postal. A pesar de que no hubo diferencias significativas en las calificaciones de los exámenes de los estudiantes en cada uno de los tres grupos, aquellos que adquirieron vocabulario a partir de mensajes de texto en sus celulares describen el método como efectivo y eficiente, llevándolos a tener actitudes positivas hacia el curso regular. En términos de autonomía, los estudiantes que adquirieron su vocabulario a través de mensajes de texto son también los más independientes del grupo.

Si se estaba buscando el aumento del éxito en los resultados obtenidos para evaluar el cambio en el desempeño como lo indica Discroll (2005), el estudio no arrojó dichos resultados. Sin embargo, los estudiantes que están satisfechos con sus cursos tienden a continuar en sus programas y los investigadores podrían considerar pequeños cambios en sus materiales electrónicos distribuidos a través de los dispositivos móviles.

Conclusión

Una teoría de aprendizaje “consta de una serie de constructos que relacionan los cambios observados en el desempeño con lo que se espera llevar a cabo con estos” (Driscoll, 2005, p.1) y además explica cómo y cuando ocurre el aprendizaje. Las teorías de aprendizaje consisten en variables internas y externas que a su vez pueden activar el aprendizaje (Driscoll, 2005). A medida que pasa el tiempo, los teóricos del aprendizaje observan estas variables, y por lo tanto pueden proveer descripciones acertadas de cómo los estudiantes aprenden. Una teoría de aprendizaje utiliza hallazgos empíricos para integrar diferentes factores que pueden explicar el fenómeno del aprendizaje. ¿Es el conectivismo una teoría de aprendizaje? El examinar los depósitos de información comúnmente usados en el conectivismo ha llevado al autor a sugerir que el conectivismo tiene un doble papel en la educación, como teoría de aprendizaje y teoría de enseñanza. Por una parte, de 13 estudios analizados en este artículo, 11 de ellos demostraron cambios significativos en el desempeño y logros en las habilidades de pensamiento de orden superior conjuntamente con materiales de aprendizaje electrónico en diversos entornos de aprendizaje. Sin embargo, los artículos no respaldan el que Siemens sugiera que el conectivismo pueda reemplazar las tres escuelas de teorías del aprendizaje. De hecho, el conectivismo puede tener un poco de conductista, cognitivo, y de la teoría constructivista del aprendizaje. De mil materiales que fluyen a través de los nodos de la red, el conectivismo puede ofrecer muchos más materiales de aprendizaje electrónico en los cuales las tres teorías clásicas del aprendizaje estén integradas.

El autor también sugiere que el conectivismo es una teoría de enseñanza ya que dos de 13 estudios mencionados en el artículo necesitan mejoras significativas en el diseño mayormente en la calidad estética de su contenido. Los futuros especialistas en diseño instruccional deberían poner como prioridad la mejora en la calidad estética del contenido de aprendizaje electrónico ya que los estudiantes de esta generación han sido expuestos desde que nacieron a materiales audiovisuales vívidos y de alta calidad como películas en pantallas de máxima imagen (IMAX) e imágenes reales en videojuegos. La forma en la que se diseñó el contenido en estos trabajos podría ser la razón por la cual no se obtuvieron cambios significativos en el desempeño. También es necesario para los investigadores determinar si los estudiantes que participan están familiarizados con las novedades presentadas en sus estudios.

Finalmente, los futuros investigadores, deben entender que el contenido electrónico de aprendizaje descrito por sus estudiantes como divertido, muy probablemente aumentaría sus habilidades de estudio independiente, lo que mejoraría su puntaje en cuanto a desempeño. Existen cientos de innovaciones que pueden ser almacenadas en los tres principales repositorios de información presentados en este artículo y evidentemente, habrá más de ellos previstos a surgir en el futuro.

Seguramente, el conectivismo, a través de varios repositorios de información puede explicar cómo aprenden los individuos en el siglo 21.

VOCABULARY ANALYSIS

In this part of the project there is mentioned a list of the vocabulary problems encountered in the article and some of the techniques used when translating the text **CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY**. The main purpose of this analysis is to provide a detailed and brief description of the problems encountered when translating from English into Spanish, as well as the solutions that were applied in each one of the cases.

The first part of this analysis consists of a list of words and phrases that were difficult to translate and in some cases to understand for the translator due to the fact that the article covers terminologies from different areas of study like geology, computing, and medicine which are not familiar to everybody. Even though the definitions of the concepts were investigated, sometimes the meaning of those remained unclear to the translator and other Spanish speakers so, it was imperative to request the opinion of knowledgeable people on the subjects in order to clear doubts and avoid mistranslations.

The examples are presented in a chart that contains both, the original text and the result of the translation into Spanish as well as the page in which the words can be seen in their original context. Below each one of the charts there is a brief explanation of the process that was followed in order to have the final result of the translation. The vocabulary section is divided into four parts: the computational, the geological, the medical and the language part.

For the following computational section the assistance of Angel Flores de la Rosa, Network Engineer was required in order to get the specific terminology more commonly used in this region in the field of informatics. He was given some possible equivalents in Spanish of each one of the concepts and he chose the one he considered more appropriate depending on the context or alternatively he provided the word that is used in Spanish.

1. - INFORMATION RESERVOIRS / REPOSITORIES

ORIGINAL TEXT	SPANISH TRANSLATION
The Internet is comprised of information reservoirs... Page 13	El Internet está compuesto por repositorios de información...
... by using one of the primary information	... al usar alguno de los principales depósitos

Some of the results that appeared when looking for the translation of the word 'reservoir' were:

- DEPÓSITOS
- ALMACENES
- FUENTES

The descriptions of the previous words were in some way remote from the meaning of 'reservoir and repositories' because the words depósitos and almacenes give the idea that the information is only stored but not used whereas fuentes sounds like it generates information by itself when it does not. Finally, the expert said that 'repositorio' is the term that is used in that context.

2. – CYBER NODES

ORIGINAL TEXT	SPANISH TRANSLATION
... attributes learning through cyber nodes specifically rooted... Page 13	... atribuye el aprendizaje a los nodos cibernéticos (puntos de concentración y distribución de información) que se originan específicamente...

There were two suggestions: nodos cibernéticos and cibernodos. Even though 'cibernodos' is the commonly used word in informatics it was not possible to use it on the translation due to the fact that it is not a registered word in the Real Academia Española. A brief description was added of what a cyber node is in order to enhance the understanding of the reader.

3. – SYNCHRONOUS AND ASYNCHRONOUS LEARNING

ORIGINAL TEXT	SPANISH TRANSLATION
Synchronous and asynchronous learning. Page 13	Aprendizaje sincrónico y asincrónico.

At the beginning I tried to use "aprendizaje sincronizado y el que no lo está" but the proper terminologies used on informatics are sincrónico y asincrónico.

4. – PODCAST

ORIGINAL TEXT	SPANISH TRANSLATION
Podcasts Page 13	Podcasts (Archivos de audio que pueden ser descargados).

This word was not translated due to the fact that it has already been borrowed to the Spanish computational terminology. The respondent provided a brief but really clear description of what podcast is and it was added to the translation so the reader can have a better understanding.

