

The Impact of the New Teaching Tools in Higher Education

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Abstract: Those of us working to improve student learning, and seeking to exploit e-learning to do so, have to ride each new wave of technological innovation in an attempt to divert it from its more natural course of techno-hype, and drive it towards the quality agenda. We have to build the means for e-learning to evolve and mature as part of the educational change process, so that it achieves its promise of an improved system of higher education.

Keywords: *eLearning, higher education, interactive technologies, internet, weblog,*

Higher education plays an essential role in society, creating new knowledge, transferring it to students and fostering innovation. Institutions throughout Europe are working to modernise, both in terms of the courses they offer and the way they operate. Europe has around 4,000 higher education institutions, with over 17 million students and 1.5 million staff.¹ Some European universities are amongst the best in the world, but overall potential is not used to the full. Curricula are not always up-to-date, not enough young people go to university after finishing school and not enough adults have ever attended university. European universities often lack the management tools and funding to match their ambitions.

Governments and higher education institutions are looking for ways to creating better conditions for universities.

The European Commission has published a modernisation agenda for universities which was welcomed by the Member States and the main stakeholders in higher education. The modernisation agenda for universities is part of the Lisbon Strategy for Growth and Jobs. The main fields of reform are:

- **Curricular reform:** The three cycle system (bachelor-master-doctorate), competence based learning, flexible learning paths, recognition, mobility.
- **Governance reform:** University autonomy, strategic partnerships, including with enterprises, quality assurance.
- **Funding reform:** Diversified sources of university income better linked to performance, promoting equity, access and efficiency, including the possible role of tuition fees, grants and loans.

Curricular reforms are also promoted through the Bologna Process, in which 46 countries in the wider Europe are working towards establishing the European Higher Education Area by 2010. The European Commission is helping member states and neighbouring countries in their modernising efforts through policy initiatives, discussion papers and forums, as well as

¹ http://ec.europa.eu/education/lifelong-learning-policy/doc62_en.htm

through EU programmes such as Erasmus, Tempus and Erasmus Mundus.

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The most recent EU policy initiatives include:

- In the field of [University-Business Cooperation](#) we develop a platform for a structured dialogue between the relevant stakeholders and look at ways to reinforce the links between higher education and companies in areas such as curriculum development, governance, entrepreneurship, continuing education, mobility and knowledge transfer.
- A Council Resolution on modernising universities for Europe's competitiveness in a global knowledge economy of 23rd November 2007

PROFESSORS are constantly looking for presentation methods that resonate with students. They also look for ways to make more efficient use of their own time. Social software, also called social networking tools, can help with both objectives, according to chemistry professors who have integrated these Web-based methods into their work. Although professors say adding the software can increase their own workload, the students have responded positively.²

„The key COMPETENCES are : communication in the mother tongue ; communication in foreign languages; competences in math, a science and technology; digital competence; learning to learn; interpersonal, intercultural and social competences ; entrepreneurship ; cultural expression.”³

Electronic learning or **eLearning** is a general term used to refer to computer-enhanced learning. It is used interchangeably in so many contexts that it is critical to be clear what one means when one speaks of 'eLearning'. In many respects, it is commonly associated with the field of [advanced learning technology](#) (ALT), which deals with both the technologies and associated methodologies in learning using networked and/or multimedia technologies.⁴ Many technologies can be, and are, used in eLearning, including [blogs](#). Teachers should strive to promote a new quality in information and knowledge which would allow students to master the scientific, social and cultural knowledge and thus serve the ideals of sustainable development and responsible citizenship. This with the purpose of stressing the public service role of higher education and its contribution to building a culture of peace.⁵ Creativity is a key competency skill sought after by many employers. And yet, one of the major criticisms of

² [Rachel Petkewich](#)- "New Education Tools" <http://pubs.acs.org/cen/education/85/8517education.html>

³ [Ján Figel](#) Commissioner for Education, Training, Culture and Multilingualism - "**Key competences for lifelong learning in Europe** "

<http://europa.eu.int/rapid/pressReleasesAction.do?reference=MEMO/05/416&format=HTML&aged=0&language=EN&guiLanguage=en>

⁴ http://en.wikipedia.org/wiki/Electronic_learning

⁵ ⁷ UNESCO/NGO Collective **Consultation on Higher Education UNESCO**, 27-29 Nov 2000

business schools relates to its lack of programs that promote creative and/or innovative thinking. This could be compounded by the fact that a large number of programs are currently offered online.

