Leading a process to use learning outcomes for program improvement

"…excellent teaching …is not simply a matter of knowing the latest techniques and technologies. Excellence also entails an ethical and moral commitment…[to] inquire into the consequences of their work with students…"

- L. Shulman

Learning outcomes are not new…

They are embedded in:

- Ontario's college sector
- Professional programs in Canada (medicine, business)
- Accreditation requirements in the US
- Provincial IQAPs from COU

…but using learning outcomes is…

"`Closing the loop'—using assessment evidence to improve student learning and inform curriculum decisions—is more difficult. In fact, among the 146 profiles of good practice submitted …only six percent contained evidence that student learning had improved (Banta & Blaich, 2011)."

Baker, G. R., Jankowski, N. A., Provezis, S., & Kinzie, J. (2012). Using Assessment Results: Promising Practices of Institutions That Do It Well. Retrieved from http://www.tamiu.edu/adminis/iep/documents/NILOA-Promising-Practices-Report-July-2012.pdf

Wabash Study

"…our assumptions concerning the importance of gathering additional high-quality data; of creating long, detailed reports; and of engaging the scholarly energies of faculty and staff proved to be completely wrong.

We had focused too much on gathering, analyzing, and reporting assessment evidence and not enough on helping institutions use it."

Blaich, C., & Wise, K. (2011). From Gathering to Using Assessment Results. NILOA Occasional Paper, (8). Retrieved from http://www.learningoutcomesassessment.org/documents/Wabash_001.pdf

BAY VIEW ALLIANCE

Higher Education Quality Council of Ontario

An agency of the Government of Ontario

National Institute for Learning Outcomes Assessment

Making Learning Outcomes Usable & Transparent

EGAD Project

egad.engineering.queensu.ca

NILOA: Wabash study lessons (2011)

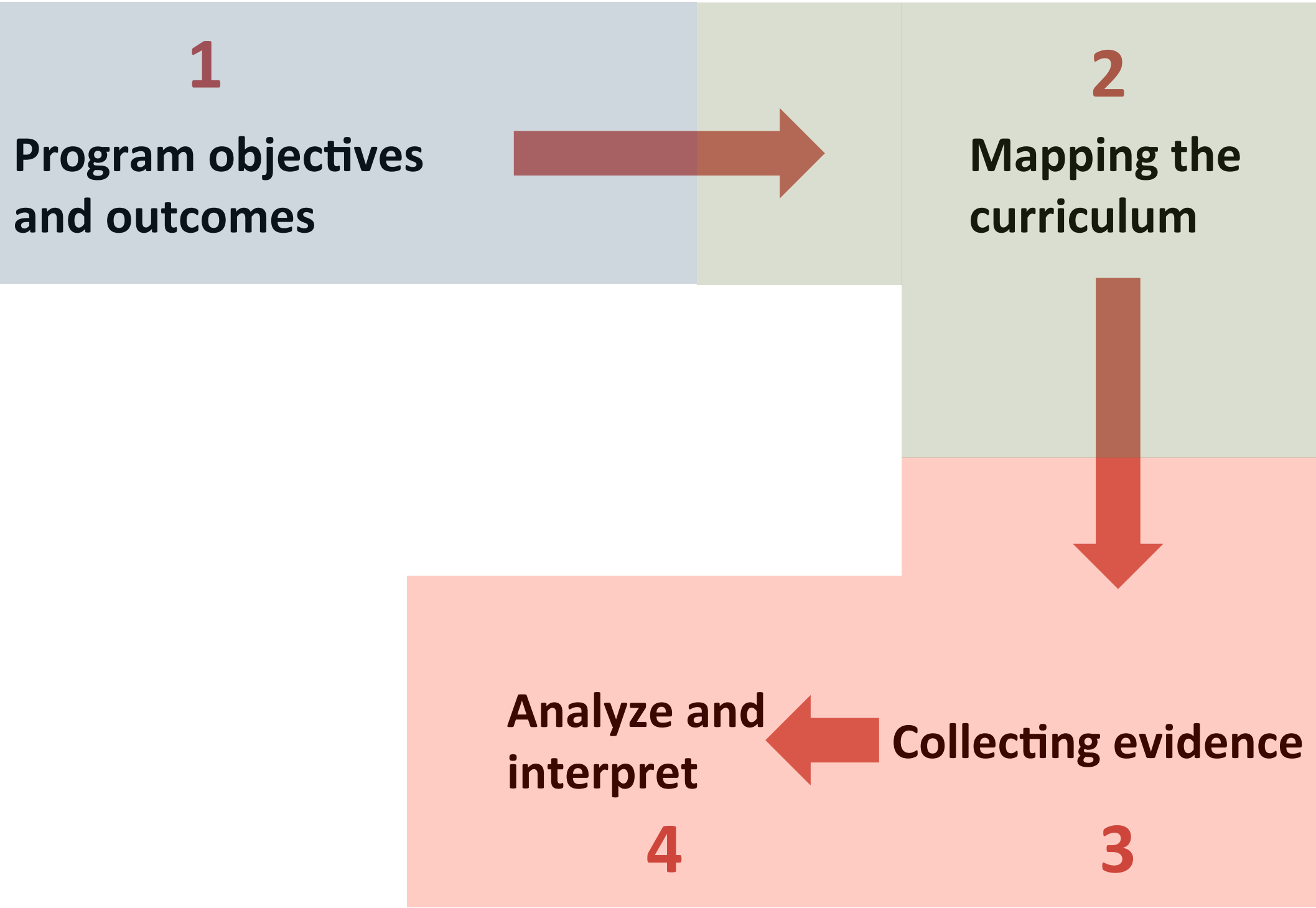
1. Perform thorough audits of useful information about student learning and experience that your institution has already collected.
2. Set aside resources for faculty, student, and staff responses to the assessment information before assessment evidence is distributed around campus.
3. Develop careful communication plans so that a wide range of campus representatives have an opportunity to engage in discussions about the data.
4. Use these conversations to identify one, or at most two, outcomes on which to focus improvement efforts.
5. Be sure to engage students in helping you make sense of and form responses to assessment evidence.

