Learning Goals

and

how they relate to this class

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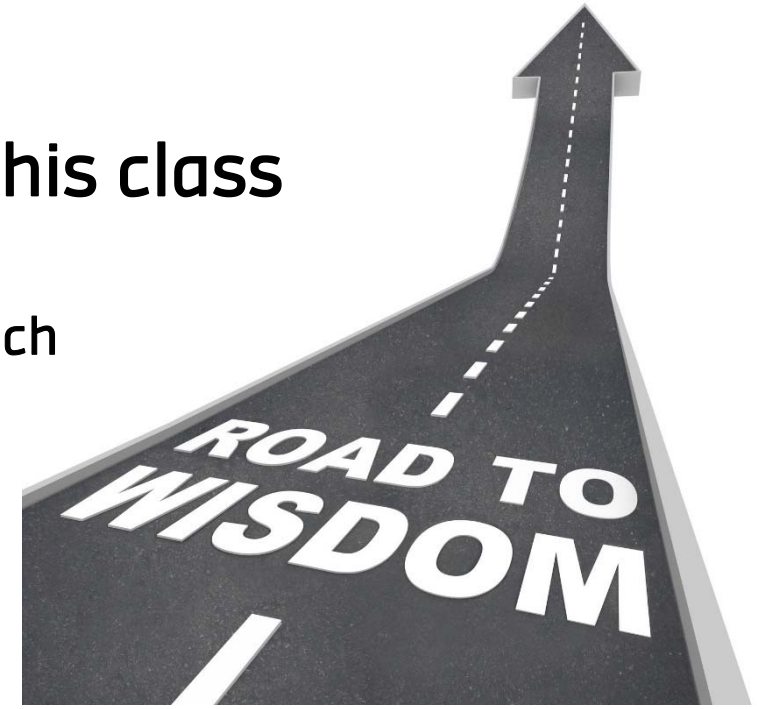
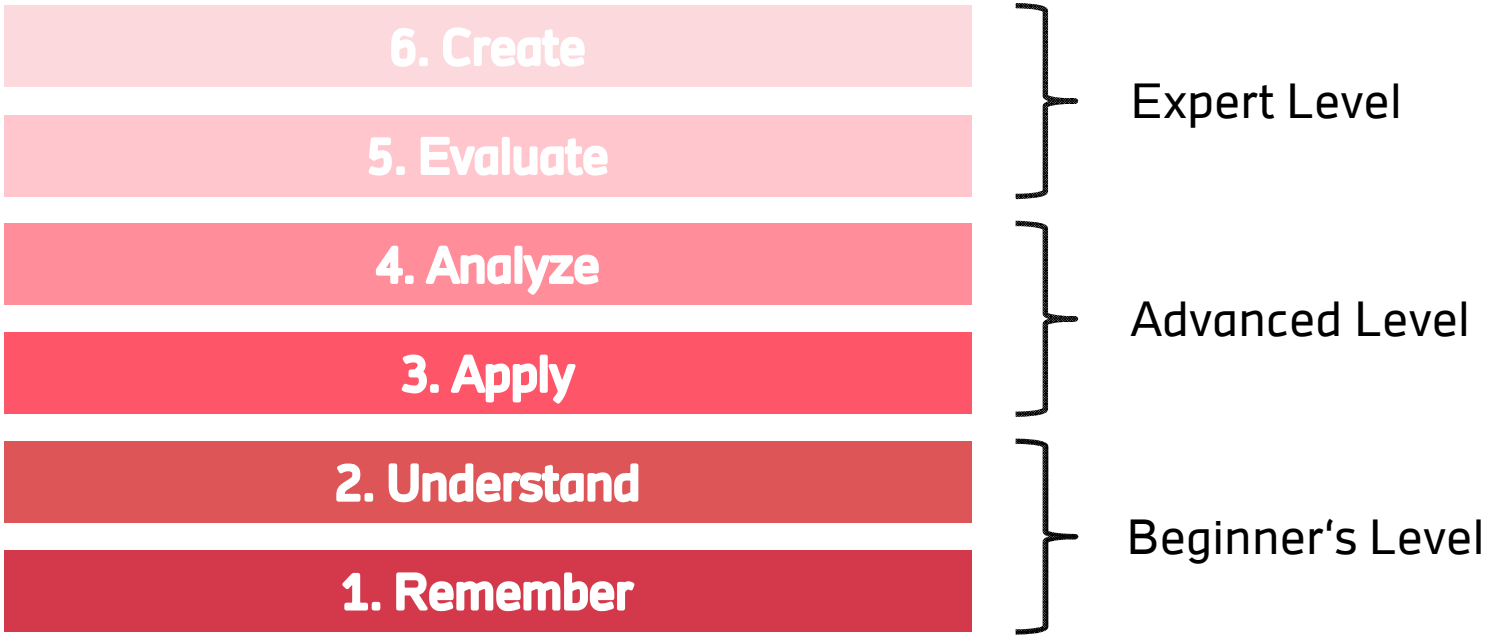