Consequently, the issue of whether online education stifles or enhances students' creativity is brought to the forefront. Using this question, the authors engaged in an inquiry process dealing with university students' perceptions of how online courses impact their creativity. Based on students' feedback, it appears that taking online courses generally enhances their creativity. They are not only more inclined to be creative thinkers, but also more likely to be organized and exercise critical thinking.

A student who is learning in a way that uses information and communication technologies (ICTs) is using e-learning. These interactive technologies support many different types of capability:

- internet access to digital versions of materials unavailable locally;
- internet access to search, and transactional services;
- interactive diagnostic or adaptive tutorials;
- interactive educational games;
- remote control access to local physical devices;
- personalised information and guidance for learning support;
- simulations or models of scientific systems;
- communications tools for collaboration with other students and teachers;
- tools for creativity and design;
- virtual reality environments for development and manipulation;
- data analysis, modelling or organisation tools and applications;
- electronic devices to assist disabled learners.

For each of these, there is a learning application that could be exploited within HE. Each one encompasses a wide range of different types of interaction – internet access to services, for example, includes news services, blogs, online auctions, self-testing sites, etc.

Learning technologies have been developing haphazardly, and a little too rapidly for those of us who wish to turn them to advantage in learning. This becomes apparent if we compare these technological developments with the historical development of other key technologies for education. Table 1 shows some of the main developments in information, communication, and delivery technologies over the last three decades, and against each one proposes a functional equivalent from the historic media and delivery technologies. The story begins with interactive computers because the move away from batch processing brought computing to non-programmers. The user had access to a new medium which responded immediately to the information they put in. As a medium for information processing, it was radically different from the much more attenuated relationship between reading and writing, thus creating a new kind of medium for engaging with ideas.

Date	New technology	Old technology equivalent	Learning support function
1970's	Interactive	Writing	New medium for

	computers		articulating and engaging with ideas
	Local hard drives and floppy discs	Paper	Local storage with the user
1980's	WIMP interfaces	Contents, indexes, page numbers	Devices for ease of access to content
	Internet	Printing	Mass production and distribution of content
	Multimedia	Photography, sound, and film	Elaborated forms of content presentation
1990's	Worldwide Web	Libraries	Wide access to extensive content
	Laptops	Published books	Personal portable access to the medium
	Email	Postal services	Mass delivery of communications messages
	Search engines	Bibliographic services	Easier access to extensive content
	Broadband	Broadcasting, telephones	Choice of elaborated content and immediacy of communication
2000's	3G Mobiles	Paperbacks	Low-cost access to elaborate content
	Blogs	Pamphlets	Personal mass publishing

Table 1: New media and delivery technologies for information processing and communications compared with their functional equivalents for reading and writing⁶

In the past five years, the number of online technologies has exploded, with many of them being well-suited for teaching and learning. Those applications defined as "Web 2.0" hold the most promise because they are strictly Web-based and typically free, support collaboration and interaction, and are responsive to the user. ⁷ „Learning and Technology: innovations in Web-Based Training “. This blog will allow us to share experiences with learning and the application of technology to the learning process- <http://leekraus.blogspot.com/>.

The most commonly used (and discussed) tools are described in Table 2.⁸

Table 2. Web 2.0 Applications

TYPE	FUNCTION	TOOLS
Communicative	To share ideas, information, and	<ul style="list-style-type: none"> ▪ Blogs

⁶ Diana Laurillard “E-Learning in Higher Education”
www3.griffith.edu.au/03/ltm/docs/E-Learning_in_Higher_Education.doc

⁷ These applications have great potential to be used in a way that is learner-centered, affordable, and accessible for teaching and learning purposes.

⁸ <http://connect.educause.edu/Library/EDUCAUSE+Review/WikisandPodcastsandBlogsO/44993>

TYPE	FUNCTION	TOOLS
	creations	<ul style="list-style-type: none"> ▪ Audioblogs ▪ Videoblogs ▪ IM-type tools ▪ Podcasts ▪ Webcams
Collaborative	To work with others for a specific purpose in a shared work area	<ul style="list-style-type: none"> ▪ Editing/writing tools ▪ Virtual communities of practice (VCOPs) ▪ Wikis
Documentative	To collect and/or present evidence of experiences, thinking over time, productions, etc.	<ul style="list-style-type: none"> ▪ Blogs ▪ Videoblogs ▪ E-portfolios
Generative	To create something new that can be seen and/or used by others	<ul style="list-style-type: none"> ▪ Mashups ▪ VCOPs ▪ Virtual Learning Worlds (VLWs)
Interactive	To exchange information, ideas, resources, materials	<ul style="list-style-type: none"> ▪ Learning objectives ▪ Social bookmarking ▪ VCOPs ▪ VLWs

Given the easy access to and increasing availability of these tools, it is no surprise that so many of them are being discussed in professional meetings and publications related to teaching and learning. Table 3 lists a few sources for identifying these and other emerging instructional and related technologies.

