Dokeos coursebook
Building learning paths

I. Introduction

This document is a support for the Dokeos seminar : Building learning paths. It is a guide during training time and a reminder after.

To learn using Dokeos, the best is to use it. This is why the training is hands on. Practice, do errors, try again. And if you are stuck somewhere, do something you don't know the conequences of. No serious injury is to be feared.

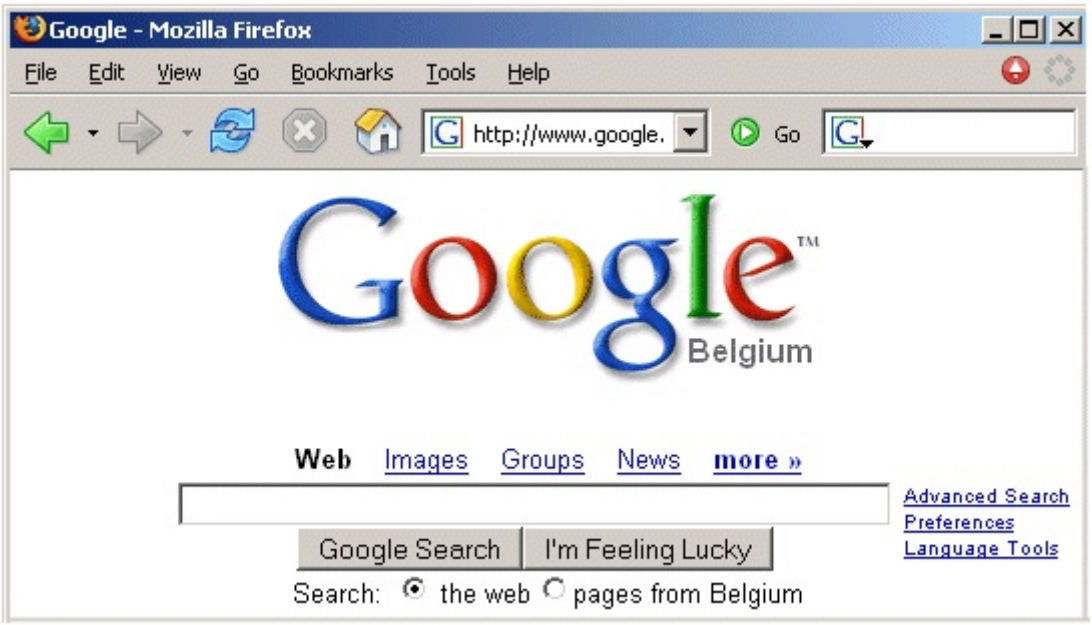
Practice : Open Internet Explorer, type http://www.dokeos.com , select Campus and register selecting Create course areas. Watch out : username and password should contain no empty spaces nor accented letters nor brackets or any special character. Note down your username/password somewhere.

II. Dokeos is web based

Dokeos runs on the internet (i.e. Networked with other people and computers) and more accurately on the web (i.e. Through a web browser : Internet Explorer or Mozilla Firefox). The first tool that you need to know is the browser. Let's choose Mozilla Firefox and see some basic features.

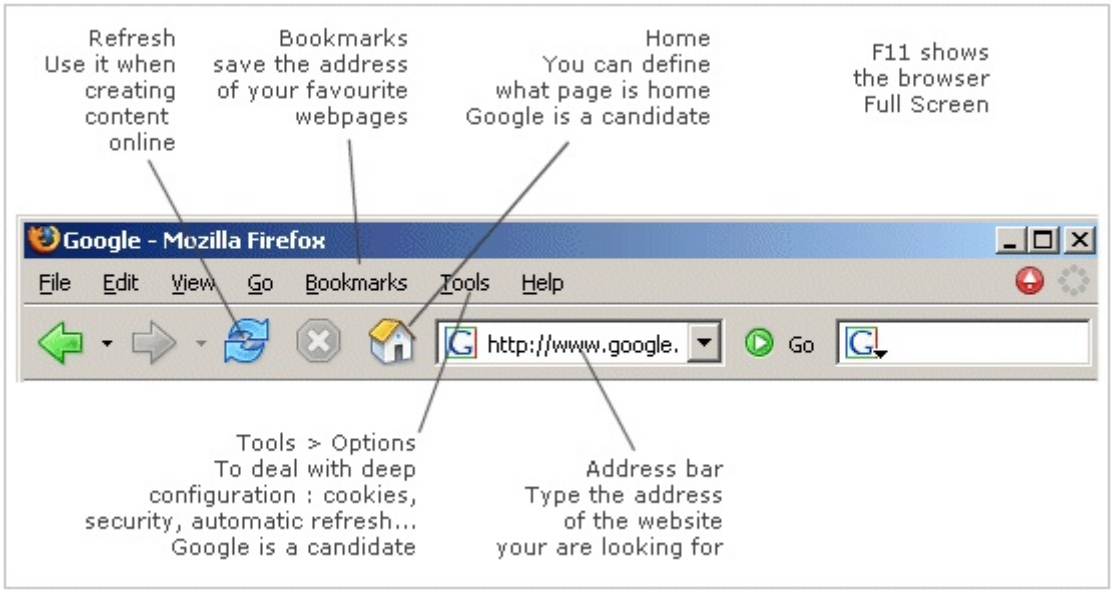
Firefox is used to :

- Browse the web to look for information;
- Display texts, images, tables, links and some extra media like Flash animations;
- Discuss in forums;
- Print pages;
- Click on links to go from one page to the other;
- Buy books, plane tickets, computers...



Your browser also deals with content management :

- **File transport** from one computer to the other or towards a webserver for publication;
- **Edit** webpages if you use a web based content management system like Dokeos and provided you give the relevant username/password;
- **Fetch and download images** onto your computer from other people's web pages (mouse over image > right click > save image).



