The I4LL online learning environment of the Talencentrum, Ghent University.

1. Components

I4LL (with an wink to 'Eye for Language Learning') stands for *Integrated Interactive Independent Internet based Language Learning* and refers to a concept and software developed at the Talencentrum Universiteit Gent.

It aims to combine a number of components into one overall online language learning environment (or Virtual Learning Environment, VLE). The environment is generic and can be used for other disciplines than language learning.

When finished it will consist of the following components:
- An **authoring environment** (complete with **scenariotool**) for the production of interactive learning objects
- A **web delivery engine** (using Java applets and XML files on a server): the I4LL shell
- A **data storage** component (repository) where the learning objects are stored and managed together with codes that describe them fully (and which are compatible with the Common European Framework for languages (CEF) and IMS standards (Instructional Management System, see: http://www.imsproject.org/aboutims.html)
- A **structuring component** where learning objects are combined into units, modules and learning paths (courses)
- A **communication component** that allows students to interact among themselves and with tutors, enabling the use of various spaces, depending on the group they belong to
- An **administrative component** (log in, assignment to courses and tutors, profiling, etc …)
- A **scoring** and **tracking component** that keeps track of learners' activities and scores.

In addition, various tools such as reference tools (including help files, dictionary and grammar tools) and concordancer tools are available that supply students with additional information.

The approach adopted is a bottoms-up approach so that compatibility with VLEs such as Blackboard can be achieved.

At the moment the following tools have been designed or are nearing completion: the authoring tool, the I4LL shell, the electronic forum, the dictionary/help file/reference tools, scenariotool. The CEF codes are also almost ready to be used.

Practical Examples

An early version of the I4LL model has already been used in the courses English for Veterinary Students, English for Law Students, English for Criminology Students (http://i4ll.rug.ac.be/ecs/) except that the interactive exercises there require the Toolbook Neuron Plug-in (http://www.taalnet.rug.ac.be/software/neuron.exe) which has since been replaced by our own delivery component that makes use of Java Applets.

In order to access the online course for Criminology students, log in with username *guest1* and password *guest*.

To access the electronic forum (Communication) inside the course, log in as *guest1* and *guest* as well. Access is only possible for modules 3,4,5.

Some more recent but still experimental interactive web based exercises can be found at: http://www.i4ll.rug.ac.be/demo/.These exercises too need plug-ins (see instructions).

The first full implementation of the system is to be realised within the Welcome project, a European Lingua project currently in progress for Dutch, Estonian, Finnish, Portuguese and Spanish (to be ready by the end of 2002).

The overall I4LL shell is currently being made operational on http://talenc29.rug.ac.be/i4lldemo/ Login is again *guest* with password *guest1*. Again the Java and Quick Time plug-ins are required (see http://www.i4ll.rug.ac.be/demo/).

