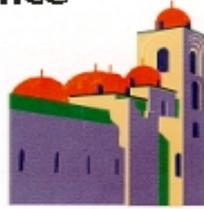


# Multimedia and Architectural Disciplines

THE NEW  
CHALLENGE OF  
LEARNING

The 13th European Conference  
on Education in Computer  
Aided Architectural  
Design in Europe



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## Abstract

*The World Wide Web offers us a new way of hunting for information. If we compare Internet to an ocean, "surfing" is perhaps the right word to use for describing this hunting process. The "power" of the Web lies in its piendly interface and in its potential to provide users with high impact documents, pictures, animation and sound. The hypertext nature of the web allows us to create an on-going set of links which refer to and connect sites all over the world. Researchers and students can use this tool not only for gathering information, but also for publishing their works and "peering" with the works of others. The challenge, then, is to generate new interest around getting information. Students seem to have more motivations in learning whilst experimenting. And the Web is a good place to start.*

## Information at the speed of light

The range of computer media extends from word processing to the Web: the ultimate technology is a challenge to discover how information travels at speed light, and how the so-called "virtual community" is growing day by day. The speed of the Net (Internet) doesn't seem to have destructive effect on information, though. On the contrary, it seems that users, especially Web users, ask for more speed, i.e. more information in the shortest time. Speed, of course, doesn't necessarily equate to quality and, arguably, for the time being, the quality of what we find on the Net is not really important. What is important is that around and inside Internet, a sense of community is developing, even though people don't meet physically and don't know anything about "true" past and/or personal lives of their net-friends. The exchange of opinions, points of view, papers, images, music, gossip and whatever we can imagine as bit-transmittable, keeps Internet alive and really pulsating.

Some scholars point out how an abuse of speed might lead to an "information disease", in which an overload of inducted thoughts will wipe out any "original" approach to new technologies. We have no proof of this, but, what is quite clear is that this new way of accessing information has a large "consensus" and a fascination never found before. It's on this fascination that we can rely, to open our and other minds to the "information age".

The perception of community, inside the Net, is not a perception of belonging to a hierarchy, with roles and chiefs. It is more a sense of being part of dynamic groups, which continuously redefine themselves. One of the most interesting aspects of the Net, is this continuous, motionless, change which can be experimented with a daily use the Web or other tools, such as, IRC (Inter Relay Chat). The Net is an interesting place to start, for a study on social behaviours and dynamics. We can use it as a platform for developing new ways of expressions and, also, it is becoming a privileged place for storing information.

## Old metaphors for new worlds

Using metaphors is the easiest way for explaining the possible actions we can perform using the Web. Some of these metaphors are already part of a shared language which has become common to the "virtual community", i.e. the community which communicate using new technologies.

The first metaphor we refer to, when we talk about the Net, is the one of the ocean. The "waves of information" can be "surfed" by everyone. The net does not discriminate against users with different backgrounds and levels of knowledge of technology. Let's examine, briefly, the terminology used to define actions and approaches.

Let's examine, briefly, the terminology used to define actions and approaches. "Sea" and "ocean" are not new concepts to use for referring to information in the age of new media. It's not a coincidence that the image of future information technology (IT) is an "information superhighway" - something that will cross and rise above the turbulent waves. The superhighway will allow us to observe the movements of the sea, and, eventually, to dive when we find something captivating.

We cannot deny feeling a sense of despair, looking "down" at the ocean of information. Nor we do feel comfortable being surrounded by quick changes in our lives due to vanguard technologies. But the most common term to define the action of looking for information on the Net is "surfing". "Surfing" is not only an action for "techno people", namely, computer literate people, but, as the noun suggests, it is a way of being on the verge, without being submerged. Crossing and navigating the surface of Internet (sur-face: on the face/facade) gives us the freedom of stopping or keeping going until we find a spot, an "oasis", a place of interest, a rest. Everyone has a different approach for hunting information. Our task, as researchers, is to point out how people use (perform) technology, so that we can improve methodologies and meta-faces (interfaces) for its best use.

