Today's webinar

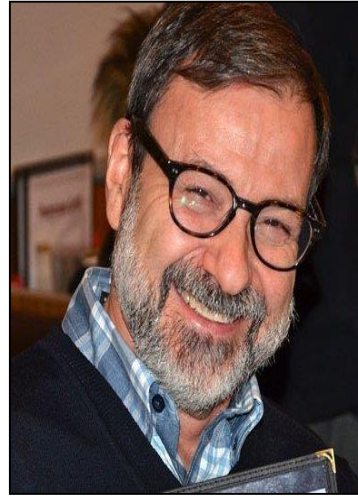## Getting started: Who's doing what and why you should care

Introduces you to the basics and paves the way for learning how to create and implement assessment tools at your institution.

Meet today's experts

Dr. Natasha Jankowski is Associate Director of the National Institute for Learning Outcomes Assessment and Research Assistant Professor with the Department of Education, Policy, Organization and Leadership at the University of Illinois Urbana-Champaign.

njankow2@illinois

Gary Kapelus is the chair of the Office of Academic Excellence at George Brown College.

gkapelus@georgebrown.ca

Brian Frank is an associate professor in the Department of Electrical and Computer Engineering, the DuPont Canada Chair in Engineering Education Research and Development, and the Director of Program Development in the Faculty of Engineering and Applied Science.

brian.frank@queensu.ca

Higher Education
Quality Council
of Ontario
Informing the Future of Higher Education

Learning Outcomes Assessment: A Brief Overview

NATASHA JANKOWSKI: NJANKOW2@ILLINOIS.EDU

NATIONAL INSTITUTE FOR LEARNING OUTCOMES ASSESSMENT

National Institute for
Learning Outcomes Assessment
Making Learning Outcomes Usable & Transparent

National Institute for Learning Outcomes Assessment
Making Learning Outcomes Usable & Transparent

NILOA

NILOA's mission is to discover and disseminate effective use of assessment data to strengthen undergraduate education and support institutions in their assessment efforts.

● SURVEYS ● WEB SCANS ● CASE STUDIES ● FOCUS GROUPS ● OCCASIONAL PAPERS ● WEBSITE ● RESOURCES ● NEWSLETTER ● PRESENTATIONS ● TRANSPARENCY FRAMEWORK ● FEATURED WEBSITES ● ACCREDITATION RESOURCES ● ASSESSMENT EVENT CALENDAR ● ASSESSMENT NEWS ● MEASURING QUALITY INVENTORY ● POLICY ANALYSIS ● ENVIRONMENTAL SCAN ● DEGREE QUALIFICATIONS PROFILE ● TUNING

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National Institute for Learning Outcomes Assessment

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Welcome to NILOA

A recording of the May 17th webinar with Paul Gaston is now available.

- « Occasional Paper 17
- « Occasional Paper 16
- « NILOA Newsletter
- « DQP Webinar
- « National Survey

VIEWPOINT

NILOA Calendar

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20	21	22	23	24	25	26
27	28	29	30	31		

FEATURED — National Institute for Learning Outcomes Assessment — WEBSITE

Valencia College

Valencia College's Institutional Assessment website is NILOA's Featured Website for its Creativity.

Featured Website Archive

In the News | Archive

Join Our Email List

NILOA 2013 National Survey of Chief Academic Officers
Fri, Jul 26, 2013 - 08:00 am

The 2013 national survey of Chief Academic Officers and institutional assessment practice is currently out in the field. Please take a few minutes to complete the survey if you have received an invitation. To see a copy of the survey, please click here.

Assessment: It's the Law
Thu, Jul 25, 2013 - 08:00 am
Colleen Flaherty in Inside Higher Ed

Starting this fall, Iowa's three public universities will be required by state law to create formative and summative assessments and submit proposals for using assessment to improve student learning. Faculty members will be given flexibility in defining methods of measurement and learning outcomes that will best contribute to continuous improvement.

Applying the Kolb Experiential Learning Model (ELM) to Distance Learning
Wed, Jul 24, 2013 - 08:00 am
Eric T. Moore in Faculty Focus

This author centered his teaching techniques on Kolb's Experiential Learning Model (ELM) for an online course and found that a valuable student-centered learning environment is possible in an online setting.

What are learning outcomes?

They are verb driven statements about student learning that also signal what we value in education

Purpose

But why do we do assessment? And why do we do it now?

Value

Institutions of higher education are increasingly asked to show the value of attending, i.e. impact in relation to cost; employment

Public and policy makers want assurance of the quality of higher education

Regional accreditors are asking institutions to show evidence of student learning and instances of use

Improvement of teaching and learning and enhanced transparency and saliency of education for students

Used to Answer Various Educational Questions

Quality Assurance

Improve educational quality

Curriculum effectiveness

Employer needs
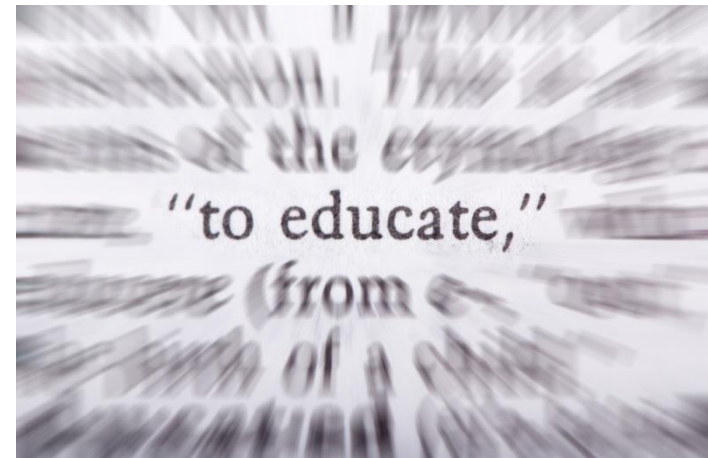- ◦ American Association of Colleges & Universities employer survey

Cost containment

Student mobility

Expanding educational providers

Value-added

What does it mean to attain a degree?

2013 National Provost Survey

Sample: All regionally accredited, undergraduate degree-granting institutions (n=2,732)

Announced via institutional membership organizations, website, newsletter, mailing

Online and paper

43% response rate (n=1,202)

725 schools participated in both 2009 & 2013

National Institute for Learning Outcomes Assessment
January 2014
Knowing What Students Know and Can Do
The Current State of Student Learning Outcomes Assessment in U.S. Colleges and Universities
George D. Kuh, Natasha Jankowski, Stanley O. Ikenberry, & Jillian Kinzie
Abridged Report
www.learningoutcomesassessment.org

National Institute for Learning Outcomes Assessment
January 2014
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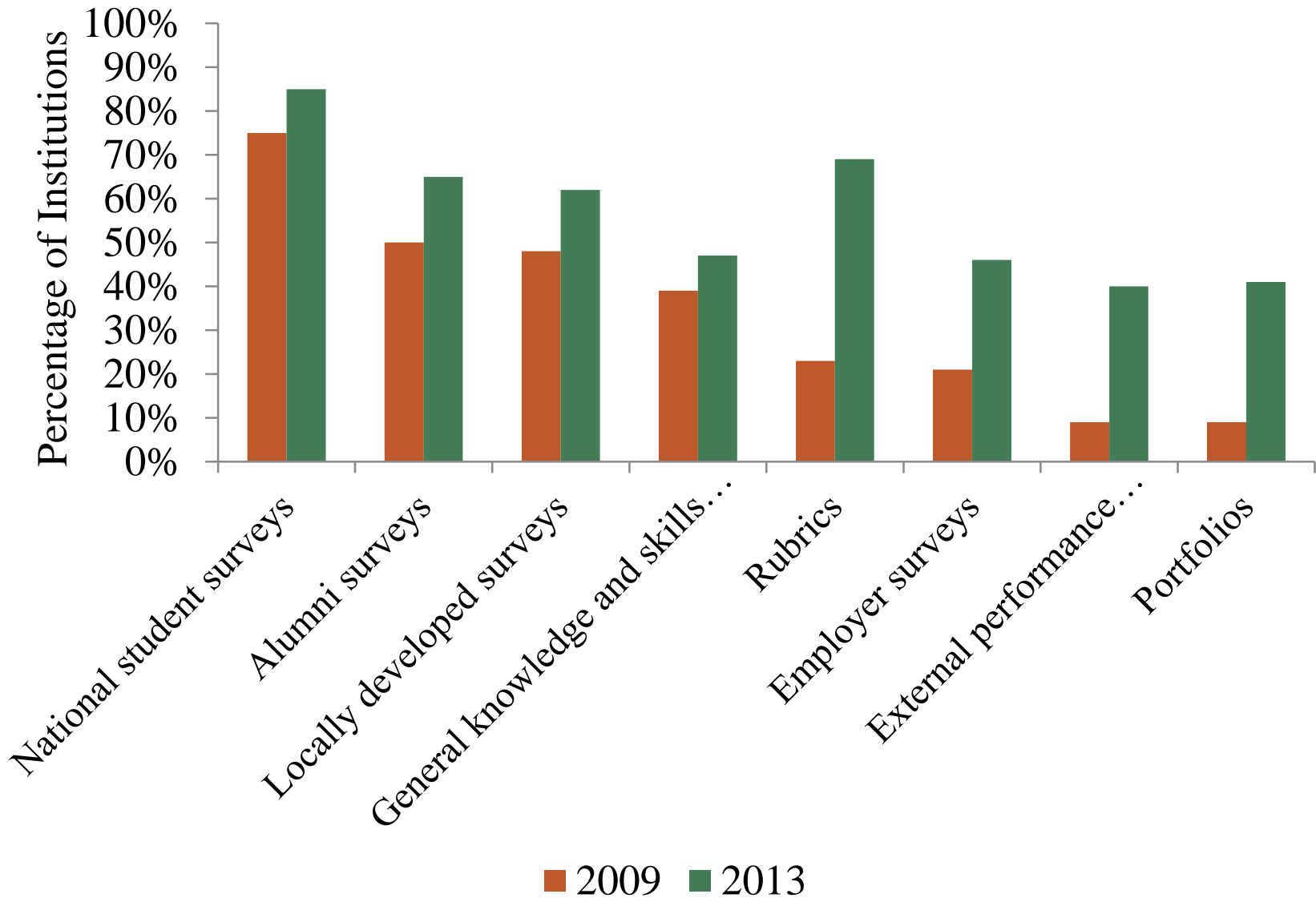**Full Report**
www.learningoutcomesassessment.org

