



Curriculum Mapping: Connecting Learning Outcomes

by

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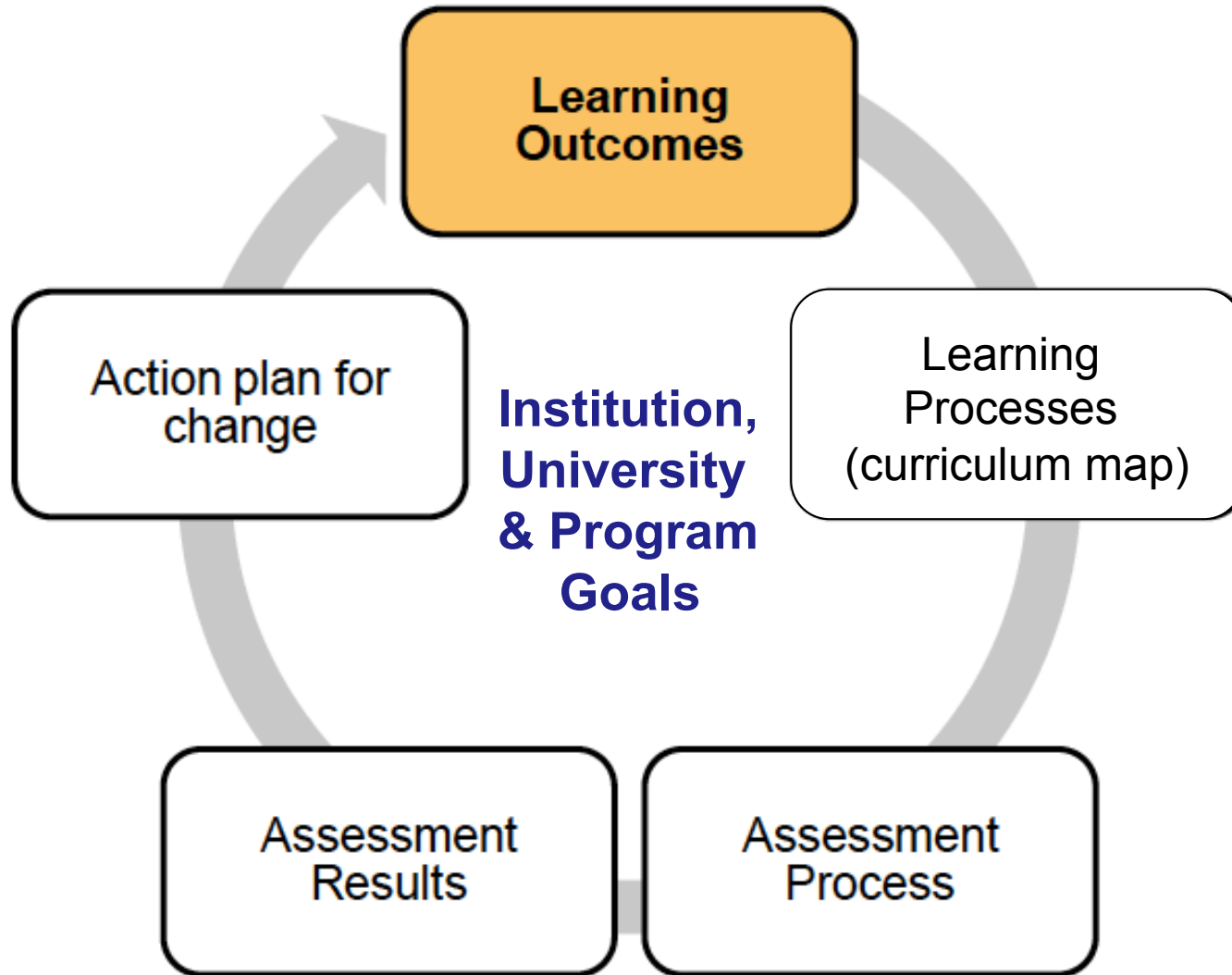
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Lecture Content

- Student learning outcomes.
- Why is it important to connect outcomes to learning.
- What is curriculum mapping?
 - process
 - implications
- Why do curriculum mapping?
 - Questions that curriculum mapping can answer.
- What else can be mapped?
- How can this improve student learning?