From the beginning, the Net has used these metaphors, such as "ocean", "surfing", "highway" or "hunting", to refer itself to a real world, a "material" world which can be touched and seen as plastic volume. It seems that "immateriality" of information has found its true dimension inside the electric impulses of the Net. For the time being, it has not developed its own language: emoticons (smileys) and acronyms are not enough to affirm it. But, we can already observe some kinds of behaviours, which can be identified only inside the use of Internet; for example: the freedom of building up a different/multiple identity, or the possibility of publishing our writings and peering at works of others, and, eventually, appropriating ideas, images, diagrams, pieces of work.

Let's leave for the moment the detail of the thousand ways of using the Net, and resist giving opinions on hot topics, such as techno-democracy or privacy - matters which are populating specialised magazines. It's enough for us to know that the Net is one of the best places to show and hide ourselves, that it stimulates our imagination over the technical difficulties, which always make us feel frustrated by a technology which is not (and never will be) perfectly fluid.

The World Wide Web (the Web) is the easiest interface for practising "net-surfing". Its hyper textual nature makes it friendly and, more importantly, personal, individual. No one has the same way of learning, or the same interests. Some searching engines will help us to focus on a topic, and then in our hands we will have the "new challenge of learning". Our "click" of mouse will be the choice, and who has used the Web at least once, knows how exciting is starting from a mathematical problem and finish up "discovering" some rare old maps conserved at the British Museum.

### **Links and keywords: passwords for learning**

This process of associating ideas is very useful for designers, for example, because they may produce more articulated references for their projects, and, of course, for students, who have the biggest library in the world at their disposal. They (but I should say: we all) like an interactive free learning, rather than an one-way "conservative" approach to a subject. Luckily, good searching engines (such as Lycos or Yahoo) save us a lot of energy. A keyword can generate hundreds of links from which to start, and then, one document after the other, we will build up a wide range of sites to visit, and to check again, because one of the most amazing things about the Web is that it is alive and constantly changing. Almost every university in the world has its Web sites, which gives information not only to local staff, but also to researchers and scholars. HTML (HyperText Markup Language - the language in which Web pages are written) is quite easy to learn, and many word processors have now the capability of converting files into this language, just selecting an option. The fascinating interface of the Web is easy and immediate. My experience in teaching HTML to the students has been a good point of observation. Most students came with no prior knowledge

of the language but it took about two weeks to develop sufficient knowledge to use HTML produce Web pages. The results are immediate: they can check in real time what they wrote and modify the layout until it's satisfactory. The Web invites to steal HTML sources and thereby the tricks of other perhaps more expert HTML writers. As students like to be original, anyway, stealing is not a real danger, and it's not discouraged by tutors. Knowledge acquisition is faster and more pleasant when information relies not only on its quantity but also on a correct and appropriate way of presenting it.

### **Not only text, please**

With some new features (such as animations and sound) the Web is now becoming a real multimedia tool. And no one will have to read the manual: it's there to be experimented. Using a simple but effective way of showing information it is possible to generate great interest.

The Web, by its nature, is made to be read on-line. I am aware of the unpleasant meaning that this word (on-line) has. It suggests that we must be connected all the time, and, since most of us don't have the privilege of accessing Internet through a direct connection, this means that our telephone will be engaged for hours, because the fascination of "being in the middle of the ocean", surfing, is not easily dropped with the line.

This is a side problem for us, though. Telephone companies and local governments are now working to give good connections to every citizen, and to give them the possibility of "hyper navigating" and using the user friendly interface of the Web.

Even though the net can be frustratingly slow or not work properly at all, students seem to be less impatient than researchers.

Using the Net for videoconferencing, with all the attendant synchronous communication, to show and communicate in real time, is a difficult task to solve. Email and the Web are not interactive in the sense that we choose options which change the source as we like it to be. Videoconferencing is interactive, because our actions are influenced by and, in turn, influence the session. The fascination of videoconferencing, using a relatively low technology such as CU-see-me, comes more from seeing the other person on our screen, and less from a "real" possibility of exchanging information and take decisions. Since we are conducting experiments on an educational level, it's more important to observe "attitudes", that is behaviours, than final results. To improve the way students use the Web, we have to work on two different aspects.