5. – VIDEOCAST

ORIGINAL TEXT	SPANISH TRANSLATION
VIDEOCASTS Page 15 Figure 1	VIDEOCASTS (Archivos de video que pueden ser descargados).

This word shares the same case of the previous one so the same strategy was followed. The word was written in English and a brief description was included for the reader's comfort.

6. – SOFTWARE

ORIGINAL TEXT	SPANISH TRANSLATION
SOFTWARE'S HOTLAVA Page 21	... Del programa Hotlava...

This word is also used in Spanish but it was decided to translate it because there are some people that may know the word but do not know the meaning that was actually my case. In order to avoid misunderstandings and to enhance the reading comprehension the word was translated.

7. – VIRTUAL REALITY LEARNING PLATFORMS

ORIGINAL TEXT	SPANISH TRANSLATION
VIRTUAL REALITY LEARNING PLATFORMS	Plataformas de aprendizaje de realidad virtual.

The problem with this noun phrase was the fact that I did a literal translation and I wanted to corroborate if the term was used like that or it was known with another terminus.

8. – VIRTUAL OPEN HOUSES

ORIGINAL TEXT	SPANISH TRANSLATION
VIRTUAL OPEN HOUSES Page 15 Figure 1	Comunidades públicas de estudio en línea.

At the beginning I did a literal translation but then I realized the term was not clear for me so I decided to look for a definition on the Internet but I did not find any that could be easily understandable. The network engineer provided me with a clear definition and an example of what a virtual open house is and with that information I could make up a definition that can be comfortable for the reader.

9. -LIFELIKE IMAGES

ORIGINAL TEXT	SPANISH TRANSLATION
...Lifelike images in video games... Page 22	... Imágenes reales en videojuegos...

Realistas and vívidas were some of the first options but then I was told that they conveyed different meanings so it was necessary to chose 'reales' because it was the closest word that gives the idea the original text transmits.

There is a part of the article in which is mentioned a study based on Geology. Due to the fact that there were noun phrases that did not sound natural when translated, the assistance of the Architect Abril Hired Catzin Tamayo, who is knowledge on the subject, was required. She was given some suggestions from which she could choose the one that is used in geology or to provide her own term.

10. – FIELD MAPPING

ORIGINAL TEXT	SPANISH TRANSLATION
“Field mapping experiences and exercises” Page 19	“Prácticas y ejercicios para elaborar mapas del terreno”

“Habilidades de aprendizaje de líneas de análisis de terreno” was the first translation result when the terms were investigated but as it can be noticed the idea was not clear at all. The strategy that was followed was to look for the definition of field mapping in English and then that definition was explained in English to the expert so she could tell what could be the correct equivalent to that activity in Geology. The results were: mapeo, elaboración de mapas de un terreno, and elaboración de croquis. At the end the noun phrase was organized so it was understandable by the readers who have little knowledge about geology.

11. – BASELINE TERRAIN-ANALYSIS SKILLS

ORIGINAL TEXT	SPANISH TRANSLATION
“Baseline terrain-analysis skills” Page 19	“Habilidades básicas en análisis de terrenos”

The same strategy was followed here. The definition of the term ‘terrain analysis’ was researched and then explained to the expert. She signaled that ‘análisis de terrenos’ was the best term to use in Spanish.

12. – LAND SURVEY

ORIGINAL TEXT	SPANISH TRANSLATION
... To conduct a land survey. Page 20	... para dirigir un estudio topográfico.

‘Medición de campo’ was the first result of the translation but I was told that activity has a specific name so I asked the expert and she told me that it is called ‘estudio topográfico’.

One of the studies that are mentioned on the article is about medicine and there I found two translation problems. Those problems were the medical concept mindfulness and its definition. The definition of the concept was exposed in Spanish to Priscila Pat Angulo, a medical surgeon student

who told that it sounded like a psychology or psychiatry term so, she consulted the word with one of her teachers the Doctor Primo Feliciano Reyes Campos specialist on psychiatry and psychotherapy. The doctor gave a brief and clear explanation and also suggested an article online about mindfulness in order to provide more information on the subject.¹

13. – MINDFULNESS

ORIGINAL TEXT	SPANISH TRANSLATION
... On the subject of mindfulness. Page 14	... sobre conciencia plena.

The article provided two possible translations: atención plena and conciencia plena. It was chosen 'conciencia plena' because this term fits better with the information that is presented on the article.

14. – DEFINITION OF MINDFULNESS

ORIGINAL TEXT	SPANISH TRANSLATION
...Involves “attending to one’s moment to moment experience” Page 14	...implica “cultivar la conciencia del momento presente”

It is important to mention that this definition was one of the biggest problems of this translation process because even in English I did not understand the meaning of that phrase and the only clue that I had was the verb 'involves' before the phrase. The verb gives the idea that the phrase is a definition or a description of what mindfulness is about and I found that definition on the article mentioned before.

Finally, one of the biggest problems of this project was the following noun phrase. In order to get the correct answer to this translation problem it was required the assistance of the teacher Jose Luis Borges Ucan who has a wide knowledge on the instructional field.

¹ http://www.samfyc.es/Revista/PDF/v14n2/v14n2_07_artRevision.pdf

15. – HIGHER ORDER THINKING SKILLS

ORIGINAL TEXT	SPANISH TRANSLATION
Higher order thinking skills Page 13	Habilidades de pensamiento de orden superior (analizar, evaluar, crear, aplicar, entender y recordar)

Some of the suggestions that were presented to the teacher were:

- Habilidades de complejo orden de pensamiento.
- Habilidades de alto orden de pensamiento.
- Habilidades de pensamiento complejas.
- Habilidades de pensamiento de alto orden.
- Habilidades de complejo razonamiento.

The teacher sent a conceptual map from the web page Conéctate al conocimiento in which the correct translation and information on higher order thinking skills is presented.² It is important to mention that it was added further information on which are those skills in order to enhance the reader's understanding because this noun phrase appears several times in the article.

² http://skat.ihmc.us/rid=1229718825773_364772441_15894/1226068520184I799818313I5060ItextIhtml

TRANSLATION TECHNIQUES ANALYSIS

The second part of this analysis consists of the translation techniques used when translating the text *CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY*. The objective of this section is to provide some examples of the translation techniques set up by Vazquez Ayora (1977) and Vinay and Darbelnet (1958), described on the literature review of this project. The use of these techniques helped the translator to accurately deliver the same message the article depicts into the Spanish used on the region.

It is important to mention that this analysis contains not all but the most noticeable examples of translation techniques found in the process. It does not mean that the translation techniques that did not appear on this analysis are less important but due to the nature of the article they did not have great impact on the translation process. Some examples were chosen just to provide evidence of their presence on the text but some others were selected because they represent a problem or a translator's decision that had to be done in order to make that sentence or phrase understandable to the Spanish speaker audience.

The following analysis comprises a brief description of each one of the techniques and the examples in their original English context, the page from which they were taken, and the translation results of those examples into Spanish. In some examples it is also recognized the assistance of the people who helped the translator to reach those translation results.

