

Edukalibre evaluation

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Agenda



- The needs of Edukalibre evaluation
- The stages
- MiLE for usability evaluation
- A Framework for pedagogical evaluation
- How to proceed

Needs



- Edukalibre has to show that:
 - the intended users CAN USE the produced pieces of software
 - The can achieve the tasks the software supports
 - there is some PEDAGOGICAL IMPACT
 - i.e. university courses that use the produced software and content are actually enhanced

An idea for Evaluation



EDUKALIBRE

GOAL: Improve the modules by making them straightforward and easy to use

PROPOSED METHOD: **MiLE**

USABILITY
EVALUATION

GOAL: Assess the pedagogical impact of new modules on teaching and learning

PROPOSED METHOD: **Composed Framework**

PEDAGOGICAL
EVALUATION

Usability Evaluation

MiLE



The idea



- Given that Edukalibre modules support some goals for some user types:
 - Are the goals easily achievable by the users?
 - Can the interaction be improved in order to fully exploit their potential?

Usability - 1



- A crucial aspect of the quality is the usability of the application.
 - Usability is “the effectiveness, efficiency and satisfaction with which specified users can achieve specified goals in particular environments” (ISO 9241-11).
- Usability is essential for a satisfying user experience
 - Lower customer calls for assistance
 - Trust building
 - User satisfaction: the application is „easy to use“



Usability - 2



- Factors determining usability:
 - What the application is
 - Who is using it
 - What they want to achieve (accomplishment of user goals)
 - The context

- Factors affecting the user experience:
 - The usefulness of the product
 - Learnability
 - Effectiveness
 - Efficiency
 - Satisfaction and Attitude



Usability and e-learning



- In e-learning environments
 - For students, usability is a necessary condition for effective online learning;
 - For instructors, is the condition for exploiting the application
- Shaping usability represents an important condition for success of e-learning applications

Approaches to usability



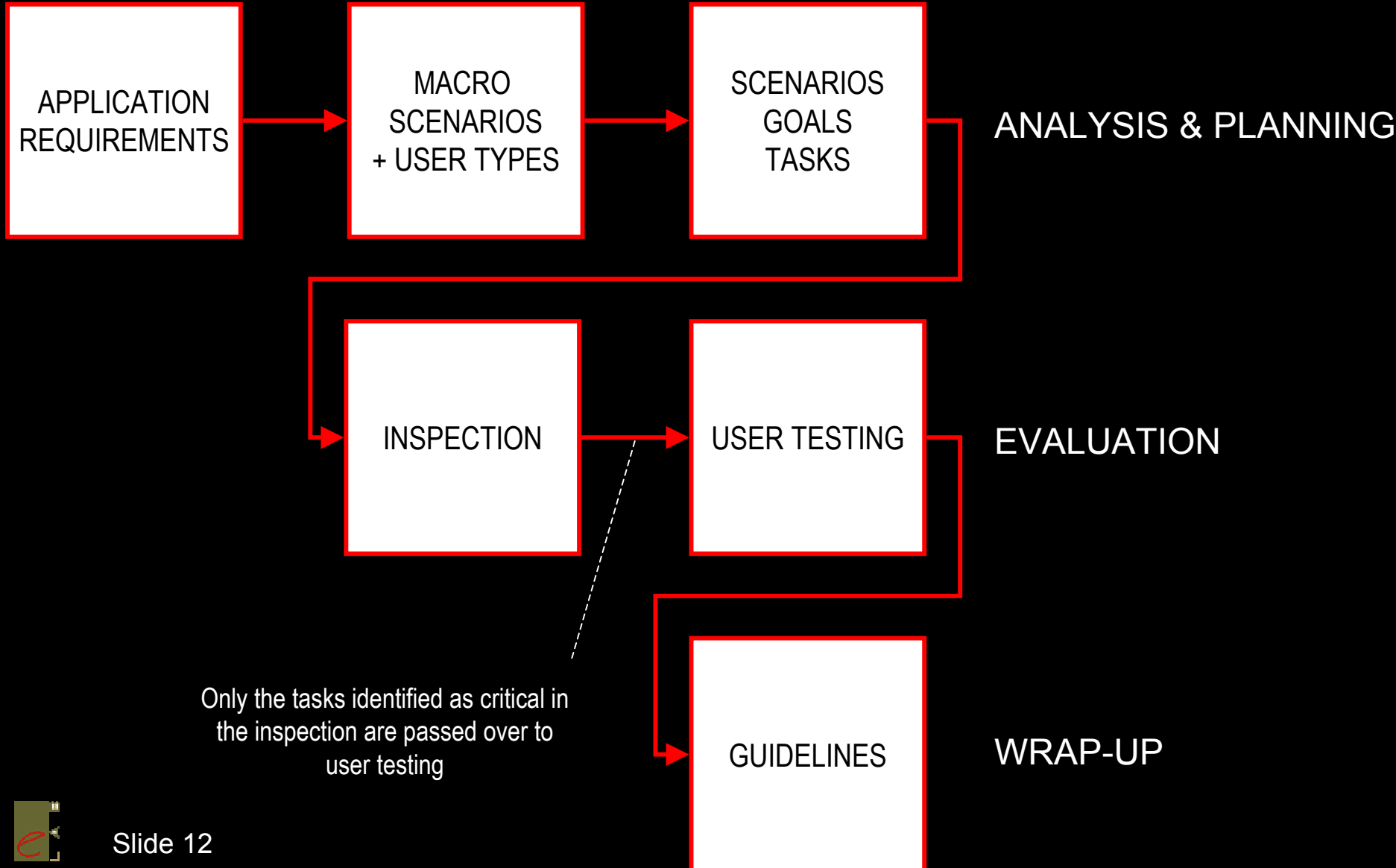
- Who measures usability?
 - Inspection: Expert review
 - User Testing: Users are the measure of quality
- How to measure it?
 - Task-oriented (scenario-based): “Doing things” with the application
 - Heuristics: Verifying compliance with usability principles