2.   Login

Before students register/log in for the course they can access a general **Introduction** containing information such as a description of the system, technical requirements, the registration procedure, etc … In the **Guided Tour** they are shown how the system actually works. Ideally this should be an interactive unit, but at the moment it is still text based. In **Latest News** the student can find urgent messages about the course or the system as a whole.
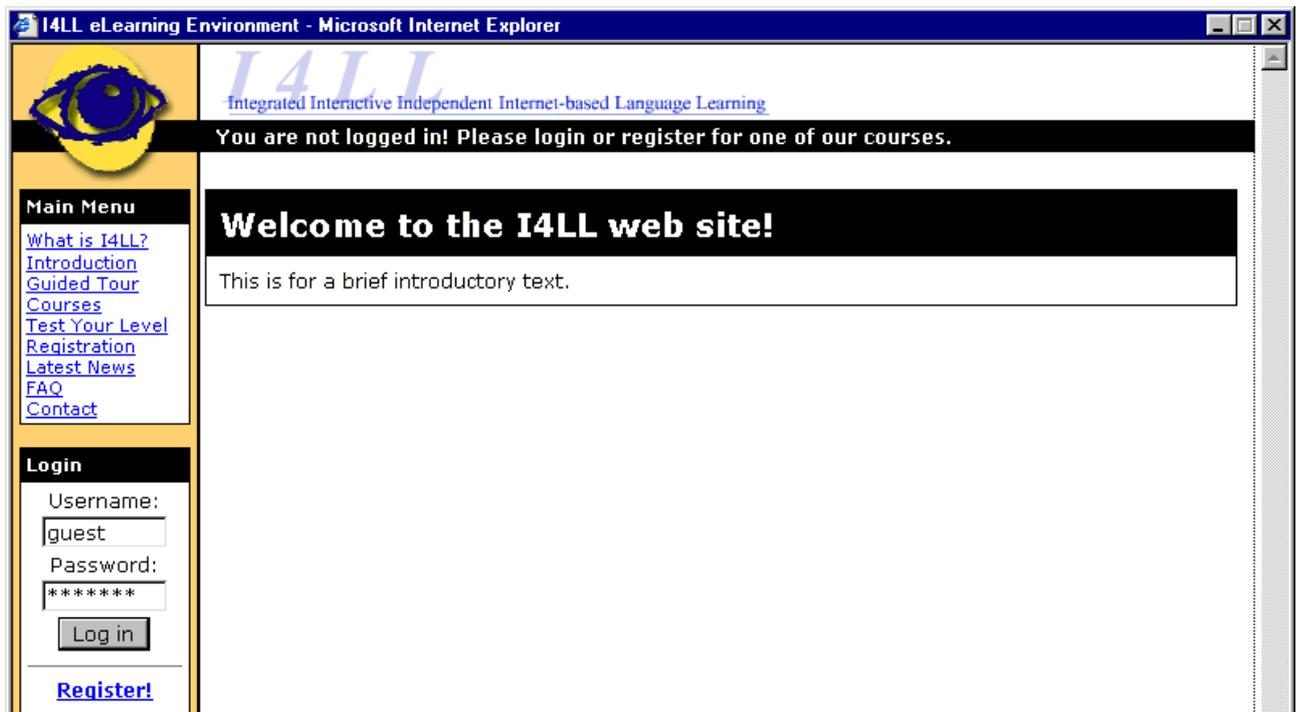
A detailed introduction to the course can be found once you login for a specific course.

3.   The learning path

Once the student logs in he enters the **Learning Path** i.e. the course itself. A Learning Path consists of (content) modules, which in their turn consist of units.

For each module detailed **Objectives** are given, so that a student can determine what he/she is about to learn and decide what is most crucial for him/her.

A module normally consists of 6 units, which each take about 30 minutes to complete. The units form part of either the **Learning** section or the **Practising** section. Learning is a guided tutorial in which what is to be learned is presented and tried out by the student. The emphasis here is on insight and information processing. The obtained scores are not retained. In the Practising section the student shows that he has mastered what has to be learned by completing exercises. Here the obtained scores are retained, but a student can improve on his/her scores at will by doing the section again. Throughout, additional **HyperReference** (grammar) materials and **Useful Links** are available in connection with the module being studied, so that this part can be used as a kind of learning section as well. A **HyperDictionary** is available for students as well. In **Language Tools** the student can find links to existing dictionaries, grammars and other reference tools.

If a student feels that he/she can dispense with the Learning section, he/she can theoretically go to the Practising section immediately, but of course this may lead to lower scores there.

Another part of each module is the **Assignments** section. In it, a student is set specific tasks in connection with the module. Ideally, they should be a continuation or even form part of the Learning and Practising sections. The tasks are presented in the Learning Path but carried out within the electronic forum (accessed through the button **Communication**)**.** The student has to follow detailed instructions, read information and post messages on the electronic forum. There he/she also has to react to what other students write and collaborate with them on some tasks. These tasks are performed individually, in small groups or within the class space.

A final, optional part of each module is the **Self Test** in which a student can prove that he has mastered the content (to be worked out). The scores of this test are retained.

Although the system is designed to create fully online courses, it has been decided in a first stage to create only 'hybrid' courses, in which online learning is supplemented with classroom learning. Every course starts with an introduction lesson in class and an introduction to the computer system. Each module consists of an online session (Learning), a classroom session and another online session (Practising). The classroom sessions are not used for 'teaching' but are an opportunity for students and tutors alike to discuss problems that may have arisen, clear up misunderstandings, comment on common mistakes, explain tasks to be performed, etc…

4. Language Tools

Apart from Learning Path and Communication, there is a third major distinction within the I4LL system, i.e. Language Tools. This is a completely separate area where references to grammars, dictionaries and general links are kept. It can be used by students as a general information area with

respect to the course as a whole. General background information on the country, the culture etc … can be found here as well.