Blaich, C., & Wise, K. (2011). From Gathering to Using Assessment Results. NILOA Occasional Paper, (8). Retrieved from http://www.learningoutcomesassessment.org/documents/Wabash_001.pdf

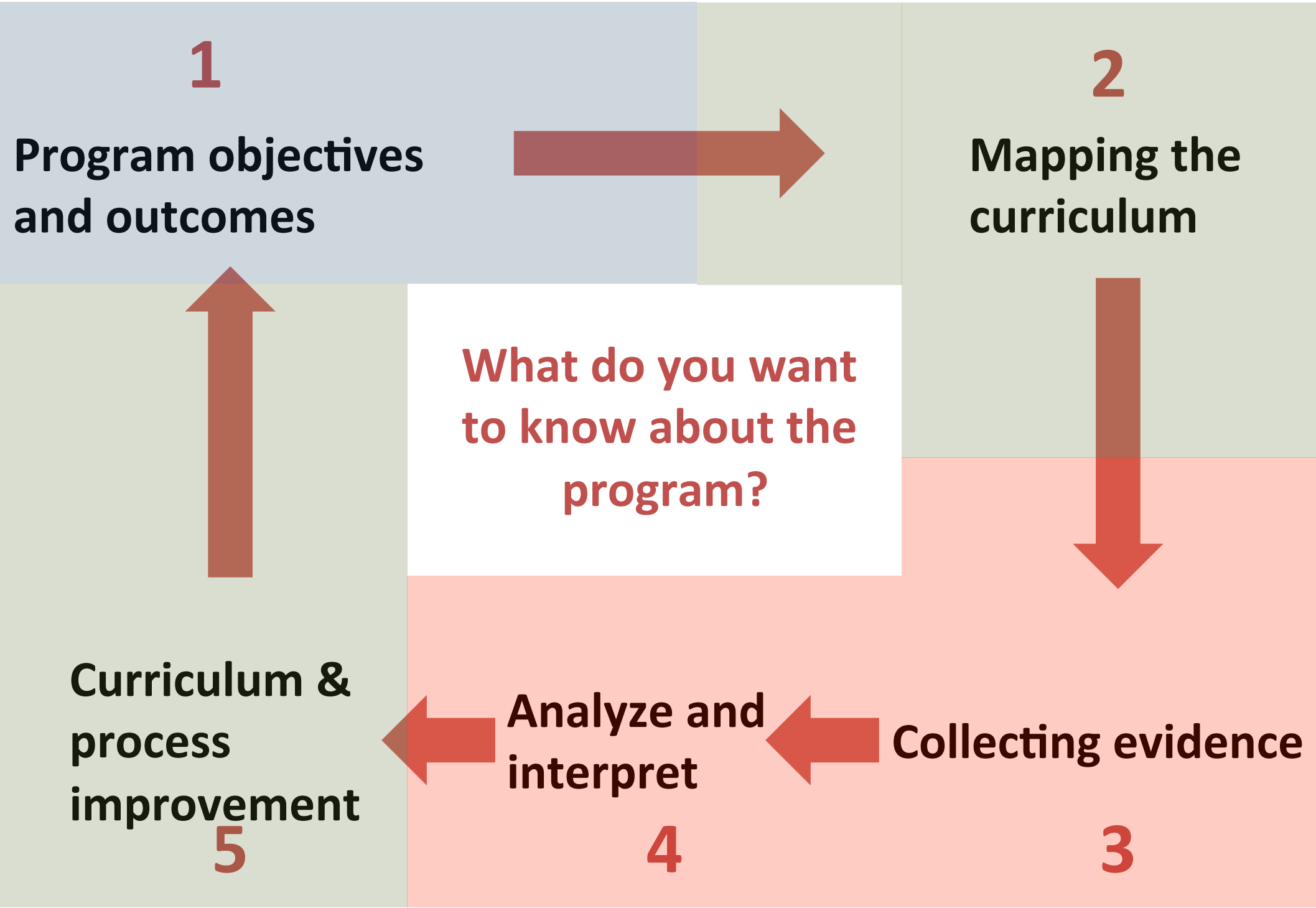
Objectives

- Apply three principles to effectively “closing the loop”
- Software tools to support change management process

