EFT*Web*: a learning environment that supports presence and distance education

Joaquim Borges Gouveia[ab], Luís Gouveia[b], Francisco Restivo[bc]

bgouveia@egi.ua.pt, lmbg@mail.telepac.pt, fjr@fe.up.pt

[a]SAGEI
University of Aveiro,
Campus de Santiago – 3810-193 Aveiro, Portugal

[b]GIOTE, IDIT
Technology and Operations Innovation Group,
Espargo – 4520-102 Santa Maria da Feira, Portugal

[c]Engineering Faculty of Porto University
Computers and Electrical Engineering Department,
Rua dos Bragas – 4099 Porto, Portugal

Keywords

Advanced network applications, web based learning environments, virtual learning environments, distance education, knowledge management

Abstract

EFTWeb supports Education, Learning and Training taking advantage of existent Web facilities. In the proposed system, teachers and students are treated as clients. Clients can choose a profile; use acquired credits, and been certified as content producers. EFTWeb have several integrated services: webmail, chat, recommender system, and document sharing. A browser interfaces these services and allows the on-line access to information for both presence and distance learning. The EFTWeb results from research efforts concerning the lack of integrated solutions to reuse the ongoing generated contents by teacher and student from each discipline. System functionality is extended in order to make possible content reuse between different disciplines from different teachers in different educational situations as the ones represented by both present and distance education.

System description

The research motivation was the need to find better ways to facilitate education, learning and training support, taking advantage of existent widespread technologies allowing:
-   to transform information and knowledge into skill;
-   innovate in the learning process, allowing to the user learning by doing;
-   system application to multiple knowledge areas;
-   to access, communicate and broadcast content in multimedia format;
-   foster skill networks growing.

The system takes advantage of existent world wide and low cost web facilities. It is based on a client / server architecture where the core content is stored in a database and

all the interaction between the system and users is made by a web browser using standard facilities (no plug-ins). The novelty is on the model used to create the database structure where a focus on clients, security and cost supervision was made. In order to fill these requirements, some integration mechanisms have been developed. In the system core, along with the contents is placed contents classification (metadata) based on thesaurus technology allowing a great flexibility in the terms definition. This facility enables content management and provides and independent layer to be placed between metadata classifications and content.

The EFT*Web* takes advantage of being a web-based system to address both the requirements of presence and distance education. The system name makes reference to the World Wide Web that supports the system and the educational activities that the system itself support: education, training and instruction (the letters are taken from the Portuguese equivalent words "*Ensino, Formação e Treino*").

For presence education, EFT*Web* deals with the knowledge management issues of relating content. In distance education it extends that facilities to provide the means for interaction between users (been students or tutors) and allow them sharing content. It also supports information feedback by allowing users to rate available contents.

In particular, the use of thesaurus technology allows more flexibility to classify content by multiple criteria.

A number of services have been considered to be present to turn the system useful:
- mail: each client must have access to its own mail address to send/receive messages;
- dialog: allow client chat in real time. The service is organised in rooms that group users with the same topic interest;
- personal area: works as the system portal, proposing to the client a link collection;
- personal folder: it's the place where the client place his documents with the option to share them;
- search engine: available in two modes - textual search and thesaurus (by directory);
- guides: this facility defines the content sequence - "*knowledge road*" - to be used. It groups other guides, units, and content.

Current status

The prototype already implements the described services and the correspondent interface both for the client and system administrator. A first trial "*real world*" test is under way. Current use indicates that reuse can be useful and prove to be one of the most used facility. This allows better content development. It also motivates more feedback via the *recommender* system and tends to decrease teacher time to organise contents for new uses.

Related information can be found on a number of topics about the system:
- initial EFT*Web* motivation [2];
- a discussion on the use of web facilities to support presence teaching [3];
- a discussion on the use of web facilities to support learning from students perspective [4];
- a full description of the system prototype [1];
- EFT*Web* rationale and model description [5].

The EFT*Web* prototype was developed using the following software development platform:
- web engine: *Microsoft Information Server IIS 4.0*;
- database engine: *Microsoft SQL Server 7*;
- programming language: *HTML 4.0*, *CSS* for web page styles, *Microsoft ASP*

(server), and *JavaScript* (client).

A working EFT*Web* version can be tested in the following *url*: 194.79.88.252/Contacto (you must ask for a password to access the system).

Conclusions

EFT*Web* proposes a system that unifies contents and their operation under education, learning and training activities. This will allow content reuse from and by both teachers and students as well as the structured storage of materials produced by them.

The intended audience for the EFT*Web* system is:
- teachers and students on need of a tool for organising communal work and their day life activities
- people in charge of education management and development that can integrate with this system presence and distance offers

References

[1] Gouveia, J. and Gouveia, L. Restivo, F. (2000). *Proposing a knowledge network to assist education, training and learning.* ITS'2000 XIII Biennial Conference. 2-5 July. Buenos Aires, Argentina. To be published.

[2] Gouveia, J. and Restivo, F. and Gouveia, L. (1999). *Integração e convergência no ensino, formação e treino*. 2ªConferência sobre Redes de Computadores. CRC'99. Universidade de Évora e FCCN. 18 e 19 de Outubro de 1999.

[3] Gouveia, L. (1998). *Digital Support for Teacher's Teaching. Current experience on using Internet facilities in Virtual University environments*. Educational Media International Journal. Routledge. Vol. 36 nº 1, March.

[4] Gouveia, L. (1998*). The NetLab experience. Moving the action to electronic learning environments*. In proceedings of BITE International Conference, Maastricht. The Netherlands, 25-27 March.

[5] Gouveia, L. and Gouveia, J. and Restivo, F. (1999). *EFTWeb: a working model proposal to support Education, Learning and Training*. CEPI'99 Conference. UCP, Lisboa, 4-5 October. To be published in selected papers of the CEPI'99 Conference.