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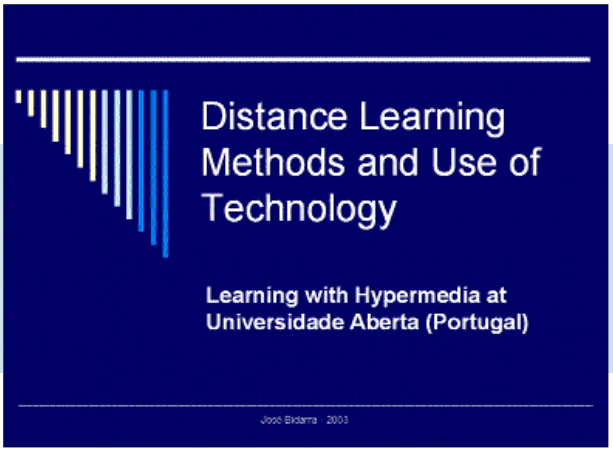
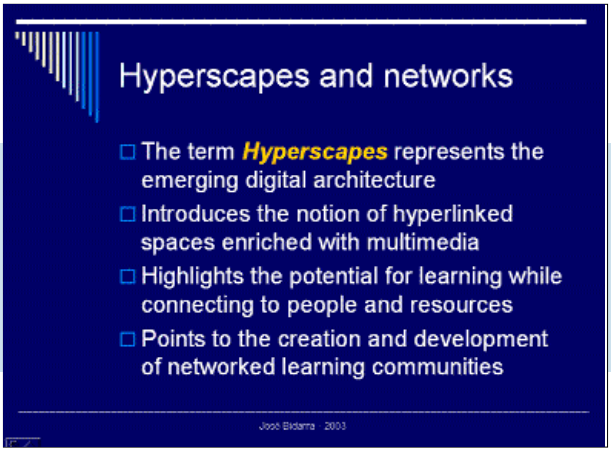
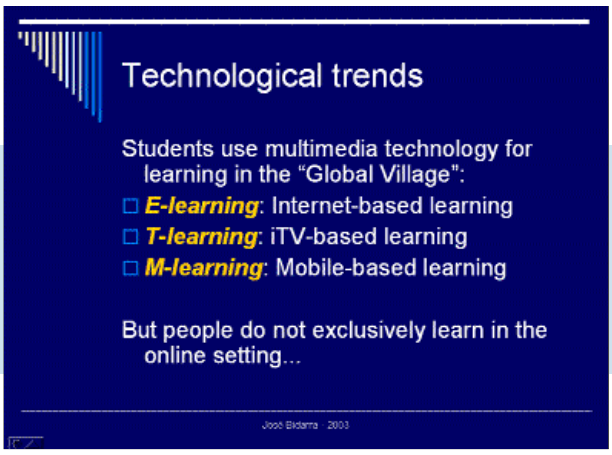
Universidade Aberta – Portugal



It is a pleasure to be here in Athens and share with you all the experience in the use of technology at Universidade Aberta in Lisbon (the Portuguese Open University). This talk is mostly about learning with hypermedia in our university. The mainstream notion is what we call the *hyperspaces approach*

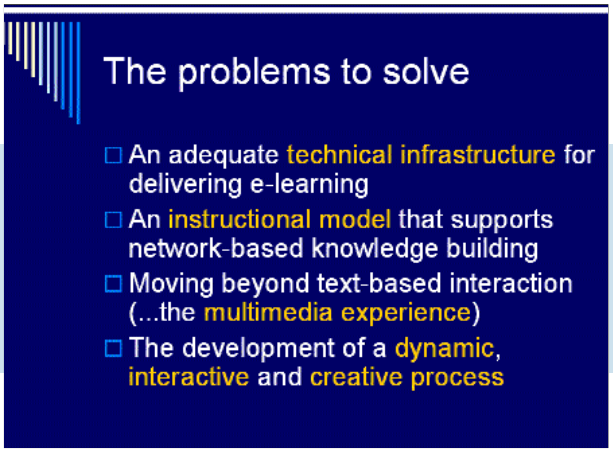


"Hyperspaces" (or "hyperscapes") is a strange word so I will give you a hint: an hyperspace represents an emerging digital architecture in our world, but not only on the web. Hyperspaces are interlinked spaces embedding different media. It is within the context of hyperlinked spaces enriched with multimedia that we discover a vast potential for learning while connecting to people and resources. Furthermore, these point to the creation and development of networked learning communities.