Learning outcomes in a program



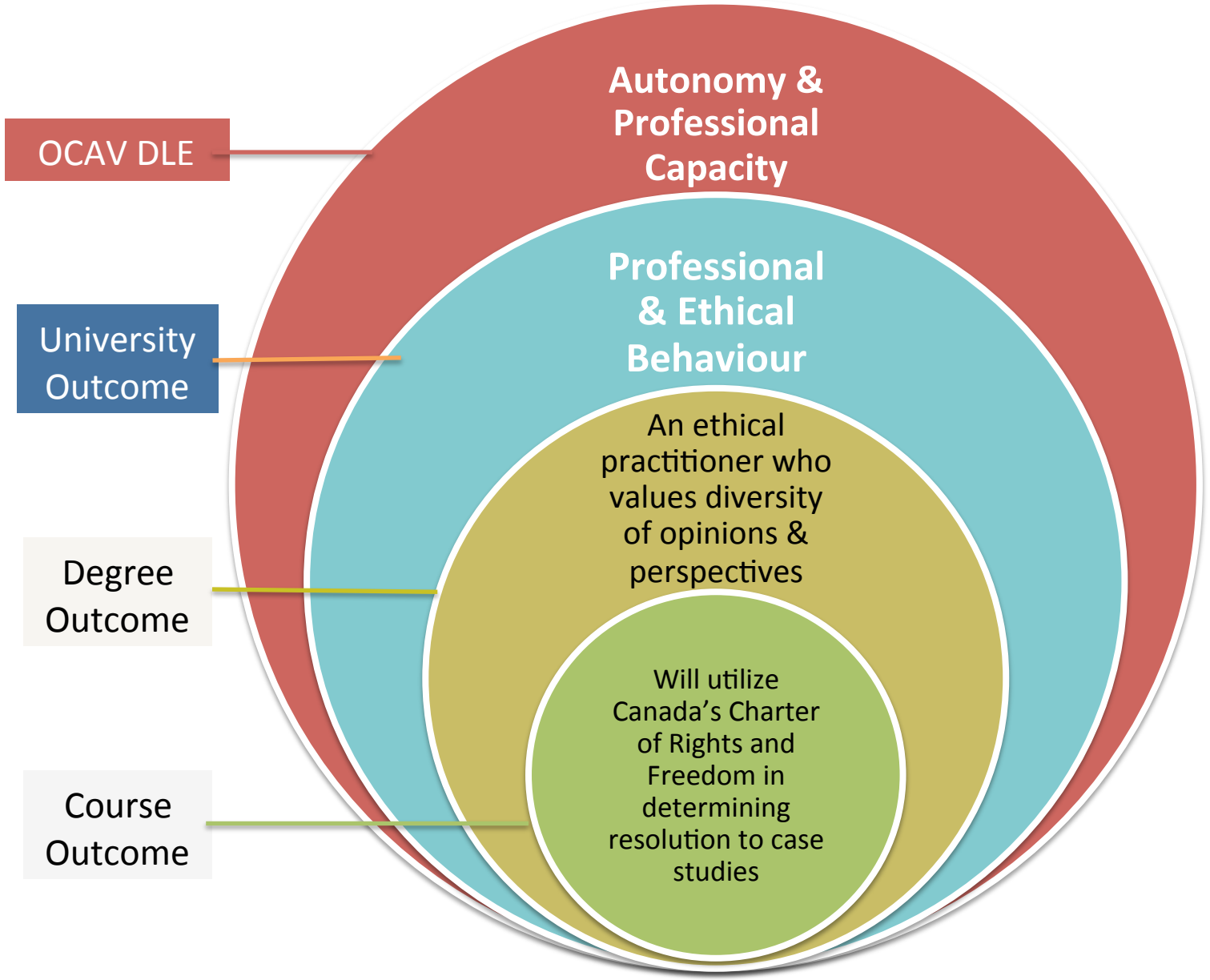
Challenge: Closing the loop effectively



Learning outcome collections

- OCAV UDLEs
- AAC&U Essential learning outcomes and VALUE rubrics
- HEQCO Tuning Sector-wide outcomes
- Disciplinary requirements (nursing, engineering, business, medicine, …)
- University wide outcomes (e.g. Guelph)

Tiered outcomes



Developing or adapting outcomes

Tool: Learning outcomes

	Diploma	Bachelor	Masters
Knowledge	…	…	…
Critical think	…	…	…
Writing	…	…	…
Interpersonal	…	…	…

Aligning outcomes and curriculum

Tool: Curriculum mapping

	Course 1	Course 2	Course 3
Outcome 1	X		X
Outcome 2		X	
Outcome 3	X		

Aligning outcomes within a course

Tool: Course planning table

PHYS101 Course Outcomes: Students will:
1. Describe motion of…
2. Predict the behaviour…

	Teaching	Activity	Assess
Week 1	…	…	
Week 2	…	…	
Week 3	…	…	

Scoring performance

Tool: Rubrics

	Marginal	Meets	Exceeds
Outcome 1	…	…	
Outcome 2	…	…	
Outcome 3	…	…	

"We learned that most institutions already had more than enough actionable assessment evidence—not only in terms of national surveys and standardized outcome measures but also from information in institutional databases, student interviews, reports from external reviewers, and many other sources of information about student learning."

Principle 1

DETERMINE WHAT INFORMATION YOU HAVE,
DETERMINE WHAT QUESTIONS YOU HAVE
DETERMINE WHAT INFORMATION YOU NEED

What information do you have

- NSSE
- Exit surveys, employer surveys, alumni surveys…
- Innovators who embed concept inventories, outcomes in programs
- Research initiatives

E.g. Wabash Study Assessment Portfolio Survey

http://www.liberalarts.wabash.edu/storage/Institutional-Assessment-Portfolio-Data-Survey.pdf

What questions do you have?

Differences between program options?

Impact of particular stream of courses?

Special students (transfer/twinning)?

What do you want to know about the program?

Particular skill?

Longitudinal development over 4 years?

Impact of coop/ internship?

Questions a program could ask

How are students' **design skills** developing over the 4-year program?

or

There is a feeling among our faculty that students aren't able to use {some specific measurement equipment}.

Breakout

At your table

1. Identify existing **information**
2. Identify **questions** you would like to answer in an outcomes assessment process

Discuss with your table. May consider:

- Institution-wide efforts
- Faculty/department-wide efforts in physical science/ professions
- Faculty/department-wide efforts in social science
- Faculty/department-wide efforts in humanities/fine arts science

INTERESTING THEMES EMERGING?

