



Erasmus+



E-tools for E-Schools

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EFES E-LEARNING METHODOLOGY

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the use of computer and Internet technologies to deliver a broad array of solutions to enable learning and improve performance

adult learners' characteristics:

- need to know why they have to learn something;
- like to learn experientially;
- approach learning as problem-solving;
- learn better where they see the immediate value & application of content;
- prefer to study at a time, place and pace convenient for them.

adult learners : school teachers



Why develop e-learning through EFES Project?



➤ **Cost:**

e-learning

<<

classroom facilities
instructor time
participants' travel
job time lost for classroom sessions

- **Learners** with difficulty to attend classroom training, because they are:
 - geographically dispersed;
 - busy with work or family commitments
 - located in conflict and post-conflict areas
 - restricted in their mobility because of security reasons;
 - limited because of cultural/religious beliefs;
 - facing difficulties with real-time communication (foreign language learners, very shy learners...)

➤ **Asynchronous** (time-independent) e-learning activities



- **training** aim to build cognitive skills;
- **course** address long-term rather than short-term training needs;
- **content**
 - delivered to a large number of learners;
 - reused for different learners' groups in the future;
- **learners**
 - from geographically dispersed locations;
 - with limited mobility;
 - with limited daily time to devote to learning;
 - with the least basic computer and Internet skills;
 - highly motivated to learn at their own pace;
- **data** collected and tracked



For Learners:

- Web-based training (WBT) with supplemental resources and assessments.
- Easy access from the online EFES LMS platform.
- Learn at own pace
- Define personal learning paths based on individual needs and interests

For e-learning providers:

- Not have to schedule, manage or track learners through a process
- Content developed according to a set of learning objectives
- Content delivered using text, graphics, audio, video (EFES WEB TV)
- Content provide learning support (explanations, examples, interactivity, feedback, glossaries, etc.)
- Track learners' actions in a central database



simple learning resources

- non-interactive resources (docs, PPT presentations, videos, audio)
- quickly developed;
- match defined learning objectives
- designed in a structured way