MiLE: blending inspection-driven scenarios with heuristics



- Developed by USI + POLIMI
- Advantages
 - Used in a variety of domains (e-learning, e-commerce, cultural heritage...)
 - Strikes a healthy balance between heuristic evaluation and task-driven techniques
 - Uses scenario analysis as the driver for usability evaluation.
 - Very flexible with respect to budget and time constraints

The MiLE Process



How to create a scenario (1)



Identify the user profiles (or user types):

Who will use the application?

User Type	
Learner	User profiles
	Responsible
	Acceptor
Instructor	Seller
	Tutor (1..n)
	Administrator
	Responsible

Identify their high-level (or macro) goals:

Why will they use the application?

Macroscenario A	
User profile	Seller
<u>Macrogoal</u>	Plan the learning experience

User type (or profile) + macro-goal = MACRO-SCENARIO

How to create a scenario (2)



Refine the Macro-scenario into scenarios

Macroscenario A	Plan the learning experience
Scenario 1	Plan the study
Scenario 2	Know course conditions
Scenario 3	Know the learning level achieved

Refine Scenarios into user tasks

Macroscenario A	Plan the learning experience	
Scenario 1	Goal	Tasks
	Plan the study	<ul style="list-style-type: none">- Know the time required to frequent a course- Find the ideal period to frequent a classroom session- Know the time needed to download a document
Scenario 2	Know course conditions	<ul style="list-style-type: none">- See course goals- See the course structure- See how to communicate with tutors and peers