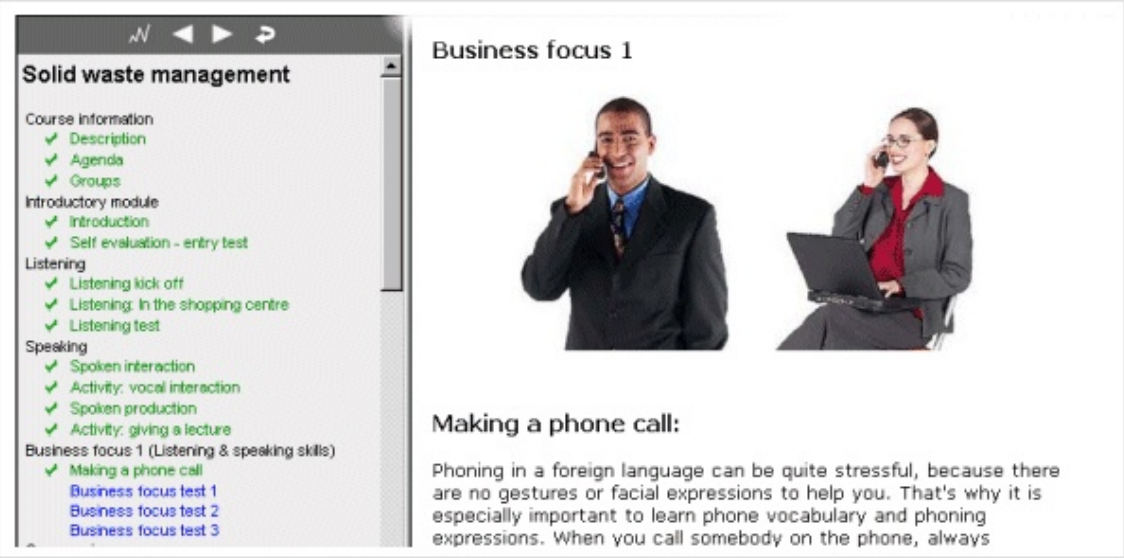
Practice : Open Firefox, enter http://www.google.com , select Images, search for chart, open the first image and save it onto your hard disk. Show this image in Windows File Manager using Thumbnails display.

III. Dokeos software

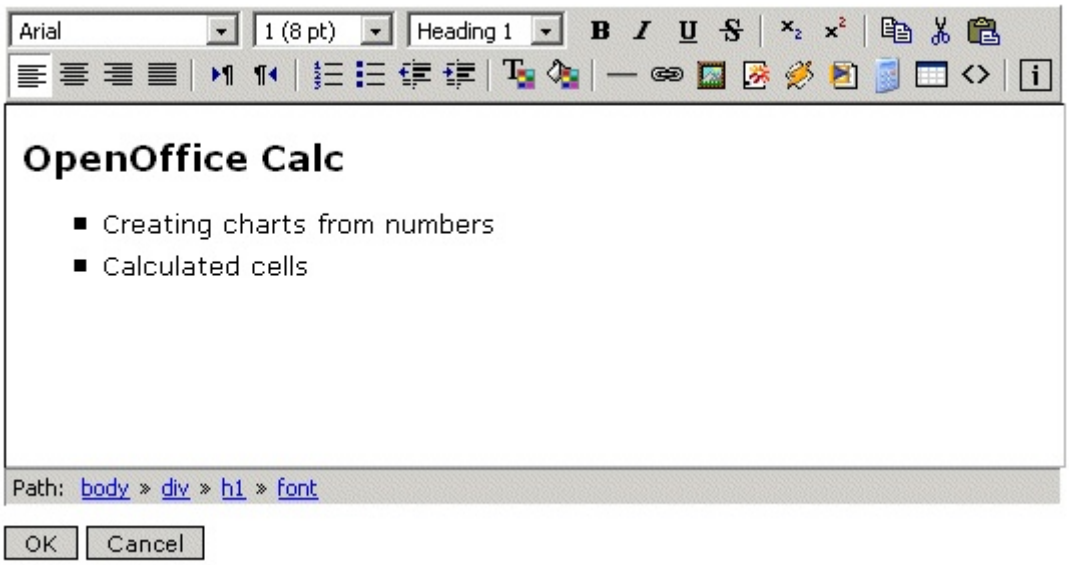
Dokeos is a virtual learning environment tool. Its main interface is the course management interface. It allows:

- Creating and importing content. Tools: Introduction text, Documents, Links;
- Learners tutoring. Tools : Members, Tracking;
- Manage communication. Tools : Forums, Announcements, Groups, Dropbox;
- Host learners' productions. Tool : Assignments;
- Create and import tests. Tools : tests;
- Describe and configure the course. Tools : Description, Course settings. Features : Hide / Show;
- Structure and import learning sequences. Tool : Learning paths.

The *Solid Waste Management* course is a demo illustrating the palette of features offered by Dokeos. You will find there both examples of interaction scenarios and examples of multimedia self-learning activities.



Practice : Firefox > http://www.dokeos.com > campus > login/password > Create a course called *Introduction to OpenOffice Calc* in the category *Training*, enter it and deactivate all tools. Click then on the yellow pencil and type:

