sample of 15 students (age 16 - 17). The target was to stimulate the Web learning environment. For this reason the project has been divided in different phases: the knowledge of the Internet (directly in Internet), the didactics using the Internet (in mathematics, in physics, in geometry, in Italian literature, in information technology), the cooperative hypertext (created for an international conference on mathematics), and the communication with the Internet (in particular way the asynchronous communication, e.g. the e-mail).

**Developing Website with a Business and a Software Engineering Approach**

Joaquim Santos Neto, Rio Sul Airlines / COPPE-UFRJ, Brazil; Luiz Roberto Silva Filho, Rio Sul Airlines / COPPE-UFRJ, Brazil; Jose Roberto Blaschek, COPPE-UFRJ, Brazil; Ana Regina da Rocha, COPPE-UFRJ, Brazil; Carla Valle, COPPE-UFRJ, Brazil

In this article we demonstrate an approach of Business Plan and Software Engineering we used to build a website. We propose a web lifecycle, using Software Engineering and Business Plan principles. We also present an Intention Diagram, which help us designing the information linking. We used this approach on developing Rio Sul’s website. Rio Sul is a Brazilian Regional Airlines and a subsidiary of the Varig group.

**AUTONOMY AND KNOWLEDGE: COMMENTS ON DISTANCE EDUCATION DESIGN**

Luiz A. Senna, University of State Rio de Janeiro (UERJ), Brazil

Autonomy and Knowledge Comments on Distance Education Design Luiz Antonio Gomes Senna Faculty of Education Universidade do Estado do Rio de Janeiro - Brazil - <edu@senna.pro.br> What kind of discussion should lead interdisciplinary teams in charge of mass-education today? What kind of school may emerge within internet? Who should be this virtual school’s student? How to conceive him? Distance education design must incorporate some principles derived from basic contemporary policies on Intercultural Education, more specifically concerning to (1) the right to cultural identity and diversity and (2) the right to Education for self development and citizenship. Knowledge and autonomy, under a post-modern point-of-view, are categories that sustain a great part of intercultural education, both concerned to the way one understand human cognition. Classic mass-education media does not offer good alternatives for intercultural education environments, what may compromise the whole principle of attending whoever everywhere they are, even if under severe conditions of social exclusion. Teleinformatic mass-education is potentially more adequate to actual policies on education, but demand an appropriate conceptual support that is still under development.

**A Hybrid CD-Internet Delivery System for Pharmaceutical Care Laboratory Instruction**

Robert Shrewsbury, University of North Carolina, United States

Abstract: Students can have up to a one week delay between the scheduled pre-lab lecture and their actual laboratory experience. A hybrid CD-Internet CD-ROM was developed to give students rapid, on-demand access to all web-based laboratory information over a telephone modem when outside of the School. The CD-ROM incorporated technology so larger multimedia materials were delivered from the CD-ROM while smaller files were downloaded over telephone modems. Thus the technology avoided problems such as long download times or accessibility to RealPlayer server connections. The benefits of the CD-ROM were evaluated with 1999-2000 academic year students and compared to the previous year’s students who did not have the CD-ROM. There was no statistical difference in time to complete the laboratory, grades, or formulation analytical accuracy between the two classes. Students with the CD-ROM preferred to either print the material, or view and print the material compared to viewing the material alone.

**The Web: A New Educational Paradigm?**

Renato Soffner, State University of Campinas, Brazil; Eduardo Chaves, State University of Campinas, Brazil

The paradigm of printed matter is the reaffirmation of the traditional linear format. That can be seen on the current paradigms of the Web. Although many sites use “links”, these show linear format. Another serious limitation of this paradigm is using the Web as an electronic reproduction of a book. Hypertext creates a new situation of discovery and interpretation. In contrast with the linear stream of printed matter, hypertext is fluid, non-linear. Pages of the Web have their own URL and are not linked to the remaining portion of the document. Thus, each node is independent of what comes before and later. The disadvantage of this view is not allowing the full potential of the new media. Besides being intellectually limited and contrary to the way our minds work. The possibility to allow students to establish non-linear relations between diverse document sources is important in the exploitation of the web potential.

**Business Queries on the Web**

Amanda Spink, The Pennsylvania State University, USA; Okan Guner, The Pennsylvania State University, USA

Queries to Web search engines are a primary means for translating people’s business information needs in a way that the Web system can understand. Web queries are a key process in e-business. This paper reports a study of business-related queries to the major Web search service - Excite. We analyzed a transaction log of 1.7 million Excite users queries to extract business-related queries. Study results are presented. We found that most people use few search terms, few modified queries, view few Web pages, and rarely use advanced search features. A small number of search terms are used with high frequency, and a great many terms are unique; the language of e-businessWeb queries is distinctive. Queries about recreation and entertainment rank highest. Findings are compared to data from two other large studies of Web queries. This study provides an insight into the beginnings of e-business.

**SMILE: Intelligent Learning Environment Accumulating Personal Styles of Users**

Svetoslav Stoyanov, Twente University, The Netherlands; Neli Stoyanova, Twente University, The Netherlands

This poster presents some design solutions of building a web-based intelligent learning environment, called SMILE Maker. It accumulates some of the individual constructs such as learning styles, problem solving styles, learning locus of