User profile + goal = SCENARIO



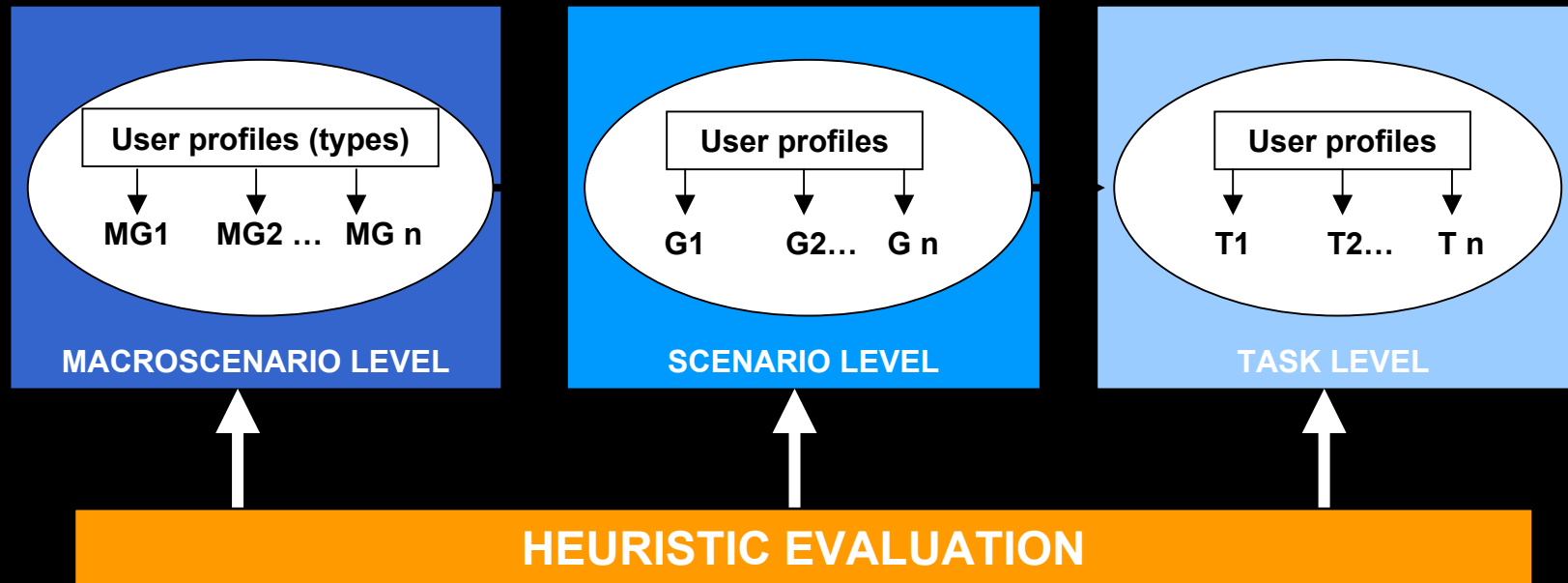
How to create a scenario (3)



Evaluate each task by means of usability attributes (heuristics)

Application Aspect	Usability Attribute	Description
Content	Authority	The author is competent in relation to the subject
	Currency	The time scope of the validity of the information is clearly stated. The info is updated
	Completeness	The information required is sufficient to complete the task
	Richness	The information required is rich (e.g. enough examples)
	Clarity	The information is easy to understand
	<u>Multilinguisticity</u>	The information is given in more than one language
Structure of Content	Structure effectiveness	The organization of the content pieces is suitable to the task
	Consistency	Similar pieces of information are organized with in similar fashion
Navigation	Accessibility	The information is intuitively located and easily accessible
	Orientation	It is easy to understand where I am within the information architecture
	Link promises	Links actually lead to the content they promise to lead
Interface & Presentation	<u>Multimediality</u>	Different media are used to convey the information necessary to complete the task
	Predictability	Link labels spread enough "scent of information", i.e. it is clear where they lead to
	Visual Communication	The quality of the visual design as how it conveys effectively content and interaction capabilities
...

The Evaluation: different levels of granularity



Choose the evaluation level most appropriate to your project.

Example



- Case study: e-learning community center of a world wide leader car manufacturing company
- Evaluation of:
 - 4 macro-scenarios and 8 scenarios for the user type “student”;
 - 3 macro-scenarios and 7 scenarios for the type “instructor”.

Example of Front-end usability problem



Goal: *Plan the study*

Task: *Find the ideal period to attend a classroom session*

Problem identified:

1. *poor visibility of textual links*

2. *lack of consistency between links styles*

Introduzione:

I moduli ti permettono di fruire, pagina per pagina, di tutte le informazioni create da per questo corso.

Moduli:

Nuova

Segui il corso on line sulla nuova

- **Modifica modulo**

- **Cancella modulo**

+ Aggiungi modulo

, propedeutico al corso in aula

I Formatori:

Federico Barral

After Sales

Vedi curriculum

Scarica curriculum

Luigi Vianello

Trainer esterno, società Exor

Consistency: 2 different visual styles for textual links.

