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Guidelines for Development of e-Courses and MOOCs

As the Global and the European experience gained in the creation and application of e-courses demonstrates, the most appropriate and effective form to learn and consolidate the knowledge and the skills acquired, is the one that includes, apart from standard structural elements (lecture notes, presentations, practical work, literature), such additional elements as video lectures, self-assessment tests and final control tests, glossary and thesaurus.

With this in mind the suggested layout for each of the e-learning modules is as follows:

- **Course Description** in any other national language + EN, 1-2 pages, to contain
  – aims and objectives of the course
  – detailed description of the competencies and learning outcomes
  Format: .html

- **Lecture (-es)** - 1 to 4 pieces of text with graphs, tables and illustrations, 20-30 pages each
  Format: .html and .pdf (searchable/readable, downloadable from the source)

  Each lecture unit is to be complimented with:

  Video Lecture/-s - a 20-25 min. piece/-s of video to contain the basic or the most important component of the lecture units, with slides and captures.
  Format: .mp4 - ISO/IEC 14496-14:2003

  Slides/Presentation/-s for the lecture unit/-s,
  Format: .pptx and .pdf (searchable/readable, downloadable from the source)

  Captures. Full-text version of captures for the video lecture/-s
  Format: .html and .pdf (searchable/readable, downloadable from the source)

- **Practical Task/s** - 1 to 4 pieces, proportionate to the number of lecture units.
  A course taker is to give detailed text responses based on logical reasoning and/or calculations
  Answers are to be presented in the following formats:
  texts – .html or .xls/.xlsx (uploadable),
  calculations – .xls/.xlsx (uploadable).

- **Self-Assessment Quiz/-zes** – 1-4 sets, proportionate to the number of lecture units, 20 questions per set, options of answers are to be provided short comments.
  Format: .html

- **Final Control Quiz** - 1 set per each of the study modules, 20-80 questions, depending on the number of lecture units in the module.
  Format: .html

- **Course library**
  Format: .html (downloadable from the source)

- **Glossary**
  Format: .html

- **Thesaurus**
  Format: .html

In MOOCs, a more flexible educational system should be used to learn information more effectively and increase student autonomy, which assumes, among other aspects, individualization of study programmes. In this regard, the Chamilo distance learning system proved the most suitable free media for creating MOOCs, as it enables development of individual learning paths.

In the most popular platforms of massive open online courses (MOOCs) which are recognized as leaders in online learning and have made significant contributions to the development of online education technologies, such as the SDG Academy, EDX, FutureLearn, Coursera, elements that help build up and consolidate practical skills, when the contact between the teacher and students is insufficient (insignificant, rather weak), are included in addition to the structural elements which are conventional for e-courses.

A Case Study: a research method that involves a detailed, in-depth and comprehensive study of the object being studied and its associated factors.
The structural elements of **a case study** are:
- Overview. This information should contain an abstract, objectives, keywords, indications of topical area, educational level, types of the methods used in solving the problem and analysis; subject headings (areas of use); language.
- Task. The assignment should include the history and condition of the problem situation, which is considered in the case study; problem statement; information needed to solve the problem; questions for discussion.
- Teaching notes. They usually include a brief statement of the assignment, information about the audience that performs the assignment, case study teaching methods, a list of references and resources.
- Answer keys and guidelines.
- Additional materials (presentations, videos, calculated worksheets, glossary/thesaurus, data, literature, data sources).

A Sample Scenario: a task taken from practical activities in a specific area, with a detailed description and assigning all the necessary data to solve it, which is compiled in accordance with the taxonomy of Benjamin Bloom or Lorin W. Anderson full learning (familiarization, understanding, application, analysis, and evaluation).
The structural elements of **a sample scenario** are:
- a brief and clear description of the work task with a minimum of necessary background information;
- additional information that the student must be able to obtain, if available;
- a list of brief questions (Multiple Mini Practice Questions), contributing to the accumulation of information necessary for further analysis;
- a worksheet (if necessary);
- answers.

Web Conferencing: to be used as a complex of a technology and a toolkit for organizing online meetings and real-time collaboration over the Internet. In this case it is envisaged to conduct online presentations, collaborate on documents and applications, synchronously view websites, video files and images.

A Webinar: a type of web conference, conducting online meetings or presentations over the Internet in real time, which implies 'one-way' speaker broadcasting and minimal feedback from the audience. During the webinar the connection between the participants is maintained via the Internet through a downloadable application installed on each participant's computer or via a web application.