BORROWING

This translation technique is used when there is a word that is understandable and used in both, the source and the target language with the same meaning. The topic of the article translated is connectivism and due to the fact that this field advances by leaps and bounds in English speaking countries, it has become more common that Spanish speakers acquire the English connectivism terminology to their own language. Since there is no time to look for equivalences in this technological era in which innovations are continually being released, borrowing has gained popularity on the translation field and that is why there are several examples of it in this translation project.

ORIGINAL TEXT	SPANISH TRANSLATION
PODCASTS	
... social networks including podcasts...	... redes sociales incluyendo podcasts...

Page 15	
SMART PHONES These mobile devices include smart phones... Page 20	Estos dispositivos incluyen smart phones...
Twitter, Facebook, Youtube Page 15 Figure 1	Twitter, Facebook, Youtube
BLOGS The NING site had 61 blogs... Page 18	El sitio NING tenía 61 blogs...
M- LEARNING ...conducted a study on m-learning Page 21	...llevaron a cabo un estudio sobre m-learning...

LITERAL TRANSLATION

This translation technique consists of the full correspondence of two languages in meaning and structure. This is the easiest translation process and it was used several times when translating the article. The following examples were taken in order to show the presence of this technique in the process. It is important to mention that there were no problems when translating the following examples due to the fact that it was a word for word translation but as it was mentioned on the first part of the analysis, the assistance of the Architect Abril Hired Catzin Tamayo was required for the last example in order to corroborate that the translation was accurate.

ORIGINAL TEXT	SPANISH TRANSLATION
Center for Advancement of Learning and Assessment Page 13	Centro por el Progreso en Aprendizaje y Evaluación
The study's results indicated a significant change in performance. Page 16	Los resultados del estudio demostraron un cambio significativo en el desempeño.
Baseline analysis-terrain skills Page 19	Habilidades básicas de análisis de terrenos

ADDITION

It is when the translator adds more information to the translated text in order to clear doubts about a concept. This technique was used several times in this project to enhance the reader's comprehension and also for the reader's comfort. During the major I was exposed to articles that

even though they were written in Spanish, there were some terms that forced me to look for definitions in order to understand and be able to keep reading what took a lot of time.

ORIGINAL TEXT	SPANISH TRANSLATION
... through cyber nodes specifically... Page 13	... a los nodos cibernéticos (puntos de concentración y distribución de información) específicamente...
... utilized virtual environment in the Geowall. Page 19	... utilizaron entornos virtuales en el sistema de proyección en tercera dimensión Geowall.
Higher order thinking skills Page 13	Habilidades de pensamiento de orden superior (analizar, evaluar, crear, aplicar, entender y recordar).
Podcasts Page 13	Podcasts (archivos de audio que pueden ser descargados).

OMISSION

The following is an elimination technique that can be used when the translator wants to avoid pleonasms, repetitions or when the information threatens the naturalness of the translated text. In this project this technique was used because if the following omissions were literally translated into Spanish, the text would not have sounded natural. The first example is about an elimination that was made in order to update the translated information because nowadays desktop computers are almost obsolete. The omission in the second example was also necessary because in this Spanish speaking region it is not used the expression “palabras de vocabulario”, only “vocabulario”.

ORIGINAL TEXT	SPANISH TRANSLATION
...on their desktop computers. Page 21	En sus computadoras.
Vocabulary words from... Page 21	Vocabulario a partir de...

MODULATION

The purpose of this translation technique is to adjust an expression or phrase from the original to the target language in order to make it understandable to the target audience without missing the essence of the original text. As it was mentioned on the first part of this analysis, the following two examples of modulation were made with the assistance of the Network Engineer Angel Flores de la Rosa and the Doctor Primo Feliciano Reyes Campos specialist on Psychiatry. These modifications

were necessary because if literal translation were used instead those concepts would have not been understood at all by Spanish speakers.

ORIGINAL TEXT	SPANISH TRANSLATION
“Attending to one’s moment to moment experience” Page 14	“cultivar la conciencia del momento presente”
Virtual open houses Page 15 Figure 1	Comunidades publicas de estudio en línea

TRANSPOSITION

The following technique consists of changing the grammatical category of a word or message to another without changing its essence and meaning. The grammatical modification in the following examples is the change of the passive voice of the original message to a more used form of the passive (pasiva con Se) in the target language because in Spanish this form of the passive (primera de pasiva) is not very commonly used. This adjustment was necessary in order to keep the naturalness of the regional Spanish used by the audience.

ORIGINAL TEXT	SPANISH TRANSLATION
Content modules were delivered with guided recordings... Page 14	Se distribuyeron módulos de contenido de grabaciones guiadas...
Teachers were given flexibility to integrate... Page 17	Se les dio flexibilidad a los maestros para incorporar...
The study was conducted in China... Page 19	El estudio se llevó a cabo en China...

CONCLUSION

The translation from English into Spanish of the article **CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY** was made in order to deliver the information the article contains to the students of the Masters in Education of the University of Quintana Roo. The main purpose of this project was to present or complement the information the students have about this new learning method in their own language. Analyses of the vocabulary problems encountered and the translation techniques used were also made to describe the process the translator had to follow in order to make an accurate translation. Due to the fact that the translated article is an academic text that includes information and terminology from several educational fields like Geology, Informatics, and Medicine, the assistance of knowledgeable people on those subjects was required. Their participation on this project as respondents significantly improved the translation product.

Through this translation process I realized that the translator's job is hard but amazing. On the one hand it is wonderful to have the responsibility to decode, in a manner of speaking, an important message from a language into another to an audience as well as having the opportunity to prove your knowledge and skills on both languages to keep the essence of the original text in the translation result. On the other hand, that responsibility is also what makes translation a tough labor because the translator has to be very careful when choosing the equivalent words from one language into another in order not to communicate a wrong idea or to generate ambiguity. He also has to be very patient when facing translation problems to be able to find the best solution to those issues. However, it has to be said that the translator's work is remarkable and necessary.

As an English Language student I have to say that this project was a great occasion to put into practice what I learned on those five years studying the English language from its diverse angles. This work made me feel thankful for the teachers that taught me what I know about English and enhance the respect I already had for translators and their labor.

My suggestions to the students who want to make a translation project in the future would be: a) use the translation techniques set up by Vinay and Darbelnet (1958) because they help a lot when a translation problem arises; b) read out loud to a Spanish speaker those translated paragraphs you are not entirely convinced about because when you hear yourself you notice your own mistakes and if not that person can make them noticeable for you. Finally, the most important suggestion, c) do not hesitate on asking for assistance when you face terminology you are not familiar with. Make the experience of translating an opportunity to prove your language skills but also to learn from others.

In addition, to carry out a translation project including the vocabulary and techniques analyses is not an easy task because there are several steps that have to be followed in order to do it properly but at the same time it is a great opportunity to prove the knowledge the translator has in both, the source and the target language. Even though I have already experienced how tough the translator's labor is, I do not discard the idea of studying a Masters in Translation in the future.