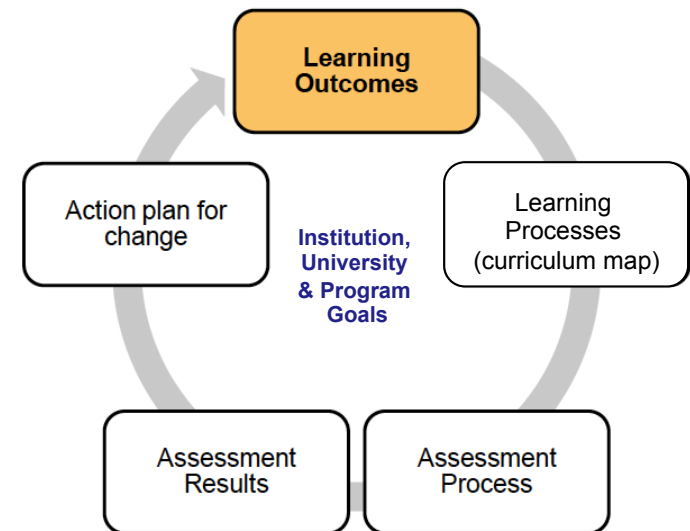
Curriculum Mapping:

Assessment Cycle



Role of Student Learning Outcomes

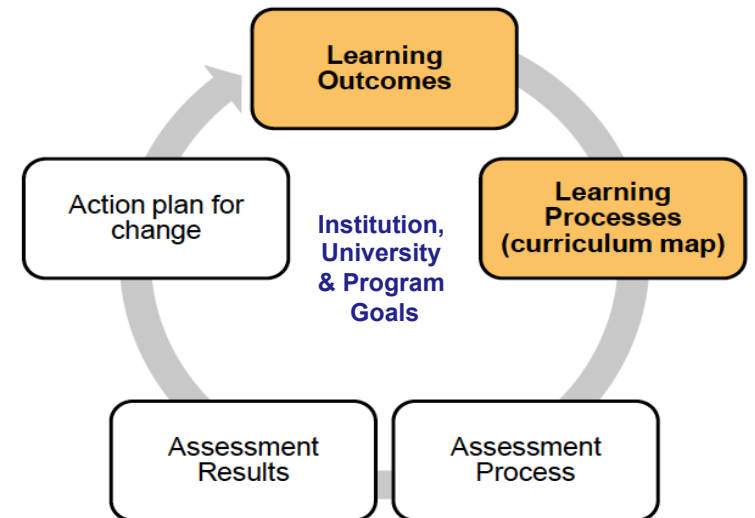
- Helps students learn more effectively.
- Shifts focus from “*what is delivered*” to “*what students will learn*”.
- Addresses the central aspects of the discipline in focus.
- Aligns with program goals.
- Creates a consistent curriculum.
- Helps to design courses, curriculum, and programs.



Role of Change

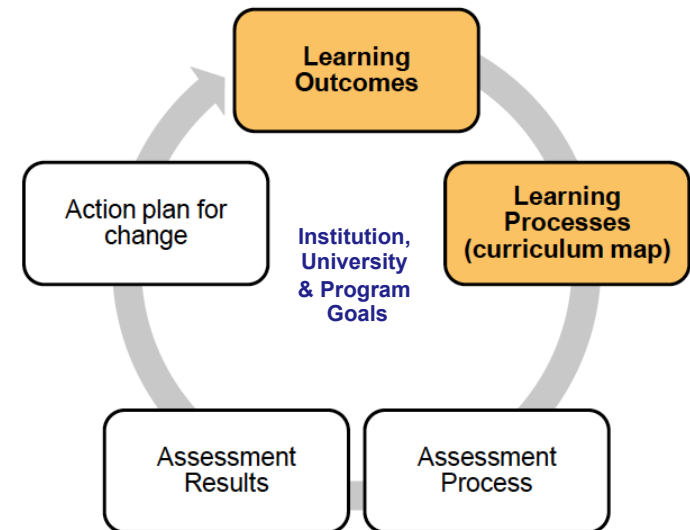
- Why do we think that recommending a specific change will:
 - lead to better outcomes?
 - influence how students understand and navigate higher education?

Changes do not necessarily equal improvement!