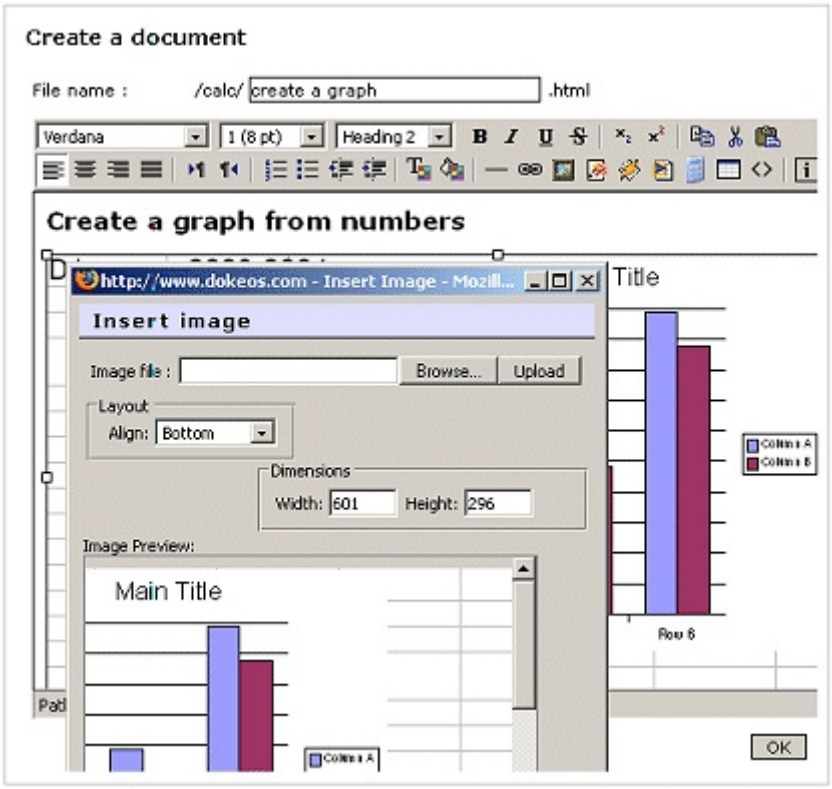


IV. Documents

The main Dokeos authoring tool is Documents. You can create, import and export multimedia web pages including images, Flash animations, mp3 audio and more.

There are two methods with the documents tool:

- You publish true web pages. You will need a web editor like the online editor included in Dokeos, or an offline editor like NVU http://www.nvu.org . You will need to learn how to use the editor but the result will be browsable, quick and easy pages, links and multimedia.
- You upload desktop documents : Word, PowerPoint, PDF... They will hardly be integrated into a Learning path or linked together to form a structure. It will mainly be a collection of resources.



Practice : create a document and insert the chart image using the icon.

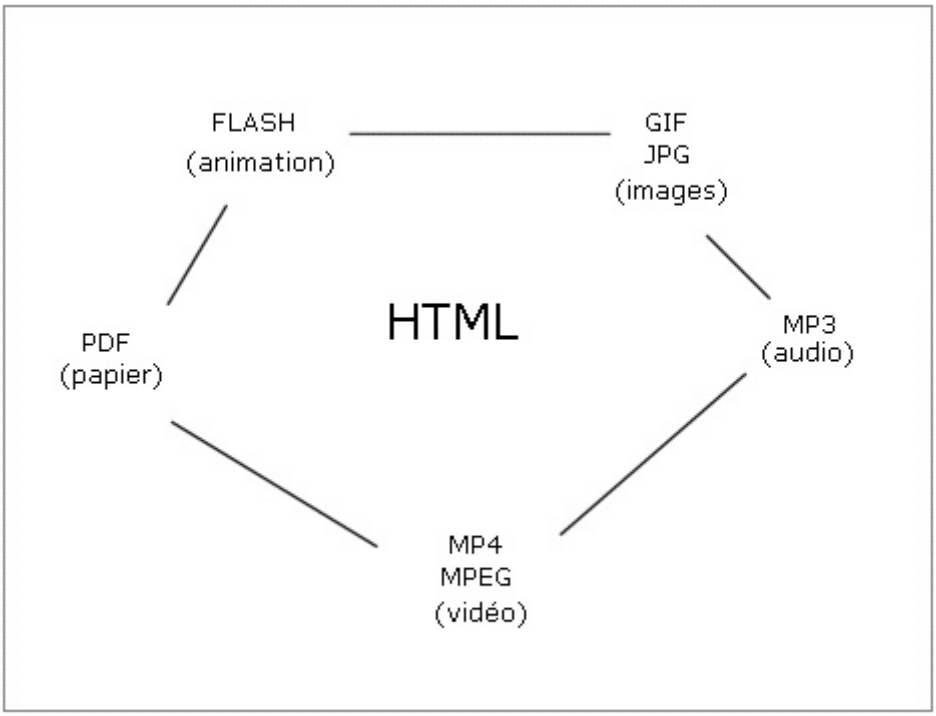
V. The formats pentagon

To produce web learning documents, you will have to follow a series of rules. In particular the rules of:

- W3C : web rules onsortium http://www.w3c.org
- SCORM : standardisation of e-learning : http://www.adlnet.org
- Web usability : ergonomy rules : http://www.useit.com

The web (= all that happens in Internet Explorer or Mozilla) uses the HTML language and is based on the HTTP protocol. This produces standardised documents, visible from any computer without too much wait and although the variety of contexts (ldifferent languages, screen widths, bandwidth...).

To reach this result, it is important to limit oneself as an author, to the most commonly accepted formats on the web and to understand the different between desktop authoring (Word, PowerPoint...) and web authoring. Keep in mind the following pentagon :

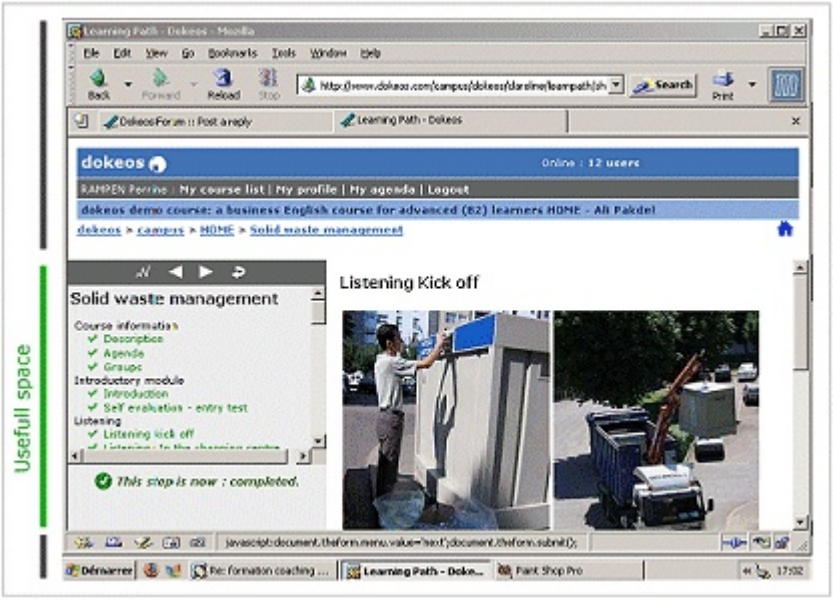


Practice : add an image, an audio file and a flash animation into your page. You can find all this in http://www.dokeos.com/seminar/ .