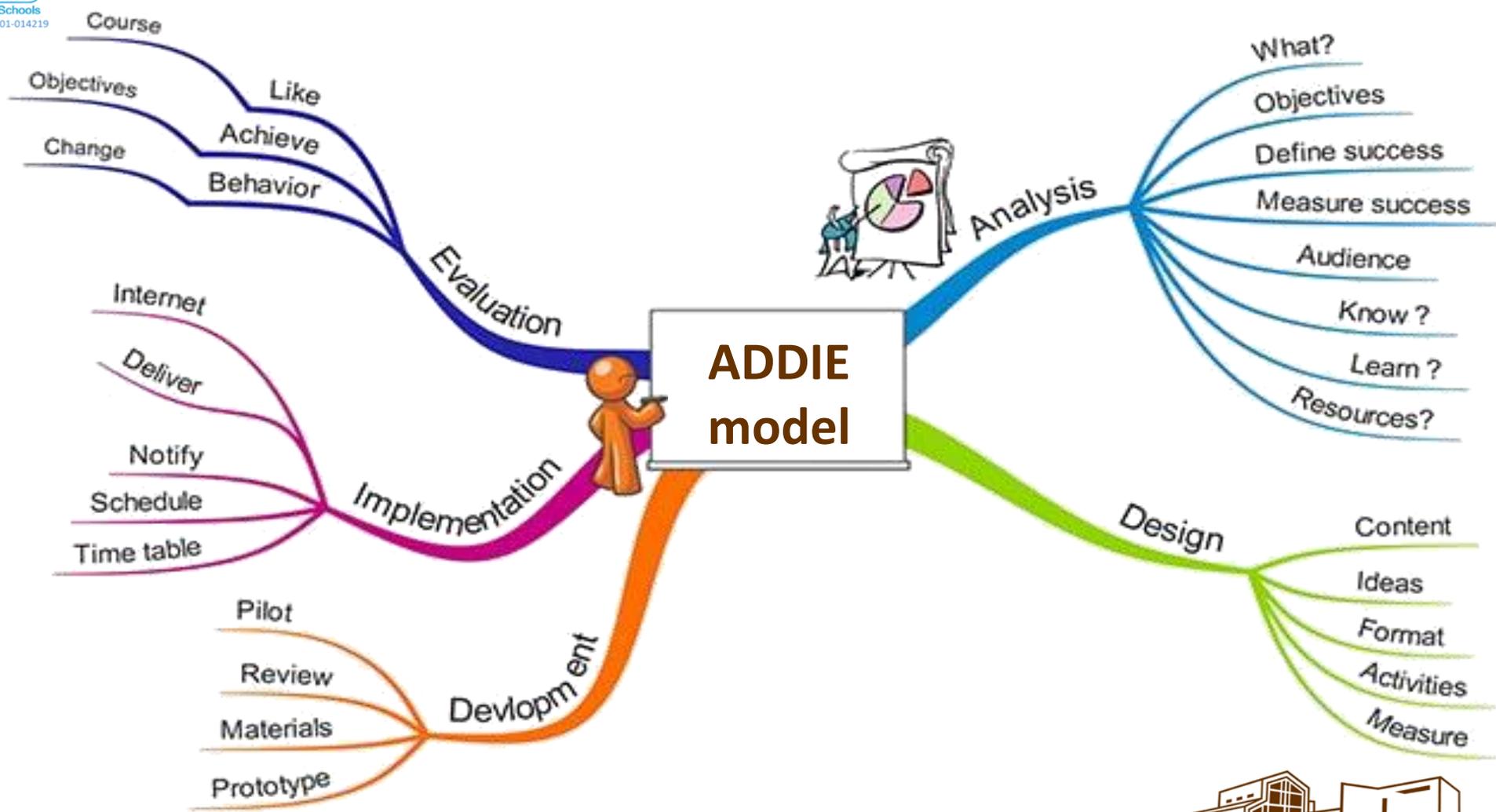
interactive e-lessons

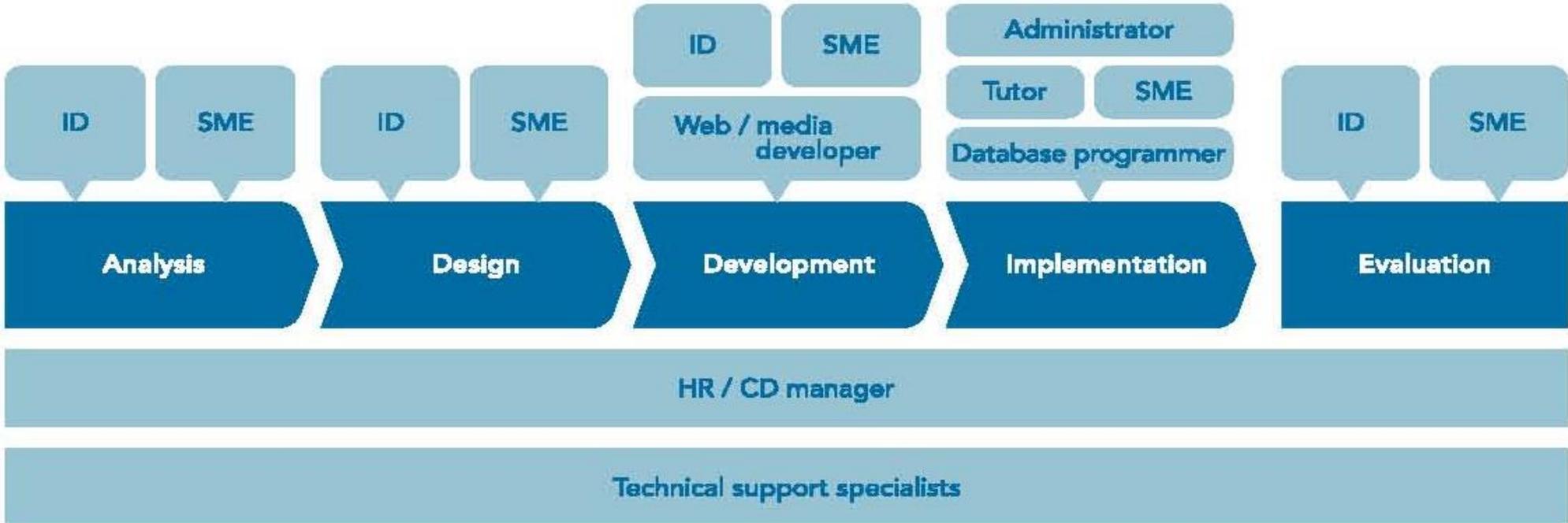
- linear sequence of screens (text, graphics, animations, audio, video -WEB TV)
- questions and feedback
- recommended reading and links to online resources
- additional information on specific topics



- **Learner-centred content:** Skills, knowledge and information provided relevant and specific to schoolteachers' needs, roles and responsibilities in professional life,
- **granularity:** segmented content to facilitate assimilation of new knowledge and to allow flexible scheduling of time for learning,
- **engaging content:** creatively used instructional methods and techniques to develop an engaging and motivating learning experience,
- **interactivity:** frequent learner interaction necessary to sustain attention and promote learning,
- **personalization:** courses customizable to reflect learners' interests and needs









| ANALYSIS | DESIGN | DEVELOPMENT | IMPLEMENTATION | EVALUATION |
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- **Task & topic analysis**

Content analysis: the most critical step in the instructional design process.

If the designer does not include accurate and relevant content, then there is little value in finding the best instructional methods and media to transfer the information to learners.