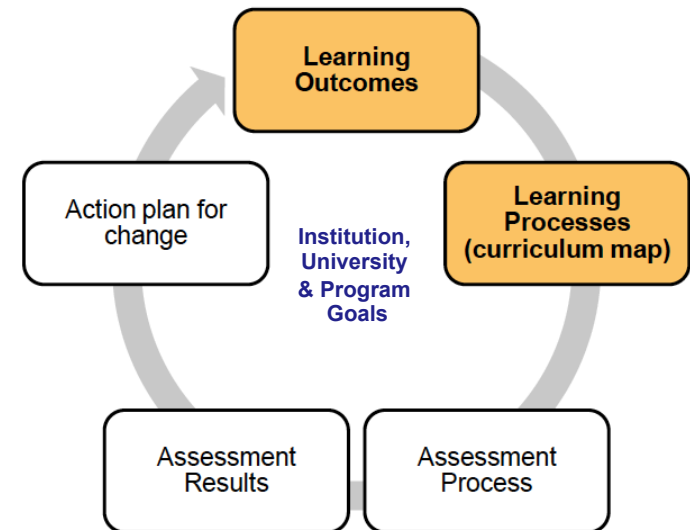
Connect Outcomes → Learning

- What **learning process** (activity) will contribute to students' mastery of the outcome?
- Example:
 - **Outcome:** Students can place all elements in the periodic table in their respective groups.
 - **Learning process:** Read. Students read the periodic table provided in the chemistry book.



Connect Outcomes → Learning

- How can the outcome be assessed quantitatively or qualitatively?
- Example:
 - **Outcome:** Students can place all elements in the periodic table in their respective groups.
 - **Assessment process:** Embedded exam. Students take an exam in which they are asked to place all elements in the periodic table in their respective groups.



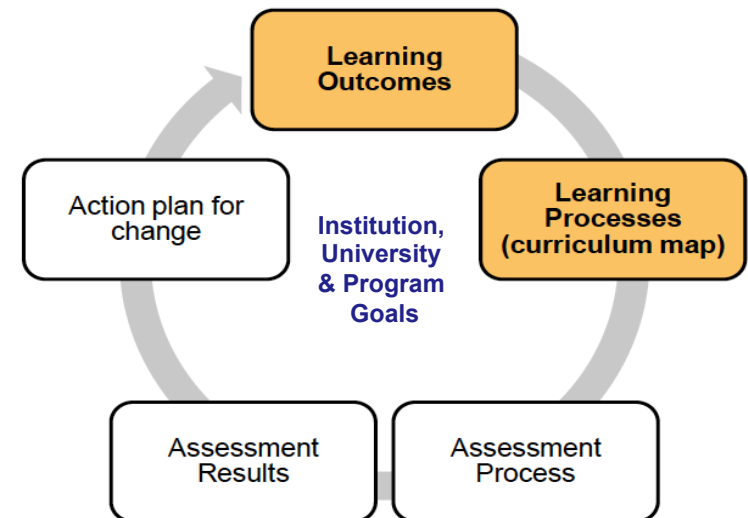
What is Curriculum Mapping?

“The concept of having an outcomes-based approach and having a strong theory of alignment all the way down to individual learning activities helps facilitate the use of assessment data.”

Ewell, 2013

Role of Curriculum Mapping

- Support instructions with learning outcomes.
 - Documents learning process, *i.e.* what is taught, how, and when.
 - Reveals gaps in the curriculum.
 - Helps design an assessment plan
- Improves communication.
- Improves program coherence.
- Encourages reflective practice.



Curriculum Mapping - the Process

- Focused on curriculum and program learning outcomes.
- Two-dimensional matrix representing courses on one axis and outcomes on the other.
- The faculty should identify which courses address which learning outcomes.

Reflections:

- Is curriculum mapping an individual process or one of consensus building?
- If two faculty members individually mapped the curriculum would they end up with the same map?

Curriculum Mapping - the Process

- In the curriculum map matrix each required course in the program should be linked with at least one **Learning Objective** and one level.
- Normally the levels are linked (as much as possible) to **Bloom's Taxonomy**:
 - **I** = Introduce (gain knowledge, comprehend information).
 - **R** = Reinforce and practice (apply knowledge gained to real situations, analyze issues and questions)
 - **M** = Mastered and assessed (prepare an exam, a paper, a presentation etc. that represents knowledge gained, application of synthesis or evaluation of knowledge and ideas).