Firstly, we should show them the correct way of looking for information, going as directly as possible during the core of the particular research being undertaken, because the first danger of "net surfing" is the incredible waste of time spent on getting the right sites' addresses. Being a "net surfer" is terrific, but if uncontrolled, can become a great loss of time, energy and, not least, money. Some indications, like searching engines' URL (Uniform Resource Locator) and database sites will be very useful places for starting the research.

Secondly, we should improve students' knowledge of HTML, because it's only knowing the nature of what they are looking at, and the way they will present the information collected, that will stimulate the "new challenge of learning". Instead of writing an essay, they will present their ideas using Web pages (as occurred in the two VDS, Virtual Design Studios, conducted in the Key Centre of Sydney University, during the first semester of 1995)(see Maher, 1995).

A good exercise for students, can be, for example, to produce a newsletter about information found on the Web. They will practise, in this way, the two aspects presented above: collecting and presenting information.

### **Beware the interface**

The colourful ocean of the Web can make us lose among its waves. There should always be a good balance between the interface produced and the quality of information (which might not necessarily be text, but images, icons, and animation). We can present "empty" information in a fanciful way, but it will still be "empty", or, and probably this is worse, present very interesting information in a dull, boring interface. On the Web, as well as in some specialised magazines, we come across both these examples. In either case, the user will lose "respect" for the information presented, but while in the first case he will be attracted by the interface, and we can therefore hope he will at least read the content, in the second case there is less likelihood that the user will actually receive the valuable information on offer.

The same can happen when students are presenting their works using the Web. Mostly attracted by the tools, they give less importance to the quality of information, and, as a result, they confuse, for example, architecture with drawings (as usually happens when technology seems to prevail).

"The new challenge of learning" is to use technology to improve our knowledge and the way we "understand media". Researchers and teachers will find it more satisfactory to see how their students attain a good knowledge of technology and are able to use it for transmitting their ideas, rather than creating "skilled monsters" who are techno-able but cannot use their skills to communicate valuable ideas.

## **Conclusions**

Using the Web to gain and gather information is a new experience. It offers a fast and easy way of accessing the biggest library in the world. Its growth has been fast (last evaluations from February 1995 give a growth rate of more than 30% in the last 4 months of 1994). The Net is becoming an extremely popular way for "hunting" information.

Beyond being a metaphor, the Web has the property of being easy-to-use and it doesn't need further instructions than "click on the button and wait". HTML, on the other side, is a simple language, which gives enough satisfaction to students, so that they can collect information and present it quickly, efficiently and attractively.

The technical environment for running a Web client is becoming less and less expensive, and, for research centers such as Universities, the Net is indispensable as a source of constantly updated research.

From an educational perspective, it's interesting to observe how the process of hunting information becomes a pleasure for some students, thanks to the hypertextual nature of the Web.

Moreover, "surfing" the Net can lead us to discover links and connections among subjects which didn't seem to be related. Text, pictures, animation and sound are the tools already available for experimentation and research. This can be particularly useful for creating a "landscape of references" for an updated research. Experiments of collaboration using the Web are being conducted with satisfactory results, especially considering the "youth" of the medium.

## **References**

More references about experiments conducted at the Key Centre for Design Computing, using the Web can be found at these URLs:

- [http://www.arch.su.edu.au/kcdc/design\\_studio/index.html](http://www.arch.su.edu.au/kcdc/design_studio/index.html)
- [http://www.arch.su.edu.au/kcdc/design\\_studio\\_au/index.html](http://www.arch.su.edu.au/kcdc/design_studio_au/index.html)
- <http://www.arch.su.edu.au/kcdc/sPacific-hwy/index.html>

and, for a full description of the VDS experience, in which I have been involved:

Maher, M. L. 1995. *The experience of Virtual Design Studios at the University of Sydney*. (ask author)

## **Acknowledgment**

I would like to thank Mr. Justin Milne for having revised and "cleaned up" my english in this paper.