CONNECTIVISM: 21ST CENTURY'S NEW LEARNING THEORY

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Abstract

Transformed into a large collaborative learning environment, the Internet is comprised of information reservoirs namely, (a) online classrooms, (b) social networks, and (c) virtual reality or simulated communities, to expeditiously create, reproduce, share, and deliver information into the hands of educators and students. Most importantly, the Internet has become a focal point for a potentially dynamic modern learning theory called connectivism. Like any learning theory, connectivism has its share of supporters and critics. Unlike any other learning theory, connectivism attributes learning through cyber nodes specifically rooted in social networks. The purpose of this article is to introduce or reacquaint readers with three of the largest reservoirs of information attributed to the principles of connectivism. In addition, it aims to examine these information reservoirs through modern empirical studies in order to determine if their findings carry sparks of likeness or alignment with the principles of connectivism.

Keywords: connectivism, e-learning, information repositories, learning theory

Introduction

Siemens (2008) suggested that modern day learning occurs through network connections as individuals share their interests, knowledge, perspectives, expertise, and opinions in online or virtual learning environments (Dunaway, 2011). Internet technologies, comprised of databases and search engines, are capable of housing thousands of blogs, news articles, book excerpts, journal articles, video clips, and podcasts. According to Siemens (2008), connectivism is a learning theory comprised of different series of nodes to connect hundreds of networks to facilitate synchronous and asynchronous learning (Dunaway, 2011). These connections provide individuals with direct access to reliable information from millions of sources to duplicate, reproduce, and share within their social networks, and to delete, critique, and discard inaccurate, irrelevant, and unreliable information.

Network connections contain streams of information constantly flowing with substantiated data including empirical findings from peer-reviewed journals as well subjective information from personal websites or blogs (Siemens, 2008). One of the principles of connectivism is how higher order thinking skills are activated when individuals can distinguish which of the abundant and diverse information available online are reliable or sustainable (Siemens, 2008). This connectivism principle is aligned with Center for Advancement of Learning and Assessment (CALA)'s definition of higher order thinking skills as skills achieved by individuals who work in environments that facilitate "persistence, self-monitoring, open-minded, and flexible attitudes" (King, Goodson & Rohani, 2009, p.1).

Today's students are "do-it-yourself" learners (Nussbaum-Beach & Hall, 2012, p.11). Having acquired information from a series of nodes, connectivism describes learning as an informal opportunity that transforms individuals into 'nodes' themselves, equally capable of sharing their knowledge and expertise with other individuals (Sangra & Wheeler, 2013). This principle is similar to constructivism's foundation in which social and cultural interactions become triggering

mechanisms for learning (Driscoll, 2005). Constructivism posits that individuals learn from mediators including parents, instructors, peers, or even computer applications (Wertsch, 2008). Individuals, according to the constructivist's viewpoint, learn from these mediators just as individuals, according to the connectivist's viewpoint learn from several series of nodes. Another classical learning theory equally effective in transforming individuals is behaviourism (Driscoll, 2005). Individuals, according to behaviourist theorists including Thorndike and Skinner, can change or transform their behaviour through stimuli such as rewards and punishments (Gould, 2008). In the daily chaos of abundant information, online collaborative tools can transform learners into individuals who can manage their time and organize their tasks accordingly (Courros, 2009; Garcia, Brown & Elbetagi, 2012, p.165).

The most radical educational transformation befalls on higher education (Hogg & Lomicky, 2012). The transformation of higher education institutions, as primary providers of esteemed traditional education to facilitators of informal and virtual learning environments surprised several research organizations, including the Pew Research Center (Hogg & Lomicky, 2012). In 2002, Pew Research Center indicated that despite the popularity of MOOCs, college students would persist in their traditional brick and mortar classrooms (Hogg & Lomicky, 2012). Contradicting to this prediction, six million students enrolled in online classes in 2010. By 2011, thirty-three percent of college students in traditional classrooms were taking at least one online course (Allen & Seaman, 2011 as cited in Hogg & Lomicky, 2012). Higher education students are satisfied with their online classes, perceiving online education as equal to traditional education (Allen & Seaman, 2011 as cited in Hogg & Lomicky, 2012). Consequently, building more course modules and offering more MOOCs are some of the strategic plans that higher education institutions are now undertaking (Hogg & Lomicky, 2012).

Learning through internal processes is evident in the classical cognitive learning theory (Driscoll, 2005). According to Piaget and other cognitive learning theorists, individuals learn from internal processes such as "insights, information processing, perceptions, and memory" (Gould, 2008, p.2). The principles of cognitivism enable individuals to understand abstract lessons and to make sense of the world around them (Gould, 2008). In cognitivism, individuals acquire knowledge through reflective exercises such as journal writing.

Reid (2013) conducted a study for healthcare professionals on the subject of mindfulness. Mindfulness, an important skill for healthcare professionals, involves "attending to one's moment to moment experience" (Brown & Ryan, 2003; Kabat-Zinn, 2005; Shapiro, Carlson, Astin, & Freedman, 2006 as cited in Reid, 2013). "Content modules were delivered with guided recordings of meditations" (Reid, 2013, p.44). This mindfulness class was the first of its kind for all participants who admitted feeling nervous and sceptical. At the end of the study, most participants affirmed that the downloadable e-learning materials and online journals helped increase their knowledge about mindfulness. The online class helped the students learn several meditation and breathing techniques, and most importantly, the class taught them how to manage their well-being. It also helped them achieve higher order thinking skills, which according to King, Goodson and Rohani (2009) can be triggered when students face new problems and uncertainties. Connectivism explains how individuals use their internal processes to activate learning through a series of nodes originating from the instructor. Mindfulness is a unique internal process, one that can generate instinctive learning and reflection.

Learning and instructional theories

Critics of connectivism as a learning theory, including Bell (2010), referred to connectivism as an instructional theory, not a learning theory. An instructional theory is a conceptual framework based on empirical findings and grounded in learning theories, which recommends the design of learning materials, resources, or situations to help learners achieve their learning outcomes and maximize their learning potential. Individuals learn through instructional strategies performed by teachers, aimed to "motivate students to learn and think on higher levels" (King, Goodson & Rohani, 2009, p.43). Learning is the acquisition of knowledge and learning theories explain how individuals learn (Driscoll, 2005). The primary evidence of learning is an individual's change in performance (Driscoll, 2005; Gould, 2008).

Information reservoirs

21st Century's 3 Major Information Reservoirs

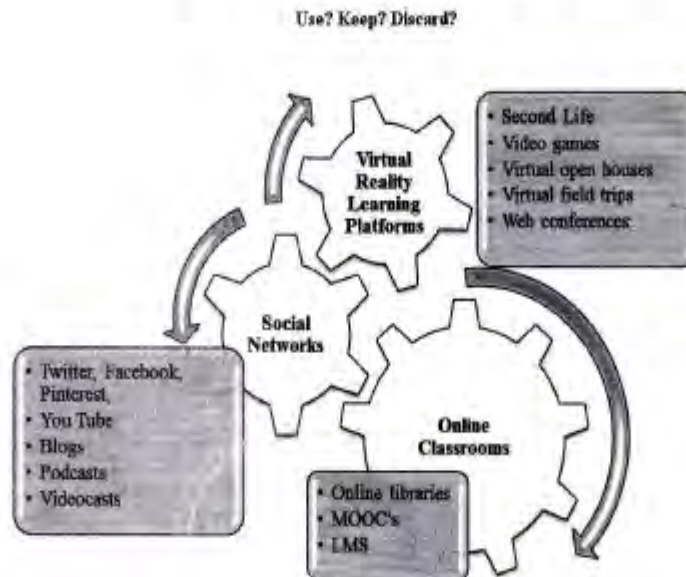


Figure 1.