Example:

Good Curriculum Map

Requirements	Program Outcome 1	Program Outcome 2	Program Outcome 3
R1	Introduced		
R5		Introduced	
R9			Introduced
R13		Reinforced and practiced	
R18	Reinforced and practiced		Reinforced and practiced
R21	Reinforced and practiced		Reinforced and practiced
R22		Reinforced and practiced	
R34	Mastered and assessed		
R39		Mastered and assessed	Mastered and assessed
Program exit	Assessed	Assessed	Assessed

I = introduced; R = reinforced/practiced/emphasized; M = mastery at senior level

Example:

Poor Curriculum Map

Requirements	Program Outcome 1	Program Outcome 2	Program Outcome 3
R1		Introduced	
R2	Introduced		
R4			Introduced
R5		Mastered	
R9		Reinforced and practiced	Reinforced and practiced
R13	Mastered		Reinforced and practiced
R15			
R18	Assessed		
R21		Assessed	
R22			Mastered
R34			Mastered

I = introduced; R = reinforced/practiced/emphasized; M = mastery at senior level

Curriculum Mapping:

Time to Share

- Have you done curriculum mapping?
- How was the process?
- What have you done with the map since?

Curriculum Mapping - Implications

- While curriculum mapping is seemingly a very straightforward process there are many assumptions made behind this potentially “*simplistic task*”.
 - If too broad outcomes are mapped there may be an issue/ agreement on what the outcomes mean.
 - Do the assumptions about alignment actually hold between the different levels in the program?
 - What is needed to say that the outcome is addressed and met?
 - What does it actually mean to introduce, reinforce, or meet a specific outcome?

Why do Curriculum Mapping?

- What are we hoping to achieve through mapping the curriculum?
 - Alignment within a program, between general educational and institutional goals.
 - Identifying where and how particular outcomes are introduced, explicitly taught and assessed (Ewell, 2013).
 - Understand the nature and role of course pre-requisites.

Mapping as a lens is a way of seeing organizational structure.

Questions that Curriculum Mapping Can Answer

- In the “*key courses*”, are all outcomes addressed in a logical order?
- Do all the “*key courses*” address at least one outcome?
- Do multiple offerings of the same course address the same outcomes at the same levels?
- Do some outcomes get more coverage than others?
- Are all outcomes first introduced and then reinforced?
- Are students expected to show a too “*high levels*” of learning too early?

Questions that Curriculum Mapping Can Answer

- Do students get practice on all the outcomes before they are being assessed?
- Do all students, regardless of which electives they choose, experience a coherent progression and coverage of all outcomes?
- What do your electives, individually and collectively, contribute to the achievement of the program learning outcomes?

Uses of Curriculum Maps

- Provide an overview of the structure of the curriculum and the contribution of individual courses to the goals of the program.
- Identify the strengths of the program, *i.e.* the student learning outcomes that are thoroughly addressed.
- Help to identify gaps, *i.e.* learning outcomes that are addressed by only a few courses.
- Suggest whether students take courses in an optimal sequence.
- Advising tools that provide students with an overview of the role of each course in the curriculum, and why some courses should be taken in a particular order.

What Else Can be Mapped?

Course:

- content
- structure
- assignment timing and exams
- connection between course and program outcomes

PROGRAMMETS KUNSKAPER & FÄRDIGHETER				
Årskurs 1	Kurs A	Kurs B	Kurs C	Kurs D
Årskurs 2	Kurs E	Kurs F	Kurs G	Kurs H
Årskurs 3	Kurs I	Kurs J	Kurs K	Kurs L
Årskurs 4	Kurs M	Kurs N	Kurs O	Kurs P
Årskurs 5				
	Muntlig presentation	Rapport-skrivning	Projekt-ledning	Teamwork

GIS (Geographic Information System) communication parameters could be mapped to visualize, question, analyze, and interpret data to understand relationships, patterns, and trends.

Example:

Map with Assessment Data Opportunities

Requirements	Program Outcome 1	Program Outcome 2	Program Outcome 3
R1	I: 3 oral presentations		
R5		I: Exam questions	
R9			I: Essay exam
R13		R: Exam questions	
R18	R: 2 oral presentations		M: Essay exam
R21	R: 2 oral presentations		R: Course portfolio
R22		R: Project	
R34	M: 1 oral presentation		
R39		M: Project	M: Project
Program exit	Interview	Interview	Interview

I = introduced; R = reinforced/practiced/emphasized; M=mastery at senior level

Important Questions to Ask Before Starting the Process

- What are you trying to map and why?
- Who should be involved in the process?
- Where does learning happen and are we capturing it?
- Are we mapping for reporting purposes or program improvement?
- What are we not seeing by applying this “lens”?
- How might we be able to capture alternate educational system views?



Thank You!
Any questions or comments?

References

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