5. The Electronic Forum

The electronic forum is a virtual meeting place where students interact (with each other and with their tutors) and collaborate or reflect on their learning.

5.1. Spaces

Structurally, the I4LL Forum consists of 5 'spaces' each reserved for a particular type of course communication: **The Lounge**, **Ad Valvas, Class Space, Group Space , Personal Space**

Within each space a predetermined number of subfolders is created. As is the case in a typical discussion forum, students can create 'threads' (post a message, which is the first message in a series of related messages) at the deepest level. They can also reply to a message within a thread of messages.

The lounge

Here all students following the same course can interact freely with other students about any subject they choose.

Ad Valvas:
- Ad Valvas can be accessed by all the students of the different classes within a course (e.g. 100 students).
- The Ad Valvas folder contains two subfolders, **Your Comments on the Course** and **Messages from the Course Organizers**. In the former, the students can freely create threads, post messages, read and reply to messages about course-related issues (in a broad sense: organisation, content, technical aspects, other remarks). The latter can be read by the students but only course organizers are allowed to post messages (and create threads).

Class Space:
- Students are assigned to a particular class (20-25 students) and are then allowed to access their Class Space.
- All students of a class and the tutor can read messages, post messages (create threads) and reply to the messages posted by their class members.
- A Class Space contains a folder "**Tutor's Comments**" reserved for messages posted by the tutor.

Group Space:
- A Group Space can be accessed by all the students assigned to that group (8-10 students).
- Only the students of that group and the tutor are allowed to read, post and reply to messages by the group members.
- A Group Space contains a folder "**Tutor's Comments**" reserved for messages posted by the tutor.

Personal Space:

- Each student has his or her own Personal Space (inaccessible to other students) which contains a number of predetermined categories: "**Log Book**", "**Final Assignment**", "**Glossary List**" and "**Useful Links**". In the log book the student reflects on the course and his/her own learning process (e.g. by filling in self-assessment forms), in the glossary list he/she can build up his private vocabulary list and in useful links he/she can save relevant internet links. In Final Assignment, he/she saves the texts that he/she has made as part of the final assignment to be posted at the end of the course.
- This private area is somewhat set apart from the other spaces and can be accessed by a student via the navigation menu and by the tutor (via the administration page for tutors). Only the student posts messages in his/her space (even though a tutor can do so as well). The student can edit and delete the messages he/she posted in his/her personal space.

ELS: English For Law Students - Microsoft Internet Explorer

Welcome, Tutor, to the forum. You are not registered for this course.
Your spaces in this forum: **Personal Space**.
tutor | **administrator** | **back to the forum**
Please **log out** before you leave this forum!

ELS: English For Law Students

Ad Valvas	Forum folder
Class 1	Forum folder
Class 2	Forum folder
Class 3	Forum folder
Class 4	Forum folder
Class 5	Forum folder

powered by
Phorum

5.2. Different users – different rights

Login is required for all users. Without entering a username and password, a user cannot browse the forum nor read or post messages.

Four different **types of users** can be distinguished in terms of the forum rights they receive.

- Students: all the students who are registered for a course. The students are organised in classes and groups. Each student has a personal space and is assigned to a class and a group.
- Tutor(s): a course has one or more tutors who assist the students and who supervise the forum activity.
- Forum administrator: in charge of forum management and maintenance, has full administration rights, adds new users.
- Guest(s): guest accounts are created to give visitors (prospective students,…) an idea of how the forum works.

After login, the four different kinds of users have access to the four spaces. However, **different rights** are attributed to the different users depending on their status. These rights are:

- Reading:
  - accessing and browsing the forum folders
  - reading the messages in the threads
- Writing:
  - creating a new thread (posting a message)
  - replying to a message in a thread
- Moderating:
  - editing messages which have been posted
  - deleting messages
- Administering:
  - adding users
  - managing the forum structure (creating new forum folders, hiding or deleting folders)
  - forum setup and maintenance (e.g. general settings)

5.3. Administration

The administration component of the Forum is a separate tool which can be accessed when the user has administrative rights. This module includes:

- Forum setup: general settings involving attachments, database settings, HTML settings, global settings, files/paths
- Forum maintenance: creating new folders, managing the properties of folders (removing, hiding,…), user administration (adding new users, editing user profiles,…)
- System maintenance: checking for updates

Administration Page for Tutors
This administration page gives the tutors access to the personal spaces of the students they are coaching and monitoring.

