

Software development of iQTool

Presenter:

Gábor Kaposi

MTA SZTAKI (WP3)

eLearning department

11 November 2009

Goal of iQTool in a nutshell

- *Create questions*
- *Create questionnaires from questions*
- *Create evaluations from questionnaires for the training material pages*
- *Create statistics from the responses of the evaluations in order to qualify the training materials*

Aim of WP3

- *Develop a software tool for*
 - *The evaluation of the training materials in the LMS on the basis of the quality assurance methodology which was formed in WP2*
 - *Storing the answers related to the quality*
 - *The management of the questionnaires*

Tasks of WP3

- *Define the flow of the development*
 - *Select the appropriate development methodology and setup the development environment (project management tools, repository, communication tools, etc.)*
-

Tasks of WP3

- *Define the initial functionality on the basis of the requirements of WP2*
- *Creating the system specification*

Tasks of WP3

- *Implementing the system prototype based of the initial specification*
 - *Functionally testing and revising the prototype*
 - *Release the public version of the system*
-

Partners in WP3

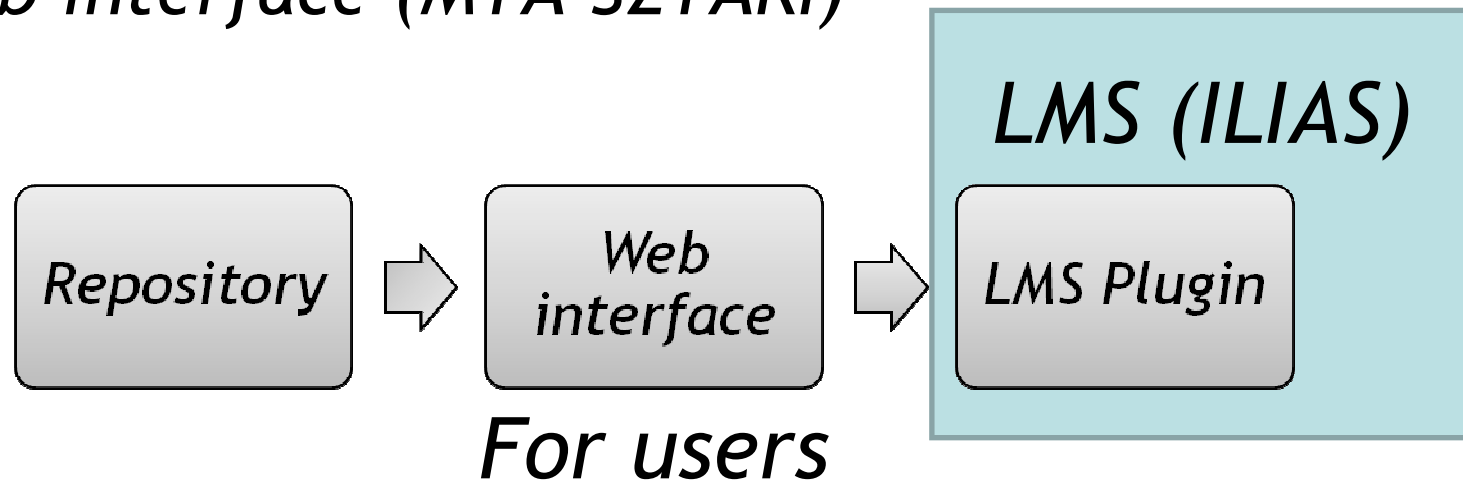
- *CENFIM*
- *MTA SZTAKI*
- *SZÁMALK*
- *TU Crete*

Times of WP3

- *Start of WP3's work: 07/2008*
- *First version of the repository available: 17/10/2008*
- *Duration of the full development: 8 month*
- *Tool available for testing: 02/02/2009*
- *Testing period ended: end of september 2009*

Basic conception

- *Three software modules were created:*
 - *LMS plugin (SZÁMALK)*
 - *Repository (TU Crete)*
 - *Web interface (MTA SZTAKI)*



Web interface

- *Main purposes:*
 - *To have interface for:*
 - *Creation of questions and questionnaires*
 - *Creating evaluations*
 - *Viewing statistics of the answers*
 - *Connects the repository and the LMS plugin*

Repository

- *Stores the*
 - *Questions, questionnaires*
 - *Evaluations*
 - *Answers*
 - *Saved statistics*
 - *Other information for the web interface*
 - *Like: user data, organizations, etc...*