This is not rendered as a link



Example of Back-end usability problem



Goal: *Manage a course*

Task: *Modify the course calendar*

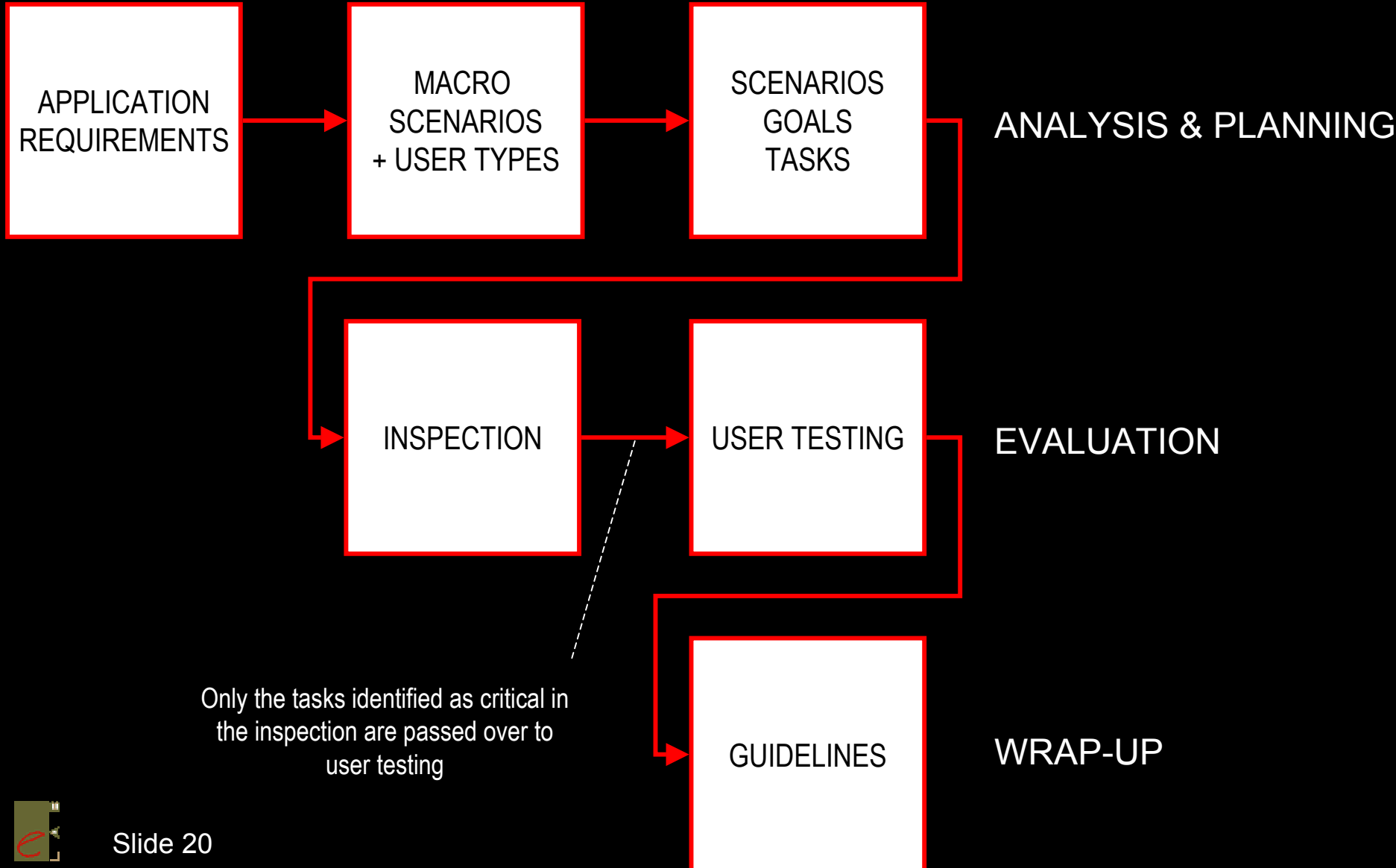
Problem identified: *Lack of consistency in link labeling. This may obstacle orientation*

The screenshot shows a web application interface. At the top, there is a navigation bar with tabs: "generale", "documenti", "moduli", "calendario", "test", "formatori", "amministrazione", "Documenti standard", and "Sistema SuperAdmin". The "amministrazione" tab is circled in red. Below the navigation bar, the main content area is titled "Nuova" and contains sections for "Introduzione:", "Il programma:", and "Date:". On the left side, there is a sidebar menu with items like "Il Training Informa", "I miei corsi", "Bacheca", "Report", and "Amministrazione". The "Amministrazione" link in the sidebar is also circled in red. A red arrow points from the "Amministrazione" link in the sidebar to the "amministrazione" tab in the top navigation bar.

