SESSION 2: GOALS, QUESTIONS, AND OUTCOMES

Goals of session 2

As a department, identify program goals

Identify questions that program hopes to answer answer by the outcomes assessment process

Identify the status of current indicators and plan future work in developing

Your turn: What do you want to know?

In groups, share some information you would like to know about your program to improve the quality of graduating students

- E.g. do you have anecdotal concerns about:
  - Ability to write
  - Ability to work in a team
  - Ability to use hardware/software
  - Ability to apply engineering science knowledge on realistic problems
  - Ability to …
- Or would you like to compare performance of different groups of students?

Graduate attributes: generic characteristics, expected to be exhibited by graduates

Knowledge base: **"Demonstrated competence in university level …"**

…

Communications: **": An ability to communicate complex engineering…"**

Set by CEAB
N=12

Indicators: descriptors of what students must do to be considered competent in the attribute

"Summarizes and paraphrases written work accurately with citations."

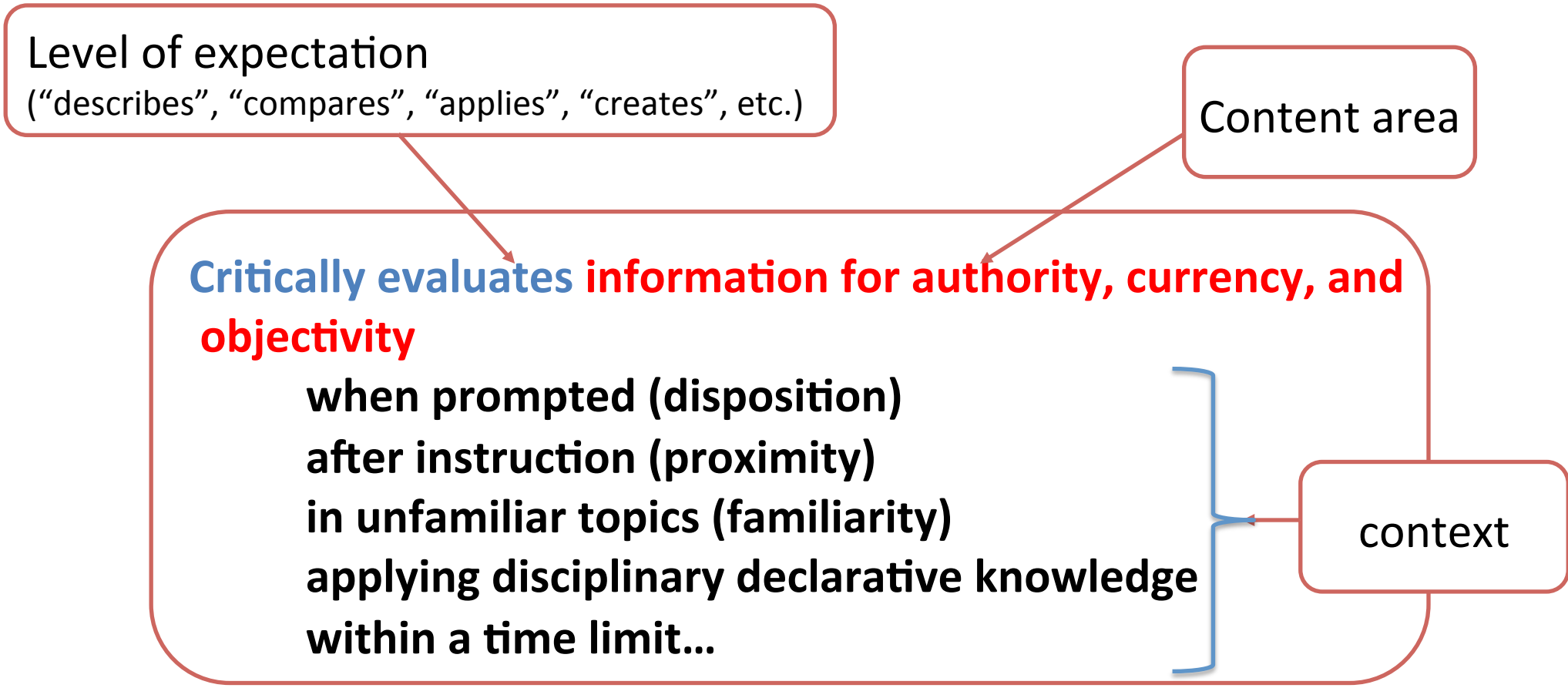
Set by faculty/ program

Course learning outcomes: descriptors what a learner is expected to know, understand and be able to do by the end of a course

Courses

Set by instructor

Learning outcomes (Biggs)



Learning outcomes (Allan, 1994)

- Subject-based outcomes
- Personal transferable outcomes, e.g.
  - Teamwork
  - Numeracy
  - Organizational skills
- Generic academic outcomes, e.g.
  - Critical thinking
  - Analyze

Attribute domains

Declarative

("knowing that")

Procedural

("knowing how")

Schematic

("knowing why")

Strategic

("knowing when and how it applies")

Generic transferable

(teaming, critical thinking, communication)

(Shavelson, 2003; Allan, 1994)

- Design: An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations. (3.1.4)
- Communications: An ability to communicate complex engineering concepts within the profession and with society at large. Such ability includes reading, writing, speaking and listening, and the ability to comprehend and write eff ective reports and design documentation, and to give and eff ectively respond to clear instructions. (3.1.7)
- Lifelong learning: An ability to identify and to address their own educational needs in a changing world in ways sufficient to maintain their competence and to allow them to contribute to the advancement of knowledge. (3.1.12)

Your turn: As a program, create a plan for developing/enhancing indicators

If no current indicators:

Who needs to be involved in creating them?

Process for creating indicators – subdivide into small working groups?

Process for providing feedback on course learning outcomes?

If indicators exist:

Is there consensus among the department about the indicators?

Are there gaps?

Quality of indicators – are they measurable & meaningful?