

Strand 2: Innovative Delivery: Methods and Approaches

Paper 3:

Act On Line Project: Networked Learning practice on Internet/WWW

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Summary

- Act On-line Project has been designed to supply emerging requests for continued professional and cultural background. It offers assistance (pedagogical and technological) for constructing short length courses for Internet/WWW environment aiming at reaching the internal public, composed of Universidade Anhembi Morumbi students and teachers, and the outside public as well. For the internal public, an Internet environment has been structured in order that students can benefit from independent study combination, both in classroom and on Internet possibilities.

Through Act On-line Project, Universidade Anhembi Morumbi is investing in methodological research to create distance learning environments on the Web, emphasizing the exploitation of interactive communication and information tools to support on line courses and on line consultation for its students.

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Introduction

- Act On-line it is a practical and academic project, aimed at the development of methodological research on interactive atmospheres of learning applied to on-line courses on WWW. It is the first concrete initiative aimed at the construction of an Educational Technologies Research Center that will start working in the second semester of this year at Universidade Anhembi Morumbi.

The methodological research developed on interface creation and design for learning environments emphasizes the exploitation of interactive tools for communication and information to support on-line courses.

Act On-line main objectives

- Stimulate faculty to create educational projects exploring Internet resources: virtual laboratories for experimentation, expert simulation systems, databases of different formats (images, slides, graphics, etc)
- Enable transfer of different information in the form of courses and interactive repositories available on WWW, in which the information searched is motivated by activities started in the classroom.
- Research the instructional interface pedagogical effects for WWW

Pedagogic model advantages

- Educational research focus is addressed to the creation of interactive and effective environments for learning purposes. Our goal is designing educational products, within the WWW context, involving data and information transmission interfaces that lead to the production of new knowledge.

1. See Internet navigation structure and software structure in multimedia

The way of distributing and structuring information for educational purposes is related to the methodological organization that should comprise resources of transmission of contents and creation of opportunities for interactions between learners and their facilitators.

Our pedagogic model tries to integrate the development of educational interface to the human potential that should exploit it. This potential is constituted of learners and process mediators.

The information transmitted acquires its meaning, according to the people that are behind the machine, both those who are learning and those who are structuring and maintaining courses and projects.

The advantage of this pedagogic model can be observed through the way learners and mediators effectively interact. Knowledge production depends on people, not only on the developed interfaces and contents presented in the web pages.

Instructional design

- Contributions resulting from sciences that study the human development, specially the ones based on cognitive models in how learning is processed, have been constantly reviewed due to the recent developments of technology. In this sense, it is arising a "new pedagogy" aimed at the effectiveness and autonomy of learning (Fagundes & Ramos, 1997). Today, speaking of autonomous processes in learning without taking hypermedia and multimedia in consideration, is omitting the reflection on how these aspects affect performances in learning mediated by computer.

Instructional design for educational products developed on WWW environment should give support to the process on how autonomous and cooperative learning is made in function of hypermedia and interpersonal communication possibilities within synchronous and asynchronous contexts.

The information in WWW is distributed in hypermedia systems¹. Hypermedia systems (HMS) and their unfolding in multimedia systems (MMS) are

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based on hypertexts that are non-sequentially and non-linearly disposed, no matter what format they use (images, texts, sounds, videos, etc).

HMS' are only effective for their interactants (e.g., learners) if organized in interfaces, i.e., something that manages to take the communication to its interactant. The interface contemplates a series of elements, such as tools, graphic maps, navigation guides, distribution of contents in different forms of menus, in order to guarantee a more direct communication with its interactant. The computer does not speak and does not react directly to the user's request the same way communication among human beings occurs, but it can be programmed to communicate with a reasonable interaction level with humans, since the interface design gets to transmit elements for such communication. The interface instructional design has the clear purpose of guiding the searches and discoveries of the user when linking it to the computer screen, besides giving it a sufficient degree of attention, in order that such discoveries can be turned into acquired knowledge.

In the educational ambit of self-learning, besides supplying elements for the mediated communication, between machine and human being, the interface should be worked in function of learning effectiveness. In order to do so, the instructional interface design combines, simultaneously, elements of navigation, self-control, self-evaluation, motivation, research sources, different formats of contents and possibilities of interpersonal interchanges. In this context, the function of tools and navigation project must be explained in order to establish a coherent and consistent link to the educational purpose.

The modelling of courses and educational activities, in the HMS context, besides corresponding to the non-linearity and being, inherently, a non-sequential process of gathering and constructing meanings, should give warranties, in lesser or higher extent, to render learning effective. People build the meanings scattered by the technology. People should incorporate the innovating charac-

teristics of hypermedia, electronic interactivity, learning control performed by learner, his/her relationship with information, etc.

Approaches on learning

- Nowadays, a convergence of approaches on the learning process is becoming apparent which, for a long time, were considered in isolation. Today, it is possible to mix principles of humanist, cognitive, and sociocultural² approaches in favour of the instructional design.