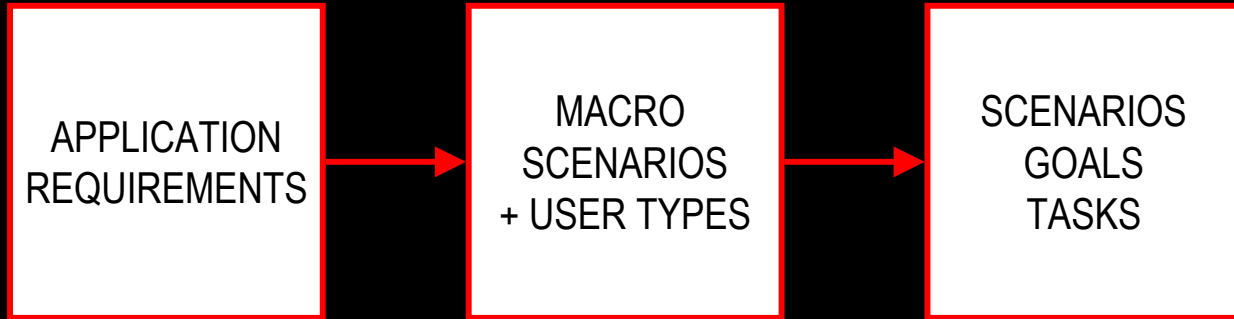
The same link point to different part (and functionalities) of the site