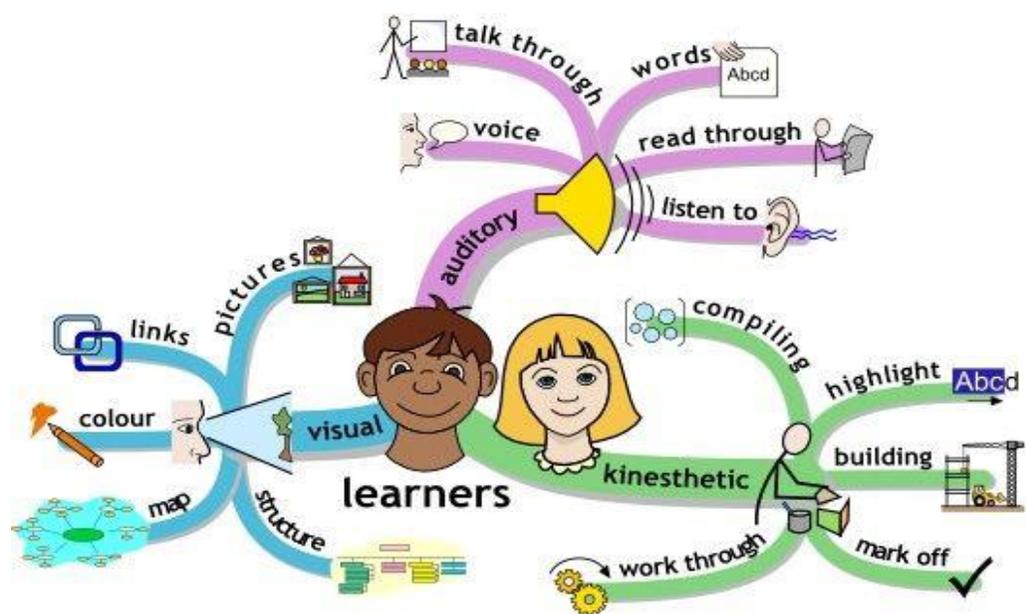
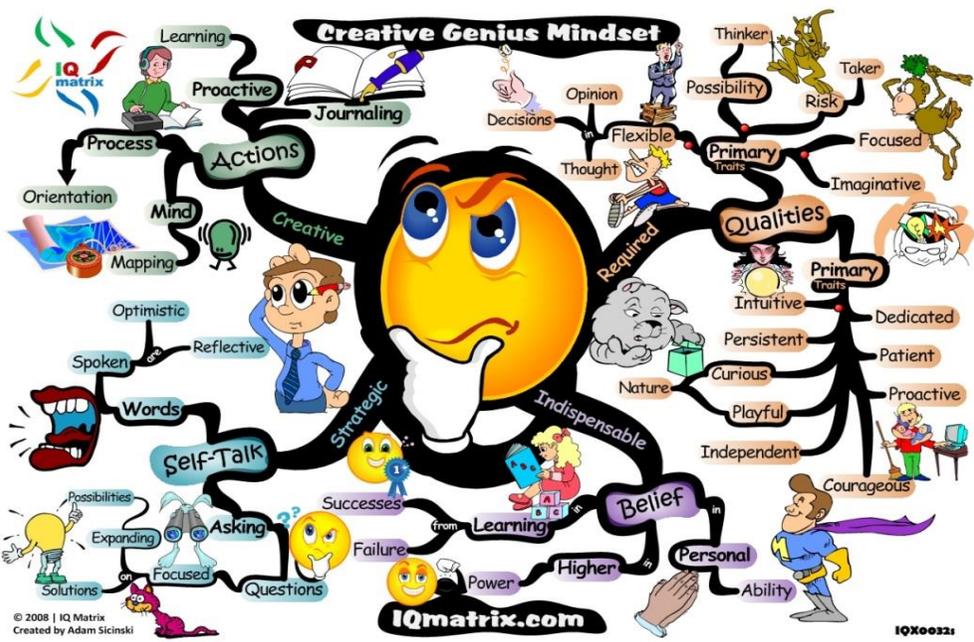
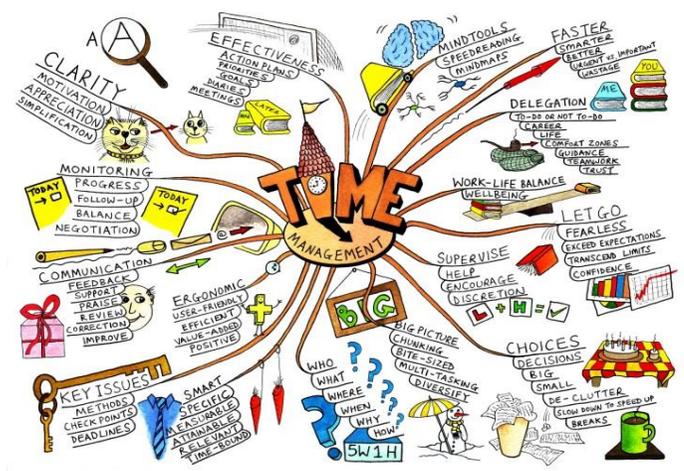
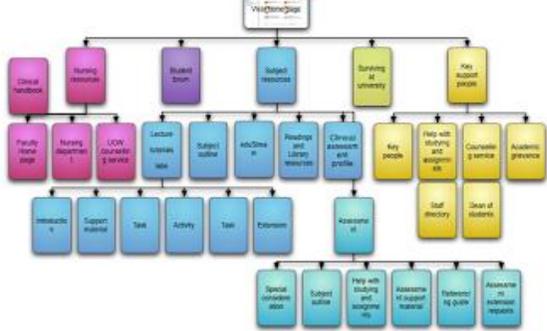
Topic analysis:

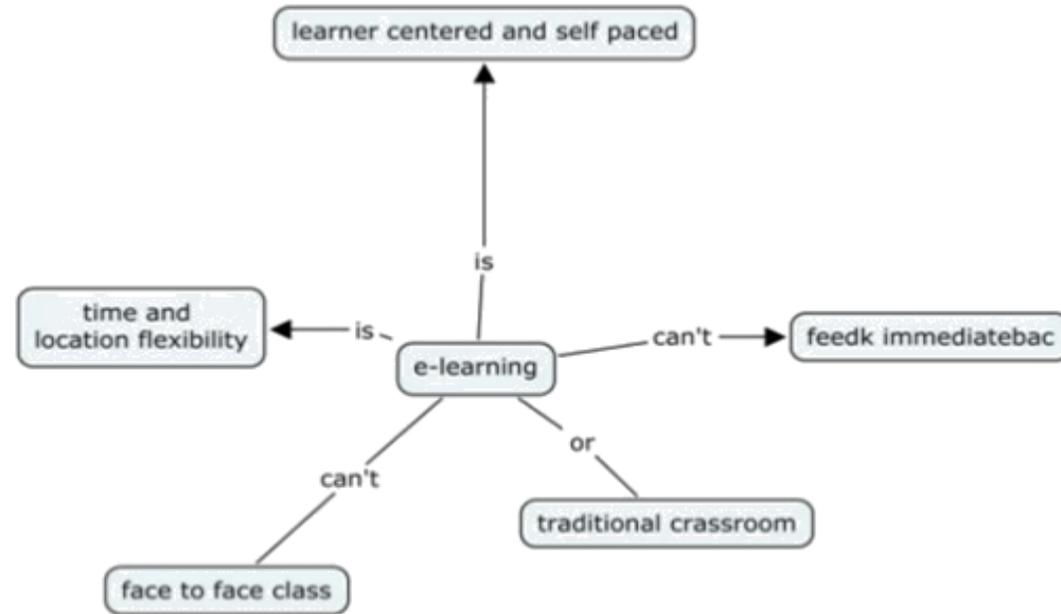
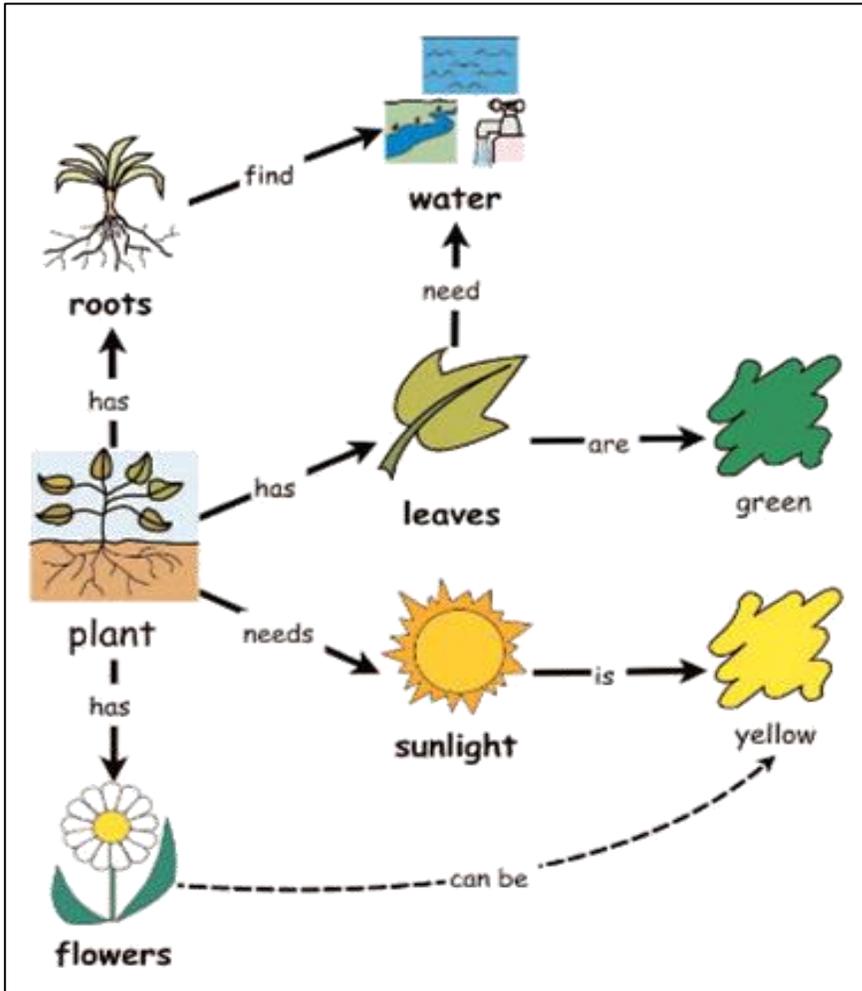
- identifies course content
- classifies content elements
- for courses designed to provide information or achieve broader educational objectives

Visual instruments (mind maps, concept maps, process diagrams...) clarify connections among content elements