LMS plugin

- *Integrates into a Learning Management System*
- *Allows to assign evaluations to the training materials with the help of the web interface*
- *Allows the user to fill these evaluations*
- *Sends the answers back to the repository through the web interface*

Basic development choices for the web interface

- *JBoss Application Server (<http://www.jboss.org>)*
 - *Dynamic Java based web technologies*
 - *Seam (<http://seamframework.org>)*
 - *High level components for web forms*
 - *Eclipse (<http://www.eclipse.org>)*
 - *Apache Axis 2 (<http://ws.apache.org/axis2>)*
 - *Communication with the repository*
-

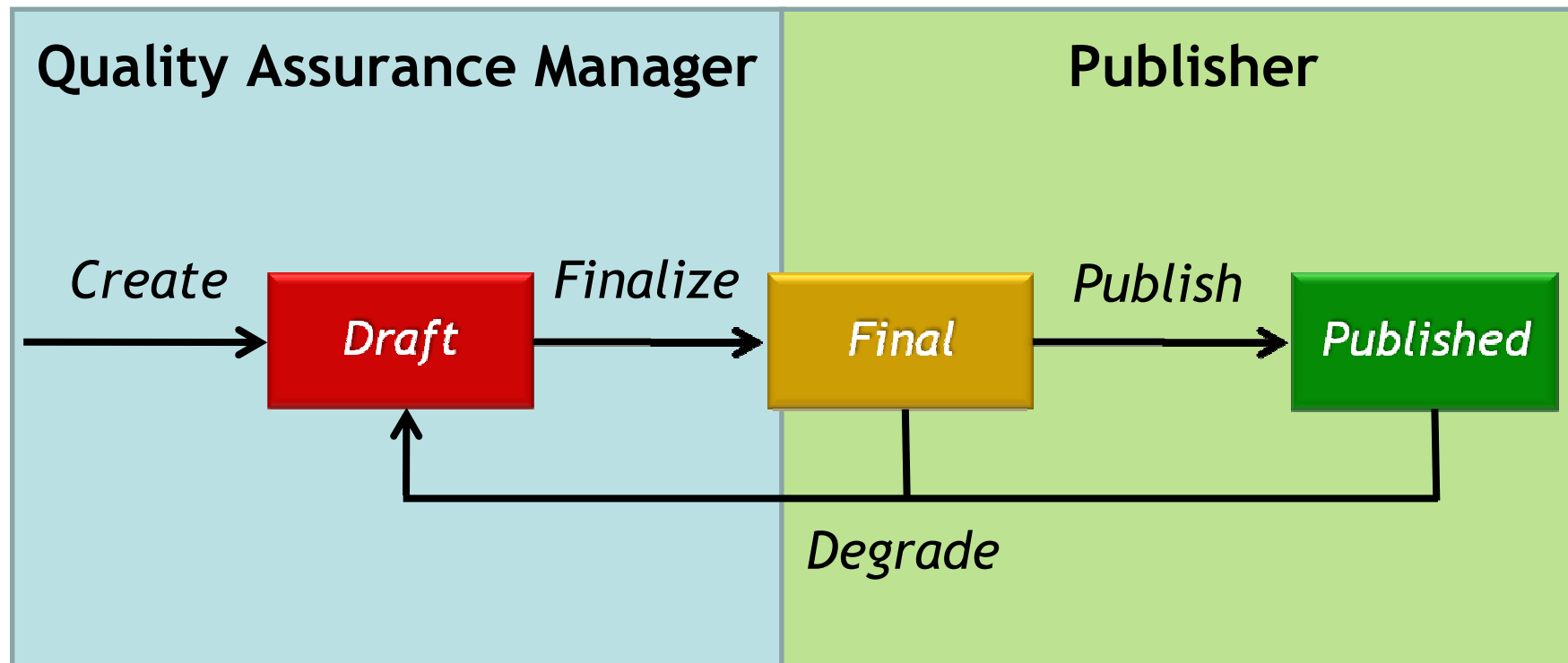
User roles of iQTool (1/2)

- *Quality Assurance Manager (QAM)*
 - *Creates questions, questionnaires, evaluations*
 - *Creates statistics*
- *Publisher*
 - *Publishes good quality questions, questionnaires*
 - *Creates statistics*

User roles of iQTool (2/2)