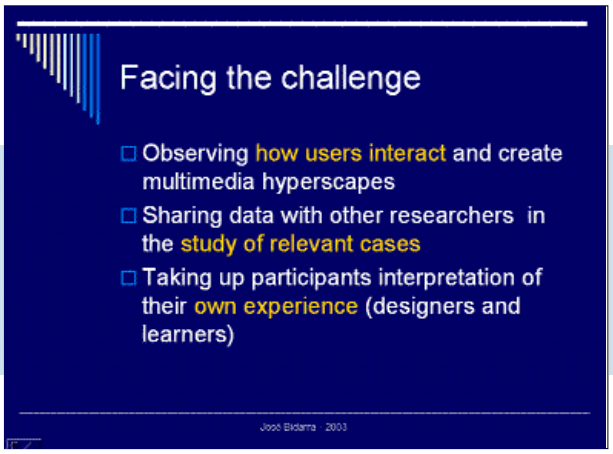
So, this is basically the philosophy of what we are doing in our research, even though not for all the students in the university but in some specific courses and areas. Because our living environment is becoming networked and because knowledge is distributed, may be there are some technological trends we have to consider. Typical technology expressions that you know are, for example, E-learning for Internet based learning, T-learning for interactive television-based learning or M-learning for mobile learning, and surely many other trends will follow. But it is not the technology itself that makes we worry. We are also concerned with the way students learn and there is a new generation of students that we call the "play generation", somebody called them previously the "playstation generation". This "play generation" is the opposite of the "drill generation" of the old days because these students have very specific needs and we have to address these needs. I will show more about this in a minute.

In general, we are still using legacy technologies in our open university. The course manual is still a fundamental printed resource. We have broadcasts on television on Saturdays in the mornings; we have on Mondays satellite broadcast TV and we produce many audio and videocassettes for different kinds of subjects. We also put forward tutor marked assignments, tutoring via telephone and seminar sessions, as well as many other media supported events. Not so much video conferencing though, only in specific cases with remote locations (such as the island of Timor) where we have set out events.



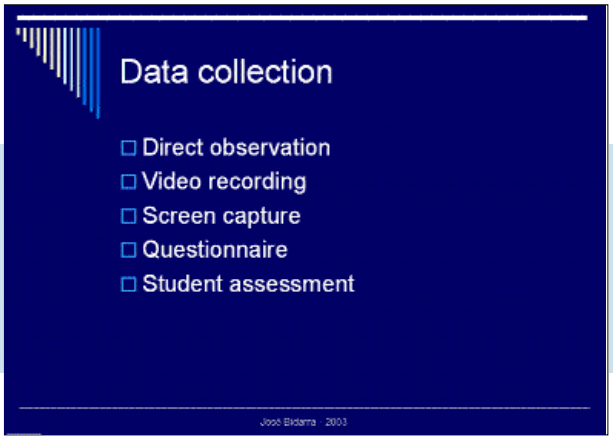
Back again to our networked society, which is growing fast, we have to solve some problems. The first one is the technical infrastructure. Not only the network connections and the PCs on the desks, but moreover the instructional software, the learning standards and the kind of interaction we want with the students. Also an instructional model that supports networked based knowledge building. In this area we have many different experiments going on in our institution.

Many of my colleagues are doing applied research and experimenting with technology in specific areas. Again, we do not have one recipe for all the students. We are trying to move beyond text-based interaction to what we call the global multimedia experience. As I said before, we are trying to relate to a new generation of students coming into distance education. The multimedia experience is somehow difficult to incorporate into the material because digital processing is a rather difficult task, but we are experimenting in this area and I think we are improving our methods and tools. In addition, it is important to develop a dynamic, interactive and creative process, so that students do not just read passively through text material as they used to do.

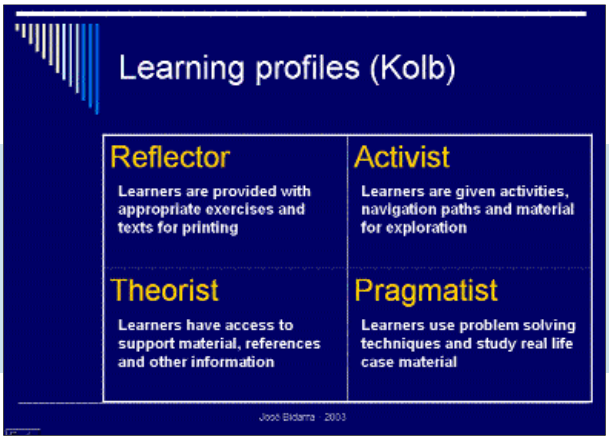


At Universidade Aberta we do our best to observe how users interact and create multimedia hyperscapes within their learning experience. So we try to see exactly how they work with the material and with the media we are providing in the courses. Also important is sharing data with other researchers studying relevant cases within the organization. Because, as it is common in our universities, each one is doing his own research and nobody knows about it; so we have to share data and try to get very fast ahead in our research, also because technology changes very quickly.