...site design

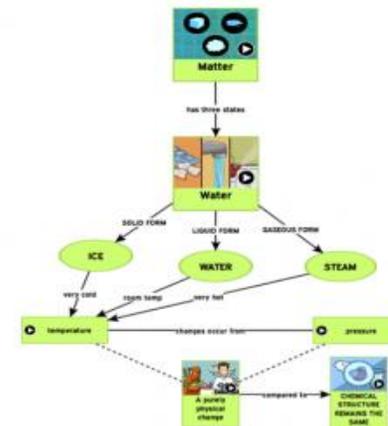


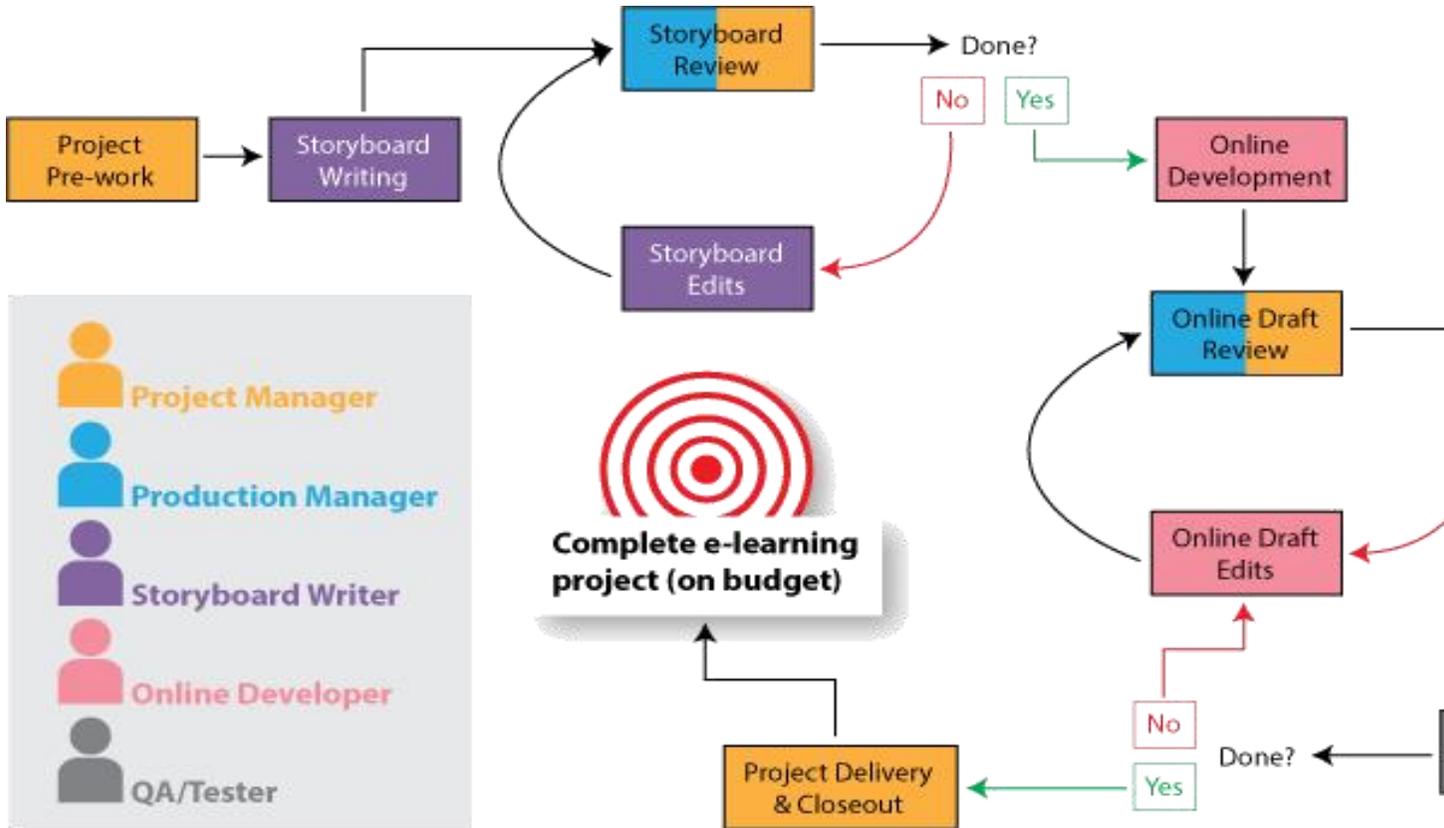


Components of a Concept Map

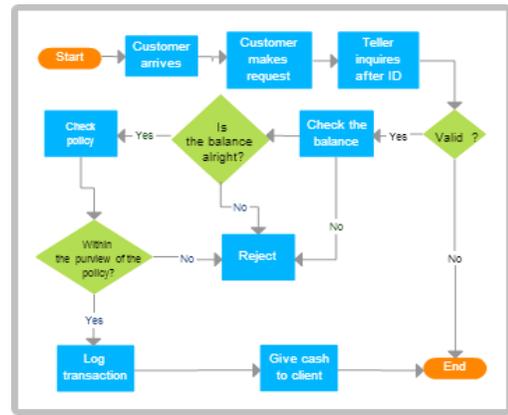
Links:
Identify the type of relationship

- Types of Links:**
- Inclusion
 - Characteristics
 - Actions
 - Process
 - Temporal
 - Similarity





- Project Manager
- Production Manager
- Storyboard Writer
- Online Developer
- QA/Tester



Blueprint as a reference to develop the course: curriculum structure; learning objectives associated with each unit; delivery methods and formats