Table 3. Emerging Technologies⁹

SOURCE	SYSTEMS	LEARNING TECHNOLOGIES	DEVICES	INFRASTRUCTURES
Gartner, <i>Hype Cycle for Higher Education, 2006</i>¹⁰	<ul style="list-style-type: none"> ▪ Repositories ▪ Global library digitization projects ▪ Course management systems ▪ Higher education 	Open-source e-learning applications E-portfolios	Personally owned devices with campus network access ¹¹	Internet 2 / next-generation Internet E-learning

⁹ <http://www.technologyreview.com/Blog>

¹⁰ (<http://www.gartner.com/DisplayDocument?id=493481>)

¹¹ <http://www.nitle.org/index.php/nitle/laboratory>

SOURCE	SYSTEMS	LEARNING TECHNOLOGIES	DEVICES	INFRASTRUCTURES
	enterprise portals <ul style="list-style-type: none"> ▪ RFID library materials management 	Podcasting Learning content		Web services for administrative applications CRM for enrollment management ID and access management
New Media Consortium and EDUCAUSE Learning Initiative, 2007 Horizon Report ¹²		User-created content Social networking Virtual worlds Massively multiplayer educational gaming	<ul style="list-style-type: none"> ▪ Mobile phones 	
EDUCAUSE Learning Initiative) NITLE ¹³	<ul style="list-style-type: none"> ▪ Creative Commons ▪ Facebook ▪ RSS 	Open journaling Digital storytelling		<ul style="list-style-type: none"> ▪ Web 2.0 ▪ Wireless
		3D visualizations Blogs Podcasting and Wikis		

The students noted, however, that online instructors are largely instrumental in enhancing creativity. **Weblogs (blogs)** are personal websites which make it easy to record daily entries. I blog to learn.¹⁴ Blogs let me read content from a single individual, unadulterated with corporate claptrap. On the outbound side, my blogs stick memories in my head -- the teacher always learns more than the student. Blogs are gut-simple to set up. Go to [Blogger](#) to see for yourself.¹⁵ Build a Blog, to start your own blog, go to [blogger.com](#). A blog account is free! There are [instructions](#) for building your personal, company, or team blog.¹⁶

A **blog** (an abridgment of the term **web log**) is a website where entries are commonly displayed in reverse chronological order. "Blog" can also be used as a verb, meaning *to maintain or add content to a blog*. Many blogs provide commentary or news on a particular subject; others function as more personal [online diaries](#). A typical blog combines text, images,

¹² (<http://www.nmc.org/horizon/>)

¹³ (<http://www.educause.edu/eli/>)

¹⁴ <http://www.webblog.ca/design.html>

¹⁵ weblogs: a history and perspective- http://www.rebeccablood.net/essays/weblog_history.html

¹⁶ <http://internettime.com/Learning/Weblogs.htm>

and links to other blogs, [web pages](#), and other media related to its topic. The ability for readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on [art](#) ([artlog](#)), [photographs](#) ([photoblog](#)), [sketchblog](#), [videos](#) ([vlog](#)), [music](#) ([MP3 blog](#)), [audio](#) ([podcasting](#)) are part of a wider network of [social media](#). [Micro-blogging](#) is another type of blogging which consists of blogs with very short posts. As of December 2007, blog search engine [Technorati](#) was tracking more than 112 million blogs.^{17 18}

History. Before blogging became popular, digital communities took many forms, including [Usenet](#), commercial online services such as [GEnie](#), BiX and the early [CompuServe](#), [e-mail lists](#) and [Bulletin Board Systems](#) (BBS). In the 1990s, [Internet forum](#) software, such as [WebEx](#), created running conversations with "threads". Threads are topical connections between messages on a metaphorical "corkboard". Some have likened blogging to the [Mass-Observation](#) project of the mid-20th century. The **World History Blog** is a history blog maintained by a blogger who uses the name Miland Brown.¹⁹ Few details are known about Miland other than he is an academic in North America. The posts generally deal with a wide range of historical issues or topics. Miland also posts about teaching history. The blog has been featured in *USA Today* and the *Internet Scout Report*. The first post is from December 31st, 2003.²⁰ 1983–1990 (Pre-HTTP). Usenet was the primary serial medium included in the original definition of the [World Wide Web](#).²¹ It featured the [Moderated Newsgroup](#) which allowed all posting in a newsgroup to be under the control of an individual or small group. Brian E. Redman and a few associates posted summaries of interesting postings and threads taking place elsewhere on the net. With its serial journal publishing style, presence on the pre-HTTP web and strong similarity to the common blog form which features links to interesting and cool places on the net chosen by the blogger, mod.ber had many of the characteristics commonly associated with the term "blog". It ceased operation after approximately 8 months. [Brad Templeton](#) calls the newsgroup [rec.humor.funny](#) (which he founded) the world's oldest still existing blog.