Overview

1. Taxonomy of Educational Objectives
2. Relevance to the class material
3. Relevance for the exam
4. Relevance for your professional life

Taxonomy of Educational Objectives

Benjamin Bloom developed a first taxonomy of educational objectives in 1956.
It was revised by Lorin Anderson and David Krathwohl in 2000/2001.
Taxonomy: a (typically hierarchical) classification scheme.



Taxonomy of Educational Objectives – Meaning of the Levels

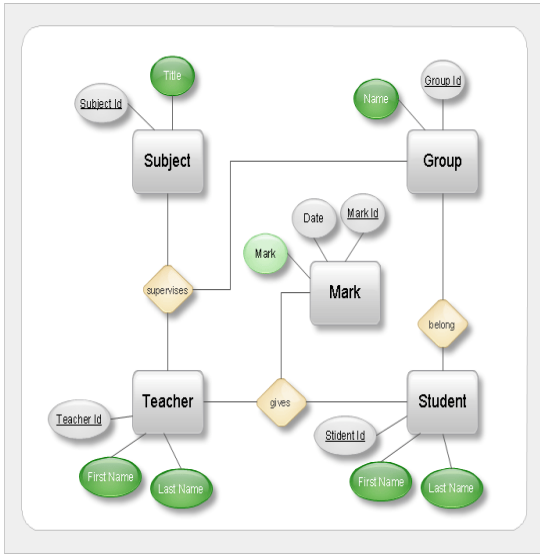
1. Remember (Beginner's Level)

Retrieve relevant knowledge from long-term memory.

- recognize
- recall

Examples from my database lecture:

- Recognize an entity relationship model (ERM)
- Reproduce the element types of ERMs (entities, attributes, relationships, types of relationships)



Taxonomy of Educational Objectives – Meaning of the Levels

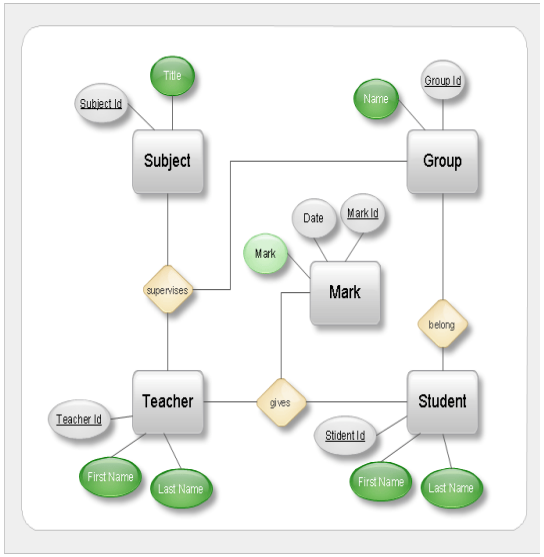
2. Understand (Beginner's Level)

Determine the meaning of instructional messages, including oral, written, and graphic communication.