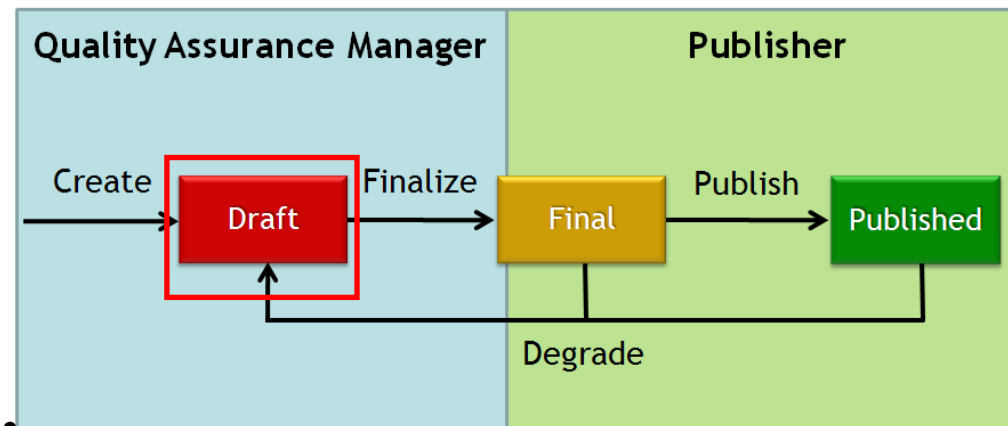
- *Evaluator*
 - *Answers the questionnaires*
- *Administrator*
 - *Does administrative tasks like user registration, organization and Learning Management System management*

Lifecycle of questions and questionnaires



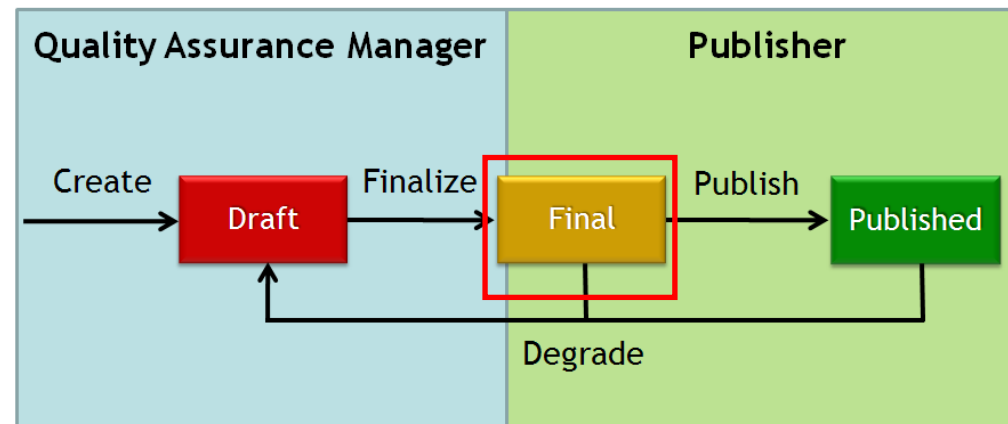
Draft status

- *After a question or questionnaire is created it is in draft status.*
- *In draft status the quality assurance manager (QAM) can still do editing.*
- *Once the QAM finished working on the question or questionnaire he/she finalizes it.*



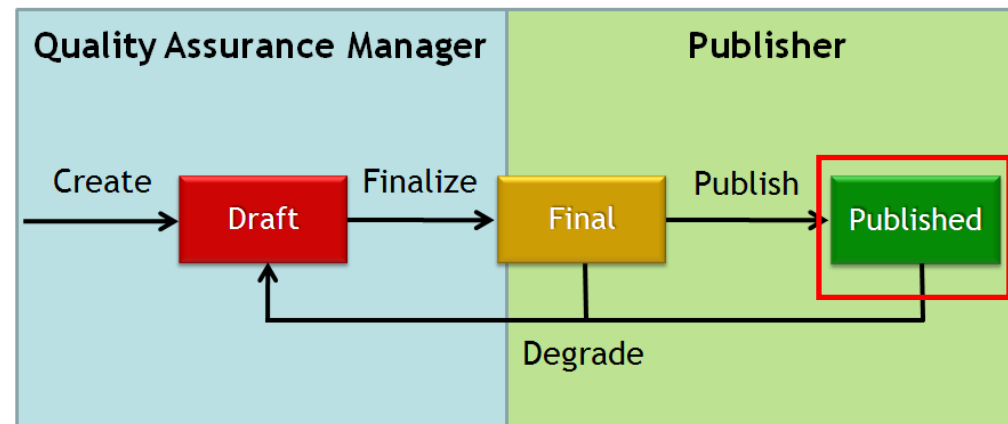
Final status

- *After the QAM finalized the question or questionnaire the publisher can inspect it and decide to either*
 - *Publish it when the quality is good*
 - *Degrade it back to draft when the quality is not so good.*