With the more and more frequent insertion of communication, information and interaction networks in the educational environment, the borders between the approaches already mentioned, are getting weaker and weaker in terms of learning process.

When we refer to the humanist approach, the interactionist root is evident. When we refer to the atmosphere of synchronous and asynchronous electronic exchanges, the focus is also the interactivity and the interactionism, dealt within new communication parameters. In this context, the theoretical contribution of Rogers (1966) grows stronger when he talks about the interpersonal relationships for the personality growth and student's behavior.

Sociocultural approach, originated in Paulo Freire's thought, says that man is the subject of education and that he is essentially interactionist in the elaboration and creation of his knowledge. In Paulo Freire's work, "man-world interaction, subject object is indispensable for the human being to develop himself and become subject of his praxis"³

The fundamental of this approach is anchored to space-time roots of man placed in the world and to man's action and reflection on the world, aiming at transforming it. It is noticed, in first analysis, the fundamental role of the Internet as man's space-time for acquisition of experience through contact

2. I am based on Mizukami denomination (1986)
3. In Mizukami, MC.N.Ensino: Abordagens do Processo. Temas básicos de Educação e Ensino. Editora Pedagógica Universitária, 1986, p.86

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with the other, not assuming a mere information consumption attitude, but in a critical and creative way.

When gathering a series of elements in its reflection on constructivism and instructional drawing, Wilson (1997) says that constructivism is not an instructional strategy to be developed under a series of appropriate conditions, it is a way of seeing the world.

According to Wilson, people build meanings in accordance with their experience, and learning should be meaningful and derive from an authentic context. Thus, learners can be introduced to constructivist learning objectives and define them according to their own strategies.

Methodology

- The Act On-line project has started focusing a methodology for creation of course frames that support effective interactive interface for learning in Internet/WWW environment. Therefore, what we submit here as methodology is referring to a part of the project. The purpose is to elaborate strategies that contemplate the effectiveness in learning, focusing aspects and possibilities of human interaction for the knowledge mediated by computers and starting from this point, check how models, pedagogic approaches and learning get new contours to be inserted in the Internet electronic environment for educational purposes.

Tools created

- Tools have been created to facilitate the interaction of the student with content, facilitators and other participants. The project incorporates the use of tools for self-learning, which mix individual research and cooperative research, individual activities and collective activities.

There are four categories:

- learning tools: guided visits; reading, glossary and help related to content

- interaction tools: e-mail, discussion list, classroom, student's voice, help with interaction
- information tools: download, hot-links, bibliography and help on how to make research
- navigation tool: it is a guide to the distribution of contents and activities

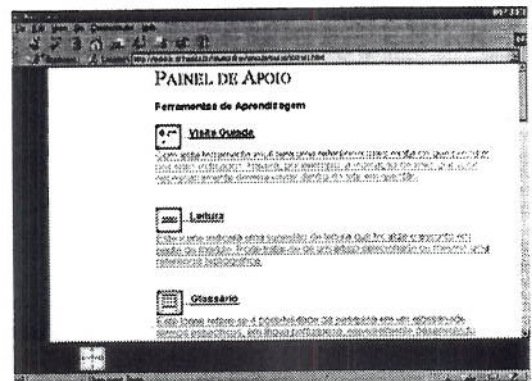


Fig 1: Navigation Tool

Distribution of course contents accessed by participant

Contents:

- are organized to focus on course objectives
- can be accessed in different external links, suggested as parallel research for the student.
- are reproduced through the interaction among the course participants through activities created

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Act On-line teaching/learning resources

- These resources should work within the course frame, with continuous pedagogic and technological support.
 - Visual resources: the color is used to create student identification with the different environments visited within the course.
 - Illustration resources: used to create a ludic and relaxed environment
 - Communication resources: e-mail and joint activities through the resource of discussion list containing guided activities for problem solving
 - Research resources: outside exploitation of WWW potential for the subject matter

What has been created

- Communication and studies control panel, containing access tools to the course and its participants and sequence suggestion for remote learning
- Personalized Modules, offering only the tools currently available.
- Plan proposing participants activities
- Guidelines on how to explore multimedia and hypermedia resources in Internet WWW environment notions of practicality, economy, ergonomics, etc.



Conclusions

- In our practical experiences of using the described models, we noticed a need of content distribution for the learning besides the hypertexts possibilities, so that we created activities to get the learner involved, such as games, interchanges between participants, interchanges with course mediators, in which important topics of the content could be treated.

One of the challenges faced by the distance learning course, even if it offered well-elaborated visual aids, was keeping the student's interest in the course. We noticed that the continuous contact with the participants through electronic mail and programmed activities in discussion list were fundamental to keep the student in the course. This was a way to show we cared about his/her learning.

Through Act On-line project implementation and maintenance, we have tried to point out the fact that it is necessary to develop a specific methodological support for on-line courses and information repositories, not only in function of interaction, communication and information tools provided by Internet/WWW environment, but also in function of the learning effect. Learning in Internet/WWW environment should praise interactive exchange and the enrichment of reference sources for autonomous and cooperative research.

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