http://www.learningoutcomeassessment.org/knowingwhatstudentsknowandcando.html
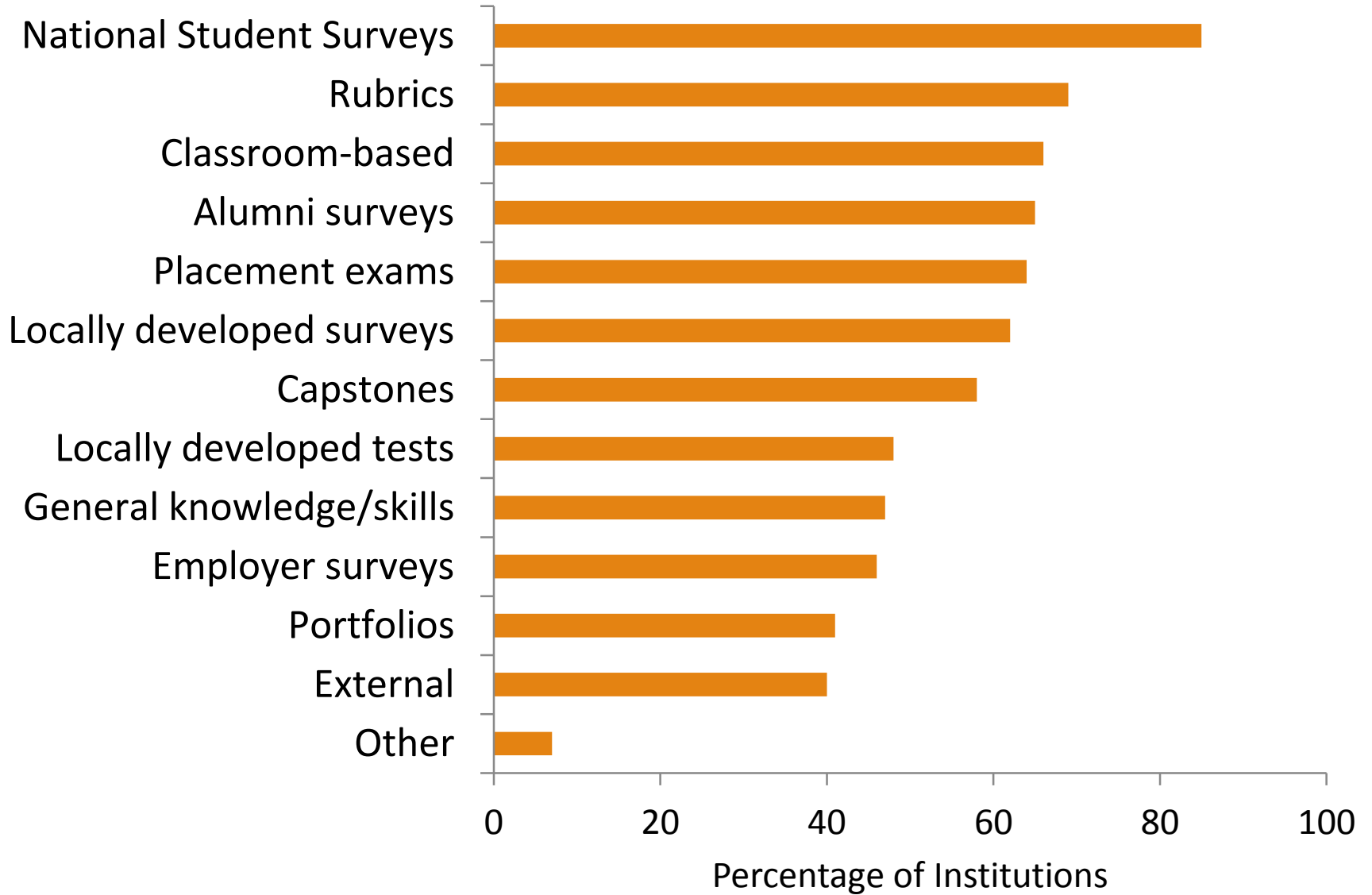
Change Over Time

Most Valuable Assessment Approaches

The top three…

- ✓ Classroom-based assessment
- ✓ National Student Surveys
- ✓ Rubrics

Challenges

Connecting various levels at which assessment occurs

Undertaking meaningful assessment

Making it institution-wide

Involving multiple campus constituents and students

HEQCO Webinar
March 30, 2015

Measuring Matters – Assessing Learning Outcomes in Higher Education

Webinar #1: Getting Started: Who's doing what and why you should care

Gary Kapelus, George Brown College, Panelist
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Ontario Framework for Programs of Instruction

- Provincial Program Standards - includes 'vocational learning outcomes' (VLOs) and 'elements of performance'

- Program Descriptions /goals

- Essential Employability Skills (EES)

Provincial 'community of practice' and resources

- Curriculum Developers Affinity Group/The Exchange (CDAG)

http://gototheexchange.ca/index.php/curriculum-at-a-program-level/program-learning-outcomes

Practical Nursing Program Standard

Ontario

Practical Nursing Program Standard

The approved program standard for Practical Nursing program of instruction leading to an Ontario College Diploma delivered by Ontario Colleges of Applied Arts and Technology (MTCU funding code 51-

Ministry of Training, Colleges and Universities
December 2012

Synopsis of the Vocational Learning Outcomes
Practical Nursing (Ontario College Diploma)

The graduate has reliably demonstrated the ability to

1. communicate therapeutically with clients* and members of the health care team*.

2. assess clients* across the life span, in a systematic and holistic manner.

3. plan safe and competent nursing care, based upon a thorough analysis of available data and evidence-informed practice* guidelines.

4. select and perform nursing interventions* using clinical judgmen in collaboration* with the client* and, where appropriate, the heal care team*, that promote health and well-being, prevent disease and injury, maintain and/or restore health, promote rehabilitation and/or provide palliation.

5. evaluate the outcomes resulting from all interventions in the nurs client* interaction and modify the plan of care as required.

6. act equitably and justly with clients* and members of the health care team*.

7. adapt to a variety of health care settings, using different leadersh skills and styles as appropriate to each setting.

8. contribute to creating a healthy and safe work environment in a variety of health care settings.

9. practise in a self-regulated*, professional and ethical manner, complying with relevant legislation and with the standards of bot the regulatory body and the practice setting to provide safe and competent client* care.

communicate therapeutically with clients* and members of the health care team*.

Elements of the Performance

- establish, maintain, and bring closure to nurse-client* relationships, using theory and evidence-informed* practices of therapeutic communication and interpersonal, family, group dynamics and community theory
- observe, monitor and interpret client* communication, applying principles of therapeutic communication and family and group interaction
- distinguish between social interactions and professional communication
- engage in relational practice* appropriately
- adopt a supportive, client*-centered approach
- interact with the client*, incorporating professional intimacy*, and appropriate use of the power inherent in the care provider's role
- adopt relational practice* to establish and maintain partnerships with the client* which support achievement of the client's'* expected health outcomes
- use appropriate communication techniques to facilitate clients'* understanding of health-related information
- assist client* to understand how to access and interpret health care information and how to navigate within the health care environment
- use communication and conflict resolution skills appropriately to participate in health care team* interactions
- use terminology, abbreviations and symbols (as approved by the organization or practice setting) accurately in all communication
- document clear, concise, accurate, and timely records using both paper-based and electronic methods, in accordance with relevant legislation, nursing standards and practice setting policies
- maintain all information, records, and files according to relevant legislation, nursing standards and the practice setting's policies
- evaluate effectiveness of therapeutic communication techniques and modify as needed

http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/health/nurse.pdf

Essential Employability Skills

Skill Category	Defining Skills Skill areas to be demonstrated by graduates	Learning Outcomes: The levels of achievement required by graduates
Communication	Reading, writing, speaking, listening, presenting, visual literacy	1. Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. 2. Respond to written, spoken, or visual messages in a manner that ensures effective communication.
Numeracy	Understanding and applying mathematical concepts and reasoning, analyzing and using numerical data, conceptualizing	3. Execute mathematical operations accurately.
Critical thinking and problem solving	Analyzing, synthesizing, evaluating, decision-making, creative and innovative thinking	4. Apply a systematic approach to solve problems. 5. Use a variety of thinking skills to anticipate and solve problems.

http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/essential.html

Essential Employability Skills

Skill Category	Defining Skills Skill areas to be demonstrated by graduates	Learning Outcomes: The levels of achievement required by graduates
Information Management	Gathering and managing information, selecting and using appropriate tools and technology for a task or a project, computer literacy, internet skills	6. Locate, select, organize, and document information using appropriate technology and information systems. 7. Analyze, evaluate, and apply relevant information from a variety of sources.
Interpersonal	team work, relationship management, conflict resolution, leadership, networking	8. Show respect for diverse opinions, values belief systems, and contributions of others. 9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
Personal	managing self, managing change and being flexible and adaptable, engaging in reflective practices, demonstrating personal responsibility	10. Manage the use of time and other resources to complete projects. 11. Take responsibility for one's own actions, decisions, and consequences.

http://www.tcu.gov.on.ca/pepg/audiences/colleges/progstan/essential.html

Accountability – alignment with provincial learning outcomes

- New programs: map course descriptions to the VLOs and EESs; approved by the Credential Validation Service (CVS)

- Periodically re-map course-specific learning outcomes to the program VLOs and EESs

- Autonomy in assessing learning outcomes (benefits/challenges)

**New in 2015: Ontario college accreditation program (OCQAS)**

- Learning outcomes reflected in 13/33 accreditation requirements

- Must demonstrate how learning outcomes are reflected in the development of both learning activities and assessments

OCQAS Accreditation standards http://ocqas.org/?page_id=9277

- Assumes colleges are practicing **outcome-based learning** at the course and program level

- The credit-granting system is still 'hours- and course-based' rather than 'outcomes-based'

- Must incorporate and integrate various mandatory provincial program-level learning outcomes

  - Some LO statements are outdated,

  - Some LO statements don't lead easily to measurement,

  - Consistency of assessment across the province for the same program?

- Practical considerations – authenticity, validity, triangulation, integration, resources

- EES are seen by some as less important in curriculum design/delivery

Has the essential employability skill being assessed actually been taught/practiced?