Published status

- *Published questions can be used in questionnaires*
- *Published questionnaires can be used for creating evaluations*





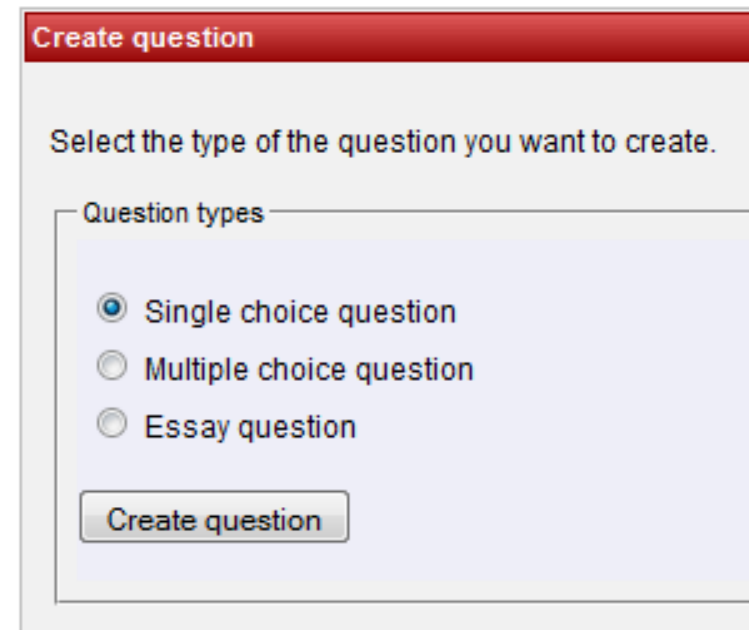
iQTool web interface

Navigation	
	Home
	Logout
Administration	
	Edit organizations
	Register user
	Edit user
	Delete user
	Delete question
	Delete questionnaire
Creation	
	Create question
	Edit question
	Create questionnaire
	Edit questionnaire
	Create profile question
	Create evaluation
Statistics	
	Create
	Create question statistic
	Create questionnaire statistic

- *Web management system for iQTool*
- *Supports user role based activities*
- *Developed by MTA SZTAKI*

Types of questions currently supported

- *Single choice question*
- *Multiple choice question*
- *Essay (arbitrary text) question*



The screenshot shows a dialog box titled "Create question" with a red header. Below the title, it says "Select the type of the question you want to create." Underneath, there is a section labeled "Question types" containing three radio button options: "Single choice question" (which is selected), "Multiple choice question", and "Essay question". At the bottom of the dialog, there is a "Create question" button.

Creating a single choice question

Header

Title:

Question:

Answers

Answer	Value	
<input type="text" value="Not satisfied"/>	<input type="text" value="1"/>	<input type="button" value="Delete"/>
<input type="text" value="Satisfied"/>	<input type="text" value="2"/>	<input type="button" value="Delete"/>
<input type="text" value="Very satisfied"/>	<input type="text" value="3"/>	<input type="button" value="Delete"/>

Creating a multiple choice question

Header

Title:

Question:

Number of choices

Minimum choices:

Maximum choices:

Answers

Answer	Value	
<input type="text" value="The structure"/>	<input type="text" value="1"/>	<input type="button" value="Delete"/>
<input type="text" value="The text"/>	<input type="text" value="1"/>	<input type="button" value="Delete"/>
<input type="text" value="The pictures"/>	<input type="text" value="1"/>	<input type="button" value="Delete"/>
<input type="text" value="The animations and videos"/>	<input type="text" value="1"/>	<input type="button" value="Delete"/>

Creating an essay question

Header

Title:

Question:

Expected length of the answer

Expected length:

Creating a questionnaire

Demo single choice question

How much are you satisfied with the general structure of this module? Delete

Not satisfied

Satisfied

Very satisfied

Demo multiple choice question

What are the elements in this learning material you are satisfied with? Delete

The structure

The text

The pictures

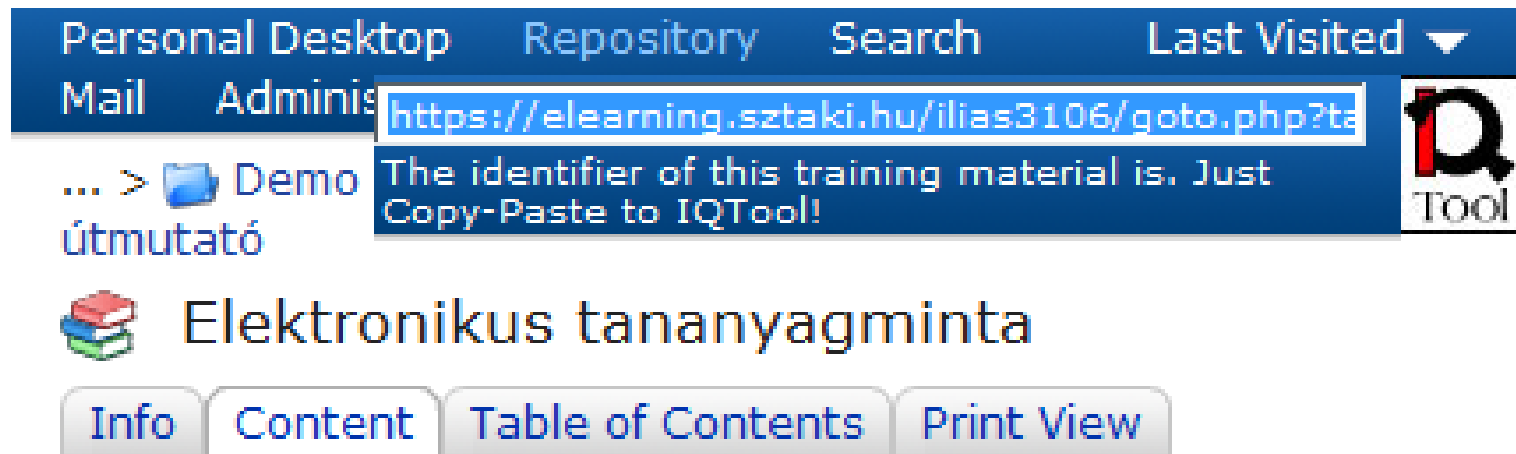
The animations and videos

Demo essay question

Please give some general feedback on this training material. Delete

Creating an evaluation (1/1)

- *Getting the link of the ILIAS page*



The screenshot shows a web interface with a blue header bar containing navigation links: "Personal Desktop", "Repository", "Search", and "Last Visited" with a dropdown arrow. Below the header, there are links for "Mail" and "Adminis". A tooltip is displayed over a URL: <https://elearning.sztaki.hu/ilias3106/goto.php?ta>. The tooltip text reads: "The identifier of this training material is. Just Copy-Paste to IQTool!". To the right of the tooltip is the "IQTool" logo, which consists of a stylized 'Q' with a red vertical bar on its left side. Below the tooltip, there is a folder icon labeled "Demo" and the text "útmutató". Further down, there is a stack of books icon followed by the text "Elektronikus tananyagminta". At the bottom, there are four buttons: "Info", "Content", "Table of Contents", and "Print View".

Creating an evaluation (1/1)

- *Creating an evaluation in iQTool web interface*

Selected questionnaire

Demo questionnaire
3 questions

Training material IDs or page URLs

Validity interval (dd mm yyyy)

Starting date

Expiration date

Filling the questionnaire in ILIAS

IQTool evaluation

Demo questionnaire

Demo single choice question

How much are you satisfied with the general structure of this module?

- Not satisfied
- Satisfied
- Very satisfied

Demo multiple choice question

What are the elements in this learning material you are satisfied with?

- The structure
- The text
- The pictures
- The animations and videos

Demo essay question

Please give some general feedback on this training material.

Finished

Statistics

Demo single choice question private 1
(count of answers given)

Statistical result for

Final Portuguese Questionnaire with 17 Questions

(histogram of answers)

Result:

| [answer_0], [answer_1], [*], [answer_0, answer_0, answer_0], [], | [answer_0], [*], [answer_3], [answer_0,
answer_0, answer_0, answer_0], [], | [answer_0], [*], [*], [answer_0, answer_0, answer_0, answer_0, answer_0,
answer_0, answer_0, answer_0, answer_0, answer_0, answer_0, answer_0, answer_0, answer_0], [], |
| [*], [answer_1], [*], [answer_0, answer_0, answer_0], [], | [*], [*], [answer_3], [answer_0, answer_0, answer_0,
answer_0], [], | [], [], [], [answer_0, answer_0], [], |

Back

Conclusions, future plans

- *Visually improve the statistical module to make it more user friendly and to make the results comparable*
- *Improve the overall usability of the iQTool web interface*

Thank you for your attention!

E-mail: kaposi@sztaki.hu