VI. Basic rules for space design

The usefull screen is minimum 800 x 600 pixels. But Explorer or Mozilla + Dokeos consume almost 300 pixels (in Dokeos 1.6, the header will be thiner). And if you plan to integrate your pages into a learning path, you should consider that you need 200 Pixels on the left.

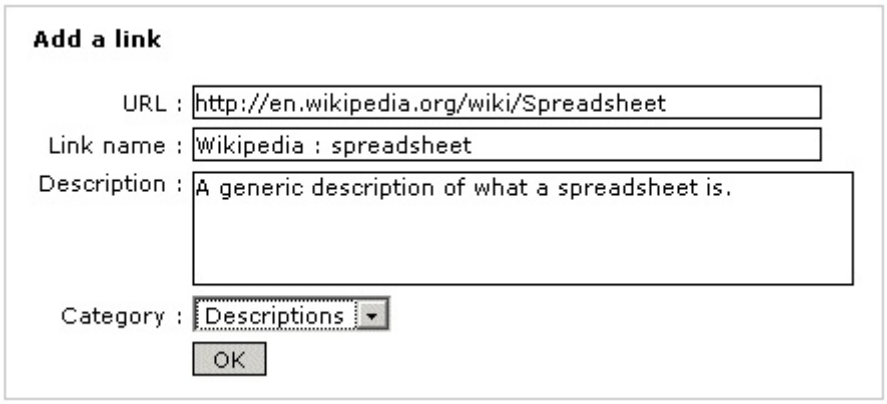
Your text will redimension, but your images not. It is then important that your images are maximum 550 wide. More generally, your website will look more professional if all your images have the same size (200 x 200 for instance). See below how much space is consumed by non-content in a small screen !



Practice : create a document, insert a 500 pixels width table, one cell, one column, border=0. Type text untill it wraps. Save and see the result.

VII. Links

The quickest way to create a course is to link to existing resources on the web.



There are a lot of freely available resources on the web. See for instance:

- Wikipedia, the free encyclopedia : http://www.wikipedia.org
- Free Foto : http://www.freefoto.com/index.jsp
- Free Medical Journals : http://www.freemedicaljournals.com/

Practice : create in Links a link to http://en.wikipedia.org/wiki/Spreadsheet.

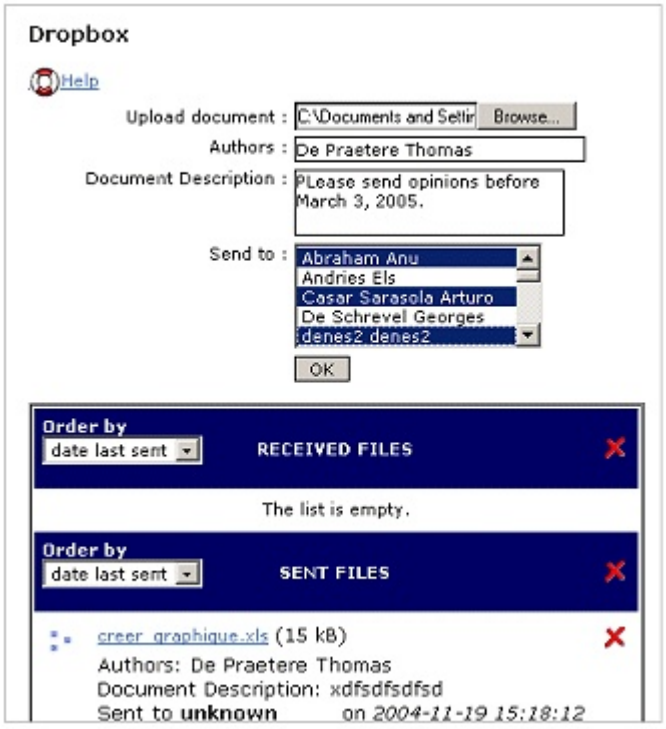
VIII. Dropbox

All educators will tell you. Learning is better when learners is active and collaborative. There are many methods to do this : games, competition, cross-regards, group paper writing...

At tools level, one possibility is to use the Dropbox. It is easy to use, flexible as it allows multimple collaboration groups and scenarios. The model is email and attachments but with more focus on group working, versioning and tracking.

The principle is : everyone sends his/her file to whom he/she wants. You cannot delete documents in other people's boxes and the tool will never erase a document with another. So you can keep track of successive versions (time is indicated).

You got two directories called Sent and Received.



Practice : create a fake user in Users and send him this document : http://www.dokeos.com/download/content/graph/graph02.xls through the Dropbox.

