# Good teaching in the lecture mode: Lesson clarity

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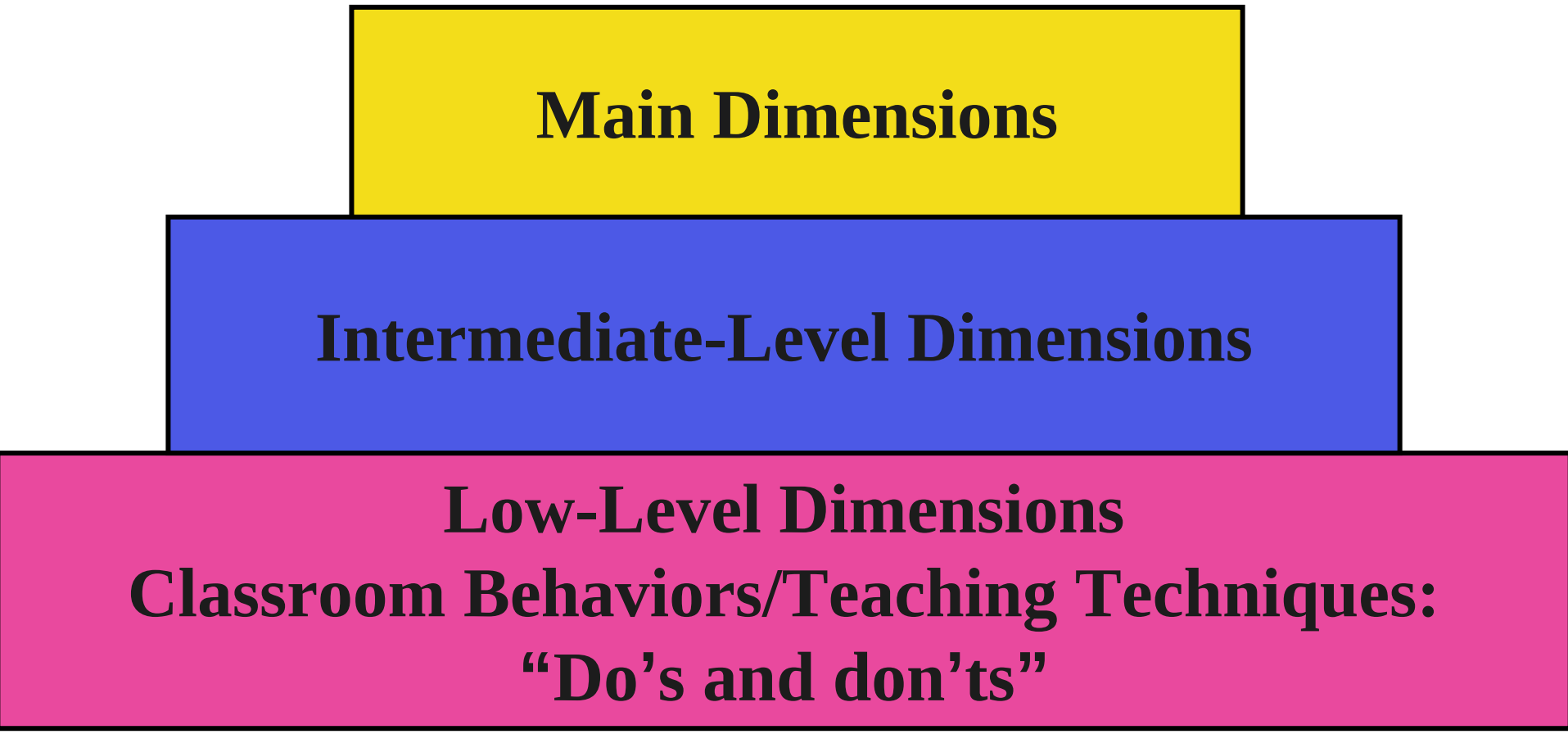
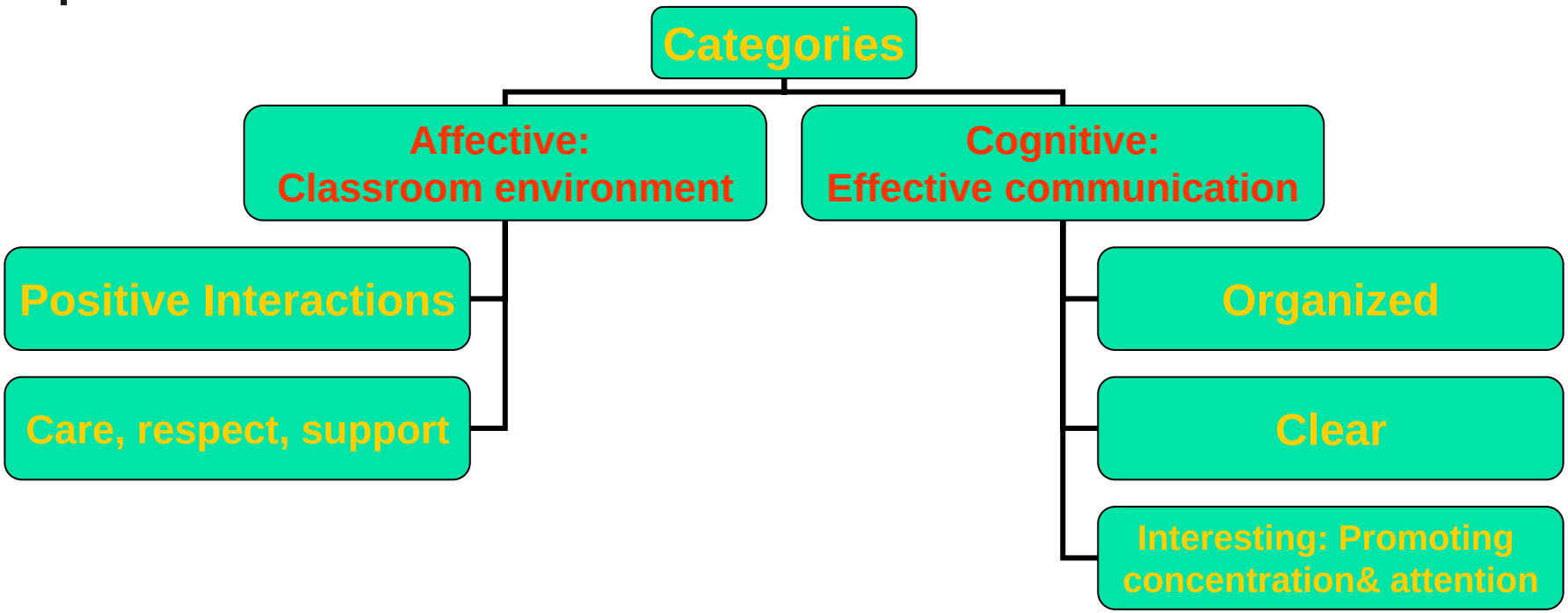
# Three-Level Hierarchical Model of Teaching Dimensions