According to the principles of connectivism, individuals acquire information through modern-day reservoirs of information. Currently, there are three major reservoirs where individuals can acquire information: (a) online classrooms including massive open online courses (MOOCs), (b) social networks including podcasts and video clips, and (c) virtual reality platforms, including 'Second Life' and 3-dimensional video games. The article examines distinct studies in which researchers hypothesized participants' changes in their performances by using one of the primary information repositories.

Online courses

Learning in this digital age consists of online courses delivered synchronously and asynchronously. The offerings of massive open online courses (MOOC) are increasing while hundreds of learners from various disciplines take advantage of their cost effectiveness and convenience. Several colleges and universities offer online courses to attract more students. Researchers continue to watch the disruptive effects of online course movements (Salas, 2013).

Undergraduate engineering students of Malaysia

Like many of their European and Asian counterparts, the government of Malaysia emphasizes the importance of producing higher education graduates who are independent, technologically knowledgeable, and well-prepared to compete with the rest of the world (Subramaniam, Nordin & Krishnan, 2013). Prompted by the Malaysian government's announcement that 50% percent of the nation's learning materials should consist of e-content by 2015, the researchers conducted a study on the readiness and the needs of Malaysian engineering students in online classrooms (Subramaniam, Nordin & Krishnan, 2013). Forty-six engineering students, all with extensive experience with learning management system (LMS) platforms similar to Blackboard participated in the study. They downloaded e-Content learning materials including PowerPoint slides and connected with their friends and lecturers online (Subramaniam, Nordin & Krishnan, 2013).

The study's results indicated a significant change in performance (Driscoll, 2005). Nearly 90 percent of the students perceive themselves as technically knowledgeable with almost 50 percent admitted to using their smart phones to surf the web (Subramaniam, Nordin & Krishnan, 2013). Eighty-seven percent of the students preferred to have access to more online learning materials and over seventy percent of the students asserted that online courses significantly increased their knowledge (Subramaniam, Nordin & Krishnan, 2013). Finally, students felt confident and prepared to take their engineering courses online (Subramaniam, Nordin & Krishnan, 2013), a scaffolding effect developed with higher order thinking skills, wherein students eventually learn to work autonomously (King, Goodson & Rohani, 2009).

The results are not at all surprising since Malaysian students are accustomed to online learning. Having taken science courses including university-level physics, bio-technology, and even physiotherapy courses online, their exposure to e-Content, online discussions and exercises continue to activate their higher order thinking skills (Donnelly & Fitzmaurice, 2005; Poikela et al. 2007 as cited in Subramaniam, Nordin & Krishnan, 2013, p.286).

Online EPHOC

"In 2007, the University of Alabama in Birmingham's (UAB) School of Public Health (SOPH), with the Jefferson County (Alabama) Department of Health (JCDH), and the Centers for Disease Control and Prevention's National Center for Environmental Health (CDC/NCEH) partnered" together (McCormick & Pevear, 2013, p.52). This alliance aimed to produce a "comprehensive online package of courses for environmental public health (EPH) practitioners" (McCormick & Pevear, 2013, p.52). The initiative includes free of charge courses utilizing the LMS platform operated by "South Central Public Health Partnership for Workforce Development" (McCormick & Pevear, 2013, p.52). Lack of qualified workforce, training materials and shortage of trainers in 2007 prompted this initiative leading to a series of online classes called "Environmental Public Health Online Courses (EPHOC) (McCormick & Pevear, 2013, p.52). Data generated came from "355" survey respondents (McCormick & Pevear, 2013, p.52).

The study indicated that 73.73 percent of the respondents were satisfied with the EPHOC series. Nearly 65 percent of the respondents attested that the EPHOC courses increased their knowledge about their jobs. When asked if EPHOC series are applicable and relevant to their daily jobs, 51.06 percent rated the series 8 or better, with 10 being the most applicable. Results of the study indicated significant changes in their job performance. Before taking the EPHOC series, only 60.41 percent passed the Registered Environmental Health Specialist (REHS) exam. However, after taking the EPHOC series, over ninety-percent of the students passed the exams.

Topical information in the video lecture series include "General Environmental Health, Food Protection, Hazardous Materials, and Air Quality and Environmental Noise" (McCormick & Pevear, 2013, p.53). "Applications of procedural knowledge that involve analysis and synthesis of two or more concepts" are referred to as higher order thinking skills" (King, Goodson & Rohani, 2009, p.12).

Social networks

Social networks are nodes of idea generators (Kijkuit & Van Den Ende, 2007). Social networks are built on mutual understanding, which is the "ability to understand and build on each other's knowledge base" (Kijkuit & Van Den Ende, 2007, p.863). Businesses and educational institutions utilize social networks in their marketing efforts, particularly in their branding processes. An organization's marketing efforts are grounded in both traditional ad campaigns and in social network campaigns. Their constant presence in the Internet is crucial to maintaining a stream of prospective customers.

Remix World

"Remix World, an educational social network, functions as an interactive online constituent for Digital Youth Network in Chicago, Illinois" (Zywica, Richerds & Gomez, 2011, p.33). The Remix World study required students from 6-12 grades to join the network by setting up their profiles (Zywica, Richerds, & Gomez, 2011). The purpose of the study was to analyze the use of learning networks in the educational community and its capacity to bring collaboration between students (Zywica, Richerds & Gomez, 2011). Researchers hypothesized that the network community for students will enhance their creativity and help with their knowledge acquisition. In the web space provided for them, students communicated with their friends, mentors, and other members of their communities. Students can add comments and other materials that they created or found from the Internet. The study indicated that there were 252 Remix World registered users with 4,883 site visits, at an average of 31.3 visits each day. There were 1965 photos, 355 videos, 222 blog entries, and 3800 discussion posts shared within the community (Zywica, Richerds & Gomez, 2011).

Teachers were given flexibility to integrate their curriculum within Remix World. Both teachers and mentors visited students' personal pages, which provided more opportunities to provide feedback. Remix World demonstrated that their content-driven social network system created a sense of community for students, teachers, and mentors. Collaborative activities such as "student discussions, peer tutoring and cooperative learning are effective in the development of thinking skills" (King, Goodson & Rohani, 2009, p.2). Moreover, creativity skills such as "divergent and convergent thinking to produce new ideas" (Crow et al., 1997 as cited in King, Goodson, & Rohani, 2009, p.13) also trigger higher order thinking skills.

NING site

Peck conducted a study at Macquarie University in Australia, using NING site, a social networking site. He hypothesized that the NING site can motivate students to interact with one another, participate in class lectures, read tutorials, increase student confidence, and improve social literacy (Peck, 2012). Fifty Linguistics students participated, ranging from ages 18 to 23. Twenty participants were international students from China, Korea, and Japan. Local students also had ethnic diversities, ranging from British, Greek, Indian, Polish, and Lebanese (Peck, 2012). The study indicated that by the end of the first semester, the NING site had 61 blogs and 52 forum comments.