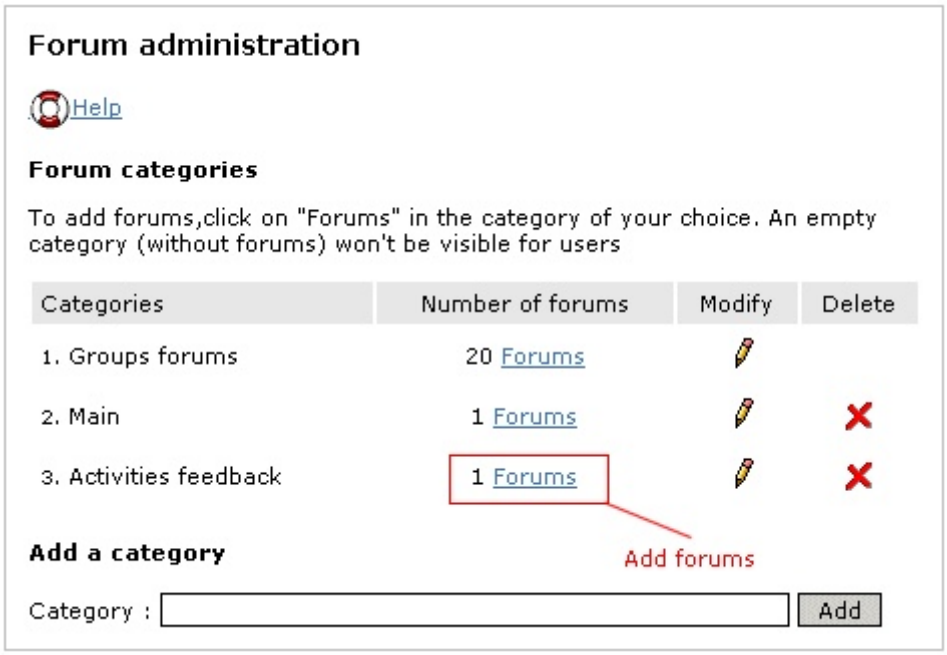
IX. Forums

Forums are hard to manage. Many are and remain empty because there is no clear task, agenda and deadlines attached to it. A good forum is related to an agenda, roles, tasks and a clear view on what will be expected and evaluated : present oneself, summarise a text, criticise an opinion, analyse a sentence, translate a description...

The Forums tool is divided in 4 levels:

Categories > Forums > Topics > Answers

In Dokeos, the forum is half-controled by the trainer/teacher : he/she is in charge of creating categories and forums where learners are free to create topics and answers.

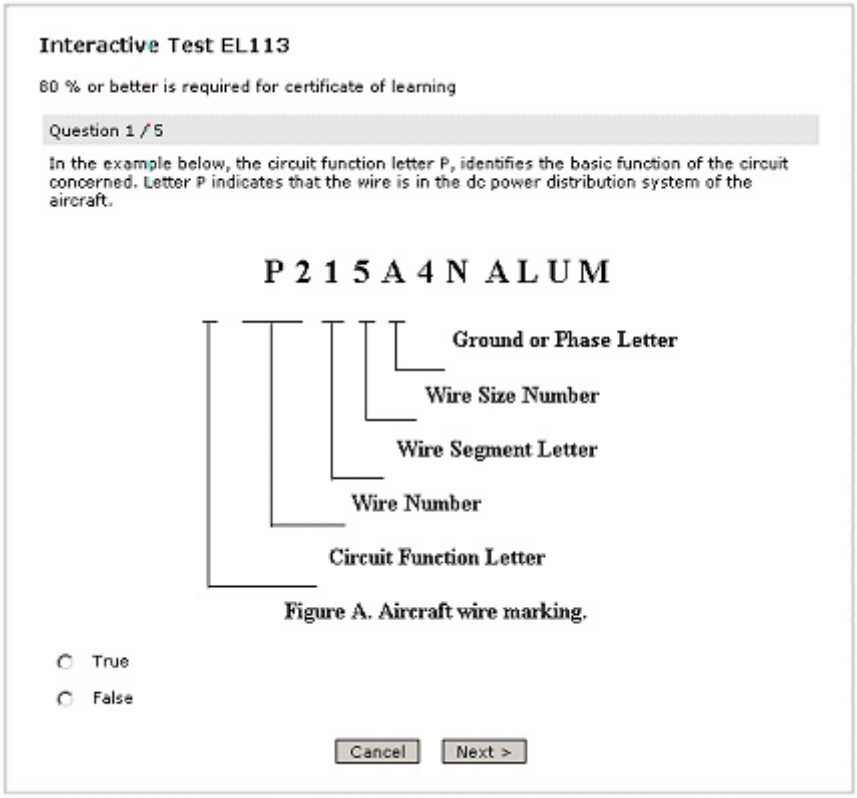


Practice : create a category: *Activities feedback*, and a forum : *Create a graph exercise*.

X. Tests

Practice and evaluation are key factors for successfull learning. The building of a relevant test is a complex problems that goes far beyond the scope of this seminar. One can, however, remember the following possibilities.

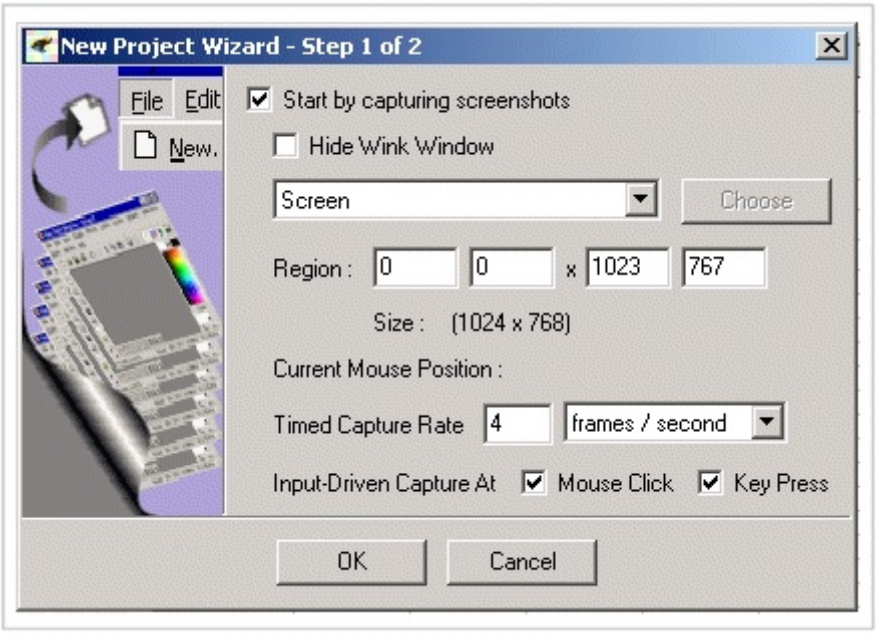
Test type	***Competence***	***Tool***
Multiple choice	Facts knowledge	Dokeos, HotPotatooes
Matching	Categories management	Dokeos, HotPotatooes
Maze	Operation. Sequence of actions.	Quandary
Listening comprehension, questions on a video, an image...	Interpretation	Dokeos + Audacity
Fill-in the blanks	Vocabulary knowledge	Dokeos, HotPotatoes
Play with variables	Equation mastering	Dokeos + Flash



