

XXV Jubilee World Buiatrics Congress

Budapest, July 6-11, 2008

<http://www.xxvwbc2008.com>

Download or Upload?

The use of technology for higher education learning and management

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Jan/2008

Introduction

Downloading means getting something from somewhere. When you download something, you receive this thing and store it with you. Uploading means putting something somewhere. When you upload something, you send this thing away to be stored by someone.

Which of these can you remember better? The things that you have acquired or those that you have sent on? The money that you have borrowed or the money that you have lent? The gifts that you have received or the ones that you have given?

When you give something to someone, you give them a part of yourself. A part of your story. A part of your life. It is hard to forget. On the other hand, when you receive something from somebody else, the thing you receive is not really yours. It is a part of someone else's life, someone else's history. You remember only the most expressive things that you have received. The rest is usually easy to forget.

Maybe you are wondering what might the relationship with those phrases with education be. Well, traditional education is typically a download process, from the teacher to the student. The student receives the information from the teacher and tries to store it in his or her memory.

A historical approach

We are talking about a centuries old process which became more popular after Ignacio de Loyola, the founder of Jesuit Catholic order, published the "Ratio Studiorum" in the XVI century. "Ratio Studiorum" was a set of pedagogical directives for the Jesuit priests whose main didactic approach was the expositive lecture, in other words, a very formal download process. The "Ratio Studiorum" also created the concept of the linear curriculum, where contents were divided into graded parts, with the easiest being delivered before the more complicated.

This process is very different from the dialectic process created by the Greeks, 25 centuries ago. In Ancient Greece, people were very esteemed if they could present arguments convincingly, even when the subject of the argument was not considered moral for the

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standards of that time (with the exception of Socrates, who was severely critical of the idea of using logic to defend a non-ethical thesis).

When you argue with someone, you give your opinion, a part of you. This is an upload process. It is not easy to forget what you said.

However, the Greek dialectic process was forgotten for many centuries and retrieved only about 150 years ago. This revival occurred thanks to philosophers of education of the XIX century, especially John Dewey, Jean Piaget and Lev Vygotsky, who proposed a new educational approach, based on the active participation of the student. For them, the process of education would be more efficient if the student could participate in the construction of its contents. This was called as “constructivism” by many authors, and we can see that it is a typical upload process.

Notwithstanding the constructivists, almost five centuries later we still follow the precepts of the “Ratio Studiorum”. Teachers speak and students listen. Present education is still a download process.

Technology arrives and history repeats itself

When the Internet was created, in 1986, the concept was to state a non centralized structure, a multicenter computer network, especially for defense and security purposes. Through this structure people could be connected and maintain constant dialogues. It is interesting to note that the Internet was born as an upload concept.

However, when Tim Berners-Lee created the World Wide Web (WWW), at the *Conseil Européen pour la Recherche Nucléaire* (CERN) laboratories, a new concept became available: people could get information from websites. This concept rapidly spread around the world and thousands and thousands of websites were created with the purpose of offering different kinds of information.

The download process had struck again. Education methods using the WWW were based on the download concept. Schools created virtual libraries, virtual syllabuses, virtual books, virtual atlases, virtual repositories, learning objects and many others things that could be downloaded by students.

There is a maxim that says: “if you don’t know the errors from the past, you will be condemned to repeat them”. In the same way as the upload Greek dialectic process was replaced by the download “Ratio Studiorum” process, the original communication concept of Internet was replaced by the download process of the websites and search engines.

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The blog revolution

Blogs appeared in around 1994. A blog (short for web log) is a website where entries are commonly displayed in reverse chronological order. The term "weblog" was coined by Jorn Barger in 1997 and the short form, "blog," was coined by Peter Merholz, who jokingly broke the word weblog into the phrase we blog in the sidebar of his blog in 1999. This was quickly adopted as both a noun and verb ("to blog," meaning "to edit one's weblog or to post to one's weblog"). After a slow start, blogging rapidly gained in popularity. As of December 2007, blog search engine Technorati (<http://technorati.com>) was tracking more than 112 million blogs.ⁱ

Blogs have a simple technology and allow common people to display information in the Internet without a profound knowledge of programming languages or web protocols. After blogs, people do not depend on Internet experts anymore. Everyone now can publish contents on the web. This characteristic has changed the history of the Internet dramatically. The upload process has been reborn.

Today, many sites collect information about blogging in education:

<http://blogs.law.harvard.edu>

<http://weblogg-ed.com>

<http://mywebspacespace.quinnipiac.edu/PHastings/classroom.html>

<http://www.bloggersblog.com/education>

Social communities

Blogs have opened the doors to a new concept in the Internet: people are not passive in front of a web site. They can interact with it and change its contents. Piaget would love that! Based on this concept, virtual social communities have exploded in the web.

Through these communities, people can be connected, interacting mainly by messages posted in forums. A full list of social networksⁱⁱ shows us the top 6 networks today:

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Community	Web site	Launch	Members (millions)
MySpace	http://www.myspace.com	1999	217
Habbo	http://www.habbo.com	2000	82
orkut	http://www.orkut.com	2004	67
Facebook	http://www.orkut.com	2004	58
Friendster	http://www.friendster.com	2002	50
hi5	http://www.hi5.com	2003	50

(A world map of social networks is available at [Valeywagⁱⁱⁱ](#))

Although social networks are a phenomenon, virtual educational environments, especially learning management systems (LMS) still follow the concept of download. Social interaction is peripheral. Schools are usually busy trying to block the access of students to social networks and fail to see them from an educational perspective^{iv}.

