PROJECT OCTOPUS[1] – ON LINE EDUCATIONAL RESOURCE CENTRE, A METAPHOR FOR A HYPERMEDIA ENVIRONMENT

Vito Carioca (Escola Superior Educação Beja-Portugal)
Aldo Passarinho (Escola Superior Educação Beja-Portugal)

INTRODUCTION

The emergency of new realities in what concerns the diversity of databases supported by technology which require high technological literacy (Norman, 1993) implies the assumption of na attitude of continuous reflection and the creation of mechanisms of access to information. This principle gave us the basis to the project, in the intention of developing a website which allows the access of users from different regions, with common interests, to sources in the domain of environmental education. This was considered an exploratory area, because, for its transversal characteristics, seemed adequate to test the model, but it doesn't exclude the multidisciplinary possibilities of the resource centre.

This Resource Centre is called so, because it functions as the tentacles of na octopus, both internally, by providing access to several databases inter-connected (in the prototype only the one related to environmental education will be created), and externally, through the effective contribution of each partner, so as allow the users a broader search.

The data base will comprise two components: a browser to select the information needed at different levels of depth, and a section with learning sequences to allow for self-study. On the other hand, the construction of the graphic interface will have into account the possible users of the resource centre, offering them visual metaphors which will facilitate their access.

In terms of concrete results to get, its possible identify the basis body of orienting goals:

- To create a resource centre of didactics features online;

- To create and to customize a database in transnational environmemtal education;
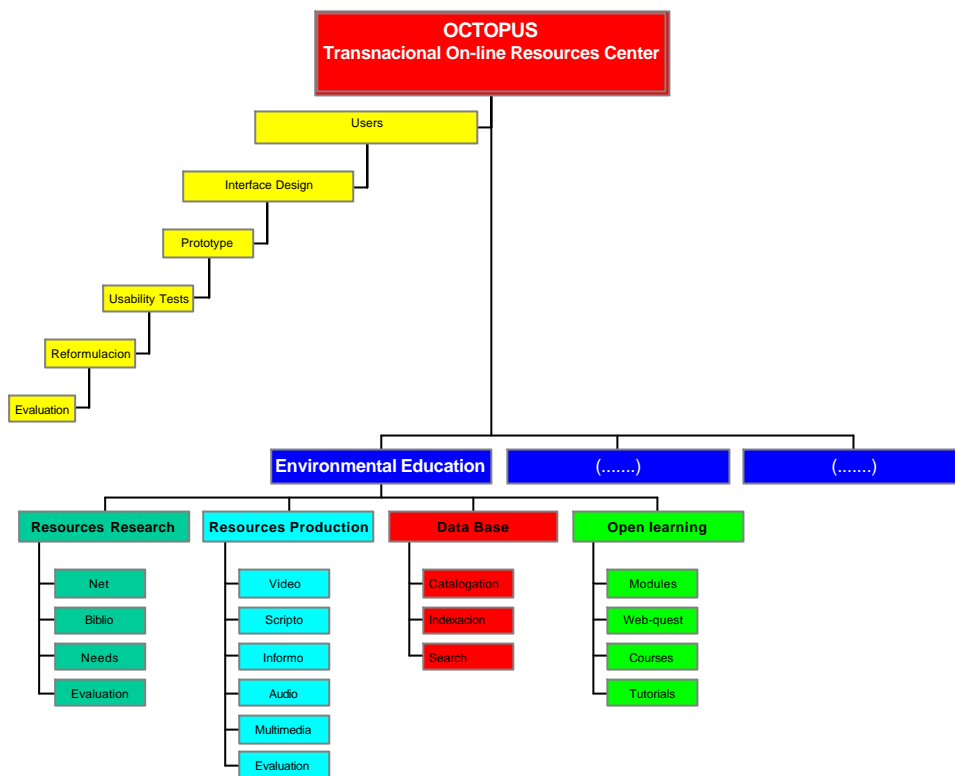
- To identify and to characterize the potencial users of the centre, with the intention to produce na adequate interface to the profile of the users;

- To search and to evaluate existing media resources in the thematic area.

1 - THE LOGIC AND CHARACTERISTICS OF THE PROJECT

The development of the project essentially consists in the design and administration of a "Transnational On-line Resource Centre", through a Web Site that may help the users to do their tasks faster and with more efficacy, transforming their computer into a truly "cognitive artefact", in the words of Norman (1993).

It is assumed, therefore, that, in the information and knowledge society we live in, it is urgent for the schools to find new ways to integrate in their practices methods to access to the multidimensional net of digital data which is provided by the *Internet.* The enormous growth of the Internet in general and of the World Wide Web in particular made available the digital data situated in <u>basic information units (knots)</u> in form of texts, pictures, videos, among others, connected by links, which are educational resources available to schools in order to foster learning. This possibility implies that the school must integrate these resources in their practices, through the development of hypermedia applications which have into account the level of technological literacy of the learners, the validation practices, the classification and indexation of this type of educational resources, the paradigms and principles of usability (Dix et al., 1997: 141-177). It also implies the use of the heuristics of usability (Nielsen, 1993:115-155) so as to detect the problems a user might have when using those applications.