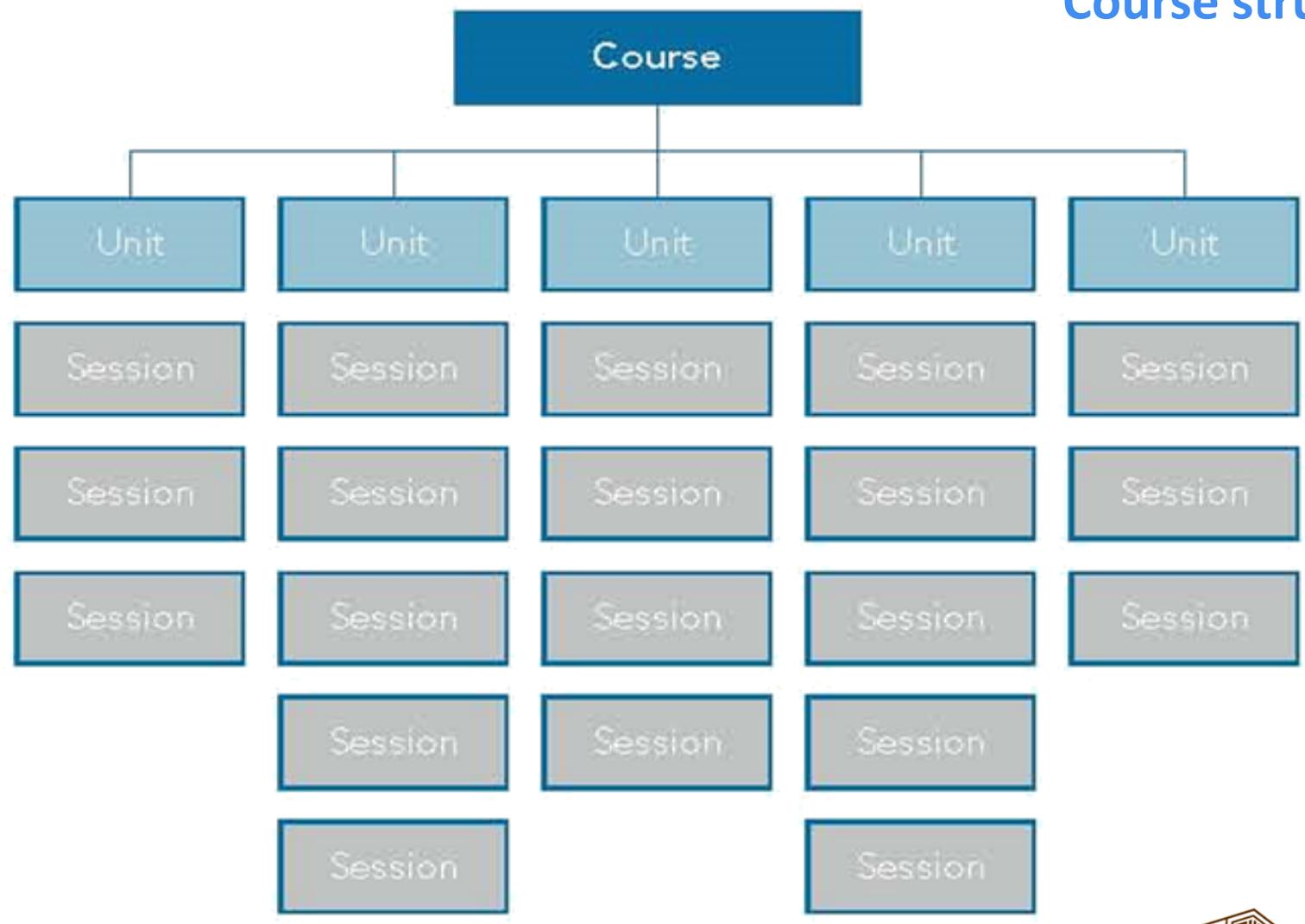
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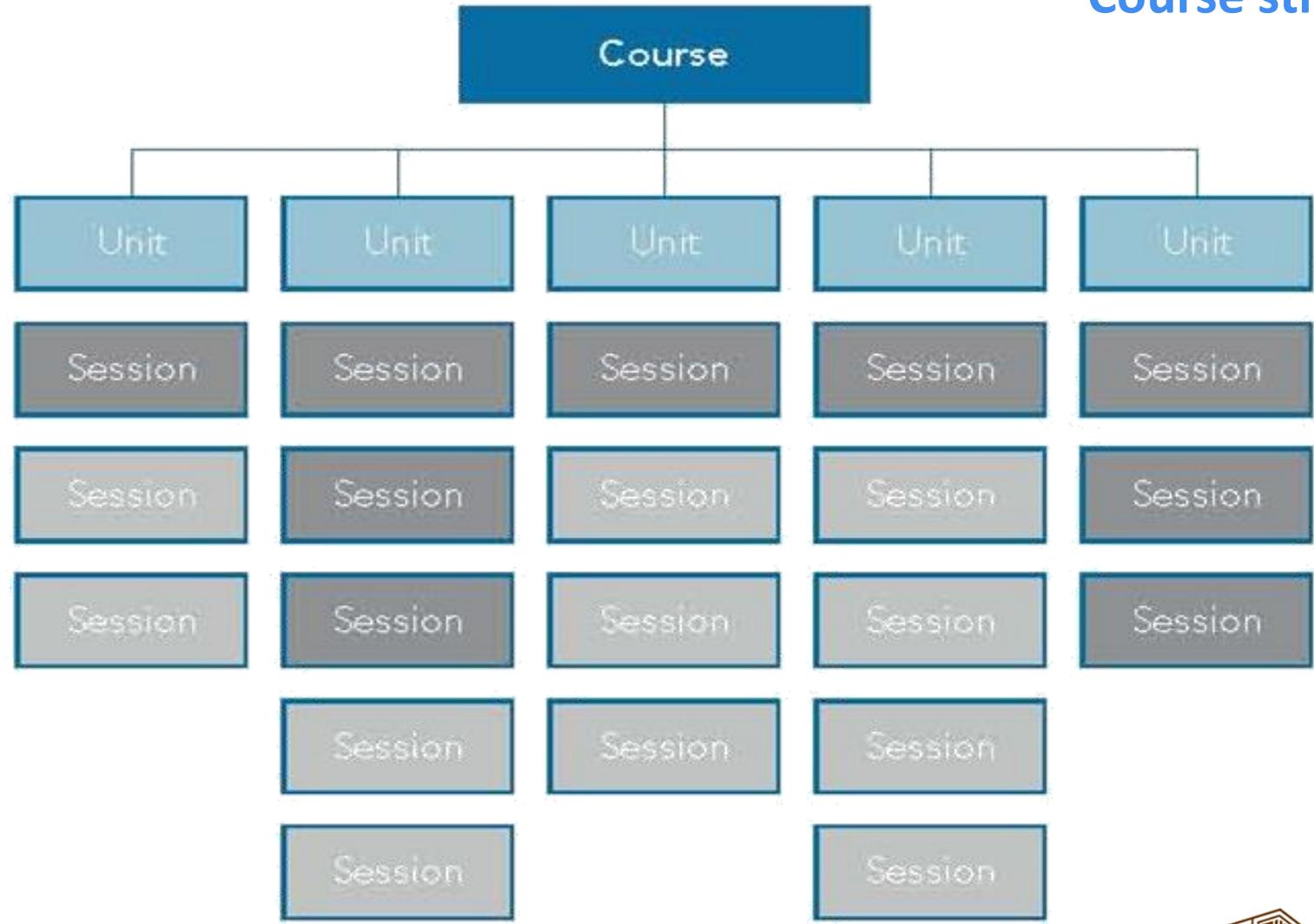
Learning objectives - Sequencing