We found that is important to take up participants' interpretations of their own experience. Not only concerning the learners but also including instructional designers and technologists as well. These are people who usually do not really talk much about their own experience. So, it is good to know exactly what they do and how they feel.



The data is usually collected by direct observation as I have mentioned. Video recording is useful in some cases, also screen tracking devices, questionnaires and, clearly, the final assessment of students. In this way, we can compare different kinds of data and crosscheck whatever results we get.



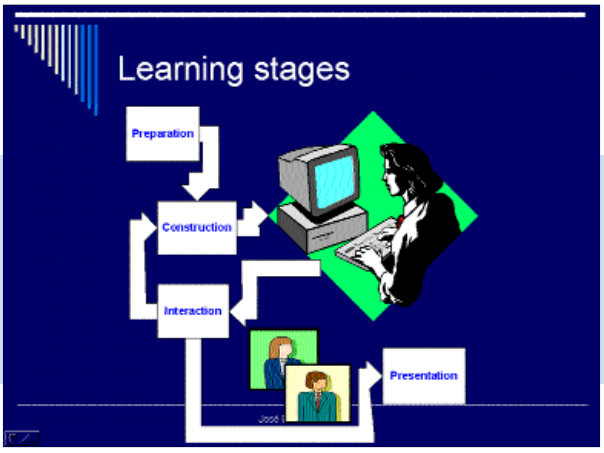
I am going back again to what I said in the beginning: our students are the main concern. We try to cope with different learning profiles following some main beliefs about this. I am just going to present the core forms – Kolb's four basic profiles – from which you can make any selective combination.

For instance, on behalf of the "reflective" student profile we provide appropriate exercise and text for printing. The "reflector" is a type of student who needs to have time to think about things, to digest the material and to interact with his own ideas for a while. On the Web things usually move too fast, so we have to provide this person with something he/she can print or take away.

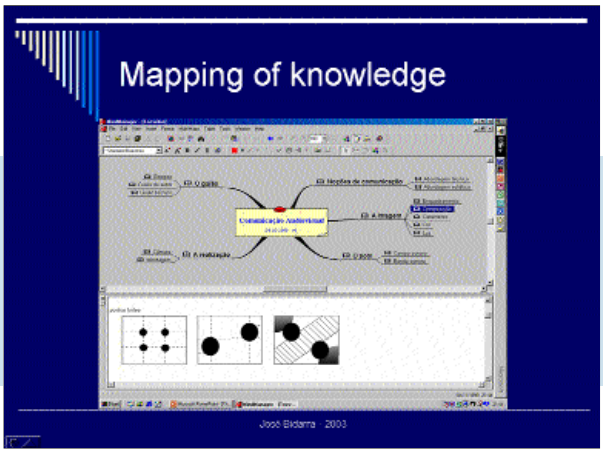
For the "active" student profile, learners are given activities, navigation, parts of material for exploration; basically something more dynamic for a more active person. This is usually the kind of material that is more difficult to produce. It involves more programming resources and more elaboration of the material.

For the "theorist" student profile, for example, we can provide support material, references, bibliographies and other information like that. This is the kind of student who wants to know exactly where everything comes from, what are the references and the theory behind any assertion, so we have to provide this strain of information as well.

For a "pragmatist" student profile, typically the student that wants to know what things are for, we must provide application material and show the outcome and the cost/benefit of a solution, for example. To accommodate for these learners, we must provide problem-solving situations, case studies and activities that are very pragmatic in nature.

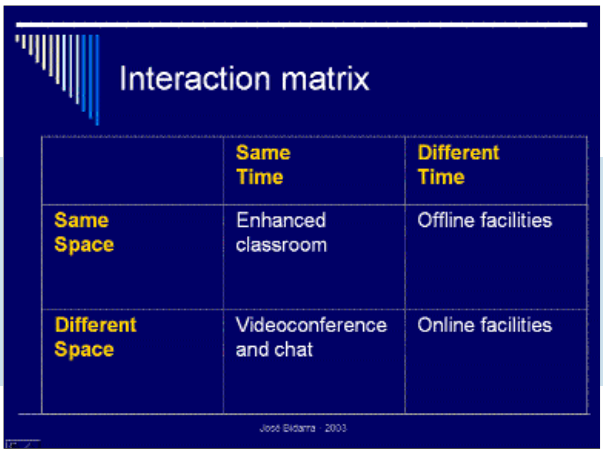


In general, we try to provide students with multiple channels instead of merely relying on a full printed text with pictures. Our model also considers four learning stages. The "preparation" phase, to get in touch with the software and the methodology. Then follows the "construction" phase closely intertwined with the "interaction" phase; these represent a cyclic process through which the students create their own hyperscapes in groups. They use online chats and computer conferencing to interact with tutors and peers; this also becomes part of their assessment in the end. Finally, the "presentation" phase consists in the publication of multimedia material on the Web. In general students are very motivated to get to the end of the course and make the material available to other students.