This global logic assumes, in the specific context of this project, the following framework:

OCTOPUS
Transnacional On-line Resources Center

Users

Interface Design

Prototype

Usability Tests

Reformulacion

Evaluation

Environmental Education | (.......) | (.......)

Resources Research

Net
Biblio
Needs
Evaluation

Resources Production

Video
Scripto
Informo
Audio
Multimedia
Evaluation

Data Base

Catalogation
Indexacion
Search

Open learning

Modules
Web-quest
Courses
Tutorials

The designation of the Web Site as "*transnational educational resource centre*" intends to convey a metaphor which seems clear to users (the metaphor of resource centres designed for educational purposes), in order to structure a hypermedia application, since the use of metaphors,

"...behind hypermedia amplifies the notion that we can isolate information in some form so that it represents what has to be learned. You can take it, take it you, guive it to someone else, copy it and so forth. The introduction of interactive and distance media have reinforced many features of traditional, static information assets in the form of books, journals, libraries..." (Kommers, Granbinger e Dunlap, 1996:21)

Another metaphor is used, the "Octopus". It aims to convey the idea that the Centre is organized having in mind the possibility to apply it to other scientific areas in future. Limiting it to Environmental Education allows a better identification of the users during the process of development of the Web Site, which guarantees the adequacy of the design to the users, since

."The multiple design alternatives must be evaluated for specific user communities

and for specific benchmark tasks. A clever design for one community of users may be

inappropriate for another community. An efficiente design for one class of tasks may

be inefficient for another class." (Shneiderman, 1998:14)

We believe that only this way is it possible to develop a Web Site usable by different

communities of users in different European countries. Nielsen (2000) refers to international

usability as a determinant factor for the success of Web Sites which aim at users of different

countries.

2 - THE DEVELOPMENT OF THE PROJECT: MAIN STEPS

With a varied partnership and great experience in the areas of intervention, the project, with a

duration of two years, began in October 2001. The first year was mainly dedicated to the

construction of the Resource Centre, and the second to its application in the Net and consequent

evaluation. Picture number 1 specifies the different steps:

CHRONOGRAM

Tasks	2001 O	N	D	2002 J	F	M	A	M	J	J	A	S	O	N	D	2003 J	F	M	A	M	J	J	A	S	O	N	D	2004 J	F	M
Definition of the users profile					▉																									
Definition about the characteristics of the database and the resource centre					▉	▉	▉																							
Definition about the characteristics of the self-learning and is materials, and the teachers resources					▉	▉	▉																							
Proposal for a tree of subjects for the database					▉	▉																								
Splitting the scientific subjects by partners					▉																									
Proposal for a index of contents and for the descriptors of the resources					▉	▉																								
Developing the graphic and navegacional interfaces							▉	▉																						
Pre-proposal for the prototype (Alfa version)								▉																						
Reformulation of the alpha version										▉	▉	▉																		
Subjects research											▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉			
Production and adaptation of subjects for the database											▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉			
Production and adaptation of subjects for the self-learning											▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉			
Presentation of the prototype (Beta version)														▉																
Database loading											▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉			
Translations											▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉	▉				
Evaluation of the Beta version by Inquiry on-line, questionnaires application and external experts																				▉	▉	▉								
Reformulation of the Beta version																						▉	▉							
Collocation on line of the Final Version																								▉						
Evaluation of the final version																									▉	▉				
Meetings					▉			▉			▉			▉						▉								▉		
Reports									▉																					▉

In the context of the validation and evaluation of the Project, it is essential to publish scientific articles on the results, in magazines in the areas of the ICT, the Educational Sciences and Environmental Education. Besides this, we will present papers in congresses and conferences. We also admit the possibility of publishing more in-depth studies in the research area of the Project. We will also try to widen the areas of the Resource Centre to other national and European institutions, trying to improve the data base, both in quantity and in quality, aiming to appeal to the potential users.

REFERENCES

- DIX, A.; FINLAY, J. ; ABOWD, G. e BEALE, R. (1997) **Human-Computer Interaction.** London: Prentice Hall. 2ªed.

-KOMMERS, P.; GRANBINGER, S. e DUNLAP, J. (1996). **Hipermedia Learning Environments: Instructional Design and Integration**. New Jersey: Lawrence Erlbaum Associates.

-NIELSEN, J. (1993). **Usabitity Engineering**. San Francisco: Morgan Kaufmann.

-NIELSEN, J. (2000). **Projetando Websites: Designing Web Usability.** Rio de Janeiro: Campus.

-NORMAN D. (1993). **Things that make us smart: defending human attributes in the age of the machine.** Massachusetts: Perseus Books.

- SHNEIDERMAN, B. (1998). **Designing the User Interface: Strategies for effective Human Computer Interaction.** Harlow: Addison Wesley