Course structure



Learning objectives - Sequencing

Course structure



Expositive methods
“absorption” of new information
listen, read, observe

- presentations (ppt, WEB TV, ...)
- case studies
- worked examples
- demonstrations

Application methods
active processes that learners use to perform procedural and principle based tasks and build new knowledge

- **demonstration-practice method** (teach a procedure, e.g. How to use MOODLE)
- **job aids** (provide just-in-time knowledge)
- **case-based exercises** (apply knowledge and principles to a concrete situation)
 - ✓ **e-learning linear lessons:** text, images, audio, animations and practice (questions and feedback)
 - ✓ **electronic simulations:** each learner’s choice produces a consequence that generates feedback



Delivery

Factors considered

- learner-related factors
- technology aspects
- organizational requirements



Evaluation



EFES e-learning courses DEVELOPEMENT



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- **content:** writing or collecting all the **required knowledge and information;**
- **storyboard** (a document that describes all the components of the final **interactive products**):
 - ✓ instructional methods: all the pedagogical elements needed to support the learning process
 - ✓ media elements: images, text, interactions, assessment tests, etc.
- **courseware** (computer programs or other material designed for use in an **educational or training course**):
 - ✓ developing media and interactive components,
 - ✓ producing the course in different formats for Web delivery and
 - ✓ integrating the content elements into a learning platform accessible to learners



| | |
|---------------------|-------------------|
| LEARNING OBJECTIVES | (1 Screen) |
| INTRODUCTION | (1 to 3 Screens) |
| CONTENT | (4 to 25 Screens) |
| SUMMARY | (1 Screen) |



1. Learning objectives:

A first screen containing a clear and informal description of learning objectives for the lesson

2. Introduction:

- ✓ one or more introductory screens
- ✓ description
 - how the knowledge gained from the course could be used and
 - the benefits of having that knowledge
- ✓ The purpose of the introduction is to motivate learners to proceed with the lesson.



3) Content (core of the lesson):

- ✓ a set of screens (from 4 to 25), the core of the lesson
- ✓ text, media elements, examples, and practice questions
- ✓ their purpose is to facilitate learning of knowledge and skills
- ✓ a range of instructional techniques and guidelines on how to use media elements could be used to present the content

4) Summary:

- ✓ list of key points in the lesson
- ✓ the purpose of the summary is to help the learner memorize the lesson's key points



Instructional techniques for presenting the content:

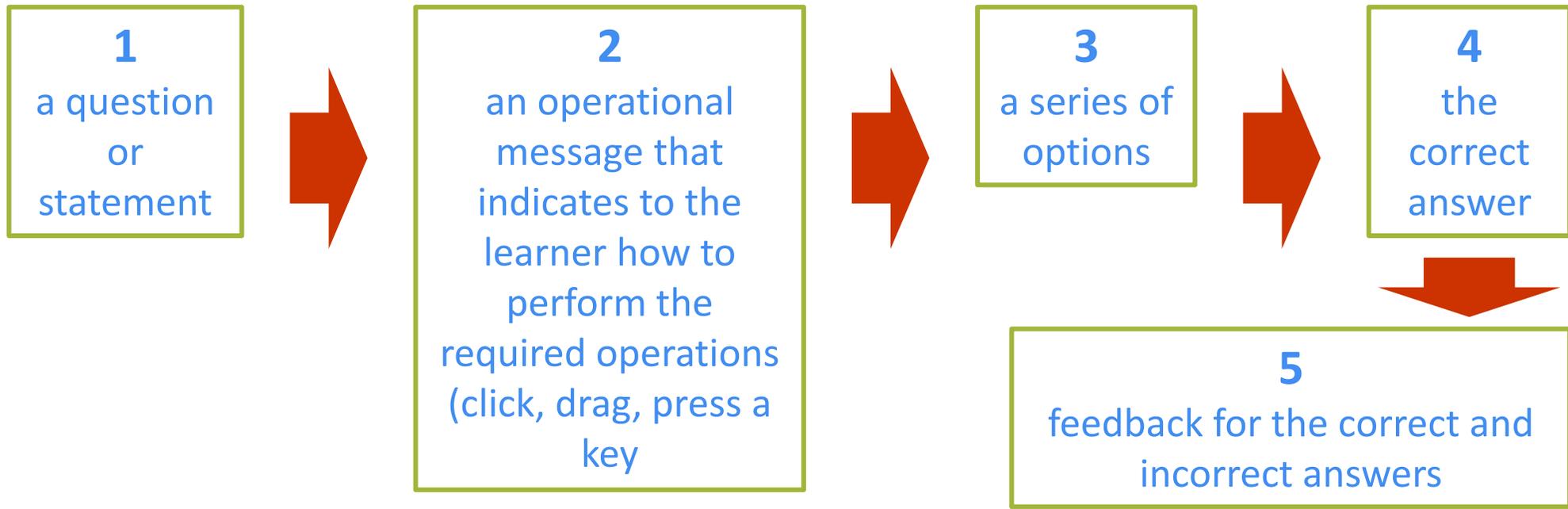
- Storytelling: information through a story narrative (illustrations, pictures or video sequences)
- Scenario-based approach: Lessons built around a scenario, where learners make decisions by choosing among different options.
Learners are provided with
 - ✓ all the information required to make the right decisions
 - ✓ feedback for correct or incorrect choices and consequences of decisions
- Toolkit approach: learners select from among a set of independent topics and choose the topics that interest them the most
- Demonstration-practise method: it is used to teach a procedure. You first demonstrate the procedure, and then you ask the learner to practice the procedure by interacting with the system