“Culture eats strategy for breakfast”
- Peter Druker

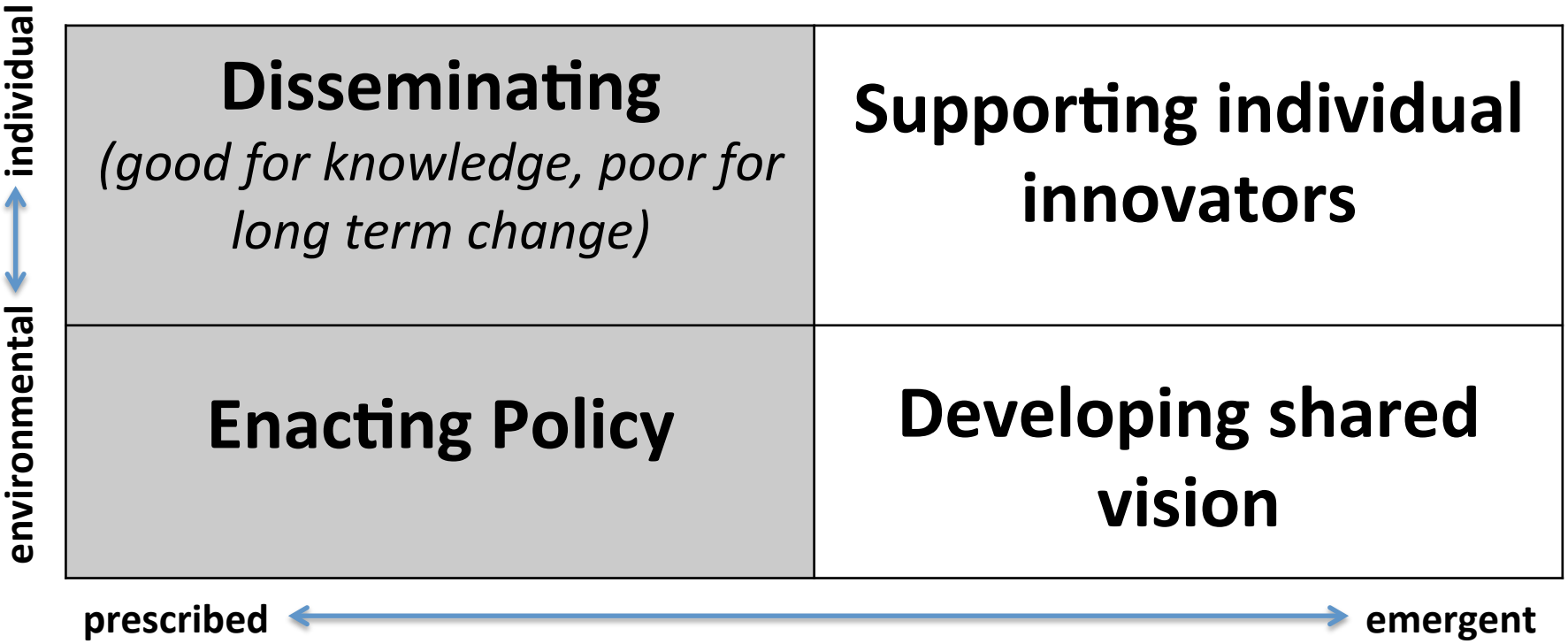
Principle 2

RECOGNIZE THIS IS A LONG TERM PROCESS OF CHANGE

Wabash study (2011)

"The research on institutional change suggests that 'institutional transformation' is rare and that, if anything, incremental change is what is best and what is possible (Kezar, 2001)."

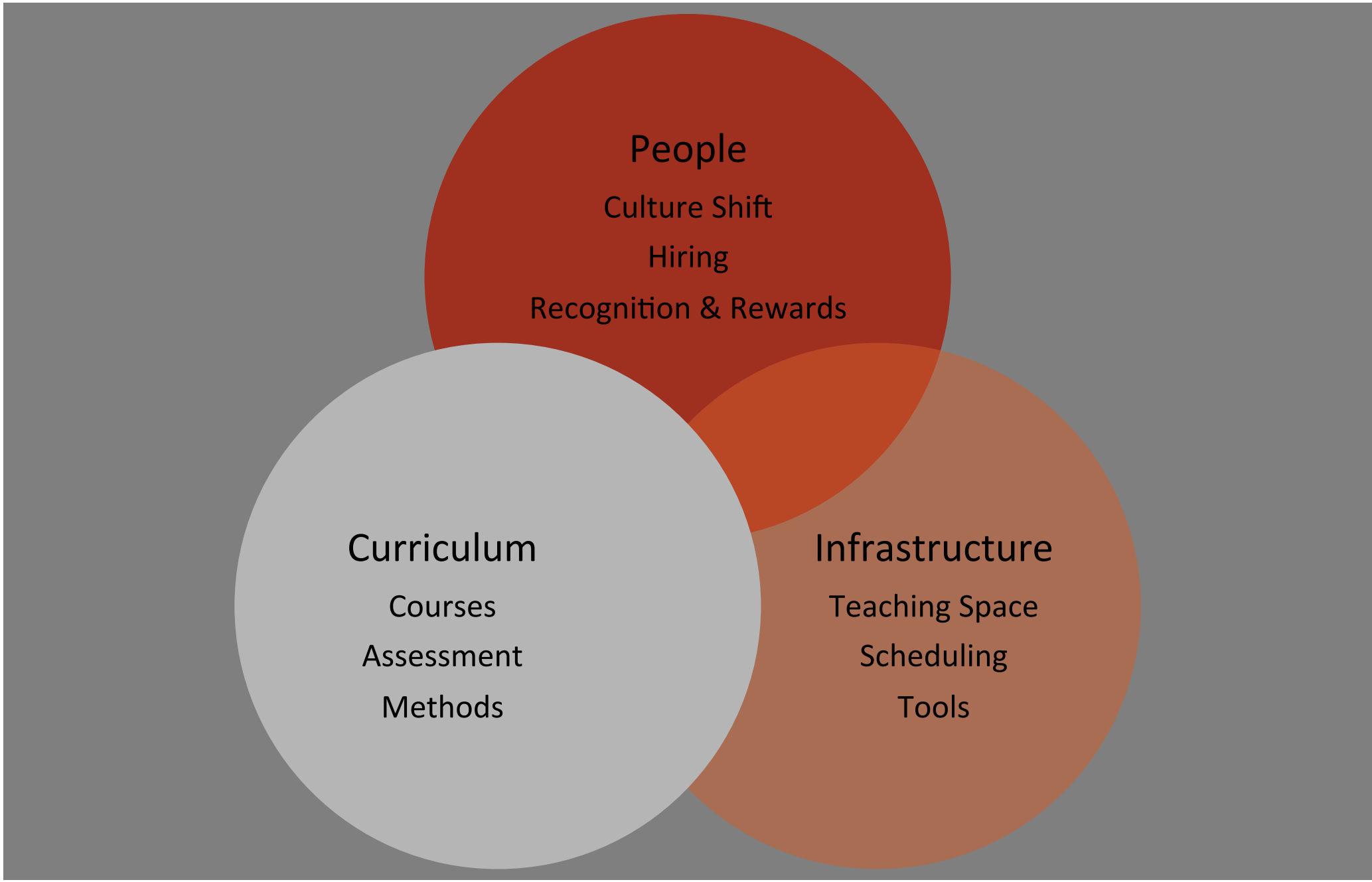
4 approaches to facilitating change



Effective strategies: are aligned with or seek to change beliefs, long-term interventions, understand university as a complex system, honest about issues and problems.