1994–2001. The modern blog evolved from the [online diary](#), where people would keep a running account of their personal lives. Most such writers called themselves diarists, [journalists](#), or journalers. A few called themselves "[escribitionists](#)". The Open Pages [webring](#) included members of the online-journal community. [Justin Hall](#), who began eleven years of personal blogging in 1994 while a student at [Swarthmore College](#), is generally recognized as one of the earliest bloggers, as is [Jerry Pournelle](#). [Dave Winer's](#) Scripting News is also credited with being one of the oldest and longest running weblogs. Another early blog was

¹⁷ <http://en.wikipedia.org/wiki/Blog>

¹⁸ Technorati est un [moteur de recherche](#) sur [Internet](#) spécialisé dans le domaine des [blogs](#). En août 2006, Technorati en indexait plus de 50 millions. Technorati a été fondé par [Dave Sifry](#) et a son siège social à [San Francisco](#) en [Californie](#), aux [États-Unis](#). (<http://fr.wikipedia.org/wiki/Technorati>).

¹⁹ www.academicblogs.org/wiki/index.php/World_History_Blog

²⁰ www.worldhistoryblog.com/

²¹ The **World Wide Web** (commonly shortened to **the Web**) is a system of interlinked [hypertext](#) documents accessed via the [Internet](#). With a [Web browser](#), a user views [Web pages](#) that may contain [text](#), [images](#), [videos](#), and other [multimedia](#) and navigates between them using [hyperlinks](#). The World Wide Web was created in 1989 by [Sir Tim Berners-Lee](#), working at [CERN](#) in [Geneva, Switzerland](#). Since then, Berners-Lee has played an active role in guiding the development of Web standards (such as the [markup languages](#) in which Web pages are composed), and in recent years has advocated his vision of a [Semantic Web](#). [Robert Cailliau](#), also at [CERN](#), was an early evangelist for the project.
http://en.wikipedia.org/wiki/World_Wide_Web

Wearable Wireless Webcam, an online shared diary of a person's personal life combining text, video, and pictures transmitted live from a wearable computer and [EyeTap](#) device to a web site in 1994. This practice of semi-automated blogging with live video together with text was referred to as [sousveillance](#), and such journals were also used as evidence in legal matters.

Early weblogs were simply manually updated components of common [websites](#). However, the evolution of tools to facilitate the production and maintenance of web articles posted in reverse chronological order made the publishing process feasible to a much larger, less technical, population. Ultimately, this resulted in the distinct class of online publishing that produces blogs we recognize today. For instance, the use of some sort of browser-based software is now a typical aspect of "blogging". Blogs can be hosted by dedicated [blog hosting services](#)²², or they can be run using [blog software](#)²³, such as [WordPress](#), [Movable Type](#), [Blogger](#)²⁴ or [LiveJournal](#), or on regular [web hosting services](#).

Types. There are various types of blogs, and each differs in the way content is delivered or written. By media type A blog comprising videos is called a [vlog](#), one comprising links is called a [linklog](#), a site containing a portfolio of sketches is called a [sketchblog](#) or one comprising photos is called a [photoblog](#). Blogs with shorter posts and mixed media types are called [tumblelogs](#). An [Artlog](#) is a form of art sharing and publishing in the format of a blog, but differentiated by the predominant use of and focus on Art work rather than text. A rare type of blog hosted on the [Gopher Protocol](#) is known as a [Phlog](#) .