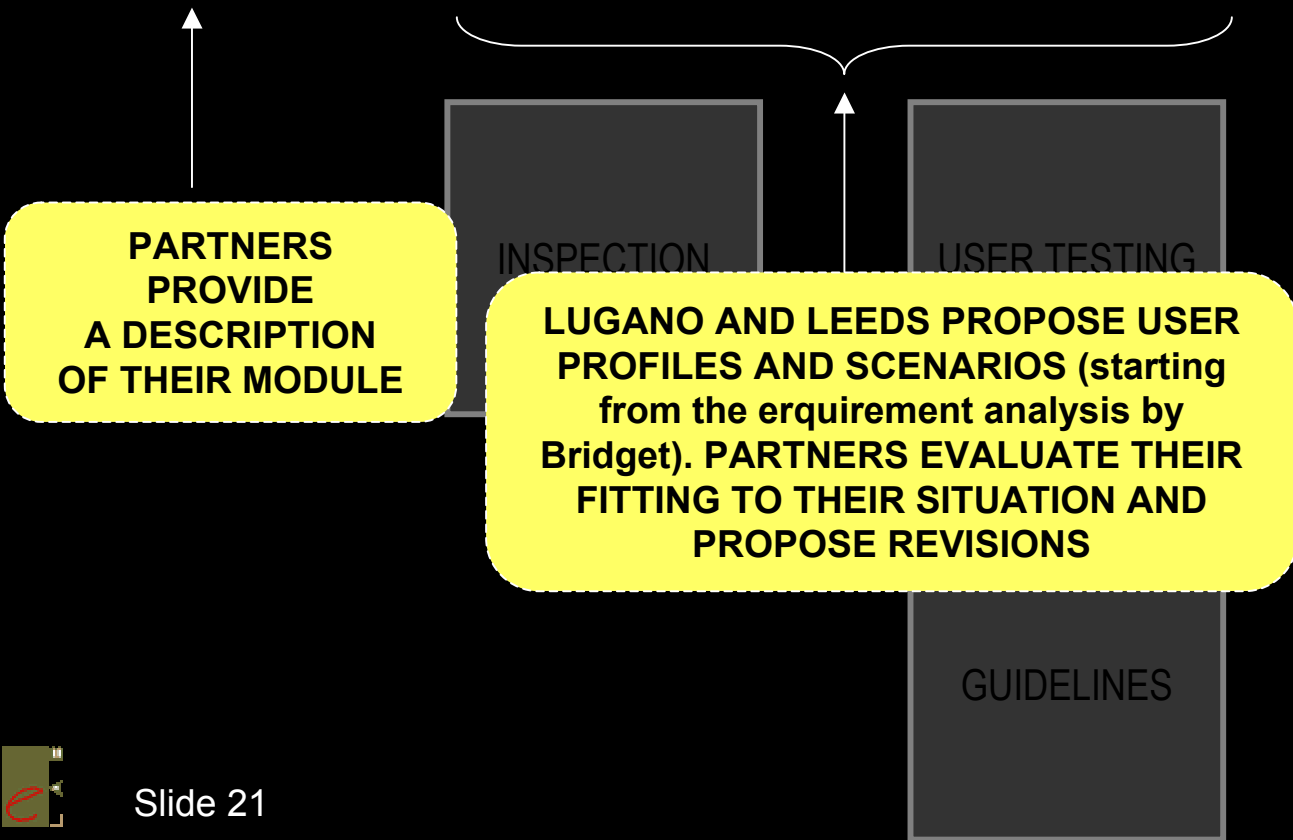
MiLE for Edukalibre



MiLE for Edukalibre (1)



ANALYSIS & PLANNING



MiLE for Edukalibre (2)



LUGANO AND LEEDS PROVIDE GUIDELINES FOR INSPECTION. PARTNERS INSPECT THEIR MODULE + ANOTHER ONE (=2 DAYS). LUGANO COLLECTS THE RESULTS

MACRO SCENARIOS + USER TYPES

SCENARIOS GOALS TASKS

LUGANO AND LEEDS PROVIDE GUIDELINES FOR USER TESTING. PARTNERS CONDUCT USER TESTING ON THEIR MODULE + ANOTHER ONE. LUGANO COLLECTS THE RESULTS

INSPECTION

USER TESTING

EVALUATION

LUGANO AND LEEDS WRITE A FINAL REPORT AND GUIDELINES FOR IMPROVEMENT

Only the tasks identified as critical in the inspection are passed over to user testing

GUIDELINES

WRAP-UP



Pedagogical Evaluation

a composed framework



Remark & Proposal



- There is no single structured methodology for a complete pedagogical evaluation
- An idea can be merging two approaches
 - Inductive: collecting evidence
 - Deductive: fit to heuristics

Inductive process - 1



- All partners will use Edukalibre modules in different scenarios
 - Topic, Class size & composition, Teaching approach
- Every partner should formulate clearly the pedagogical impact they expect to achieve, e.g.
 - **EFFECTIVENESS** (what are the learning objectives in their specific case study; what indicators can be used as evidence that the objectives have been achieved)
 - **EFFICIENCY** (do teachers or learners spend too much resources on the task)
 - **COST** (does the end result justify the time and effort spent)
 - Survey to teachers & Co + students

Inductive process - 2



- How will the courses that use Edukalibre modules be improved? What indicators will be used to show this?
- Here we need data from the single partner institutions.... only DFIU sent us details!

Inductive process - 3



- The requirements analysis emphasized social issues
 - Collaborative creation of content may have additional benefits/pitfalls
 - We need to know in what situations will each partner use Edukalibre software/content and how they will relate to the libre idea (i.e. collaborative content created by teachers or students)

Deductive process



- Compare moodle with Eduk calibre modules to other VLE – are there any new/original functions?
 - Inspection and comparison
- Fit with the Framework by Britain & Liber
 - Interviews & user questionnaire

How to proceed?

Next step for evaluation



Schedule – Usability evaluation



- Lugano prepares MiLE scenarios by **mid September**
- Feedback by **mid October**
- Identify at least 2 inspectors from each partner (2 days/work)
- Conduct usability inspection by the **mid November**.
- Write usability report – one for each partner – **end of November**
- Conduct user testing **in December**
- Usability report **by December (?)**

- Note that MiLE can rely on the requirement analysis done at the beginning of the project by Bridget, so creating scenarios should be relatively easy

Schedule – Pedagogical impact



- Prepare for evaluation – report by each partner by **end of December**
 - Prepare description of learning objectives
 - List measurable indicators of pedagogical value
 - List indicators for success/failure of the libre concept (collaborative creation of content by teachers/students)
 - Provide description of usage, including people involved, settings, context, integration in learning environment
- Plan of Evaluation – **end of January 2005**
 - Coordinated by Leeds and Lugano
- Conduct evaluation by each partner - **February–August 2005**
- Write evaluation report – **October-November 2005**