Teachers selected a topic for further discussions while students added comments in the discussions. Students admittedly felt as if they belonged in a cultural community (Peck, 2012). Peck (2012) noted that students who frequently posted online were usually quiet in the classrooms. Blogging requires social literacy skills not familiar to many students. The study generated friendships and students were less sceptical about the study. Social learning theorist, Vygotsky, noted that social interactions with peers, instructors, and parents contribute to learning and cognitive development (King, Goodson & Rohani, 2009, p.13).

Podcast study for nursing students

Vogt, Schaffner, Rivar and Chavez (2010) hypothesized that students who acquired lectures from podcasts will achieve higher exam scores compared to students who acquired lectures in classroom. The researchers also hypothesized that students would prefer podcast lectures over lectures delivered in the classroom (Vogt, Schaffner, Rivar & Chavez, 2010). The researchers conducted a study with 63 undergraduate nursing students in 2007 to 2008, who acquired lectures in classrooms and 57 students who acquired lectures via podcasts. The first exam covered topics in health promotion, the second exam covered topics in growth and development, and the third exam covered topics in immunizations (Vogt, Schaffner, Rivar & Chavez, 2010, p.40). The results of the study indicated no significant difference in the first exam test scores between students who acquired lectures via podcasts and students who acquired lectures in the classrooms. However, there was an increase in test scores for the second exam for students who acquired lessons using podcasts compared to students who acquired lessons in the classrooms. For the third exam, students who acquired podcast lectures did worse than students who acquired lectures in the classrooms. In addition, only 44 % of the students preferred to use podcast lectures. Majority of the students preferred classroom lectures.

According to Vogt et al. (2010), students were not familiar with the podcast technology, and therefore, preferred the traditional classroom lectures. Since the study was conducted in 2007 and 2008, the author recommends more studies using podcasts and videocasts (podcasts simultaneously played with video clips) to deliver lectures. Nevertheless, the study failed to produce performance changes in exam scores and generated negative perceptions from the students regarding podcast lectures.

Podcasts for General Biology students

White (2009) has been delivering General Biology lessons to undergraduate students since 2005. He typically has 150-200 students enrolled in his biology classes. Since 2005, he has made 39 podcast lectures, allowing his students to listen to his podcasts to enhance their knowledge acquisition. The researcher's log indicated that 1,333 lecture audio files were downloaded from 228 different IP addresses. On the weeks before exams 1, 2, and 3, there were 76 % downloads, 70 % downloads, and 98 % downloads respectively. For the final exam, 100 % of the students

downloaded his podcasts. According to White (2009) several educators worry that podcast lectures would keep students from entering the classrooms. However, in this study, data indicated no significant difference in student attendance. The students continued to download the podcasts while maintaining active participation in the classrooms. This "executive control of behavior" also considered metacognition, wherein "attitudes, commitment, and attention" are demonstrated by individuals consistent to higher thinking order (King, Goodson & Rohani, 2009, p.22). The study demonstrated consistent changes in the students' performances and participation.

Virtual Learning Platforms

In a virtual world, a "networked learning environment is transformed into a 3-D shared learning space in which the learners are represented by avatars (Lin, Chou & Kuo, 2007, p.101). Avatars are representations of learners (Lin, Chou & Kuo, 2007, p.100). Virtual learning platforms encourage creativity from both educators and students. They also encourage virtual collaboration through activities that enable avatars to talk, walk, move, and point on objects to create intense social and intellectual interactions" (Lin, Chou & Kuo, 2007, p.100).

Chinese manual for Second Life

In this study, the researchers, also language instructors, utilized second life (SL) to enhance knowledge acquisition. Their study was conducted in China, requiring Chinese students to use SL to create a Chinese version of the second life manual (Wang & Shao, 2012, p.15). The study demonstrated that SL provided effective "language learning tasks" (Wang & Shao, 2012, p.15). This activity demonstrated skills in several areas, including linguistic-verbal skills wherein the participants were able to distinguish correct meanings and word orders (King, Goodson & Rohani, 2009, p.20). The activity also triggered creativity as participants learned to "use basic principles of *ties to the new situation*" while trying to "put pieces together into a coherent system that integrates new information with what a person already know (Sternberg & Davidson, 1995; Crowl et al., 1997 as cited in King, Goodson, & Rohani, 2009, p.14).

MBA students and Second Life

In Schiller's study (2009), MBA students specializing in Information Systems, participated in an SL project to enhance their experiences with commerce and to improve teamwork efforts. Through reflective essays and online chats, the study indicated that students perceive this SL project as relevant to their course content (Schiller, 2009). Students enjoyed this class and perceived the project to be fun and engaging. It is important to note that the "emotional tone of person solving problems" affices insights (Sternberg & Davidson, 1995, p. xi as cited in King, Goodson, & Rohani, 2009, p.16). The internal processes that activated learning in this study was similar to the *groundwork* study conducted by Reid (2013). The students learned from their reflective exercises, gaining knowledge about several distinct ways to solving problems.

Geology and virtual reality

In this study, "Geology students in Northern Arizona University utilized virtual environment in the Geowall" (Kelly & Riggs, 2006, p.158). The researchers hypothesized that the virtual reality landscape would increase student "confidence and performance in the introductory level field class" (Kelly & Riggs, 2006, p.158) First year geology students often find learning "baseline terrain-analysis skills" to be challenging (Kelly & Riggs, 2006, p.158). The project included "field-mapping experiences and exercises" (Kelly & Riggs, 2006, p.158) Geowall software was designed to enhance spatial understanding.

The researchers hypothesized that this project would improve students' spatial skills and student confidence. The students entered a virtual environment where geology laboratory activities and 3-dimensional earth data were explored. The study indicated that Geowall delivered positive results in student performance. However, students asserted that the software did not help them acquire better visual images that would clearly explain heights, distances, slopes and other spatial knowledge needed to conduct a land survey (Kelly & Riggs, 2006). In situational learning, students achieve higher order thinking skills when faced with real-life context to solve problems and overcome obstacles (King, Goodson & Rohani, 2009, p.37). It is unclear if the researchers realized the participants' constant exposure to more dynamic three-dimensional audio-visual materials including video games and simulated environment including SL may have affected the way students perceived Geowall. Nevertheless, geological concepts take into consideration creative and critical thinking skills as well as complex analysis which constitute to higher order thinking skills (King, Goodson & Rohani, 2009).

Mobile Devices

All information repositories can now be acquired through mobile devices. Hence, a portion of this article is dedicated to examining studies in which researchers utilize mobile devices to find connections between versatility and learning. Since connectivism starts with the individual, personal knowledge consists of an individual's network, which is made up of various online information repositories (Mackey & Evans, 2011), that can trigger learning. A common practice for students is to surf the web and acquire data from these online information repositories by using their mobile devices such as cell phones, iPads, and iPods. Not only are they used for social and entertainment purposes, mobile devices are pivotal in helping individuals acquire higher order thinking skills.