Some competences lead naturally to automated tests : multiple choice, fill-in the gap, drag and drop matching, listening comprehension (audio + multiple choice) or image interpretation (image + multiple choice). The Tests tool and the Hot Potatoes software http://web.uvic.ca/hrd/halfbaked/ are relevant in these cases.

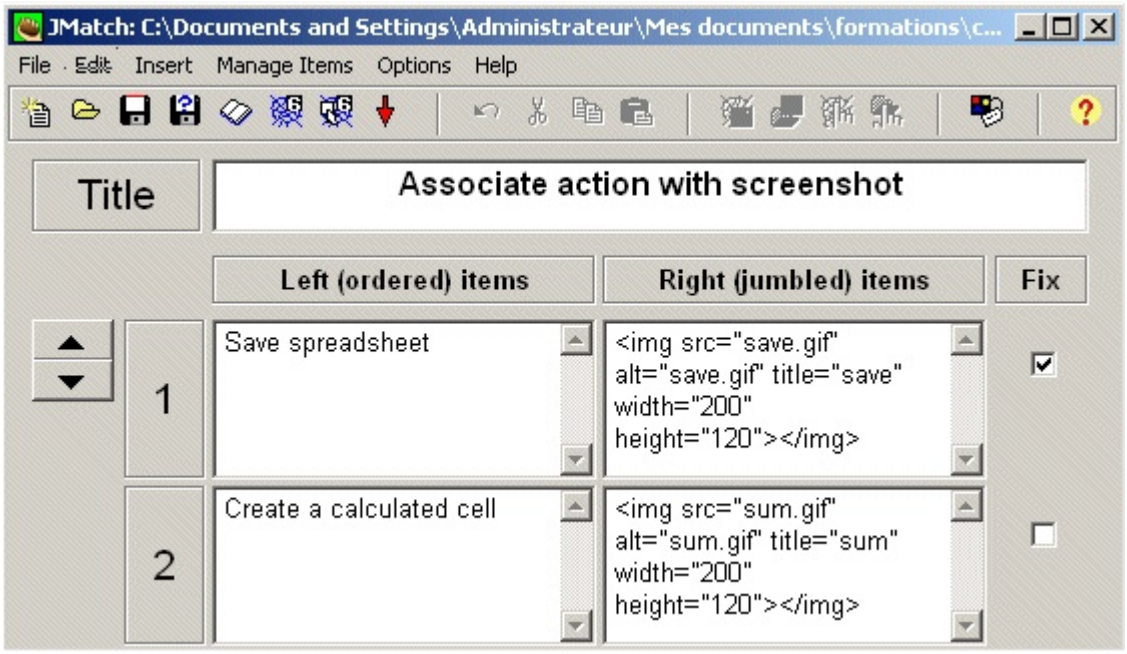
Some other competences call for open questions, paper writing exercises, production... For these, one will use Forums, Assignments, Dropbox...

Some other competences call for simulation. One will want to develop Flash animations with Flash authoring tools like **Wink** http://www.debugmode.com/wink/

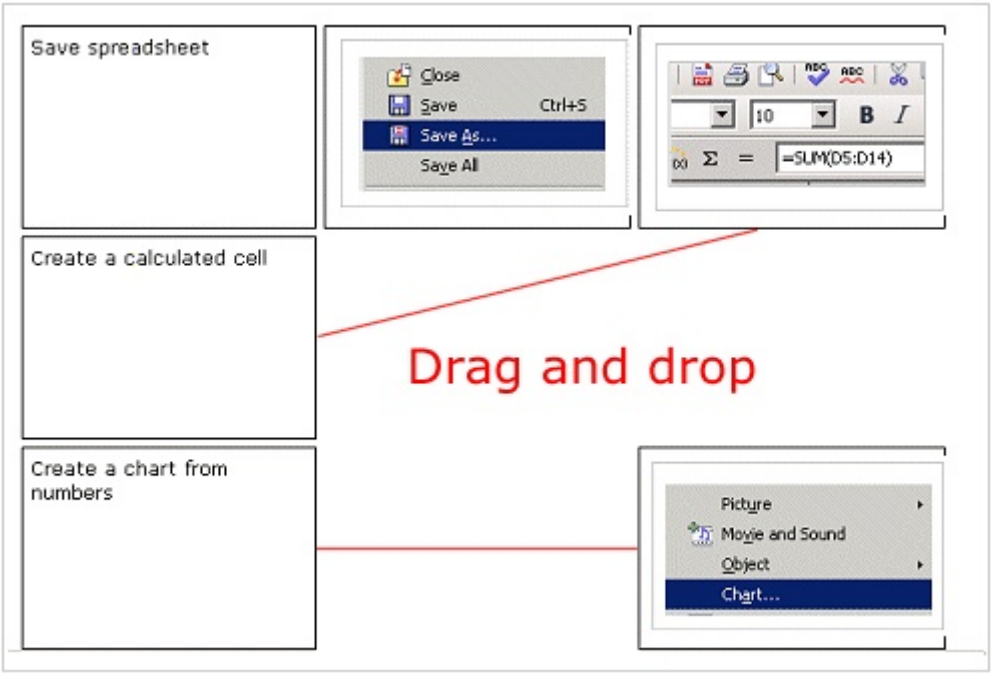


To create a test in **Hot Pototatoes** is quite easy and you will be able to upload tests and save scores in Dokeos.