- Our LOAC project focused on developing a validated tool to measure critical thinking (one of the mandatory EESs)

- We discovered that faculty in our project were not necessarily teaching critical thinking skills but still expected students to demonstrate these skills in graded assignments

- We worked with faculty to incorporate and make explicit the learning and practicing of critical thinking skills into the core curriculum, so that there was something tangible to assess

- This is a common challenge with assessing EESs

http://www.heqco.ca/SiteCollectionDocuments/LOAC-GBC.pdf
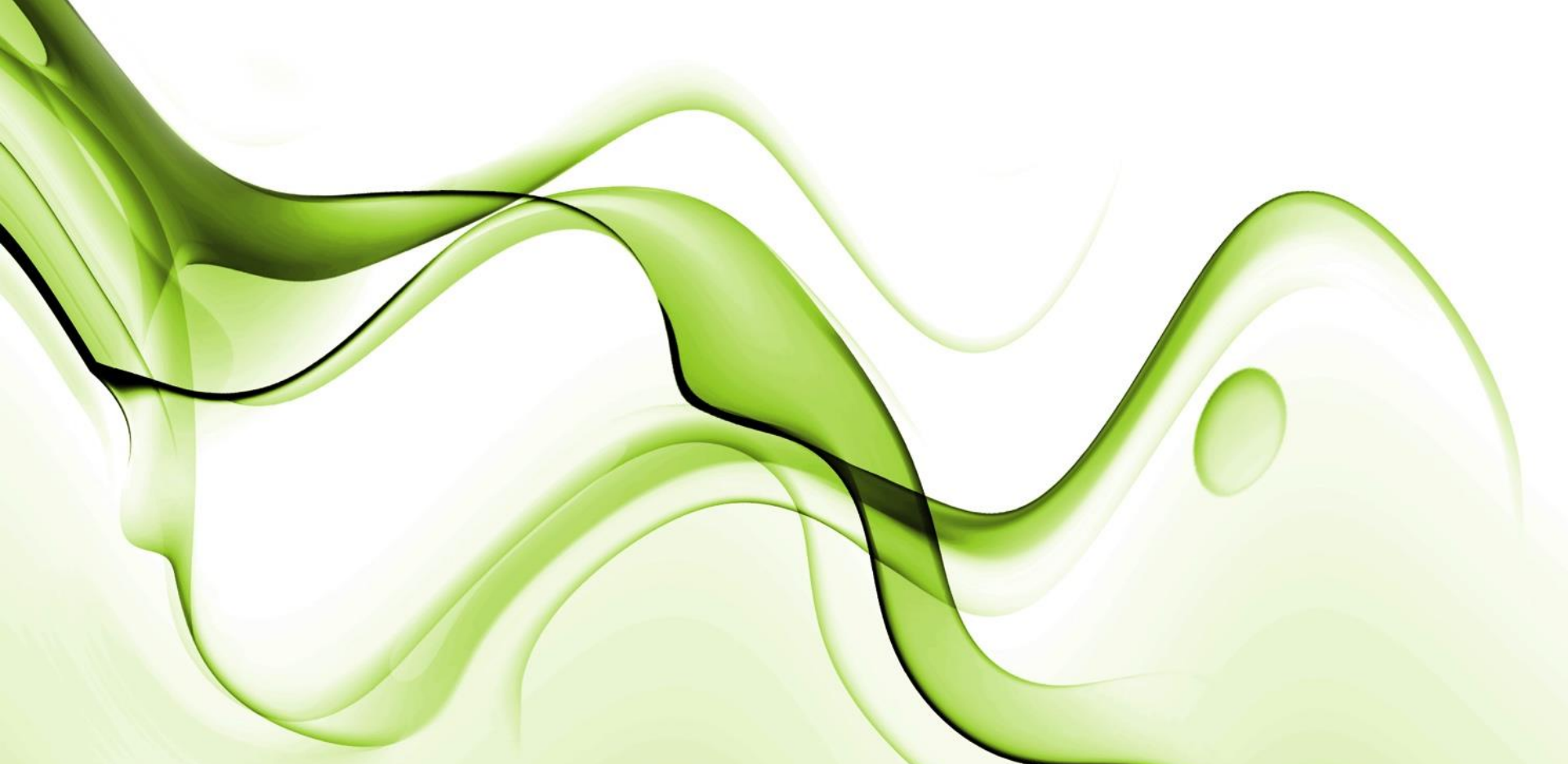
Learning Outcomes: Why and so what?

Brian Frank, Queen's University
brian.frank@queensu.ca

Why learning outcomes?

- Assessing and improving quality of learning
- Curriculum development
- Space planning
- Student services and academic support planning

Responding to needs including…

- Pressure for accountability
- Mobility, credit transfer, "unbundling"
- Multiple modes of delivery

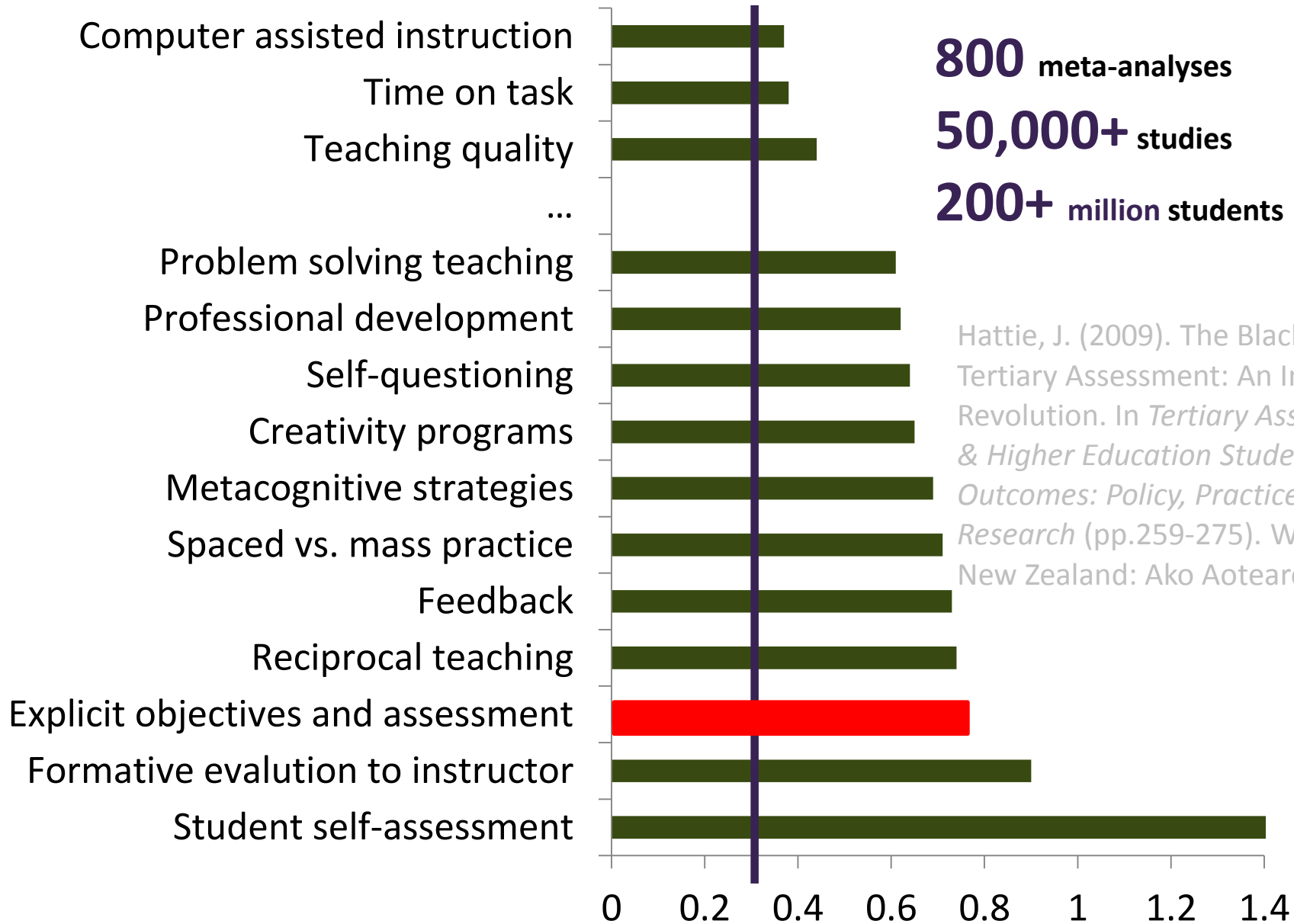# Value of identifying learning outcomes

A study synthesizing:

800 meta-analyses

50,000+ studies

200+ million students

found that explicit outcomes and assessment has one of the largest effects on learning...

Hattie, J. (2009). The Black Box of Tertiary Assessment: An Impending Revolution. In L. H. Meyer, S. Davidson, H. Anderson, R. Fletcher, P.M. Johnston, & M. Rees (Eds.), Tertiary Assessment & Higher Education Student Outcomes: Policy, Practice & Research (pp.259-275). Wellington, New Zealand: Ako Aotearoa

Effect size (performance gain in σ)

Computer assisted instruction
Time on task
Teaching quality
...
Problem solving teaching
Professional development
Self-questioning
Creativity programs
Metacognitive strategies
Spaced vs. mass practice
Feedback
Reciprocal teaching
Explicit objectives and assessment
Formative evalution to instructor
Student self-assessment

0   0.2   0.4   0.6   0.8   1   1.2   1.4

800 meta-analyses
50,000+ studies
200+ million students

Hattie, J. (2009). The Black Box of Tertiary Assessment: An Impending Revolution. In *Tertiary Assessment & Higher Education Student Outcomes: Policy, Practice & Research* (pp.259-275). Wellington, New Zealand: Ako Aotearoa

