Course Design

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- Diamond – *Designing & Assessing Courses and Curricula*
- Wiggins & McTighe – *Understanding by Design*
- Leifer – Engineering Design
- Felder & Brent – Course Design

Diamond – *Designing & Assessing Courses and Curricula* – Basic Design Sequence

- Statement of Need
- Statement of Goals
- Design of
  - Instruction
  - Assessment
- Implementation and Assessment
- Revision as Needed

Diamond, R. 1997. *Designing & assessing courses and curricula*. San Francisco: Jossey Bass

Wiggins & McTighe – Understanding by Design[1]

- Design (vb) – To have purposes and intentions; to plan and execute (Oxford English Dictionary)
- Backward Design
  - Conceptual framework, design process, and accompanying set of design standards
  - A way to design or redesign any curriculum to make student understanding more likely

Wiggins, G. & McTighe, J. 1998. *Understanding by design*. ASCD.

Backward Design

Stage 1. Identify Desired Results

Stage 2. Determine Acceptable Evidence

Stage 3. Plan Learning Experiences and Instruction

Backward Design

Stage 1. Identify Desired Results

Filter 1. To what extent does the idea, topic, or process **represent a "big idea" having enduring value beyond the classroom?**

Filter 2. To what extent does the idea, topic, or process **reside at the heart of the discipline?**

Filter 3. To what extent does the idea, topic, or process **require uncoverage?**

Filter 4. To what extent does the idea, topic, or process **offer potential for engaging students?**

Backward Design

Stage 2. Determine Acceptable Evidence

Types of Assessment:

Quiz and Test Items : Simple, content-focused test items

Academic Prompts : Open-ended questions or problems that require the student to think critically

Performance Tasks or Projects : Complex challenges that mirror the issues or problems faced by graduates, they are authentic

Backward Design

Stage 3. Plan Learning Experiences and Instruction

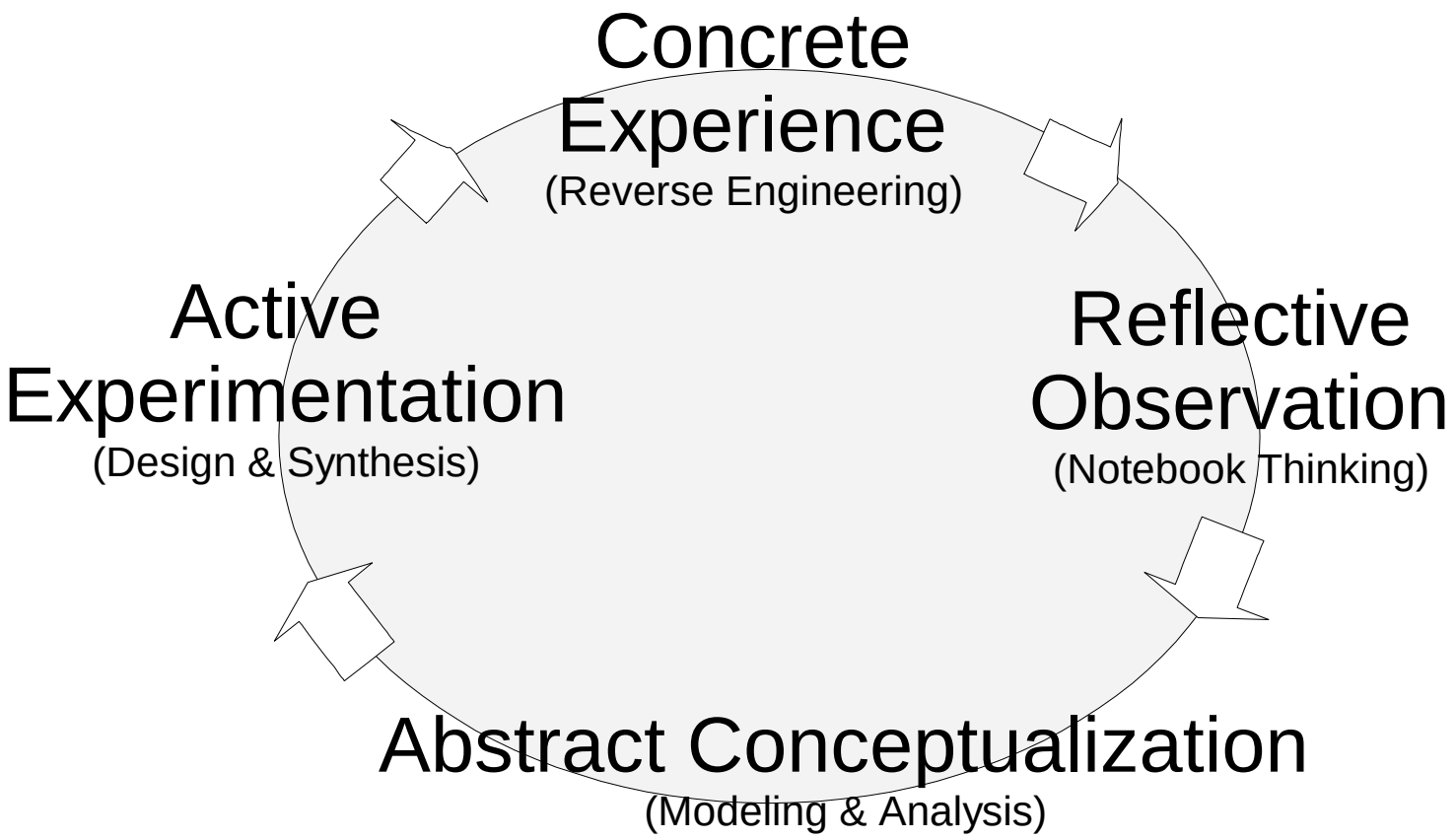
- What enabling knowledge (facts, concepts, and principles) and skills (procedures) will students need to perform effectively and achieve desired results?
- What activities will equip students with the needed knowledge and skills?
- What will need to be taught and coached, and how should it be taught, in light of performance goals?
- What materials and resources are best suited to accomplish these goals?
- Is the overall design coherent and effective?