Mapping of knowledge is another concept we are trying to implement. We are using cognitive mapping and concept mapping tools, like Mind Manager shown here, because these allow for the construction of maps by groups of students. Both knowledge and content maps can be structured and prepared to integrate multimedia materials as well.

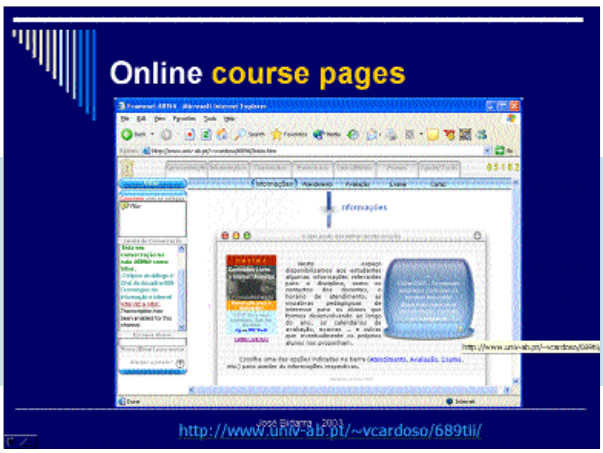
Eventually we can have groups of students working on different teams, and we can integrate their work by importing their maps and creating a huge integrated map. This can be then transformed into a website in a few seconds by way of simple formatting options.

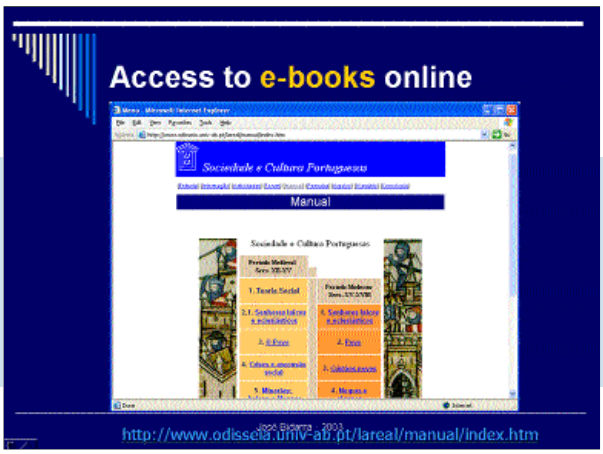


The main interaction methods we use in most cases are based on "space" and "time" variables. For example, for "same time" and "same space", like we have here in this room, we may consider a multimedia extension. For "different time" and "same space" we may have lab facilities, a place were students can have a more realistic setting. Here, learners can work on their own time. In "same space" and "same time" activities, typically a videoconference or a chat, we may engage learners in synchronous events. In this case, you have to schedule special events and you have to be there at a specific time. Finally, we have "different time" and "different space" activities,

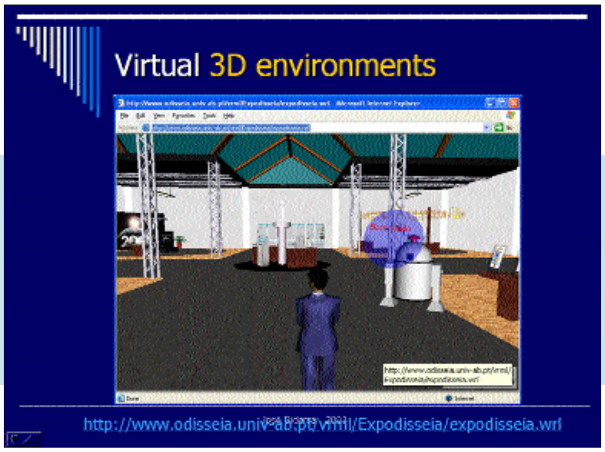
essentially asynchronous learning environments, with conferencing facilities and learning management systems (LMSs).

The IntraLearn platform is the learning management system we have installed; it is being used now mainly for training courses but we are also preparing undergraduate and post-graduate courses for this platform.

