Education in Information and Communication Technologies

Session 2
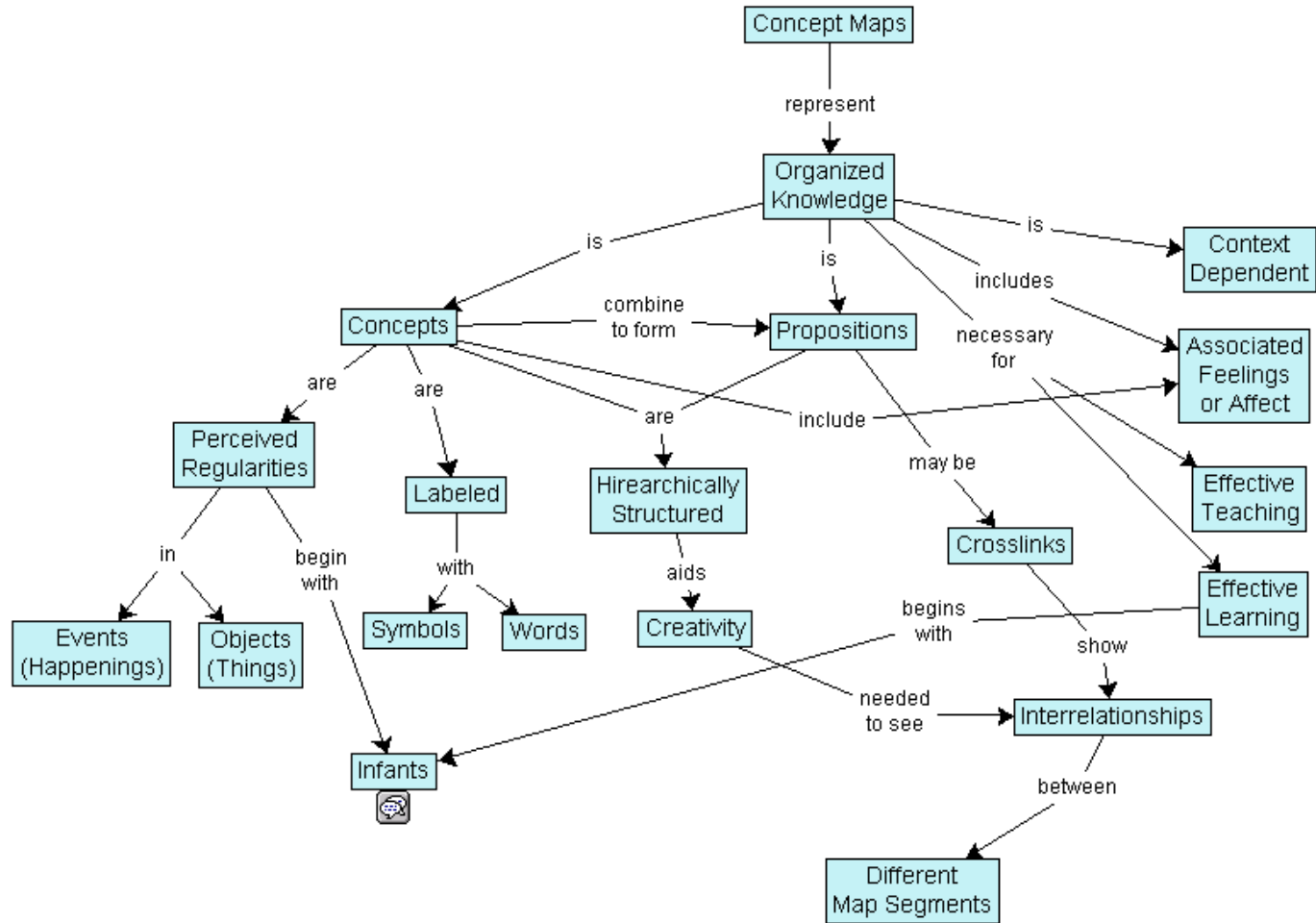# Concept Maps

Máster Universitario en Formación del Profesorado de Educación Secundaria Obligatoria, Bachillerato y Formación Profesional

Facultad de Formación del Profesorado y Educación

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Goals

- To handle concept maps and
- To know their possibilities

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Definition of Concept map

Concept Maps
represent
Organized Knowledge
is — Concepts
is — Propositions
is — Context Dependent
includes — Associated Feelings or Affect
necessary for
combine to form
Concepts: are — Perceived Regularities; are — Labeled; are — Hirearchically Structured; include — Associated Feelings or Affect
Perceived Regularities: in — Events (Happenings); begin with — Objects (Things); begin with — Infants
Labeled: with — Symbols; with — Words
Hirearchically Structured: aids — Creativity
Propositions — include — Effective Teaching
may be — Crosslinks
Crosslinks: begins with — Effective Learning; show — Interrelationships
Effective Teaching / Effective Learning
Creativity — needed to see — Infants
Interrelationships — between — Different Map Segments