Practice and assessment questions associated with response options and feedback

- ✓ reinforce the achievement of learning objectives
- ✓ involve learners and keep their attention

Structure



Question formats

- **True or False:** A statement with two options (true/false or yes/no), where only one is correct,
- **Multiple choice:** A statement that provides different options; only one is correct.
- **Multiple responses:** The correct answer consists of more than one option, all of which must be selected,
- **Matching:** This type of interaction presents two series of elements. The learner must associate each element of the first series with an element of the second.
- **Ordering:** The learner has to order several elements in a sequence, e.g. the logical sequence of several phases, steps or operations to be performed



require the work of a group of professionals

Who is doing what?

- a **course integrator** to assemble all the course components and set up the course interface; this person could also be responsible for quality assurance testing;
- **graphics developers** to create graphics and animations, including navigation buttons and icons;
- **multimedia developers** for audio and video editing;
- **HTML/XML coders** if there is a need to develop tailored templates; and
- **programmers** to develop complex interactions.



- Course delivered to learners
- Installation on a server accessible for learners

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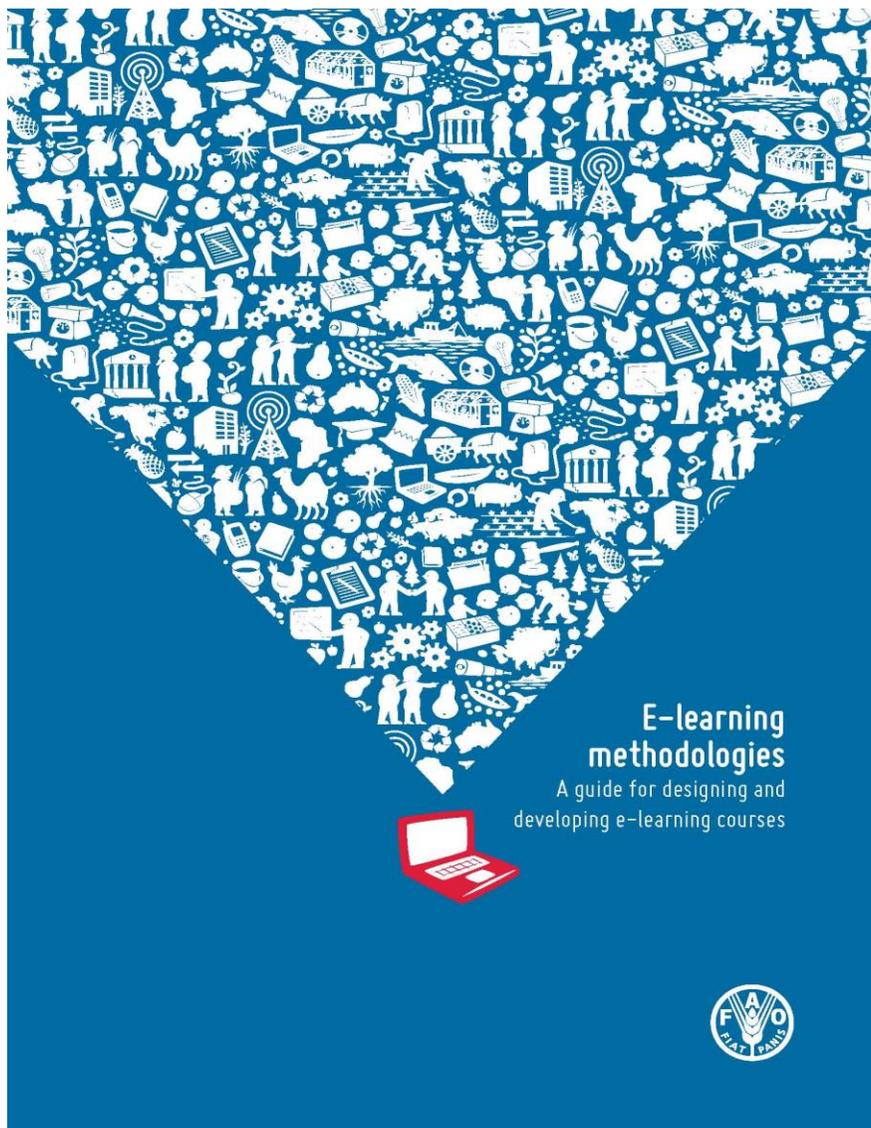
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- learners' reactions
- achievement of learning objectives
- transfer of job-related knowledge and skills
- impact of the project on the educational community

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Beatrice Ghirardini, 2011. E-learning methodologies: A guide for designing and developing e-learning courses. *Food and Agriculture Organization of the United Nations*, Rome. Pp. 141.



*Thank you
for your attention*