We have experimented to use the concept of social communities in an educational setting with good results:

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Maurício Garcia Sair

Informática

Novo Tópico

Tópicos	Respostas	Autor	Visualizações	Última Mensagem
AF - CONTEÚDO DA PROVA	1	aura.cunha	50	04/12/2007 20:38:00 aura.cunha
DATAS - PROVA SUBSTITUTIVA E AF	1	aura.cunha	40	29/11/2007 11:21:00 aura.cunha

Legenda: Atividade | Aviso | trabalho | Livre Expandir tópicos

Título	Data	Status
1 - APRESENTAÇÃO	07/08/2007	Publicada
2 - HARDWARE	09/08/2007	Publicada
3 - HARDWARE	14/08/2007	Publicada
4 - HARDWARE	16/08/2007	Publicada

Fig. 1 – Portal at Faculdades Fanor (Brazil), using the concept of social network.

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Throw it away: the wiki arrives

In the traditional download concept, teachers give texts to the students, which they read in order to memorize. For centuries, students were not allowed to change or improve those texts. The teacher is wise; the student is an empty bottle.

However, in 1994, Ward Cunningham, an American computer programmer, created a system that allowed users to change the contents displayed. He called this system a WikiWikiWeb, a simple and fast way to create online databases. Wiki Wiki is a duplication of wiki, a Hawaiian word for "fast". It was named by Cunningham, who remembered a Honolulu International Airport counter employee telling him to take the "Wiki Wiki" Chance RT-52 shuttle bus line that runs between the airport's terminals. According to Cunningham, "I chose wiki-wiki as an alliterative substitute for 'quick' and thereby avoided naming this stuff quick-web."

Based on this "very" upload concept, many projects have been created, the most well-known of which is the Wikipedia (<http://www.wikipedia.org>). Launched in 2001 as "Nupedia", the Wikipedia currently includes several million freely-usable articles and pages in hundreds of languages worldwide, and content from millions of contributors. It is one of the world's most popular web sites and is an extensively used reference source worldwide (this article included).

There are many examples of wiki use in education:

<http://www.umbc.edu/biobio/biol414/wiki>

<http://aristotle-experiment.wikispaces.com>

http://www.scienceofspectroscopy.info/edit/index.php?title=Using_wiki_in_education

<http://www.wikiineducation.com>

Close contact: multiplayer gaming online

The 1980s saw the birth of a kind of computer game in which the participants assume the roles of fictional characters and collaboratively create or follow stories. Participants determine the actions of their characters based on their characterization, and the actions succeed or fail according to a formal system of rules and guidelines. These games were called as RPG (role-playing game).

In the 90's, the remote access made possible by the Internet expanded the concept of RPG in a worldwide perspective. People started to play while connected to each other through the Internet. Games such as "Ultima Online" and "EverQuest" became so popular that a new concept of RPG emerged: the MMORPG (Massive Multiplayer Online Role-Playing Game).

This is a very interesting fact. Although millions of people are connected and playing, educators have overlooked this fact and there are very few studies of the use of this in education^{vi}. For example, “World of Warcraft”, one of the most popular MMORPG, has currently almost 10 million subscribers!

Second Life (SL), a project created by the Linden Lab company in 2003, started to change this fact. SL is not exactly a MMORPG, but includes many of its resources and characteristics. SL uses a downloadable client program that enables its users, called "Residents", to interact with each other through motional avatars, providing an advanced level of a social network service combined with general aspects of a metaverse. Residents can explore, meet other Residents, socialize, participate in individual and group activities, create and trade items (virtual property) and services from one another.

The popularity of SL has raised the attention of educators and a lot of projects have been created in the metaverse^{vii}. For example, we maintain a project in Second Life called “Vestibular Brasil”^{viii} where almost 40 Brazilian higher education schools participate.



Fig. 2 – “Vestibular Brasil”, a Second Life project by the author

Conclusion

These new Internet “upload” concepts (blogs, wikis, etc) are being called Web 2.0. The popularity of Youtube (<http://www.youtube.com>) shows how upload-based systems can become very huge projects. This means that technology itself can't improve educational efficiency without a profound change in the way that we teach, moving from download to upload.

Some authors foresee that in few years time textbooks will be totally replaced by electronic media. Some of them believe that even classrooms will disappear^{ix}. We cannot predict what will happen in the future with our educational models, but changes will be enormous and many things that we do today will belong in museums. We have to be prepared.

References

ⁱ <http://en.wikipedia.org/wiki/Blog>

ⁱⁱ http://en.wikipedia.org/wiki/List_of_social_networking_websites

ⁱⁱⁱ <http://valleywag.com/tech/data-junkie/the-world-map-of-social-networks-273201.php>

^{iv} http://www.education-world.com/a_issues/issues/issues423.shtml

^v <http://en.wikipedia.org/wiki/Wiki>

^{vi} <http://people.coe.ilstu.edu/rpriegle/mmorg>

^{vii} http://www.simteach.com/wiki/index.php?title=Second_Life_Education_Wiki

^{viii} <http://www.vestibularbrasil.com.br>

^{ix} http://collegeuniversity.suite101.com/article.cfm/college_education_and_technology?CFID=37846821&CFTOKEN=44493631