Defining a concept map by using a concept map

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Concept Maps

Features of concept maps

- Graphical illustration of relations between ideas

- Help

  - Establish connections, patterns, and relations

  - Develop, organize, and communicate ideas

  - Link with previous knowledge

  - Classify or categorize concepts, ideas, and information

  - Develop vocabulary

  - Highlight important ideas

  - Support brainstorming

  - Group work and improve social interaction between students

  - Guide review and study

  - Improve abilities and strategies for reading comprehension

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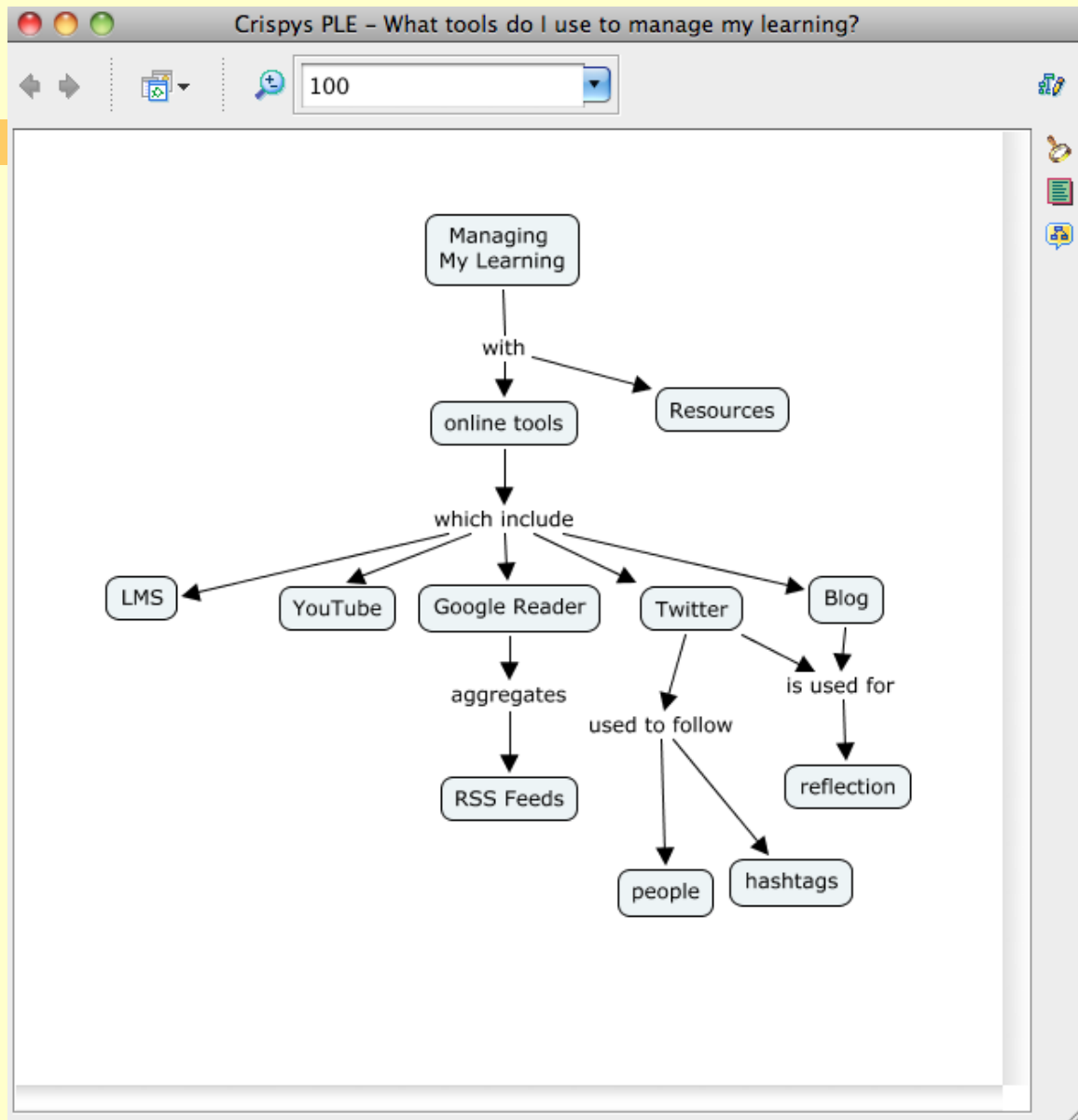
Using concept maps. Why?