Continuous Improvement Process

Learning environment

Design

Delivery   Support

Analysis & Evaluation

Continuous program improvement cycle

Learning outcomes

Program wide   In-course

Assessment

Program wide   In-course

Program & course curriculum maps

	Course'1'	Course'2'
Outcome'1'	X''	
Outcome'2'		X''
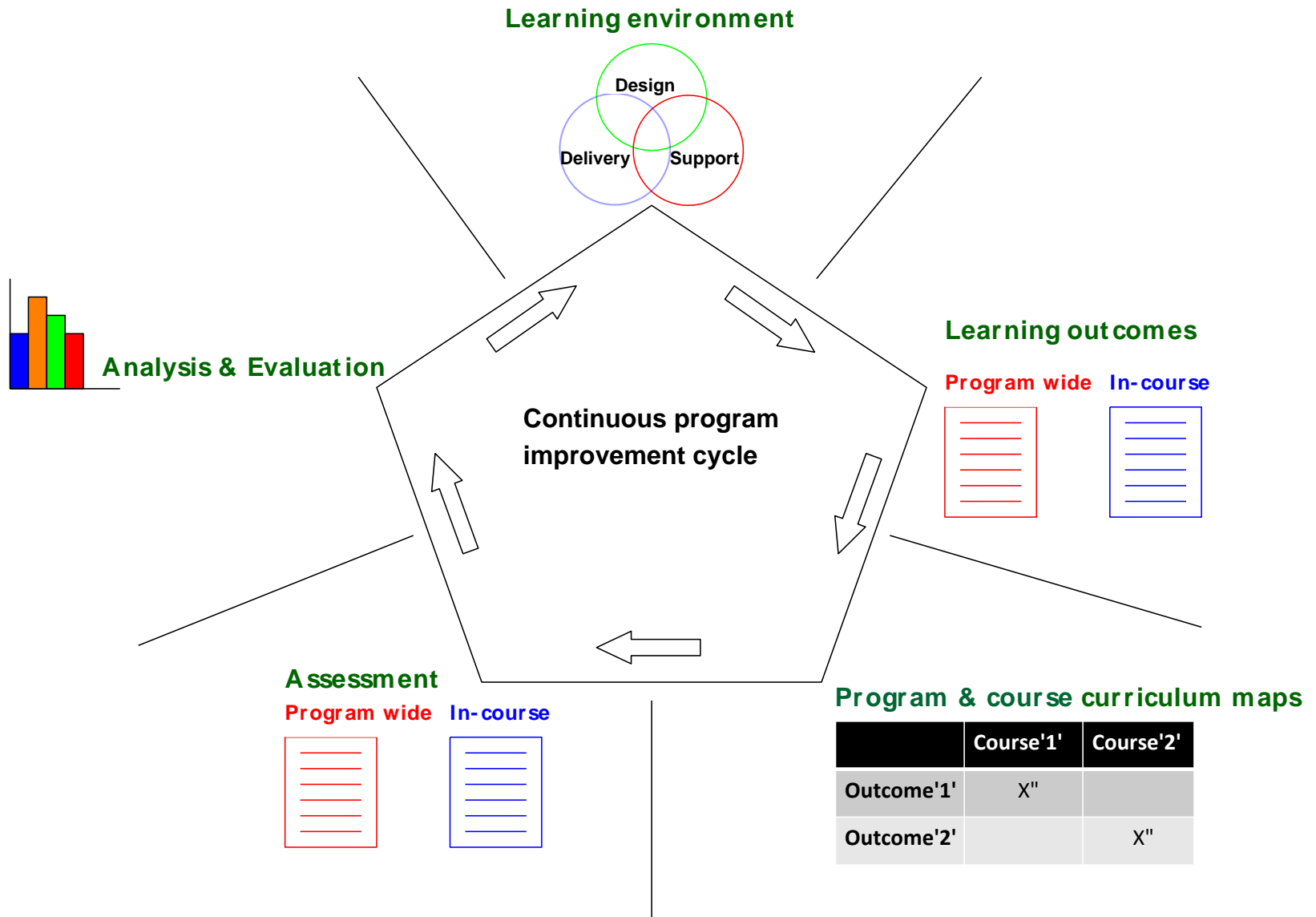
Curricular development

	Year 1	Year 2	Year 3	Year 4
Problem Analysis (APSC-PA-Y-03)	Applies critical and creative thinking principles to solve contextualized problems.			
Design (APSC-DE-Y-01)	Follows a general design process to design system, component, or process to solve open-ended complex problem.	Employ and apply design processes and tools with emphasis on early stages (problem definition, creative thinking processes for idea generation and decision making) on multi-disciplinary and disciplinary projects.	Applies technical knowledge, models/ simulations, and/or appropriate computer aided design tools with iteration to analyze and construct potential design solutions to complex open-ended problems.	Follows appropriate iterative design process involving knowledge, creativity, justifiable decision making, analysis, and tools.
Communication (APSC-CO-Y-03)	Effectively communicates technical information following a prescribed format and using standard grammar and mechanics.		Demonstrates conciseness, precision, and clarity of language in technical writing.	Demonstrates conciseness, precision, and clarity of language in technical writing.
Impact of Engineering (APSC-IM-Y-03)	Devises solutions for engineering problems that incorporate technical, social, environmental, and legal factors.	Devises solutions for engineering problems that incorporate technical, financial, social, environmental, and legal factors.	In the context of engineering activity evaluates societal, business, and technical norms of other cultures while maintaining ethical, moral position required for engineering practice in Ontario.	
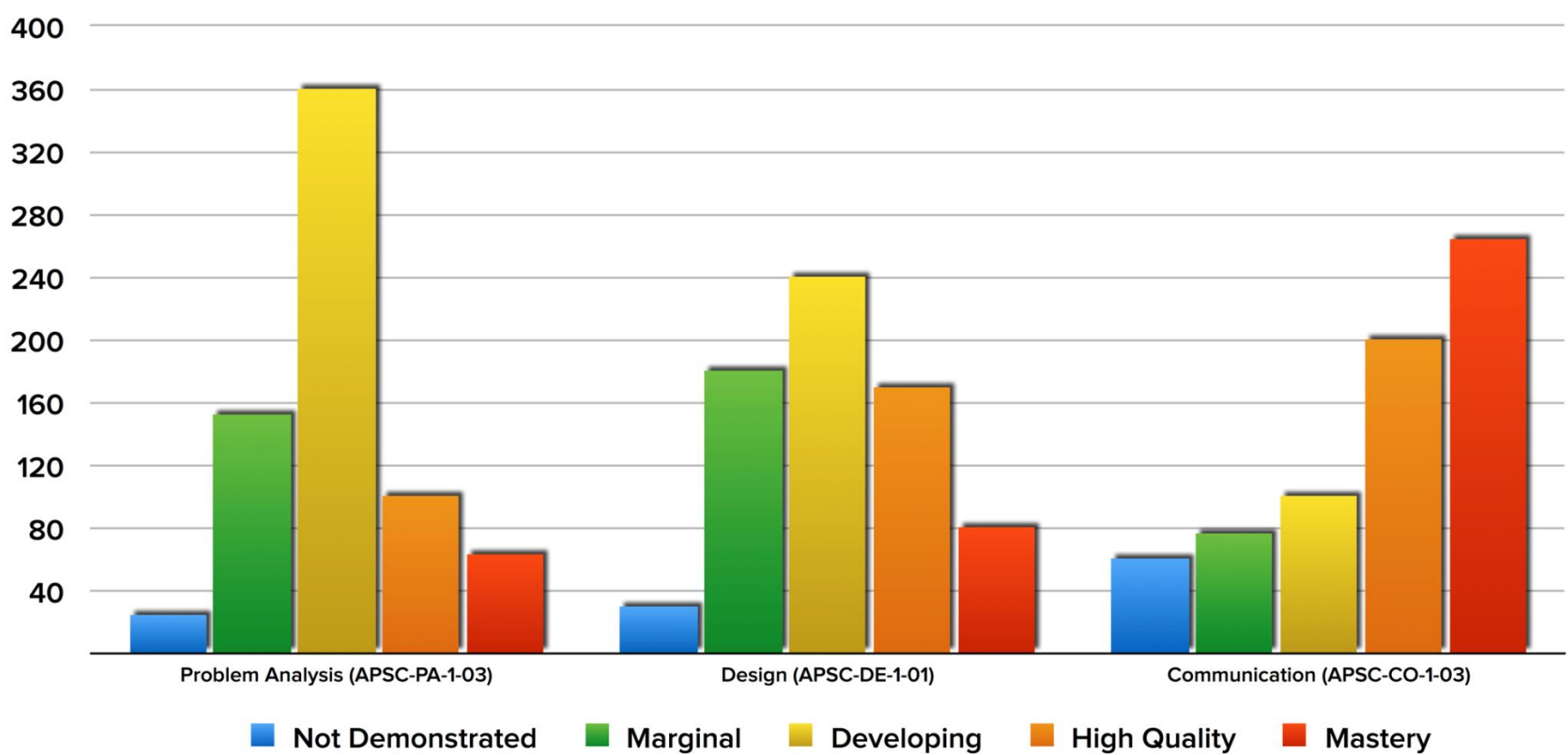
	Not Demonstrated (0-3)	Marginal (4)	Developing (5)	High Quality (6)	Mastery (7-8)
Problem Analysis (APSC-PA-1-03)	Unsupported or trivial arguments	Arguments weak overall	Arguments include some but not all critical elements	Makes claims supported by data and backing, with appropriate qualifiers	**Meets expectations and:** Claims supported…
Design (APSC-DE-1-01)	No or inadequate process described	Process identified, misses critical factors.	Process is clear but missing some elements	Creates justified process for solving problem..	**Meets expectations and:** Comprehensive process…
Communication (APSC-CO-1-03)	Report difficult to understand	Understandable but not formatted…	Clearly formatted following guidelines …	Concise and clearly formatted….	**Meets expectations and:** Varied transitions…

31

Student development

Left chart:

Y-axis: Rubric Level (1 to 4)
X-axis: Year 1, Year 2, Year 3, Year 4
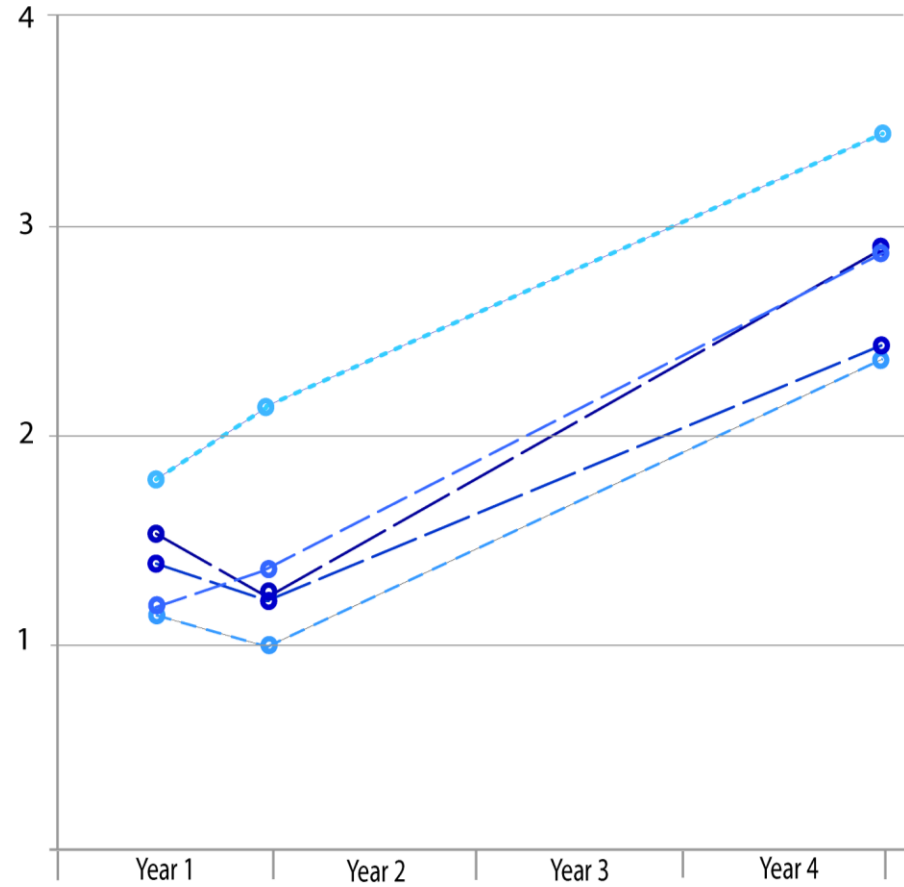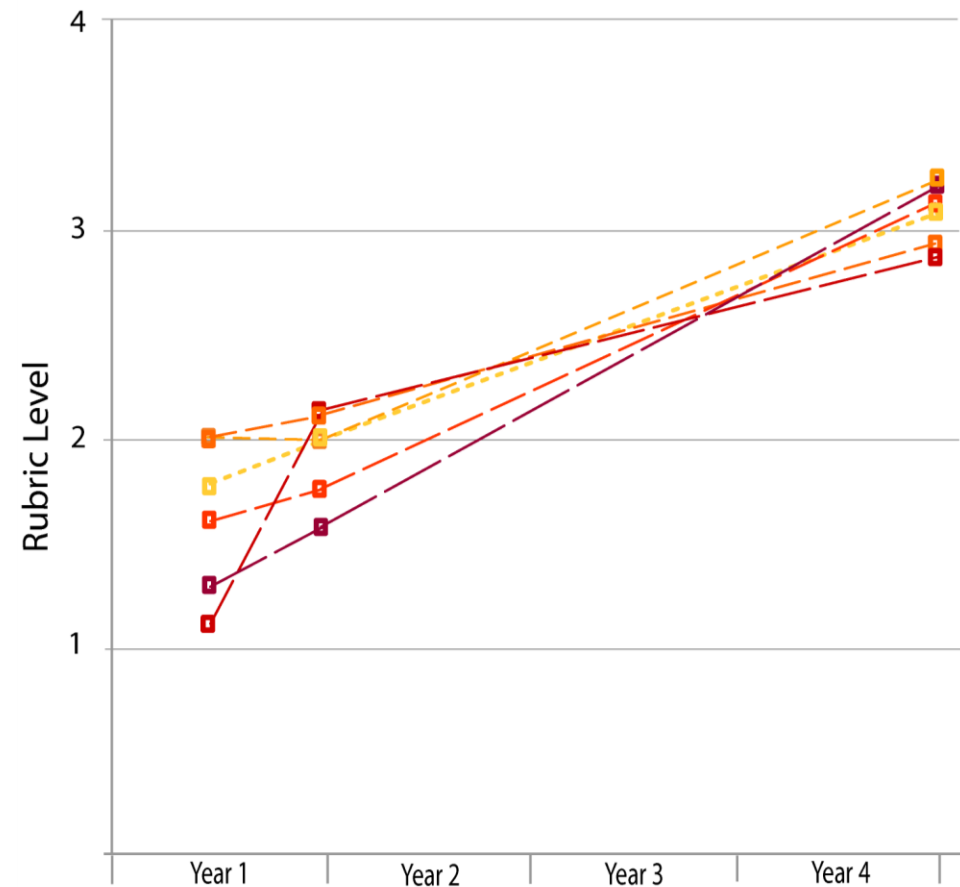
Legend:
- Define Problem
- Identify Strategies
- Propose Solutions
- Evaluate Solutions
- Implement Solutions
- Evaluate Outcomes

□ Problem Solving

**Right chart:**

Y-axis: (1 to 4)
X-axis: Year 1, Year 2, Year 3, Year 4

Legend:
- Explanation of Issues
- Evidence
- Context and Assumptions
- Studen's Position
- Conclusions and Outcomes
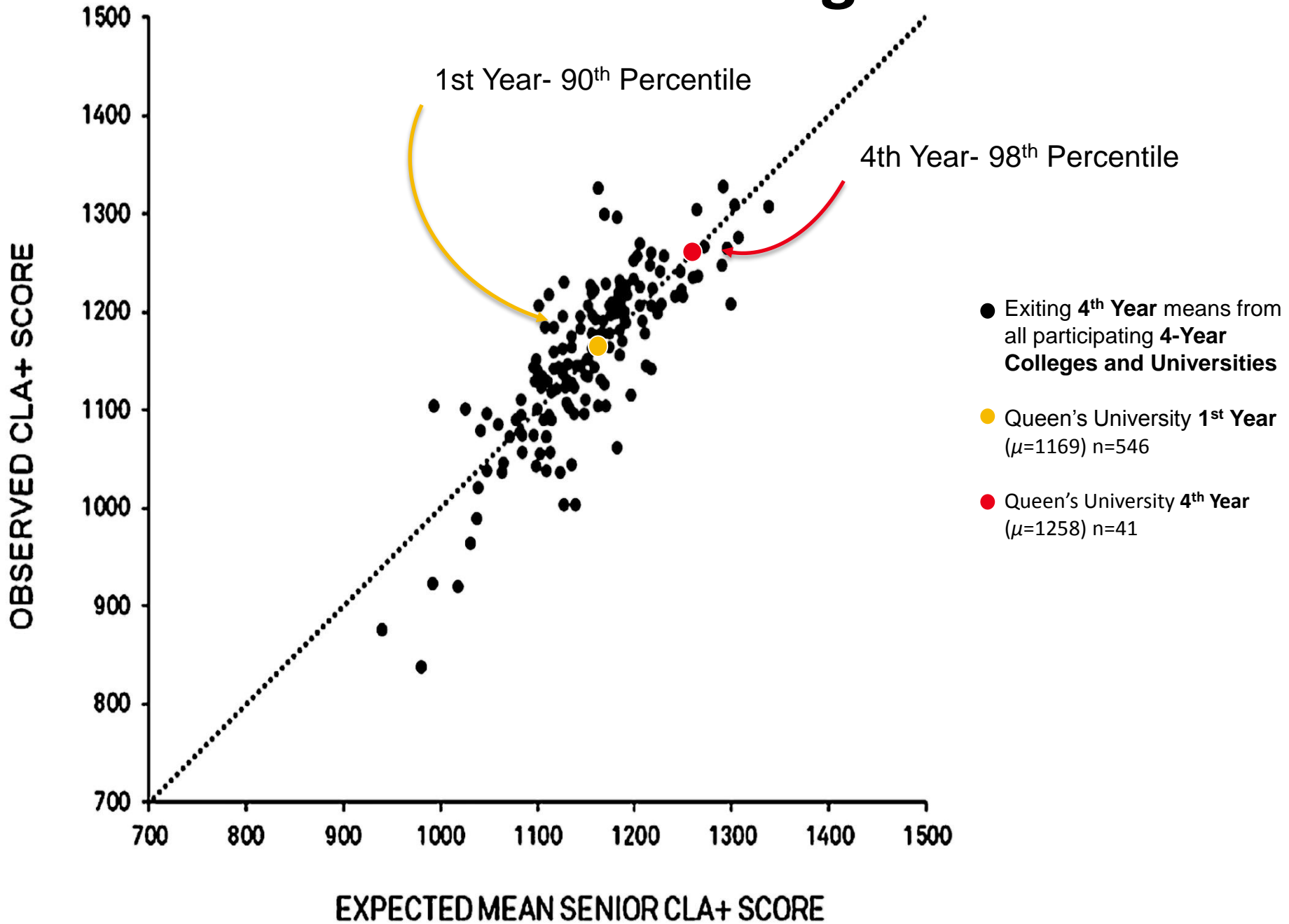
○ Critical Thinking

Benchmarking

1st Year- 90th Percentile

4th Year- 98th Percentile

OBSERVED CLA+ SCORE

EXPECTED MEAN SENIOR CLA+ SCORE

● Exiting **4th Year** means from all participating **4-Year Colleges and Universities**