- Interpret
- Exemplify
- Classify
- Summarize
- Infer
- Compare
- Explain

Examples from my database lecture:

- Understand the model elements in a given ERM: recognize n-m and other types of relationships and what their meaning is in relation to the data in the real world
- Explain a given ERM



Taxonomy of Educational Objectives – Meaning of the Levels

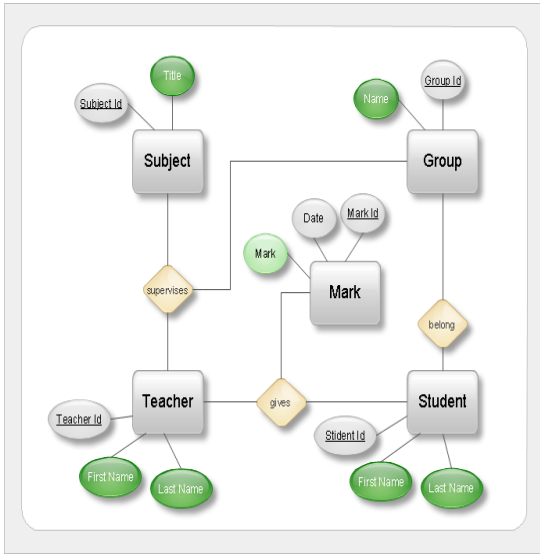
3. Apply (Advanced Level)

Carry out or use a procedure in a given situation.

- Execute
- Implement

Examples from my database lecture:

- Transfer a given ERM to a database schema



Taxonomy of Educational Objectives – Meaning of the Levels

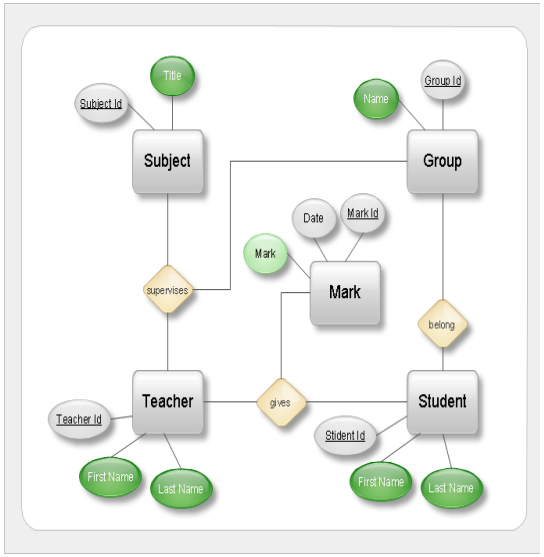
4. Analyze (Advanced Level)

Break material into its constituent parts and detect how the parts relate to one another and to an overall structure or purpose.

- Differentiate
- Organize
- Attribute

<u>Example from my database lecture:</u>

- Compare the different entities and relationships in a given ERM, reorganize and optimize them if possible



Taxonomy of Educational Objectives – Meaning of the Levels

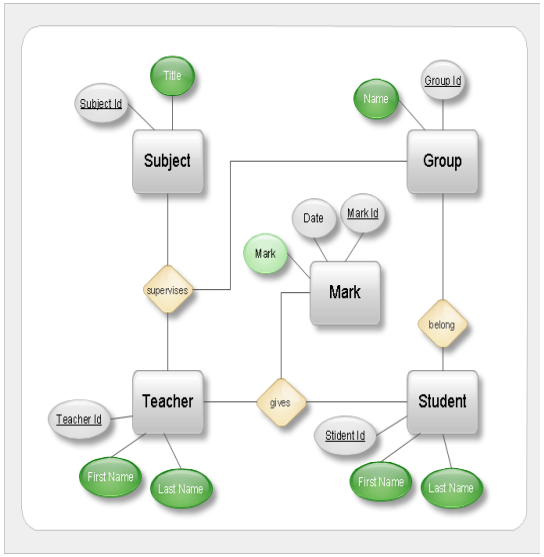
5. Evaluate (Expert Level)

Make judgments based on criteria and standards.