5.4. Future improvements

- Alerts (via e-mail) that notify a student when a number of new messages have been added to a thread..
- Student profile including name, e-mail, class - group, photo and personal description. This may be important for social reasons.
- Ideally, students should be able to preview their message and revise it before they actually post it on the forum. As an alternative solution, the student could get the option of editing and deleting his/her own messages.
- Posting can include the possibility of attaching files to a message. This is an interesting feature but the consequences of allowing people to upload files should be carefully considered before implementing it. It may be wise to restrict the option of attaching files to a number of predetermined file types and file sizes. (Attachment settings)
- Area for social interaction (preferably off limits for tutors).

6. The coding of learning objects

Under the impulse of the IMS Global Learning consortium international standards are being developed in order to improve the transferability across systems of learning content of all disciplines. IMS endeavours to promote the widespread adoption of specifications that will allow distributed learning environments and content from multiple authors to work together (in technical parlance, "interoperate"). The technological codes that describe these specifications have been worked out by IMS and now enjoy wide acceptance, but in terms of content specifications too, standards have to be worked out by the various disciplines. Within Europe, the most widely accepted reference for language learning at present is The Common European Framework of Reference for Languages (CEF). This document (see: http://www.coe.int/T/E/Cultural_Co-operation/education/Languages/) provides a practical tool for setting clear standards to be attained at successive stages of learning and for evaluating outcomes in an internationally comparable manner. It is increasingly being used as the basis for the reform of national curricula (in Flanders by the DVO at the Department of Education). At the Language Centre in Gent this document has been adapted to a coding system that can be used to provide content specifications for language learning objects. These codes can be used by developers to express their concrete learning objectives in a largely language independent way (by means of a preparation wizard), they can be used e.g. to provide the framework for largely language independent grammar descriptions (to be used in a webbased grammar tool) and they can be used to provide the elements of a search engine for language learning materials (A la Carte). The use of these codes is an integral part of the I4LL model, which provides a tool (the repository tool) that allows developers to decide upon and enter these codes in an intuitive way.

7.   The Authoring environment

The authoring environment allows a developer to put interactive materials that have been designed beforehand into an XML file which can be published on the web and read in a browser by means of Java-based plugins. The created files are compatible with the IMS specifications. Once the developer has assembled his/her texts (in HTML format), audio and/or video fragments, images, exercises (questions, feedback, correct answers and the scores allocated to each of them) they can be assembled in the authoring tool into a coherent whole that the student can go through in an interactive way. One such interactive file is a **unit.**