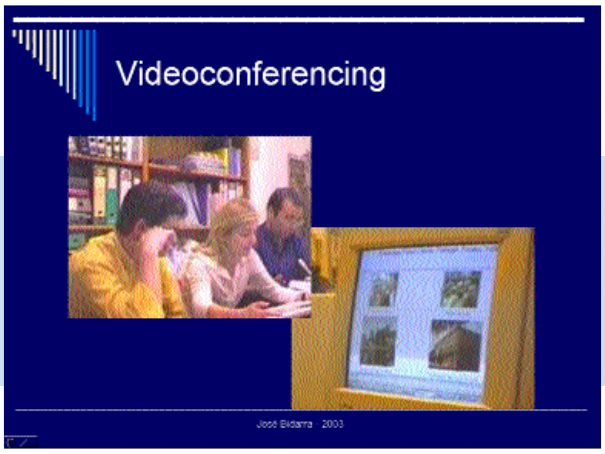




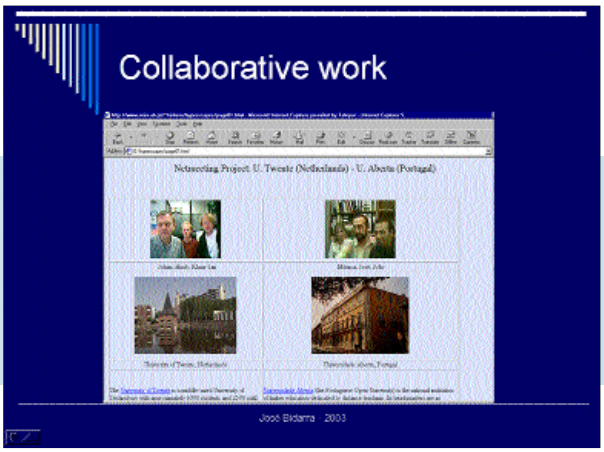
Online "course pages" are now common with all our courses. Also access to e-books online, as you see in this example. It is not the actual book, but some value adding material that grows on the course book. Support for workshops and seminars is supported online as well.



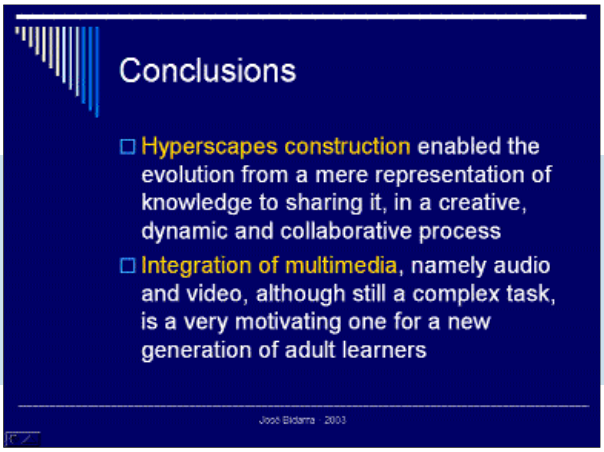
Concerning virtual reality environments, we have someone specifically working on this strand of research. This implies the development of an artificial environment where students can be immersed and an interface accessible by means of the computer screen. Again, the strategy is to reach the latest generation of adult students.



Regarding video conferencing technology; we have been using dedicated broadband facilities and PC-based installations. We have educational conferences going on with the Timor island and occasional meetings with other universities, for example.



In a specific case desktop videoconferencing was used to link our students to their peers in the University of Twente, in the Netherlands. The task of students in both universities was to create web pages in synchronous sessions, with enough room for collaborative work, so people could introduce themselves and create materials online together.



In conclusion, we feel there is a change from a mere representation of knowledge to sharing it in a creative dynamic and collaborative process, perhaps with more success in some cases and less success in other cases, but in essence we have more students motivated and engaged with hypermedia these days. As I said earlier, because student learning profiles are different, we can never say that all of them will enjoy learning with a certain model and that all of them will learn with the same kind of material. The integration of multimedia, namely audio and video, is still a complex task due to background difficulties: we learn in school how to process text and graphics on the computer but unfortunately we do not learn how to process video or multimedia components. But this is nevertheless a very motivating challenge for a new generation of adult students.

Last but not least, it's important to raise the aspirations and equal opportunities of adult students, providing skills for working life, sustained by effective and efficient learning. Today universities have less money and technology resources are becoming very expensive, as many people said here today. In my view, the way to overcome these difficulties is by fostering innovation and supporting dissemination of good practice and evidence, which is what brings we here today. Thank you very much.