Henderson, C., Beach, A., & Finkelstein, N. (2011). Facilitating change in undergraduate STEM instructional practices: An analytic review of the literature. Journal of Research in Science Teaching, 48(8), 952–984. doi:10.1002/tea.20439

Change…


People
Culture Shift
Hiring
Recognition & Rewards
Curriculum
Courses
Assessment
Methods
Infrastructure
Teaching Space
Scheduling
Tools

Our experience

Guelph: Outcomes for several decades

Queen's: Engineering planning started planning to use learning outcomes in all programs around 2008

Breakout: Think early about organizational change!

Introduce yourself.

Based on culture change or initiative you have led or been part of, keys to developing sustained shared vision re: continuous improvement process

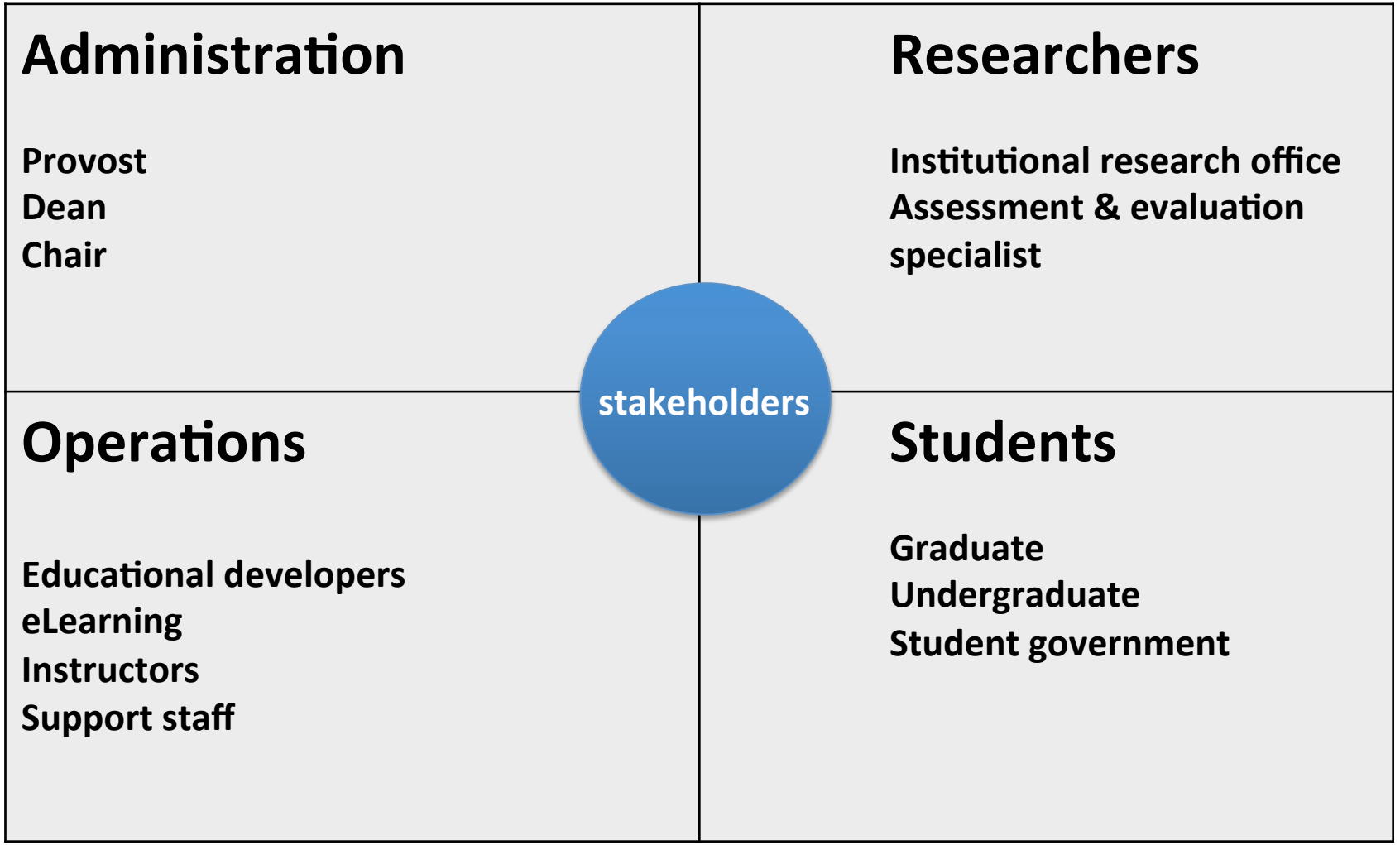
Key inhibitors	**Drivers/resolutions**

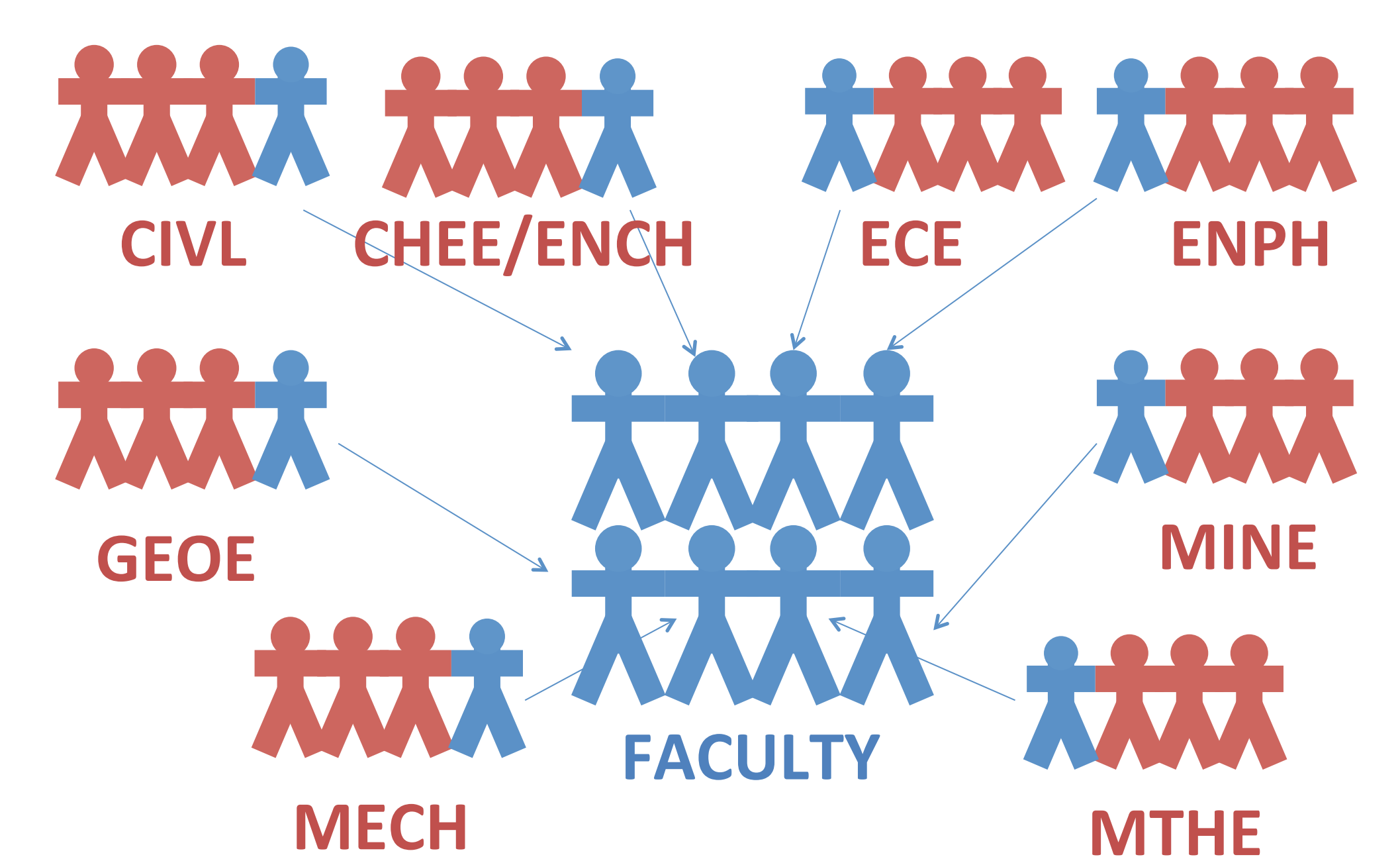
"The next step in developing the necessary scholarship and expertise for assessment is to **create mechanisms to systematically train campus assessment leaders** in the political skills and organizational knowledge they need to more fully utilize their assessment data."
-Blaich & Wise (2011)

