QUALITY ASSURANCE AND ENHANCEMENT MARKETPLACE FOR HIGHER EDUCATION INSTITUTIONS

Jens Bennedsen
Juha Kontio

Objectives for this session are

- **to learn the methods and process of self evaluation and**

- **to experience self evaluation in practice**

- **to introduce a tool of improving by learning from others**

Please remember

There is no formal certification as a CDIO Program

Each institution/institutional department self-certifies using the CDIO Standards and demonstrates certification to its normal accrediting agency or organization

cdio
CONCEIVE DESIGN IMPLEMENT OPERATE™

Central Questions for Engineering Education

WHAT knowledge, skills and attitudes should students possess as they graduate from university?

+

HOW can we do better at ensuring that students learn these skills?

Better engineers

cdio
CONCEIVE DESIGN IMPLEMENT OPERATE™

How Can We Do Better?

Retask current assets and resources in:

- Curriculum
- Teaching and learning methods
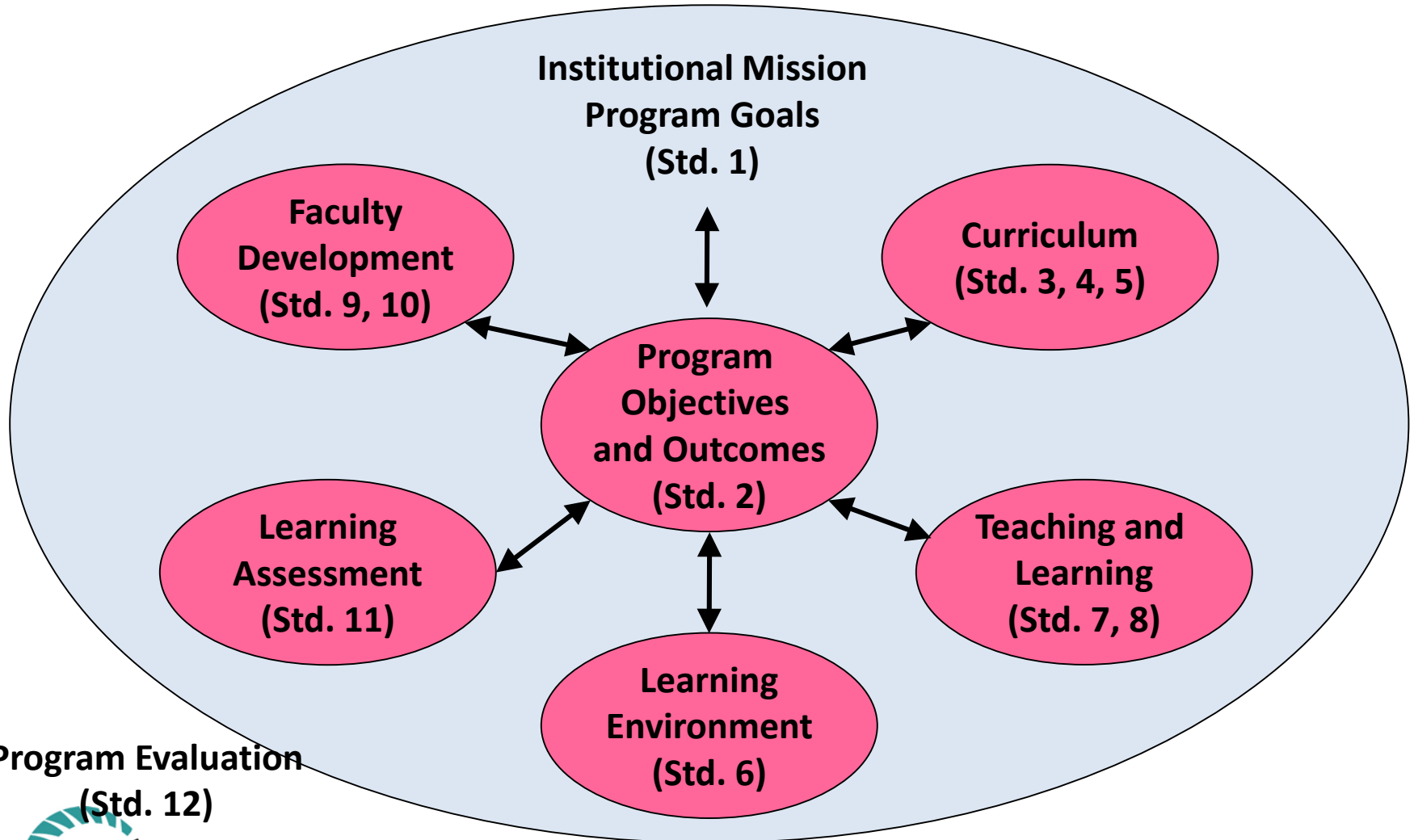- Design-implement experiences and engineering workspaces
- Learning assessment methods
- Faculty competence
- Program evaluation

cdio
CONCEIVE DESIGN IMPLEMENT OPERATE™

CDIO standards – best practices

General structure of standards

Description

- The description elaborates the statement of the standard, explaining its meaning.
- It defines significant terms and provides background information.