# A model of Main Teaching Dimensions

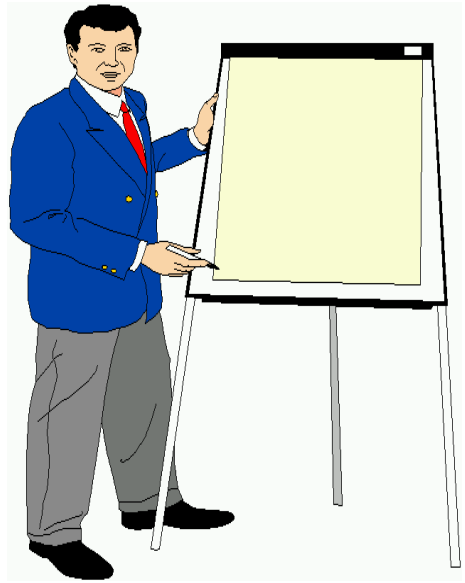


# What is the meaning of clear teaching?

**Clear teaching =**

**Students' understanding**

Teaching in a way that students construct their new knowledge so as they achieve a sound level of understanding



# What are intermediate/low-level dimensions of clear teaching?

a. Facilitating input thru senses

b. Reducing cognitive load

c. Constructing new knowledge

d. Deepening the new knowledge—looking back, sharpening the meaning

# a. Facilitating input thru senses

Avoiding “noise”: in hearing, visual, logical, internal/emotional

# Multiple-channel communication

Communication of same information thru speech, writing, face mimics, supporting gestures, demonstration, picture, diagram, painting, videotape

# b. Reducing cognitive load

- Breaking down the new information into small units

- Teaching the small units step by step

- Providing “wait time” and every so often other breaks/pauses in the material presentation

# c. Constructivist learning theory

Meaningful learning is possible only when the learner **relates new material** in a substantive fashion **to an already existing** cognitive structure. Understanding develops through an **active process of thinking and building networks** of bodies of knowledge

# c. Constructivist learning theory

Students will learn and remember information better when they can **make more cognitive associations** with this information and more **interconnections between the new and the already known**

# c. Building new knowledge, based on the Constructivist learning theory

1. Connecting to existing knowledge
2. Creating a common base of knowledge to all students in class
3. Adapting to student diversity: Adjustment to the individual and his/her interpretation

# 1. Connecting to existing knowledge

- **Identifying relevant knowledge** and **reminding** it
- **Reviewing** relevant knowledge
- Identifying **similarities** and **differences** between new and old knowledge—**comparing** and **contrasting**
- Presenting **interconnections** between new and old knowledge, i.e., generalizations, special cases

# 2. Creating a common base of knowledge to all students in class

Starting with examples, demonstrations, analogies, metaphors, cases, events, incidents, anecdotes, vignettes

Starting with visual representation: a drawing, picture, graph, two- or three-dimensional model, computerized animation, videotape, etc.

Starting with the main/central idea, advance organizer, end results, an algorithm for solution, a plan for action, a simulation of the process, a reduced/simplified version – more specific/concrete, less rigorous and less accurate.

# 3. Adapting to student diversity: Adjustment to the individual and his/her interpretation

**Identifying factors of diversity**

Questioning, questionnaire, interview, exam/test

**Adapting teaching to student diversity**

- Reviews, repeating explanations
- Adapting the pace, pauses
- Adapting teaching methods: verbal/visual/written/built on intuition and imagery

**Examining students' understanding throughout the lesson**

- Questioning (Socratic, questions to students, encouraging students' questions
- Analyzing homework assignments (problem solving, learning journals, asking for explanations, reflection, etc)

**Examining students' understanding outside classtime**

Homework projects and assignments, exams, meeting with students, help thru email, Internet, personal discussions etc.

# d. Deepening the new knowledge — looking back, sharpening the meaning

- Presenting additional examples, demos, analogies, metaphors, cases, events, vignettes, anecdotes, rule-example-rule
- Additional understanding performances in increasing level of difficulty
- Identifying potential problems and errors