Principle 3

LONG TERM LEADERSHIP REQUIRED

People directly involved



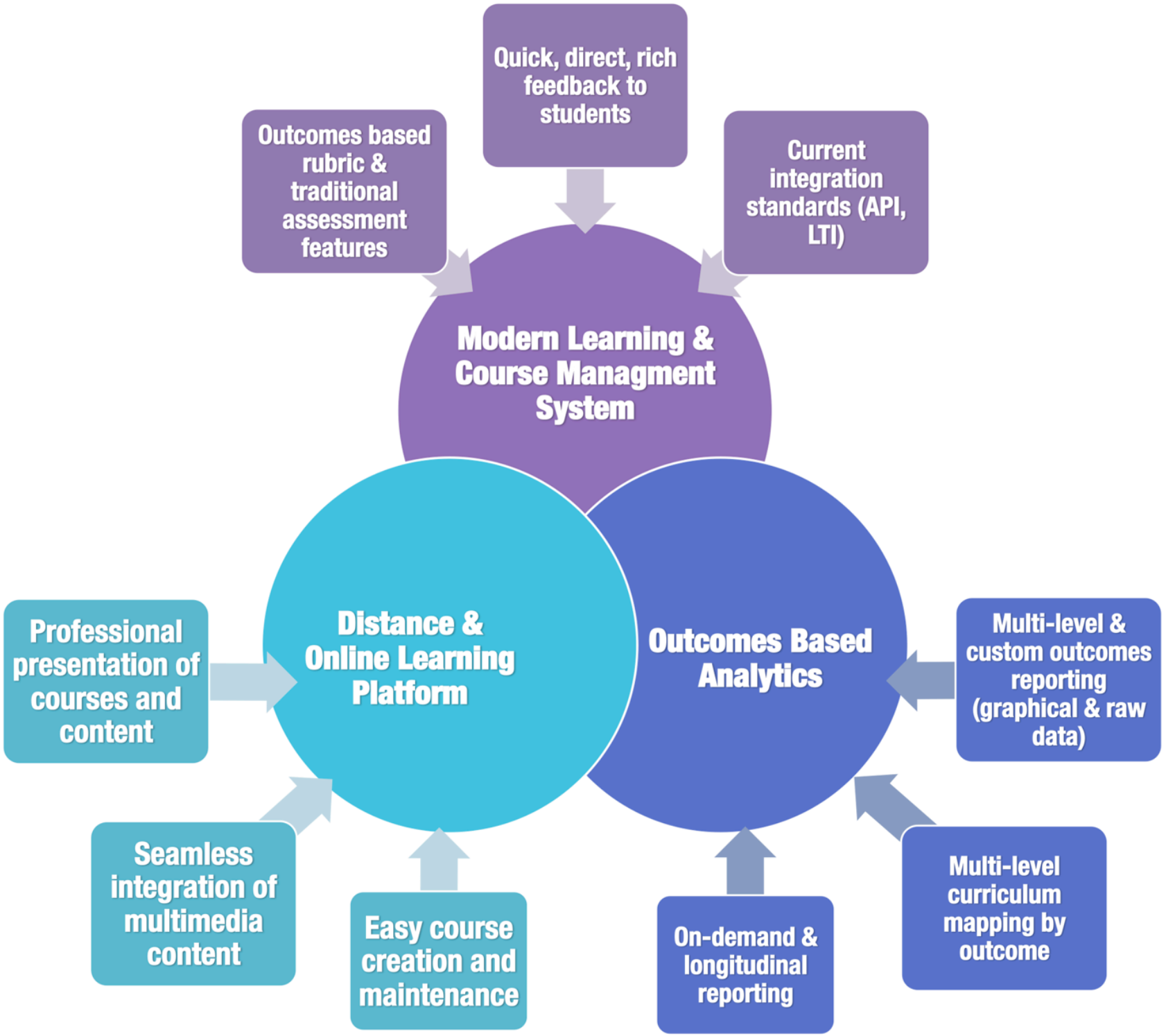


Agents of change

Leadership drivers

- Focus on continuous improvement of sustainable practices.
- Outcomes achievement is a responsibility shared by faculty and students.
- Embed a culture of autonomy and academic freedom within courses and curriculum in higher education.
- A scholarly approach to curriculum development includes processes that are faculty-driven, data-informed and literature-supported. The process is further supported by a scholarly approach to analysis, application, teaching and assessment.

SOFTWARE TOOLS

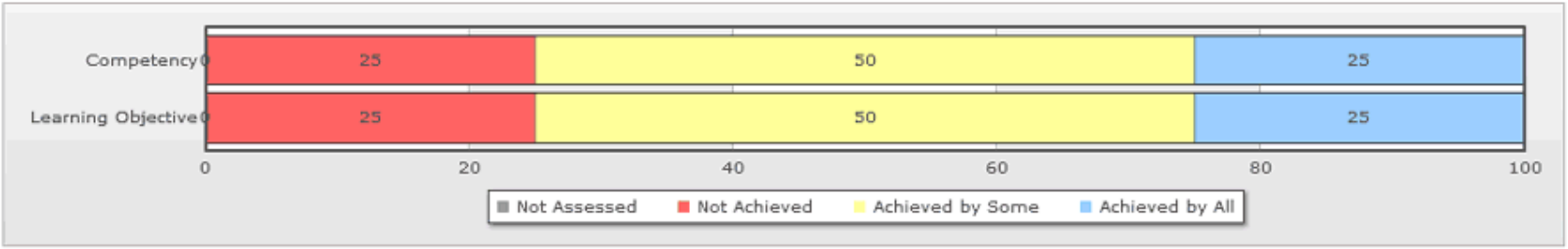

Quick, direct, rich feedback to students
Outcomes based rubric & traditional assessment features
Current integration standards (API, LTI)
Modern Learning & Course Managment System
Professional presentation of courses and content