● Queen's University **1st Year** (μ=1169) n=546

● Queen's University **4th Year** (μ=1258) n=41

Visualizing the curriculum

First Year Curriculum Treemap, Area = # of assessments per attribute

# of assessments per indicator
0.0 0.5 1.0 1.5 2.0 2.5 3.0
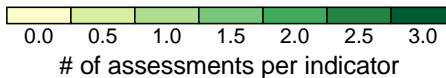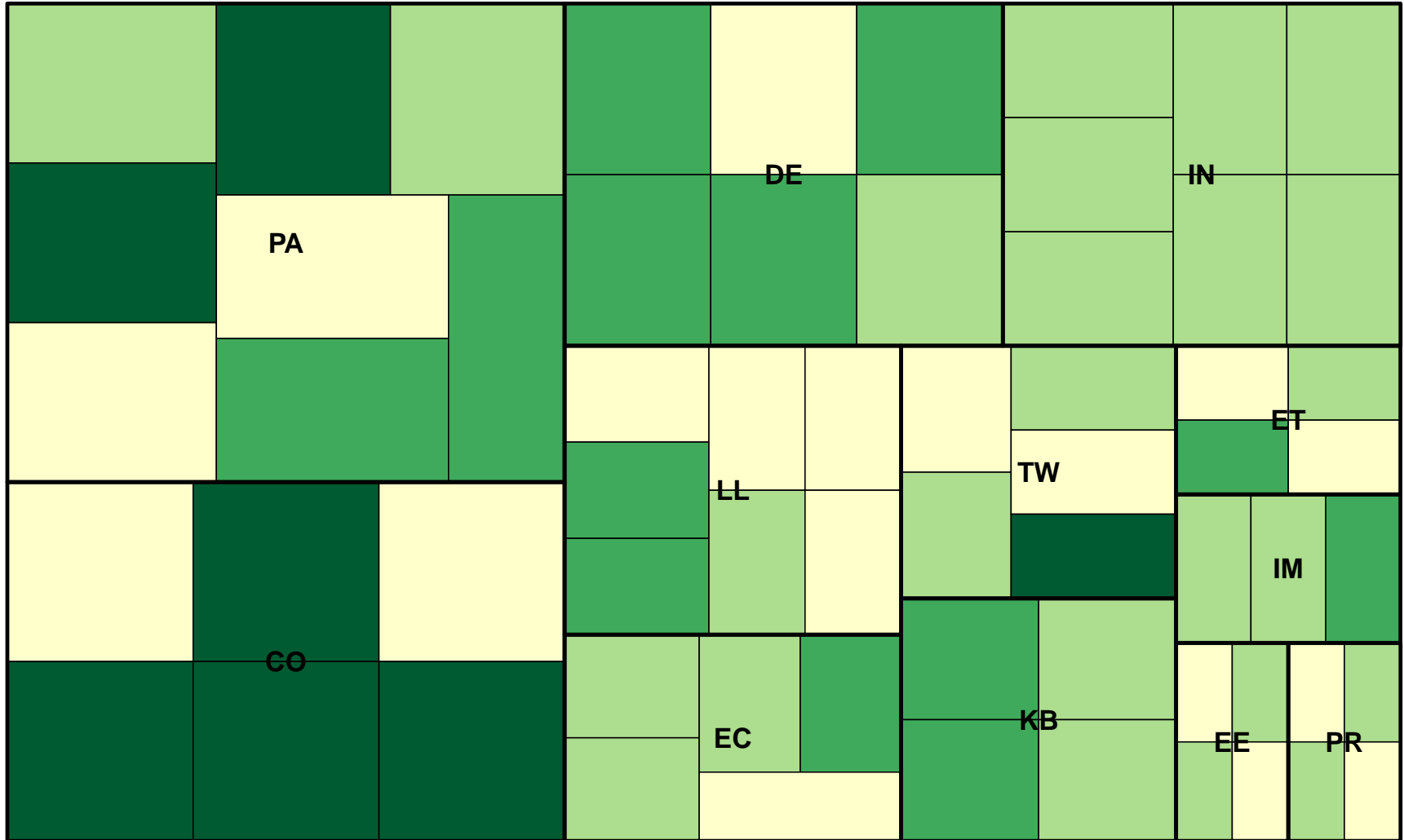
Visualizing the curriculum

First Year Curriculum Treemap, Area = # of assessments per attribute
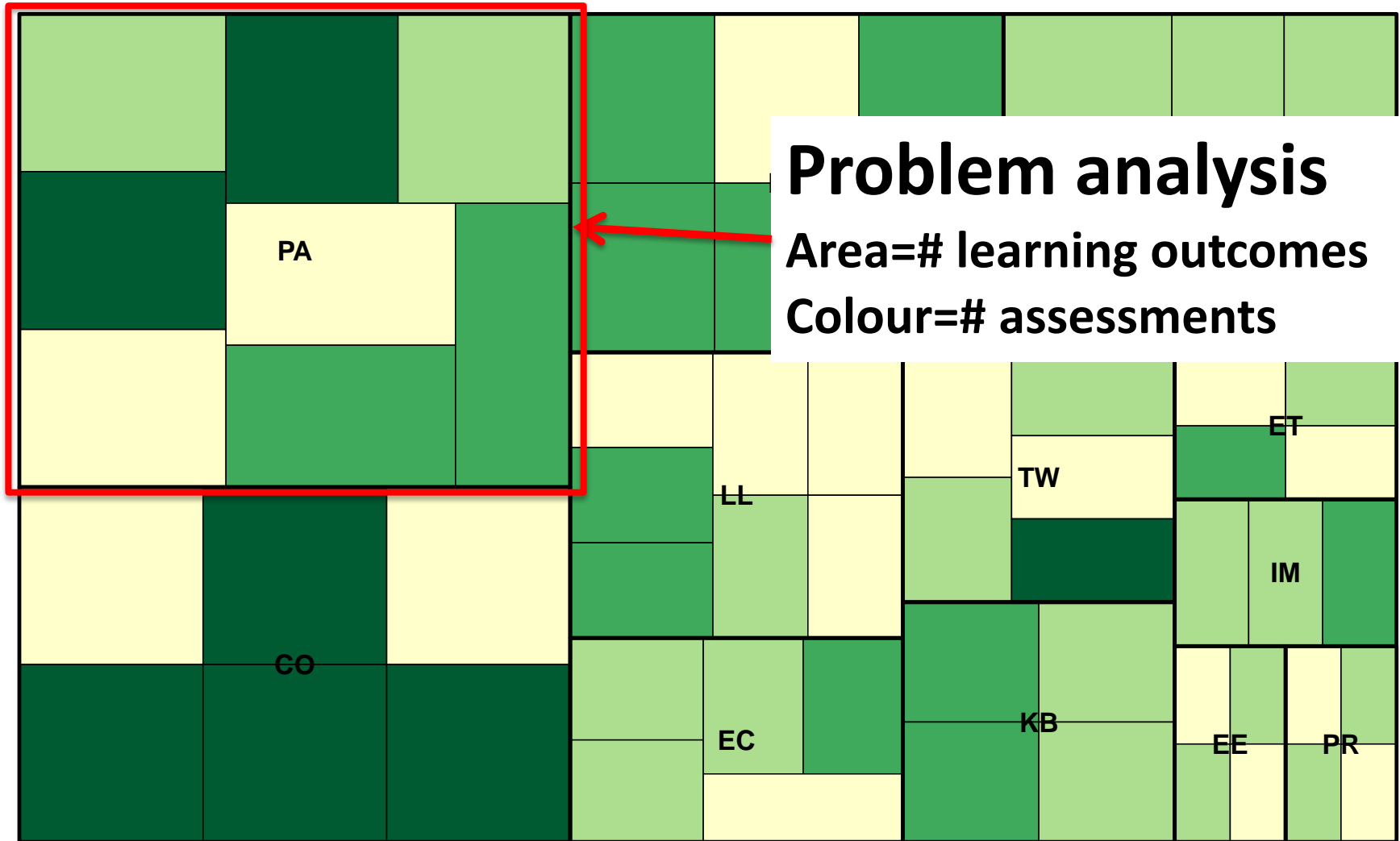
Problem analysis
Area=# learning outcomes
Colour=# assessments
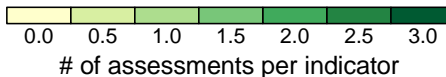
PA