The authoring interface will look like this:



The learner interface will look like this:



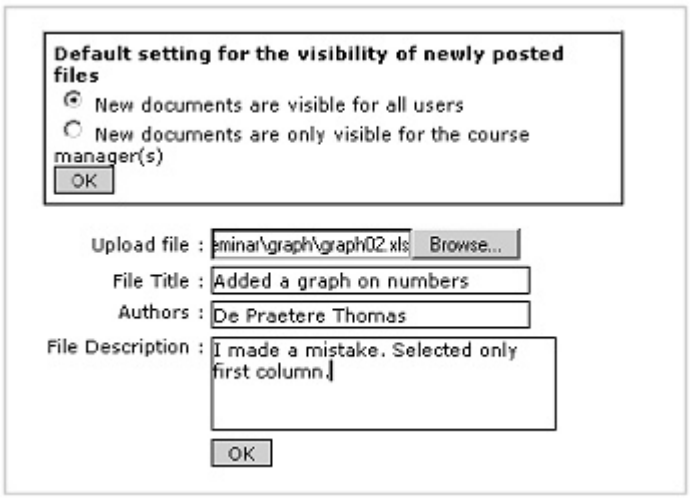
Practice 1 : create a Flash simulation in Wink and upload it into Documents.

Practice 2 : create a drag and drop matching exercise using the following images:

1. save : http://www.dokeos.com/download/content/graph/save.gif
2. create a graph : http://www.dokeos.com/download/content/graph/chart.gif
3. create calculated cell : http://www.dokeos.com/download/content/graph/sum.gif

XI. Assignments

This tool is very simple. It lets learners publish their productions (whatever they are) into the course website. Either towards the trainer only or towards all other members of the course, depending on the course scenario.



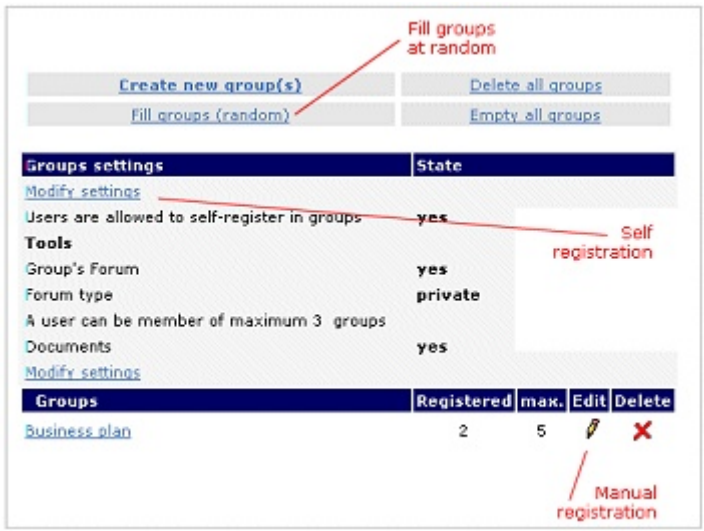
Practice : upload a Calc or Excel file in Assignments then show it or download it.

XII. Groups and members

Dokeos lets you supervise people and gather them into groups. To get data relative to people, enter Users, then select Tracking and show all.

To create groups, go to Groups, create a series of groups with limited seats. There are three ways to fill groups:

1. You let learners self-register;
2. You fill groups at random;
3. You fill groups manually, one person at a time.



Practice : Create 2 additional fake users, 2 groups and insert 2 users in group manually and yourself as moderator.

XIII. Building learning paths

The SCORM norm (*Shareable Content Object Reference Model*) allows to create, import and export learning sequences called learning paths.

Scorm acts on three levels

1. Pedagocical

Standardised navigation
Automation of the supervision
Sequencing of activities
Pre-requisites management
Time measure

2. Technical

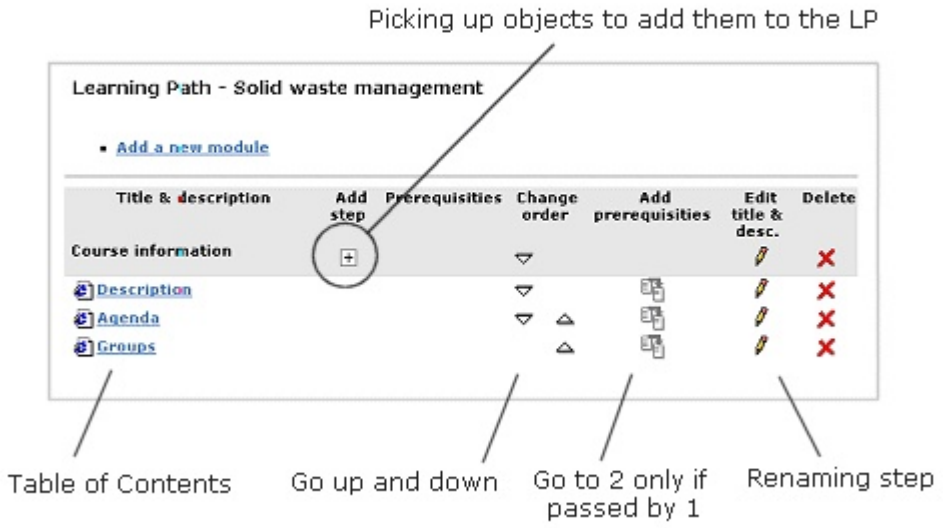
Transport of the content as a ZIP package
Structure of the path in a file called imsmanifest.xml
Open format (XML)
Public norm
Multi-formats : CD-Rom, different LMS
Metadata for search engines

3. Economic

Content recycling
Sustainable development
Editability
Building resources collaboratively

Technically speaking, a SCORM course is a course articulated around a Table of Contents written in the XML language and saved in the ZIP format. This makes it portable to LMS, CD-Rom and so on.