Distance & Online Learning Platform
Outcomes Based Analytics
Multi-level & custom outcomes reporting (graphical & raw data)
Seamless integration of multimedia content
Easy course creation and maintenance
On-demand & longitudinal reporting
Multi-level curriculum mapping by outcome

Desire2Learn Analytics

Progress on Competency Achievement Across Courses

Wed Mar 28 06:28:14 EDT 2012

Organization: Devstaging_Athena_QA (dev)
Competency Objects: 8
Competencies: 4 **Learning Objectives:** 4 **Activities:** 0



Competency

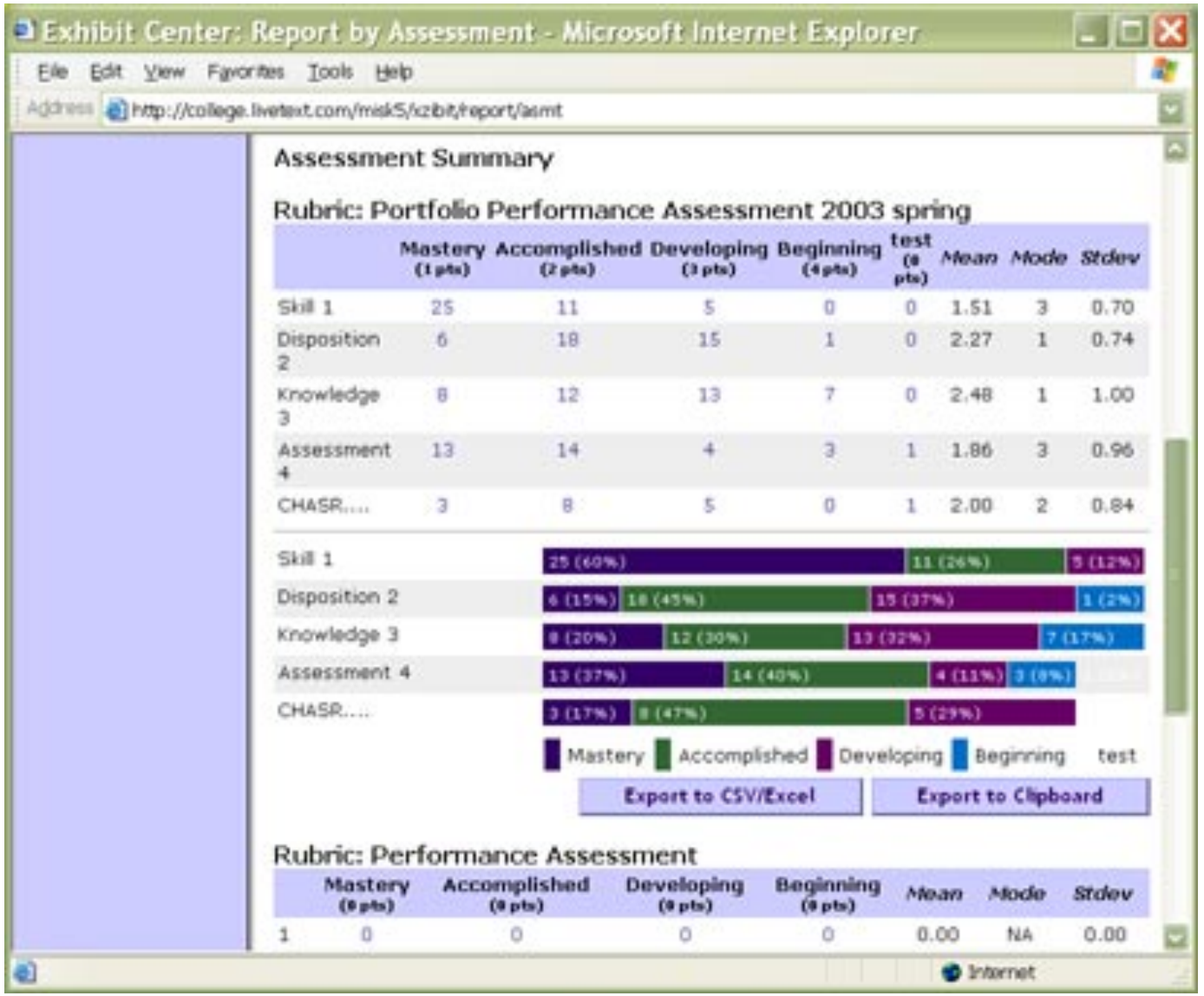
Course	Basic Understanding of Underlying Concepts	Agile Gen2 Nested Competencies	BioM Competency - CO	Canadian History Competency	Average
Agile Software Engineering	17 %	33 %	N/A	N/A	25 %
BIOMECHANICES_CO	N/A	N/A	0 %	N/A	0 %
Canadian History	N/A	N/A	N/A	100 %	100 %
Average	**17 %**	**33 %**	**0 %**	**100 %**	