Nintendo DS Lite to increase self-study

The author draws the readers' attention to mobile devices, devices that most students use to surf the web. These mobile devices include smart phones, iPads, iPods, and handheld video games. According to Kondo, Ishikawa, Smith, Sakamoto, Shimomura and Wada (2012) Japanese university students prefer to receive learning materials from their mobile devices, not from their personal computers (Thornton & Houser, 2005 as cited in Kondo et al., 2012). Kondo et al.'s (2012) study utilized a Nintendo DS Lite to determine if students will spend "more time on self-study" (p.172). Even after completing the modules, Kondo et al. (2012) hypothesized that students' self-study behavior is "independent self-study" (p.172). Also hypothesized, with an increased involvement in their studies, test scores would also increase. Language skills courses were imbedded in these mobile devices with modules that foster "self-study" (Kondo et al., 2012, p.173).

The study indicated that 'reading and listening' test scores of 99.4 percent of students who utilized the mobile devices significantly increased. The students stated that learning with Nintendo DS was enjoyable. The study also indicated that students spent 104.18 minutes per week to view or download E-learning materials. Eighty-one percent of the students would like to continue learning the English language with the Nintendo DS. Self-study behaviour has significantly increased and evidently motivated students to be actively engaged in their studies. "Playfulness, creativity and an ability to unify separate elements are major parts of insight" which contributes to higher order thinking skills (King, Goodson & Rohani, 2009, p.15).

Sociology and m-learning

McConatha, Prall, and Lynch (2008) conducted a study on m-learning, or mobile learning. Out of 112 sociology students, 42 chose to use their smartphones to study for two scheduled exams while the remainder of the students chose to study using their desktop computers (McConatha et al., 2008). The software utilized was the HotJava Software's Learning Mobile Author (McConatha et al., 2008). URLs were given to the two groups of students. Learning materials such as handouts, practice exams, and review sessions were delivered online. The software for the cell phone can track access to the site, frequency of the access and "quiz scores feedback" from the browser (McConatha, 2008, p.19). The results of the study indicated that the average scores for the two exams for students who utilized their cell phones to access their learning materials is 89 % compared to the average score of 84 % from students who did not utilize their cell phones to access their learning materials.

The study's results are similar to other studies indicating that the use of mobile devices can activate learning and improve student performance.

Vocabulary words as text messages

Katz and Vablon's (2011) study consisted of 241 freshman university students in Israel enrolled in an English language course. Eighty-one of the students acquired vocabulary words from text messages in their cell phones, eighty-five percent of them acquired vocabulary words from email messages in their personal computers, including laptops, and seventy-five students acquired vocabulary words via snail mail. Although there were no significant differences in the examination scores of students in each of the three groups, students who acquired vocabulary words from text messages in their cell phones perceive the method as effective and efficient, leading them to have positive attitudes towards the foundational course. In terms of autonomy, students who acquired their vocabulary through text messages are also the most autonomous students in the group.

If one is looking for increased achievement scores to assess performance change as prescribed by Driscoll (2005), the study failed to deliver those results. However, students who are satisfied with their courses tend to persist in their programs and researchers may have to consider slight changes in the e-Content materials delivered through mobile devices.

Conclusion

A learning theory "comprises a set of constructs linking observed changes in performance with what is thought to bring about those changes" (Driscoll, 2005, p.1). It explains why and how learning occurs. Learning theories consist of internal or external variables that can activate learning (Driscoll, 2005). As learning theorists observe these variables over time, they can provide accurate descriptions of how students learn. A learning theory utilizes empirical findings to integrate several factors that can explain learning phenomenon. Is connectivism a learning theory? Examining the information reservoirs commonly used in connectivism led the author to determine that connectivism has a dual role in education. It serves as a learning theory and as an instructional theory. On one hand, out of the 13 studies evaluated in this article, 11 of the studies demonstrated significant changes in performance and achievement of higher order thinking skills along with diverse E-learning materials in diverse learning environments. However, the articles do not support Siemen's suggestion that connectivism can replace all three schools of learning theories. In fact, connectivism can also be part behaviourist, part cognitive, and part constructionist learning theory. With thousands of materials flowing through the network nodes,

connectivism can provide thousands more E-learning materials in which all three classical learning theories are embedded.

The author also suggests that connectivism is an instructional theory because 2 out of 13 studies in the article need significant design improvements predominantly in the aesthetic quality of the content. Future instructional design specialists should prioritize improving the aesthetic quality of E-learning content since this generation's students have been exposed to high quality and lifelike audio-visual materials including movies with IMAX screens and lifelike images in video games since they were born. The way the content in these studies is designed could be the reason why the studies did not deliver changes in performance. It is also necessary for researchers to determine if their student participants are familiar with the innovation introduced in their studies.

Finally, future researchers must understand that E-learning content perceived by students as fun, would most likely increase their self-study skills, which will enhance their performance scores. There are hundreds of innovations that can be housed in the three major information reservoirs introduced in this article. Evidently, there will be more information reservoirs scheduled to emerge in the future. Surely, connectivism, through various information reservoirs can explain how individuals in the 21st century learn.

References

1. Bell, F. (2016). Connectivism: Its place in theory-informed research and innovation in technology-enabled learning. In the *International Review of Research in Open and Distance Learning*, 17(3), (pp. 98-118). Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/902>
2. Couros, A. (2019). Open, connected, social - implications for educational design. *Campus-Wide Information Systems*, 26(3), (pp. 232-239). doi: <https://doi.org/10.1108/10650740910967393>
3. Driscoll, M.P. (2005). *Psychology of learning for instruction (3rd ed.)*. Boston: Pearson Education, Inc.
4. Dunaway, M.K. (2011). Connectivism: Learning theory and pedagogical practice for networked information landscapes. In *Reference Services Review*, 39(4), (pp. 675-685). doi: <http://dx.doi.org/10.1108/00907321111186686>
5. Garcia, E., Brywa, M. and Elhelagi, I. (2012). *The changing roles of staff and student within a connectivist educational ecosystem*. Article presented at the 11th ECEL European Conference on E-learning. Retrieved from http://academic-conferences.org/pdfs/BU_2012-13-Nov/ECEL_2012/Abstract-booklet.pdf
6. Gould, M. (2005). *The Learning Process*. Learning Process – Research Starters Education, 1.
7. Hogg, N. and Looisley, C.S. (2012). Connectivism in postsecondary online courses: An exploratory factor analysis. In *Quarterly Review of Distance Education*, 13(2), (pp. 95-114). Retrieved from <http://www.infoagepub.com/index.php?id=89&i=154>
8. Katz, Y.J. and Yablun, Y.B. (2011). Affect and digital learning at the university level. In *Campus-Wide Information Systems*, 28(2), (pp. 114-123). doi: <http://dx.doi.org/10.1108/10650741111117815>
9. Kelly, M.N. and Riggs, N.R. (2006). Use of a virtual environment in the geowall to increase student confidence and performance during field mapping: An example from an introductory-level field class. In *Journal of Geoscience Education*, 54(2), (pp. 158-164). Retrieved from <http://www.nags.org/nagt/jge/abstracts/mar06.html#v54p158>