Concept maps. How to use (for teaching)

1. Designed by lecturer, and used as a basis to teach in class (instead of the traditional slide)

2. To be developed by students as a home work to be delivered

   - From a skeleton (an incomplete schema with empty boxes)

   - From a list of concepts to include (to organize and relate information)

   - From a text, as synthesis of the knowledge acquired to summarise the text.

Good to make sure that students have read and understood previously taught materials, or materials to be read and understood by themselves

Recommended tool: CMAP Tools from the (Institute of Human and Machine Cognition www.ihmc.us), complete and easy to use

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Complementary Bibliography

- **The Theory Underlying Concept Maps and How to Construct and Use Them. J.D. Novak and Alberto J. Cañas.** http://cmap.ihmc.us/Publications/ResearchPapers/TheoryCmaps/TheoryUnderlyingConceptMaps.htm

- **AUSUBEL, D. P.; J. D. NOVAK Y H. HAINESIAN:** "Psicología Educativa", Ed. Trillas, México, 1989. (in spanish)

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Practicing with the tool

In-class Activities

A1 Open *cmaptools* y create nodes and links in order to make a concept map

A2 ¿Do you remember the courses of the Secondary Teaching Master?
Download the skeleton about the organization of the Master from the Virtual Campus and:

- – Complete the empty nodes or tags
- – Link unlinked nodes
- – Add additional nodes
- – Name the untagged links
- – Use a different colour for the modules than for the courses
- – Use a bigger font size for the initial node
- – Make links between nodes have an arrow at the end
- – Put a link to the web page of the School ("Facultad de Formación de Profesorado")

Remember
- *Highlight the initial concept (bigger font size)*
- *Use colours to highlight important levels or nodes*
- *Links should have an arrow indicating direction*
- *Nodes are concepts*
- *Links are usually verbs, or link words*

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Activities: Using Concept Maps

In/out of -class Activities

S02-AO01.Using concept maps to learn about Asturias

Using this text as a reference, fill the concept map skeleton (download from virtual campus)

Asturias (English /aːˈstʊəriəsˌ ə-/; Spanish: [asˈtuɾjas]; Asturian: Asturies [asˈtuɾjes]), officially the Principality of Asturias (Spanish: Principado de Asturias; Asturian: Principáu d'Asturies), is an autonomous community in north-west Spain. It is coextensive with the province of Asturias, and contains some of the territory that was part of the larger Kingdom of Asturias in the Middle Ages. Divided into eight comarcas (counties), the autonomous community of Asturias is bordered by Cantabria to the east, by Castile and León to the south, by Galicia to the west, and by the Bay of Biscay to the north.

•The most important cities are the communal capital, Oviedo (Uviéu or Uvieo), the seaport and largest city Gijón (Xixón), and the industrial town of Avilés. Other municipalities in Asturias include Cangas de Onís (Cangues d'Onís), Cangas del Narcea, Gozón, Grado (Grau or Grao), Langreo (Llangréu), Llanera, Laviana (Llaviana), Lena (Ḷḷena), Llanes, Mieres, Siero, Valdés, Vegadeo (A Veiga) and Villaviciosa (see also List of municipalities and regions in Asturias).

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Activities: Using Concept Maps

Out-of-class Activities

S02-AO02. *Using concept maps to learn about Oviedo*

Take a look at this web page with information about Oviedo:

http://www.planetware.com/tourist-attractions-/oviedo-e-ast-ovi.htm

Create a concept map using the following terms. Relate them with tagged links. Add (if wanted) additional terms. Use the word "Oviedo" as the starting point of the map.

Santa María del Naranco, San Miguel de Lillo, San Julián de los Prados, the Cathedral, Parque de San Francisco, UNESCO Word Heritage, smart park, Gothic Stile, Precomanesque Stile, Santiago de Compostela Pilgrins Road, 848, 14th and 15 century, main monuments

S02-AO03.. Find information about your country's Education System (from kindergarden up to university). Develop a map showing the different paths that can be followed.

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Activities: Using concept maps

Delivery for each activity:
1. *Convert the map to JPG format.*
2. *Create a document with the name "S02AO01Concept Map Squeleton-Asturias" in which you will include your personal data, information about the activity, and the map*
3. *Save as PDF.*
4. *Create a ZIP file with the PDF and the original map (cmaptools format) and upload to the virtual campus in the related activity.*
5. *Create a folder in Drive called Portfolio<YourNameHere>, and share it with your lecturer*
6. *Upload the ZIP to your portfolio in Drive*
7. *Add entries to the repository if you have researched and find it interesting.*

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Tools

- Course in the Virtual Campus
  - Slides
  - Additional doc for each session
  - Task to upload the activities
- Google Drive
  - Student portfolio (folder student's name)
    - Shared with the lecturer
    - Stores all the activities done
  - Common information repository

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Credits

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- My first concept map by Cris Jobling, licensed under CC BY-SA 2.0 license

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