- Check
- Critique

Examples from my database lecture:

- Analyze an ERM and judge whether it is structurally correct and correctly describes the data that should be stored in a database.
- Recognize bad modelling decisions like unnecessary redundancies or contradictions.



Taxonomy of Educational Objectives – Meaning of the Levels

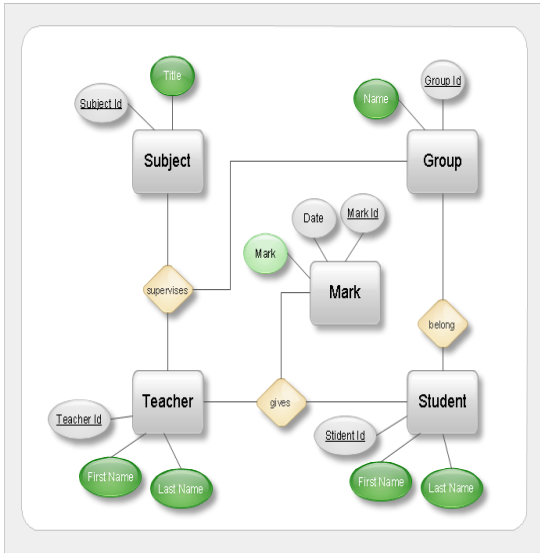
6. Create (Expert Level)

Put elements together to form a novel, coherent whole or make an original product.

- Generate
- Plan
- Produce

<u>Example from my database lecture:</u>

- Analyze a real world situation and create a new ERM that describes the data which should be stored in a database.



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Relevance to the class material

What is the meaning of the different levels:

Beginner's Level:

⇒ Is what you do at Highschool.
At university it is a matter of course, not an achievement by itself!

Advanced Level:

⇒ Is necessary for a Bachelor's and a Master's degree
Mastering the abilities of the Beginner's Level is the prerequisite for acquiring the abilities to analyze and evaluate

Expert Level:

⇒ Is necessary for Bachelor and especially Master students

Relevance to the class material

Overall goal for the class:

⇒ Achieve an advanced or expert level in most of the subjects of the class.

What I can give you:

- Material (class notes, papers, links)
- Explanations (written, oral)
- Opportunities to become active (exercises, discussions, project)

What you must do:

If you only passively consume what I give you, you will achieve only the Beginner's Level: Remember and Understand.

For the Advanced Level and Expert Level you must become active – analyze, evaluate, be creative!

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Relevance for the exam

Evaluation of your performance in the exam

⇒ Demonstrate that you achieved at least the first stages of the Advanced Level (=> grade 4.0)

Simple reproduction of the class material is not enough to pass the exam.

The exam is open book – everything can be copied from the class notes.

⇒ This is not a sufficient ability for a Master's degree

The exam problems will test you on the Advanced and Expert Levels.

⇒ You must use your own words, demonstrate your own ideas.

⇒ If you want to gain points in the exam, do not simply copy from the class notes.

Bedeutung für die Prüfung

How to prepare for the exam:

- Review the class material and recognize the overall structure in it. Identify the major topics.
- Review the tasks on the exercise sheets. Invent similar tasks.
- Recognize interrelations and practice explaining them.
- Practice with a partner. Set each other additional tasks and discuss your solutions.
- Imagine how the class concepts are applied in real life.
- For all topics, ask yourself fundamental questions like "What is the purpose of this? Who needs this, and who doesn't? What would the consequences be if this didn't exist?
- In all things, ask WHY!

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Relevance for your professional life

You are emerging academics of a higher level (Master of Science)

⇒ You will work at positions where you will have to make decisions.

The basis of good decision making is

- Understanding
- Analysis
- Evaluation
- Providence
- and often Creativity

⇒ You will need the abilities of the Advanced and Expert Levels.

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