Dokeos provides a tool called Learning Path to build SCORM packages.



XIV. Pedagogical quality management

To build a valuable learning path, you will have to analyse the situation and adapt the objectives of the training to the needs of the audience in terms of competences. It is one of the most difficult steps.

Then it is time for design : trying to modelise the competences so as to create learning situations that are as closer as possible to real life situations in order to contextualise. This step might be the occasion to build a planning of your development.

One analysis and design are done, you are ready for development. This includes the building of raw media : audio, video, texts... and their combination into learning objects. This phase should also include crash users tests.

Fourth step : the course begins. Time for adjustments on the fly according to the comments and requirements of the participants.

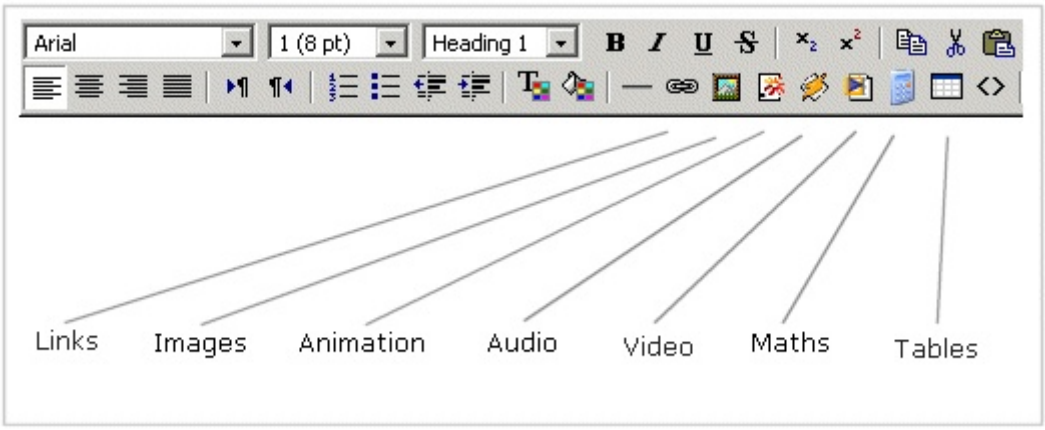
Analysis Audience Content Budget Objectifs	**Development** Objects : tests, contents... Raw media (audio, video, text, ...) Sequencing
Design Activitiess Roles in the dev team Plannning of development	**Maintenance (life)** News Interaction Groups Tutoring Editing by more than one

In the design phase, it will be usefull to write a storyboard that details the differents steps of every lesson. The storyboard is a key tool to help you go down from ideas to action.

Example storyboard

Objectives	***Method***	***Steps***	***Assets***	***Tools***
Draw a graph from numbers in Excel	Experimentation	Objectives	Text + screenshot	Dokeos + Gimp
		How to do it	Animated screenshot	Viewletbuilder
		Do it yourself	Web page + Excel file	Dokeos + Excel
		Show me how you did	Assignments tool	Dokeos
		Common mistakes	Page + Screenshots	Dokeos + Gimp
		Let's discuss your solution	Forum	Dokeos

XV. Authoring tools



The Dokeos multimedia editor allows to integrate images, audio, video, Flash animation and mathematics. However, it does not allow to create these media. To create raw media, one can use different softwares. The most important is the format in which you save the document. Refer to the formats pentagon.

For example, you can use PhotoShop, PaintShop or The Gimp and many other softwares to create and treat images as far as you save them in GIG or JGP formatr. Identically to create FLASH animations (format name = .swf) you can use Macromedia Flash, RoboDemo, Qarbon Viewletbuilder, Wink, OpenOffice...

Dokeos suggests a list of these softwares. We do not pretend they are the best ones. Our goal is that they are:

- free or cheap,
- run on any or many platform(s) : Windows, Linux, Mac OS X,
- easy to use.

Task	Paying	Open or free	Online with Dokeos
Image manipulation Resizing and manipulating photos and screenshots.	 Photoshop Windows - MacOSX	 The GIMP Win - Linux - MacOSX	Import images in the Documents tool in .gif, .jpg or .png format.

Audio manipulation

Recording and editing .mp3 audio.

No paying software does better than Audacity.

Audacity
Win - Linux - MacOSX

Import audio in the Documents tool in .mp3 format. 64 Kbps is a good compression rate.

Software simulation

Creating software demonstrations and tutorials.

Captivate
Windows - MacOSX

Wink
Windows - Linux

Import animations in the Documents tool in Flash (.swf) format.

Web pages authoring

Creating multimedia web pages.

Dreamweaver
Windows - MacOSX

NVU
Win - Linux - MacOSX

Online editor
Win - Linux - MacOSX

Exams

Surveys, tests, examination and reporting.

Questionmark
Win - Linux - MacOSX

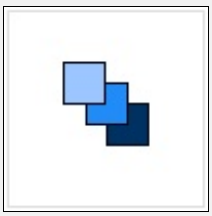
Hot Potatoes
Win - Linux - MacOSX
Not free if course needs login. License.

Tests tool
Win - Linux - MacOSX

Learning path

Sequencing learning content and activities in compliance with the SCORM standard.

Learning Maker
Windows



Reload Scorm Editor
Win - Linux - MacOSX

Learning path
Win - Linux - MacOSX

XVI. Support

To conclude some links to more documentation:

- The Teacher Manual, Admin Manual and some insights on pedagogy : http://www.dokeos.com/documentation.php
-
- The Dokeos users free support forum : http://www.dokeos.com/forum
-
- The Dokeos contextual help : in every tool, you can click on Help. This will explain to the teacher how to use the current tool.