By device , Blogs can also be defined by which type of device is used to compose it. A blog written by a [mobile device](#) like a [mobile phone](#) or [PDA](#) is called a [moblog](#).²⁵ [Genre](#). Some blogs focus on a particular subject, such as [political blogs](#), [travel blogs](#), [fashion blogs](#), [project blogs](#)²⁶, [education blogs](#), [niche blogs](#), [classical music blogs](#), legal blogs (often referred to as a [blawgs](#)) or [dreamlogs](#). Education blogs are becoming a means for educators, students, and education administrators to interact more effectively than ever before. [Technorati](#) currently tracks [63.1 million blogs](#). [Over 5,000 of them](#) are about education. There are over 30,000 blogs hosted at [edublogs.org](#) alone.²⁷ A blog can be private, as in most cases, or it can be for [business](#) purposes. Blogs, either used internally to enhance the communication and culture in a [corporation](#) or externally for [marketing](#), [branding](#) or [PR](#) purposes are called [corporate blogs](#). [Blog search engines](#) . Several blog search engines are used to search blog contents (also known as the [blogosphere](#)), such as [Bloglines](#), [BlogScope](#), and [Technorati](#). Technorati, which is among the most popular blog search engines, provides current information on both popular searches and [tags](#) used to categorize blog postings. Research community is working on going beyond simple keyword search, by inventing news ways to navigate through huge amounts of information present in the [blogosphere](#), as demonstrated by projects like [BlogScope](#). With more than 22 million blogs online, blogs are becoming a media form of their own. While they offer the benefits of marketing products, discussion of specialised topics, and channel for political activism and social change, they present significant political and legal risks. The

²² www.websitesource.com/

²³ „Make love, not war! ”- <http://www.buzzworkers.com/blog/index.php>

²⁴ www.blogger.com/start

²⁵ A **moblog** is a [blog](#) published directly to the web from a phone or other mobile device. Moblogging is popular among people with camera-enabled [cellphones](#) which allow them to either e-mail photos and video that then appear as entries on a web site, or use mobile blogging software to directly publish content to a Web server-
<http://en.wikipedia.org/wiki/Moblog>

²⁶ <http://www.darkstarlinux.ro/en/blog>

²⁷ <http://oedb.org/library/features/top-100-education-blogs>

emergence of blogging has brought with it a range of legal ramifications. Since blogging is a relatively new phenomenon, a substantial body of case law simply does not exist.²⁸



The right software is important for your blog, especially if you're a business with lots of web traffic. Blog software can range from simple to complicated where you would need someone to configure

it for you. There are many companies out there with web blog software. Now that blogs are becoming more and more mainstream, even more software companies are designing their own blog software. Please feel free to click on any of the links you see on this page to find software for your blog^{29,1}. „**You are viewing a feed that contains frequently updated content.** When you subscribe to a feed, it is added to the Common Feed List. Updated information from the feed is automatically downloaded to your computer and can be viewed in Internet Explorer and other programs. „³⁰Create a blog is necessary and easy.^{31 32 33}

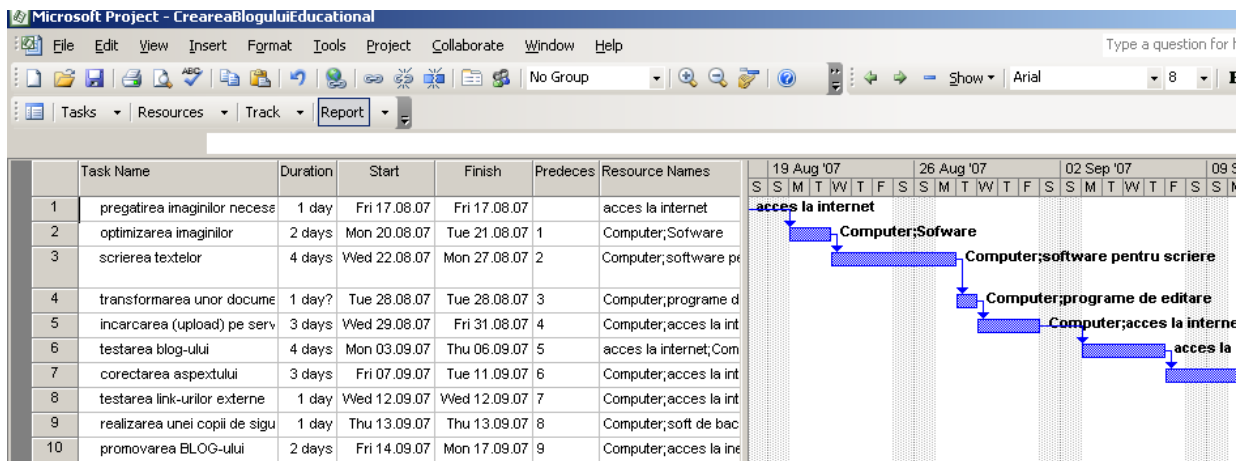


Fig. 2. Create a blog represented with Microsoft Project.

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²⁸ Sylvia Mercado-Kierkegaard -Blogs, lies and the doocing: The next hotbed of litigation?

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