Each unit consists of a number of screens and on each screen you can find a number of objects. Objects can be texts, images, audio clips, but also exercises (and parts of exercises).
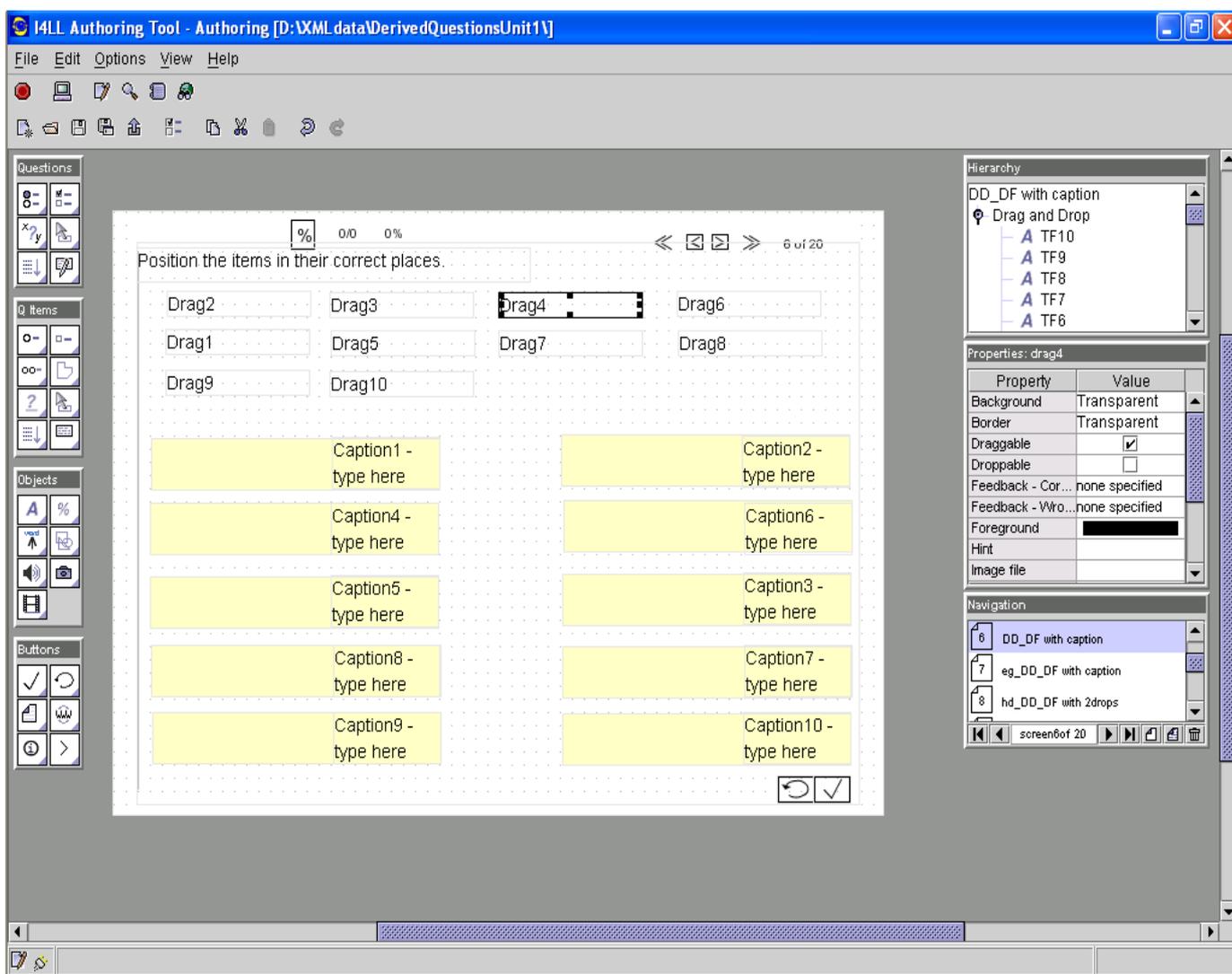
The objects can be individually combined on the screen (the **toolbox approach**) or they can be pre-programmed into fully functional templates in which only the content is missing (**the paradigmatic approach**). In the Language Centre we have opted for the creation of a large number of pre-programmed templates (which contain e.g. **derived questions**) that are screen based.

In this way we have created screen templates for Multiple Choice, True and False, Drag and Drop, Fill in the Blank, Multiple Select, Reordering of texts and Open Questions, either on their own or in combination with other objects or questions. There are also many subtypes and variations. Shapes and buttons of many kinds, a timer, score displays and other objects have been added as well as windows for feedback, video, sound etc…

In the **Hierarchy** box the developer is given an overview of the objects on a screen and access them, and in the **Properties** box he /she can change a number of properties of objects (colour, size, position on the screen but also more content-related ones such as feedback on/off, with hint or without, timer on/off, etc …)

In the **Navigation** box the developer can see the screens that he/she has created and navigate between them. He/she can also add or delete screens and save a screen as a user defined template.

The tool produces an XML file and a corresponding media folder. These can then be uploaded to the net or inserted inside a website.

The tool is being constantly updated and improved, but in essence it can already be used to construct a multitude of exercise types (see practical examples above).

8. Other tools and subtools

8.1. Scenariotool

The scenariotool is at the same time a training tool for developers and a tool
It will allow developers to transfer their creative process into an electronic document that can then be used as input for the authoring tool, which is far too open and complicated for average users.
The scenariotool will also be used to output a printed version of the interactive materials created in the authoring tool.

8.2. Repository preparation tool

This tool allows developers to create the metadata for the learning objects while they are still in the planning phase. It will help them to define their objectives and other metadata within the framework of the codes used in the repository.

8.3. Hyperreference tools (reference tool, dictionary tools, help files, …)

These tools will allow the easy buildup of reference, dictionary and other information tools. Based on Php they generate webpages dynamically.

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