Rationale

- The rationale highlights reasons for the adoption of the standard.
- Reasons are based on educational research and best practices in engineering and higher education.
- The rationale explains ways in which the standard distinguishes the CDIO approach from other educational reform efforts.

Rubric

- A rubric is a scoring guide that seeks to evaluate levels of performance.
- The rubric of the CDIO Standards is a six-point rating scale for assessing levels of compliance with the standard.
- Criteria for each level are based on the description and rationale of the standard.
- The rubric highlights the nature of the evidence that indicates compliance at each level.

Remember

1. **CDIO self-evaluation is for your program development**
2. **It's a tool for you**
3. **You don't need to prove anything with this**
4. **It's a tool for continuous improvement**

![cdio logo] CONCEIVE DESIGN IMPLEMENT OPERATE™

Exercise: Learn and teach CDIO standards to your colleagues

- ## Why?
  - ### Deeper understanding of the standards
- ## What?
  - ### Learn four standards
  - ### Preliminary self-evaluation
- ## How?
  - ### Active learning with the jigsaw method
- ## You need
  - ### Standards v. 2.1
  - ### Evaluation template

Step 1

- **We create groups of four people**
  - **This is your home group!**

Step 2

- **In your group:**

  Decide who takes which standard of the following

  - **2. Learning outcomes**
  - **8. Active Learning**
  - **9. Enhancement of Faculty Competence**
  - **10. Enhancement of Faculty Teaching Competence**

Step 3

- **Each member of the group studies his/her standard**
  - **→ to become an expert of that standard!**
- **To Do**
  - **Try to understand the ideology behind it and make notes**
  - **Identify examples from your program that answer these challenges**
  - **Estimate the level of your program in the scale (use the template)**
  - **Write some rationale for your judgement**

Step 3(a)

- **Fill out the first page with your evaluation of your standard**

- **Give some rationale for your evaluation (page 3)**

Workshop: part 2

January 2018

Name: _____ Group: _____

Criterion #	Please indicate (with an X) at what level you think your programme meet the selected criterion					
	Level 0	Level 1	Level 2	Level 3	Level 4	Level 5
9			X			

Evaluation of the criteria

Criterion #	Is the rationale understandable?	Is the rubric understandable?	What indicators did you use for the criterion? (please make use of the reverse side of the paper if you need)

Workshop: Self-Evaluation Form, *to be kept for the Cross-Sparring*

Fill out the yellow columns by your self. There is room for 2 criteria on the reverse side of the paper. The blue column is to be filled out together with your Cross-Sparring partner.

Criterion #	Level	Rationale	How to improve	Best practise

cdio
CONCEIVE DESIGN IMPLEMENT OPERATE™

Step 4

- **Expert groups meet (one group for each studied standard)**
- **To Do**
  - **Exchange your thoughts in the group**
  - **Agree on the presentation of your standard to the rest of the expert group**

- **You will later teach this standard to your home group members!**

Step 5

- **Return to your home group**
- **To Do**
  - **Each home groups studies the standards led by the expert**
  - **Flip charts are as a reference (2, 8, 9, 10)**
  - **Evaluate your program/faculty**
    - **1) level on the standard,**
    - **2) give some rationale and**
    - **3) how to improve→ Fill the template (page 1 + 3)**
  - **When asked move to next standard and teaching continues…**
  - **This is repeated until all four standards are taught and evaluated by the entire home group**

Constant-sum weighting

- **Each participant review the evaluation of his/her standards and assign a positive integer to each standard so that**
  - **a higher integer is assign to the standard were you think you are doing well**
  - **the sum of all integers is 12**

cdio
CONCEIVE DESIGN IMPLEMENT OPERATE™

If we have time

Cross-Sparring

- **Now each participant have a four-standard self-evaluation of his/her program**

- **We pair each participant with an other participant so that**

  - **You can share what you do well**

  - **You can learn from others how to improve**

Sparring

- ”**Sparring is a form of training common to many combat sports. Although the precise form varies, it is essentially relatively 'free-form' fighting, with enough rules, customs, or agreements to make injuries unlikely.”**
  -*Wikipedia*

Cross-Sparring

- **Explain to your sparring partner what you think you do well regarding to one or several of the standards**

- **Listen to your sparring partner and get inspired on how to improve one or several of the standards**

Reflection

- **Based on what you have learned from your sparring-partner**
  - **Reflect on how to improve your program**
  - **Write it down**

Summary

- **Reflective self evaluation is a powerful tool**

- **Learning from others and sharing best practice can improve your performance considerably**