The Web as a Tool for Collaborative e-Learning: the case of CoLab

Guillermo J. HOYOS-RIVERA
Roberta L. GOMES
Jean-Pierre COURTIAT
Rachid BENABBOU

{ghoyos, rgomes, courtiat, benabbou}@laas.fr
http://www.laas.fr

Laboratoire d’Analyse et d’Architecture des Systèmes-CNRS
Toulouse, France
Presentation Plan

• Introduction

• e-Learning and the Web

• CoLab’s operation principles

• e-Learning through the use of CoLab

• Conclusion and perspectives
Presentation Plan

• Introduction
  • e-Learning and the Web
  • CoLab’s operation principles
• e-Learning through the use of CoLab
• Conclusion and perspectives
Introduction
Access Control...

No access!!!
Introduction

Adaptable Browsing...
Introduction

Awareness & Communication...
Introduction

Co-Browsing...
Presentation Plan

• Introduction

• e-Learning and the Web

• CoLab’s operation principles

• e-Learning though the use of CoLab

• Conclusion and perspectives
The Web has been successfully used for online e-Learning by the deployment of Tutorial Systems, Online Curses...
However, in general, interactions among the participants of a course are limited since these systems haven’t been designed to support groups of users...
Access control and adaptability are generally hardcoded and don’t evolve in time...
What could be desirable?

Asynchronous Browsing

+ Synchronous Browsing and Online Communication

+ Adaptable Browsing

Dynamic Evolving Behavior

???
Presentation Plan

- Introduction
- e-Learning and the Web
- CoLab’s operation principles
- e-Learning through the use of CoLab
- Conclusion and perspectives
CoLab’s operation principles

Architecture

- Introduction
- e-Learning and the Web
- CoLab’s operation principles
- e-Learning through the use of CoLab
- Conclusions and perspectives

Browsing Policy

Collaboration Engine

Communication Policy

Coordinated Browsing

Inter-user Communication

Communication Utilities

Intranet

Internet

Rules

U_x

Users
CoLab’s operation principles
Collaborative Browsing Session Management & Operation

- Introduction
- e-Learning and the Web
- CoLab’s operation principles
- e-Learning through the use of CoLab
- Conclusions and perspectives

Session State

Metadata

Users Profiles

Collaboration Engine (Rules)

State Modification

Browsing & Communication Actions + Time

Browsing & Communication Obligations & Authorizations
CoLab’s operation principles
Collaborative Browsing Platform

- Introduction
- e-Learning and the Web
- CoLab’s operation principles
- e-Learning through the use of CoLab
- Conclusions and perspectives
By pattern matching on the resource's URI.

**Conditions based on user role/actions:**
- Visits per user;
- Precondition on documents;
- Required score;
- Time-based conditions.

**Conditions based on other users actions:**
- Access condition on roles;
- Competition condition.
CoLab’s operation principles
Adaptability

Based on:

- User profile: e.g. user’s language...
- Connection bandwidth: e.g. ISDN, modem...
- Equipment performance: PDA, laptop, workstation...
Presentation Plan

• Introduction
• e-Learning and the Web
• CoLab’s operation principles
• e-Learning though the use of CoLab
• Conclusion and perspectives
CoLab seems to be the good choice for e-Learning, since it implements:

- **Asynchronous browsing**: students and professors consult and review the available material, students solve exercises and evaluations, professors review exercises and evaluations…
CoLab seems to be the good choice for e-Learning, since it implements:

- **Adaptability**: resources presented are adapted to the user’s profile, connection bandwidth and equipment performance (when available)…
  - Spanish language documents are presented to students whose profile language is Spanish;
  - Special compact version of the material is presented to users accessing using a PDA.
CoLab seems to be the good choice for e-Learning since it implements:

- **Synchronous browsing and communicating**: a professor gives a lecture, supervises the students learning activities, or students have virtual teamwork at their own decision;
CoLab seems to be the good choice for e-Learning since it implements:

- Dynamic evolving access control: users have the right to access learning material, and other resources, depending on their current role, the time, the user’s past actions, as well as the past actions performed by other users...
  - Document X can only be accessed by a given user if document Q has previously been accessed by that same user;
  - Document Y is accessible only on workdays (Monday – Friday) from 9:00 to 17:00 until September 30;
  - Document Z can only be accessed by a user of role A if no user of role B has accessed it.
Presentation Plan

• Introduction
• e-Learning and the Web
• CoLab’s operation principles
• e-Learning through the use of CoLab
• Conclusion and perspectives
Conclusions and Perspectives

• Conclusions:
  – The Web can be successfully used for group-oriented e-Learning;
  – Dynamic behavior on Web-based e-Learning systems are good for learners;
  – The current implementation satisfies the requirements to validate that such proposal is fully implementable.
Conclusions and Perspectives

• **Perspectives:**

  – Keep working in the definition of the fine-grain aspects of the Access Control system;

  – Integrating all the necessary tools within *CoLab*;

  – Interfacing *CoLab* with *Virtual Reality*;

  – Exploring the possibilities of extending this work for implementing a *Social-Web*. 
Thank you... 

Eυχαριστώ...

Gracias...

Merci...