10. Kijlkuik, B. and Van Der Ende, J. (2007). The organizational life of an idea: Integrating social network, occasion, and decision-making perspectives. In *Journal of Management Studies*, 44(6), (pp. 865-882). doi:<http://dx.doi.org/10.1111/j.1467-6486.2007.00695.x>
11. King, F.J., Goodson, L., Rohani, F. (2009). *Higher order thinking skills*. Center for Advancement of Learning and Assessment. Retrieved from http://www.caa.lsu.edu/files/higher_order_thinking_skills.pdf
12. Kondo, M.; Ishikawa, Y.; Smith, C.; Sakamoto, K.; Shimomura, H. and Wada, N. (2012). Mobile assisted language learning in university EFL courses in Japan: Developing attitudes and skills for self-regulated learning. In *ReCall: The Journal of EuroCall*, 24(2), (pp. 169-187). doi: <https://dx.doi.org/10.1017/S0958344012000055>
13. Lin, C.-S.; Chou, C.C. and Kuo, M.-S. (2007). Inhabited virtual learning worlds and impacts on learning behaviors in young school learners. In *International Journal of Distance Education Technologies*, 5(4), (pp. 99-112). Retrieved from <http://www.igi-global.com/article/inhabited-virtual-learning-worlds-impacts/1716>
14. Mackey, J. and Evans, T. (2011). Interconnecting networks of practice for professional learning. In *The International Review of Research in Open and Distance Learning*, 12(3), (pp. 1-18). Retrieved from <https://www.irrodl.org/index.php/irrodl/article/view/875>
15. McConatha, D., Chu, M. and Lynch, M.J. (2008). Mobile learning in higher education: An empirical assessment of a new educational tool. In *TOJET: The Turkish Online Journal of Educational Technology*, 7(3). Retrieved from <http://www.tojet.net/articles/v7i3/732.pdf>
16. McCrossick, L.C. and Ferver, J. (2013). Environmental public health online course (EPHOC) series: Are we making a difference? In *Journal of Environmental Health*, 75(10), (pp. 52-53). Retrieved from http://www.ncha.org/JEH/2013_abstracts.htm#june6
17. Newbange-Bach, S. and Hall, L.R. (2012). *The connected educator: Learning and leading in a digital age*. Bloomington, IN: Solution Tree.
18. Park, J.J. (2012). Sleeping is social: Engaging students online and in class. In *Asian Social Science*, 4(13), (pp. 91-93). Retrieved from <http://www.iiste.org/journal/index.php/ass/article/view/21838>
19. Reid, D.T. (2013). Teaching mindfulness to occupational therapy students: Pilot evaluation of an online curriculum/Enseigner la pleine conscience aux étudiants en ergothérapie : Évaluation préliminaire d'un programme d'études en ligne. In *The Canadian Journal of Occupational Therapy*, 80(1), (pp. 42-48). doi:10.1177/0008417413475598
20. Salas, A. (2013, Feb (4)). The emergence of free online education. In *The Hispanic Outlook in Higher Education*, 25(1), (pp. 14-15).
21. Sangra, A. and Wheeler, S. (2013). New informal ways of learning: Or are we formalizing the informal? In *RUSC*, 10(1), (pp. 286-293). Retrieved from <http://www.uoc.edu/ojs/index.php/rusc/article/view/v10n1-sangra-wheeler>
22. Schiller, S.Z. (2009). Disrupting learner-centered teaching: Pedagogical design and assessment of a second life course. In *Journal of Information Systems Education*, 20(3), (pp. 369-381). Retrieved from <http://jise.org/Volume20/20-3/Pdf/20N3P369-abs.pdf>
23. Siemens, G. (2008, January 27). *Learning and knowing in networks: Changing roles for educators and designers*. Article presented to IIFORUM. Retrieved from <http://iiforum.org/wp-content/Paper105/Siemens.pdf>

24. Subramaniam, S.T.S.; Nordin, N. and Krishnan, M. (2013). e-Content Development in EngineeringC: Students Needs and Readiness. In *International Journal of Business and Social Science*, 4(6). Retrieved from <http://www.ijbssnet.com/update/index.php/side-archive.html?id=1946>
25. Vogt, M., Schaffner, B., Ribat, A. and Chavez, R. (2010). The impact of podcasting on the learning and satisfaction of undergraduate nursing students. In *Nurse Education in Practice*, 10(1), (pp. 38-42). doi: <http://dx.doi.org/10.1016/j.nepr.2009.03.006>
26. Wang, F. and Shao, H. (2012). Using second life to assist EFL teaching: We do not have to sign in to the program. In *TechTrends*, 56(4), (pp. 15-18). doi: <http://dx.doi.org/10.1007/s11528-012-0582-4>
27. Wertsch, J.V. (2008). From social interaction to higher psychological processes. In *Human Development*, 51(1), (pp. 66-79).
28. White, B.T. (2009). Analysis of students' downloading of online audio lecture recordings in a large biology lecture course. In *Journal of College Science Teaching*, 38(3), (pp. 23-27). Retrieved from <http://www.questia.com/library/1G1-192259905/analysis-of-students-downloading-of-online-audio>
29. Zyzanski, J., Richards, K.S., and Gomez, K. (2011). Affordances of a scaffolded-social learning network. In *On the Horizon*, 19(1), (pp. 33-42). Doi: <http://dx.doi.org/10.1108/107481211111107690>

BIBLIOGRAPHY

1. *Procedimientos técnicos de ejecución* (Vázquez Ayora 1977: 251-383)
https://www5.uva.es/guia_docente/uploads/2012/364/50676/1/Documento6.pdf
2. Vinay, J. y Darbelnet, J. (1995). *Comparative stylistics of French and English*. Amsterdam [Netherlands]: J. Benjamins Pub. Co., pp. 84-93.
3. Sofer Morry (2006) *The translator's handbook*. U.S.A Schreiber Publishing, Inc., pp 69-77.
 - a. Retrieved on December the 5th, 2013
4. <http://www.wordreference.com/definition/>
5. <http://www.linguee.com/english-spanish/page/about.php>
6. <http://dictionary.reference.com/>
7. <http://translate.google.com/>
8. [http://www.sites.upiicsa.ipn.mx/polilibros/portal/Polilibros/P_terminados/PolilibroFC/Unidad II/Unidad%20II_5.htm](http://www.sites.upiicsa.ipn.mx/polilibros/portal/Polilibros/P_terminados/PolilibroFC/Unidad%20II/Unidad%20II_5.htm) retrieved on May 19 2014 8:11 pm.
9. http://es.wikipedia.org/wiki/Pew_Research_Center Retrieved on May 20th, 2014 12:11 p.m
10. <http://en.wikipedia.org/wiki/GeoWall> Retrieved on May 23, 2014 2:52 p.m
11. <http://redcaspe.org/drupal/?q=map/node>
12. <http://lema.rae.es/drae/?val=software>
13. http://skat.ihmc.us/rid=1229718825773_364772441_15894/1226068520184I799818313I5060ItextIhtml
14. http://www.samfyc.es/Revista/PDF/v14n2/v14n2_07_artRevision.pdf