Leifer – Stanford

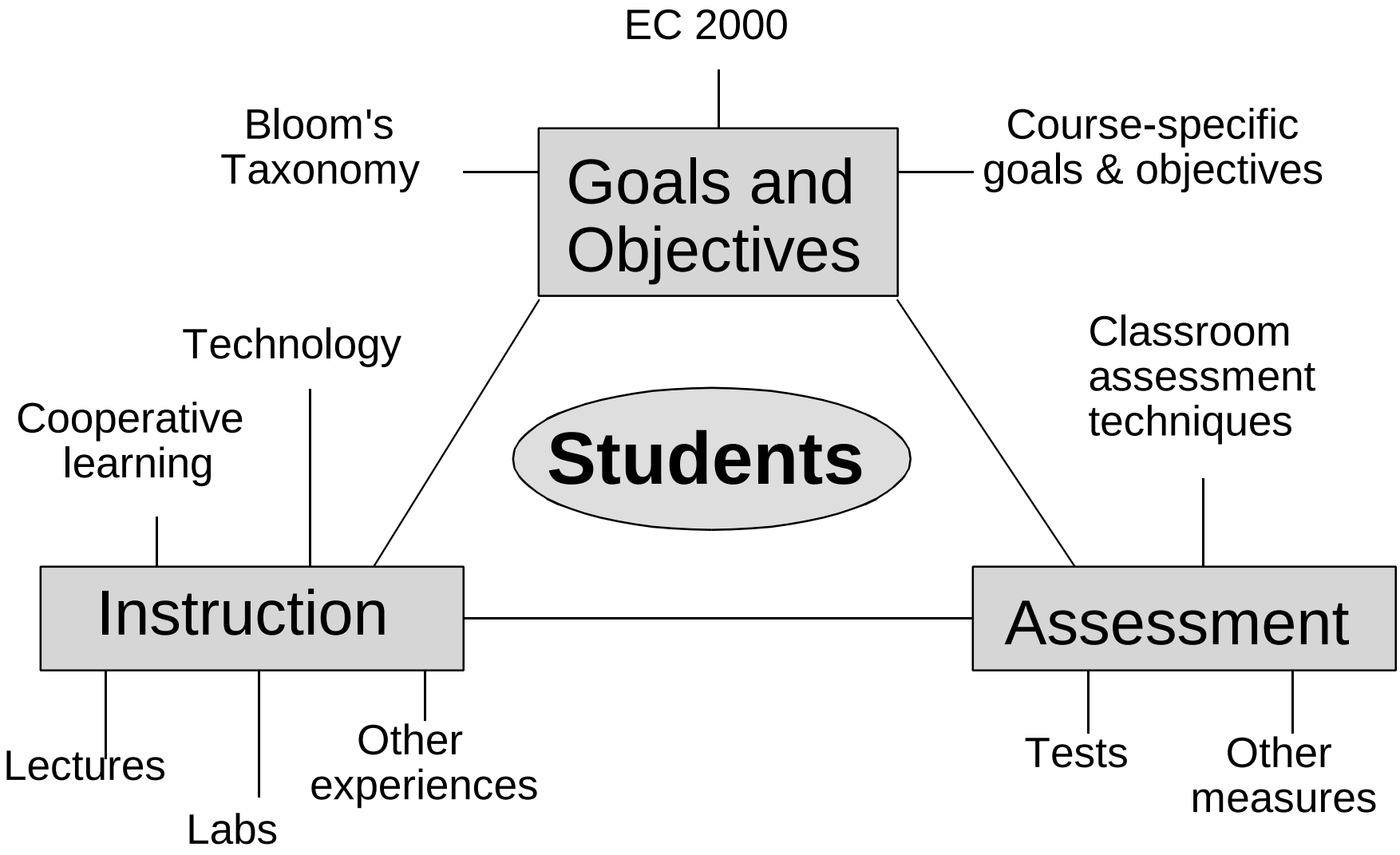
Design – A social process that identifies a need, defines a problem, and specifies a plan that enables others to manufacture the solutions

Engineering Education – A socio-technical activity that identifies a learning need; defines a teaching opportunity; and specifies the curriculum experience that will enable others to learn; and evaluate their own performance

Product-Based Learning
Leifer (Stanford)



Effective Course Design



Felder & Brent, 1999

Inquiry Learning Cycle
BSCS

- Engage
- Explore
- Explain
- Evaluate

The Students Explain[1]

1. In trying to make their thoughts clear for other people, student achieve greater clarity for themselves.

2. The students themselves determine what it is they want to understand.

3. People come to depend on themselves.

4. Students recognize the powerful experience of having their ideas taken seriously, rather than simply screened for correspondence to what the teacher wanted.

5. Students learn an enormous amount from each other.

6. Learners come to recognize knowledge as a human construction, since they have constructed their own knowledge and know that they have.

[1]Duckworth, E. 1987. *The having of wonderful ideas" & other essays on teaching and learning*. New York: Teachers College Press.