Learning Objective

Course	BioMechanics LO	Agile Gen4 Nested Competencies LO	Biom LO - CO	Canadian History Learning Objective	Average
Agile Software Engineering	N/A	33 %	N/A	N/A	33 %
Biology 101	N/A	N/A	N/A	N/A	0 %
BIOMECHANICES_CO	50 %	N/A	0 %	N/A	25 %
Canadian History	N/A	N/A	N/A	100 %	100 %
Average	**50 %**	**33 %**	**0 %**	**100 %**	

LiveText

Assessment Analytics



		eLumen	Canvas	Moodle	Waypoint Outcomes	Desire2Learn	LiveText
1. LMS, L/CMS or CPI		CPI	LMS	L/CMS	CPI	L/CMS & CPI	CPI
2. Integration		Custom	LTI & API	LTI & API	LTI & API	LTI & API	LTI & API
3. Rubric-based assessment							
3a.	Rubric Generation	★★	★★★	★	★★★	★★	★★
3b.	Customizable	★★	★★★	★	★★★	★★	★★
3c	Rubric Repository	★★★	★★★	★	★★★	★★	★★★
4. Learning Outcomes							
4a.	Multi-level capability	★★★	★★	★	★★	★★★	★★★
4b.	Multi-level mapping	★★★	★	★	★★	★★	★★
4c.	Multi-instance mapping	★★★	★★★	★★	★★★	★★★	★★★
4d.	Outcomes Repository	★★★	★★★	★★	★★	★★	★★
5. Assessment							
5a.	Direct & Indirect Evidence	★★★	★★★	★★	★★★	★★★	★★
5b.	Multiple assessors	★★	★★	★★	★★★	★★★	★★★
5c.	In-line grading	★	★★★	★	★★★	★★	★★★
5d.	In-line feedback	★	★★★	★	★★★	★★	★★★
6. Analytics							
6a.	Multi-level reporting	★★★	★★	★	★★	★★	★★★
6b.	Tabular reporting	★★★	★	★	★	★★	★★
6c.	Graphical reporting	★	★	★	★	★	★
6d.	On-demand reporting	★★★	★★	★	★★	★★	★★★
6e.	Longitudinal reporting	★★★	★	★	★★	★★	★★★
6f.	Custom group reporting	★★★	★	★	★	★	★
7. Pricing							
7a.	Hosting Model	Self or SaaS	SaaS	Self	SaaS	Self or SaaS	SaaS
7b.	Subscription	Yearly License	Open-source	Open-source	Yearly License	Yearly License	Yearly License
7c.	Cost	FTE Scaled	FTE Scaled ($28)	Free	FTE Scaled ($12-20)	FTE Scaled	$80-98

Software summary

- *Desire2Learn* is the closest to a complete package to manage courses, learning outcomes, rubrics, and reporting; Analytics tool in early stages
- *eLumen* outstanding at analysis, but poor integration into general LMS
- *Waypoint Outcomes/LiveText* outstanding at managing outcomes, rubrics, and feedback

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1. LMS, L/CMS or CPI		CPI	LMS	L/CMS	CPI	L/CMS & CPI	CPI
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3b.	Customizable	★★	★★★	★	★★★	★★	★★
3c	Rubric Repository	★★★	★★★	★	★★★	★★	★★★
4. Learning Outcomes							
4a.	Multi-level capability	★★★	★★	★	★★	★★★	★★★
4b.	Multi-level mapping	★★★	★	★	★★	★★	★★
4c.	Multi-instance mapping	★★★	★★★	★★	★★★	★★★	★★★
4d.	Outcomes Repository	★★★	★★★	★★	★★	★★	★★
5. Assessment							
5a.	Direct & Indirect Evidence	★★★	★★★	★★	★★★	★★★	★★
5b.	Multiple assessors	★★	★★	★★	★★★	★★★	★★★
5c.	In-line grading	★	★★★	★	★★★	★★	★★★
5d.	In-line feedback	★	★★★	★	★★★	★★	★★★
6. Analytics							
6a.	Multi-level reporting	★★★	★★	★	★★	★★	★★★
6b.	Tabular reporting	★★★	★	★	★	★★	★★
6c.	Graphical reporting	★	★	★	★	★	★
6d.	On-demand reporting	★★★	★★	★	★★	★★	★★★
6e.	Longitudinal reporting	★★★	★	★	★★	★★	★★★
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CONCLUSIONS

Recommended Practices for sustainable improvement process

1. Identify existing data and questions
2. Recognize it is involves long term change
3. Requires leadership and collaboration

- Data-informed
- Faculty-driven, student-engaged, stakeholder-informed
- Culture- & context-specific
- Rigorous & authentic
- Resourced & recognized
- Look for supporting tools and peers

A Guide to Developing and Assessing Learning Outcomes at the University of Guelph - http://www.uoguelph.ca/vpacademic/avpa/pdf/LearningOutcomes.pdf