ET

TW

IM

LL

CO

KB

EC

EE

PR

0.0 0.5 1.0 1.5 2.0 2.5 3.0
# of assessments per indicator

35

Visualizing the curriculum

First Year Curriculum Treemap, Area = # of assessments per attribute

Ethics and equity

Area=# learning outcomes

Colour=# assessments

# of assessments per indicator

0.0   0.5   1.0   1.5   2.0   2.5   3.0
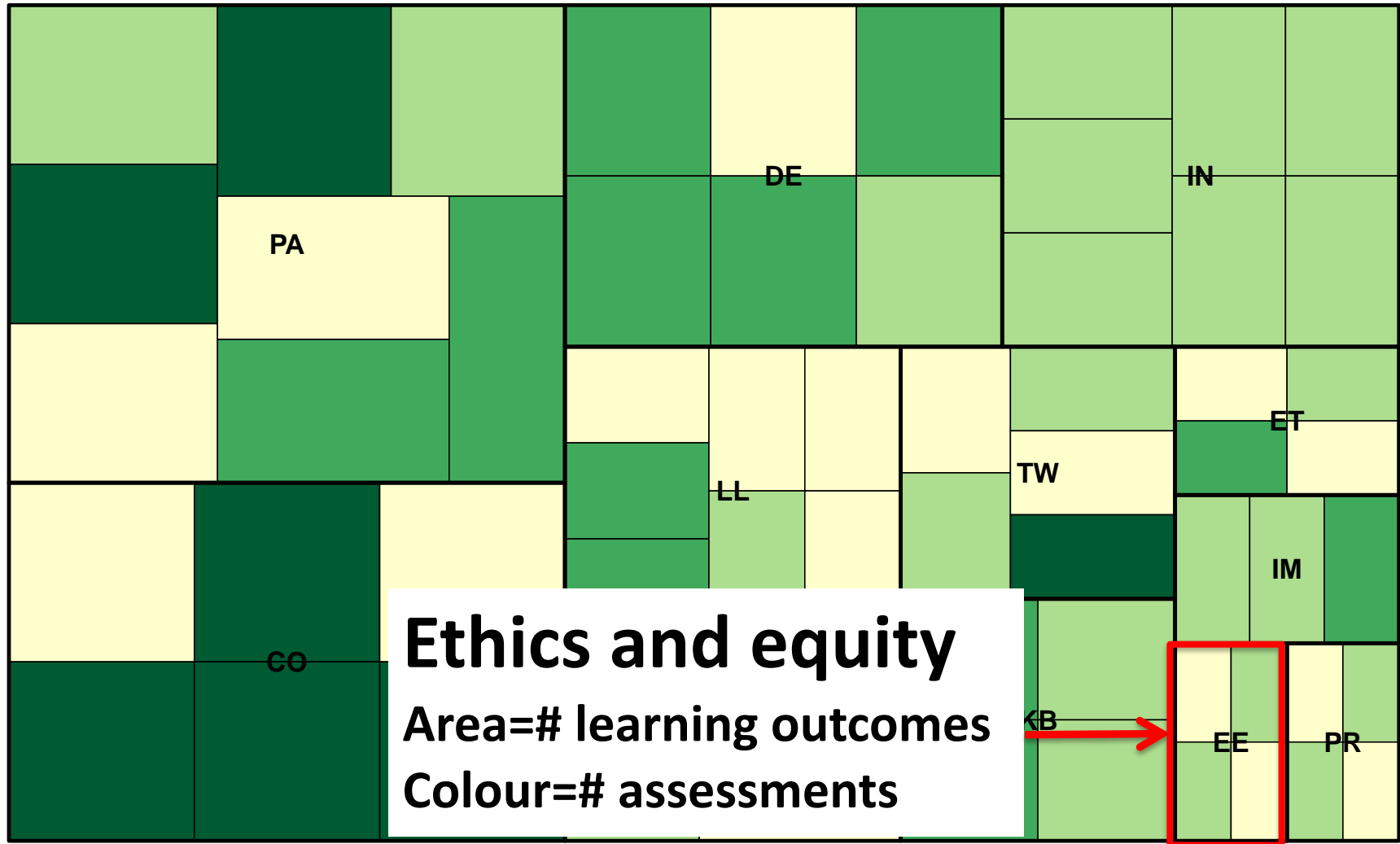
Engineering Program Attribute Performance
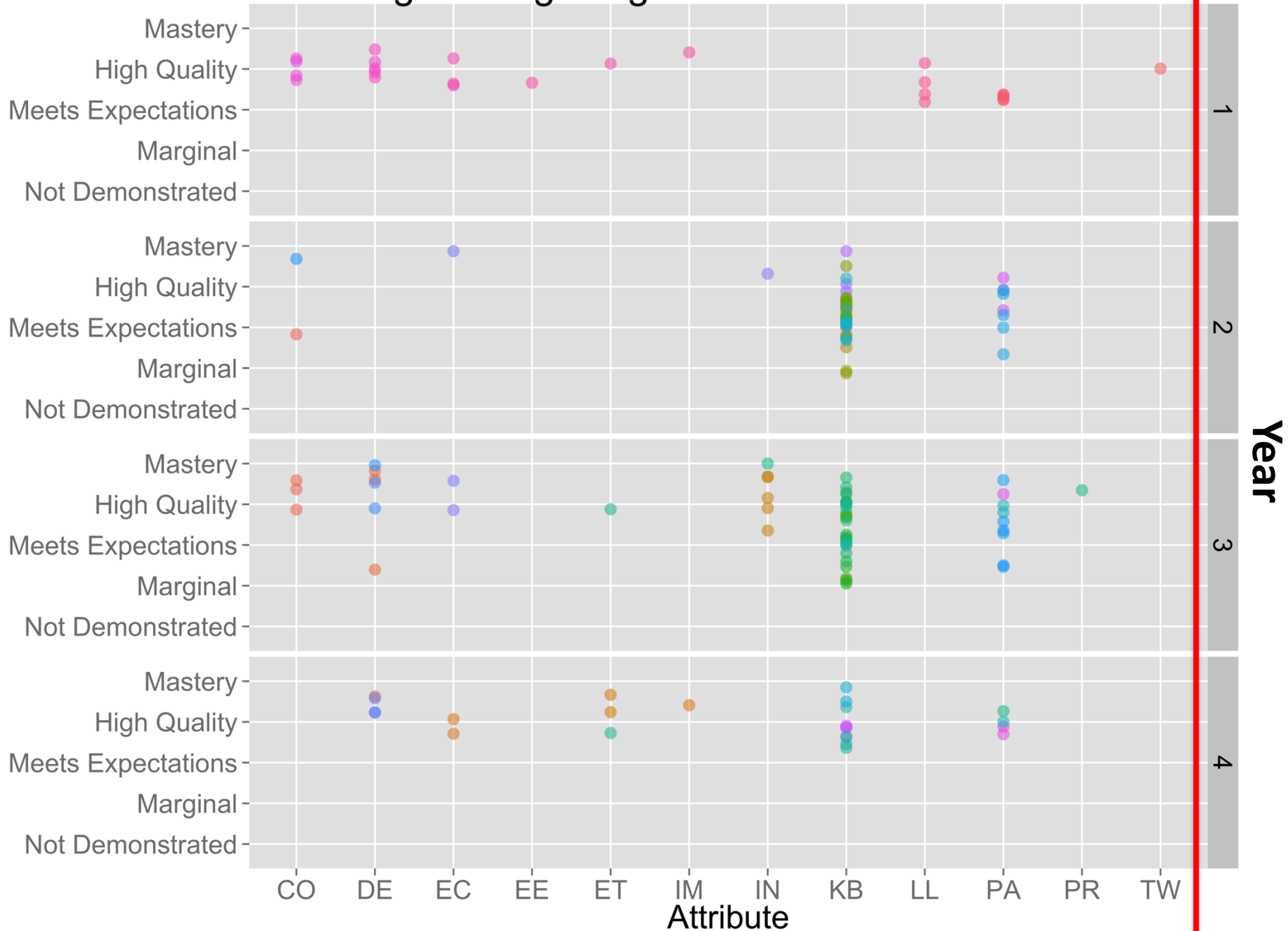
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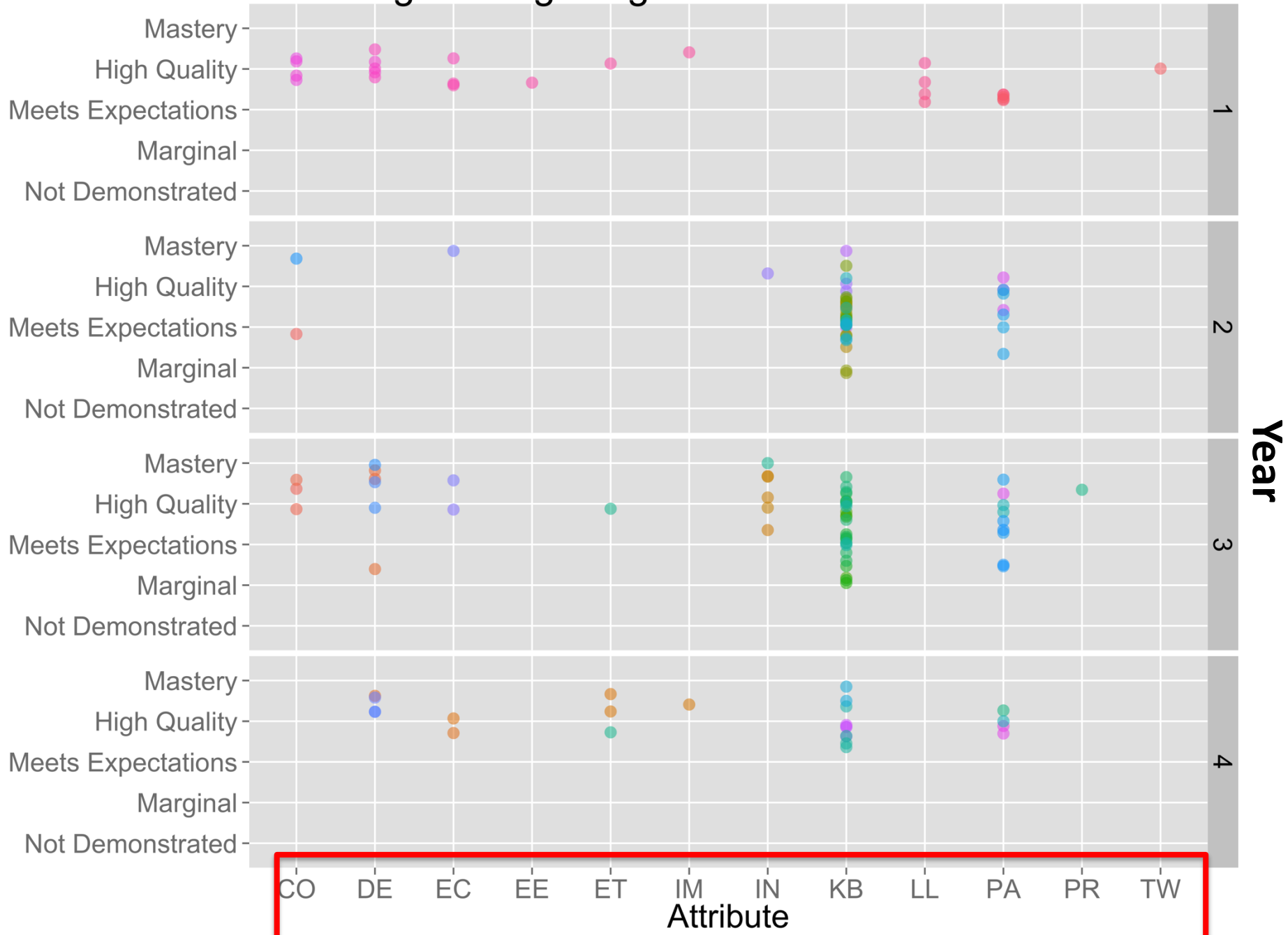
Engineering Program Attribute Performance
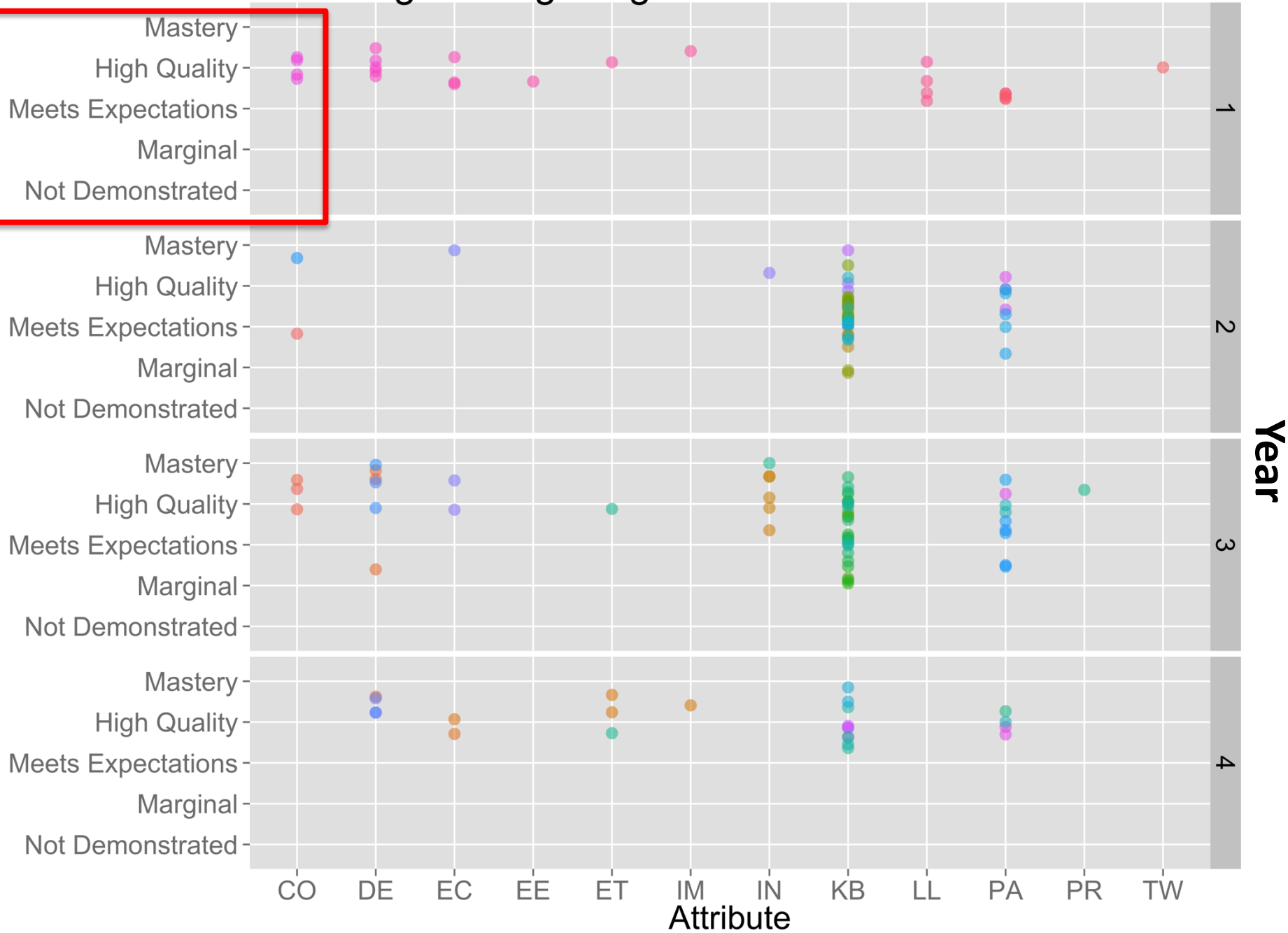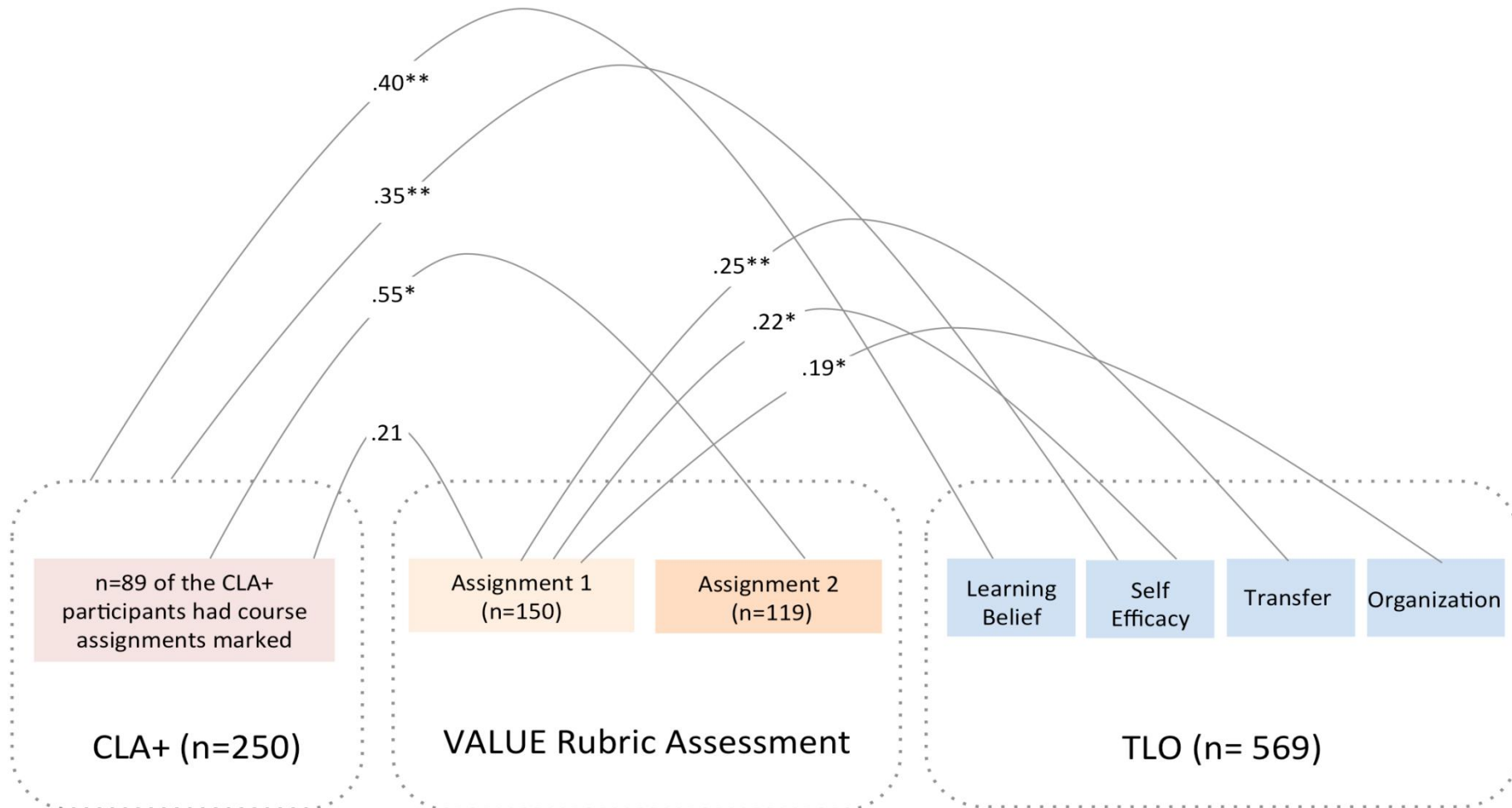
Engineering Program Attribute Performance
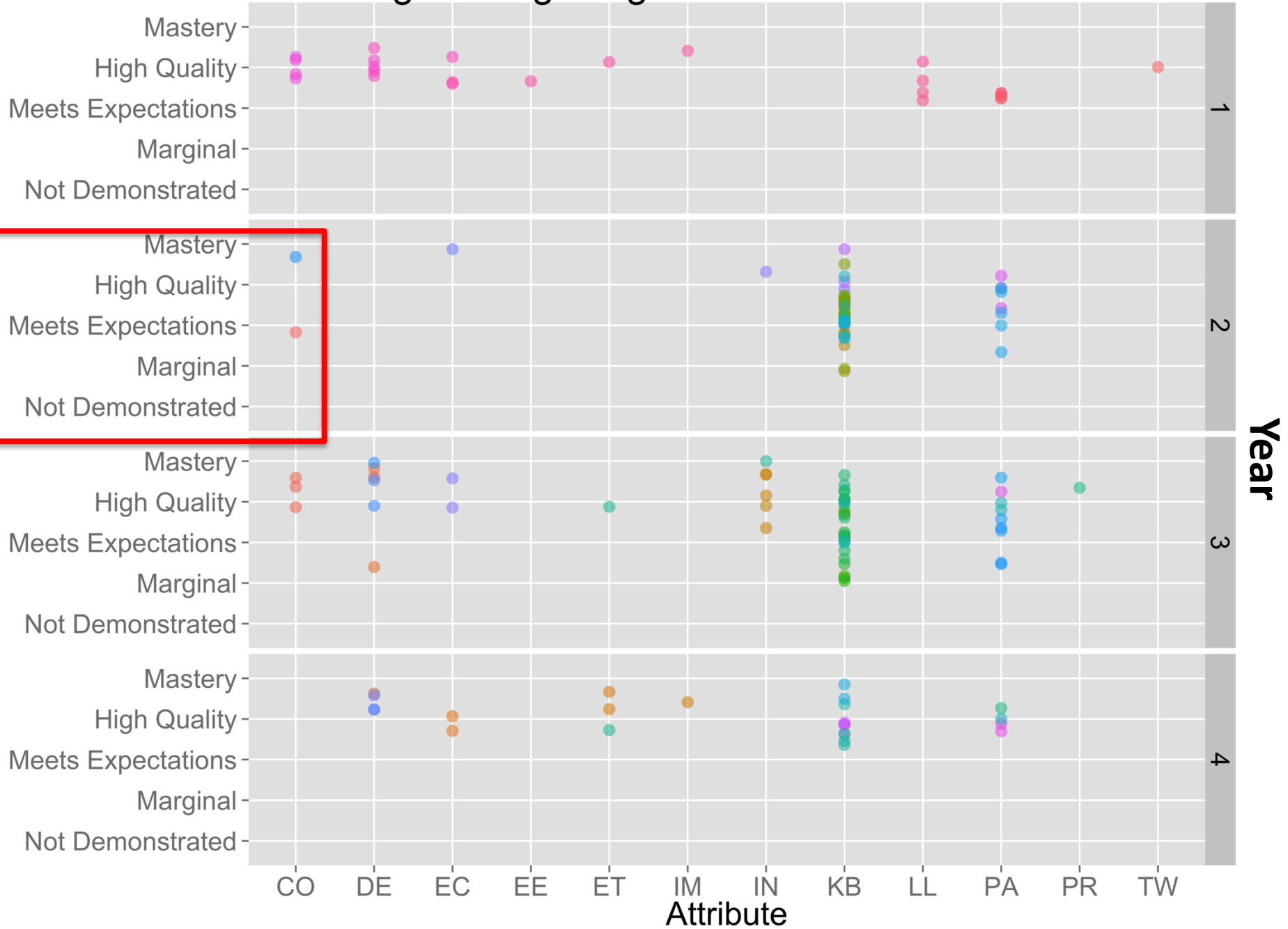
Can we trust our data? Triangulation

Relationship Between Critical Thinking/ Problem Solving/ Written communication (CLA+ and VALUE Rubric assessment) and Learning Orientations (TLO) in First Year Engineering

.40**

.35**

.55*

.25**

.22*

.19*

.21

| n=89 of the CLA+ participants had course assignments marked | Assignment 1 (n=150) | Assignment 2 (n=119) | Learning Belief | Self Efficacy | Transfer | Organization |

CLA+ (n=250)   VALUE Rubric Assessment   TLO (n= 569)

Note: **p< .01, *p< .05

Impact on teaching

Encourage a **culture** of thinking about learning goals, measuring, and making improvement

Encourage **discussions** about teaching at institutions and within departments

Tradeoffs in assessment

Authenticity	vs.	**Cost**
Reliability	vs.	**Cost**
Standardized benchmarkable	vs.	**motivation & time**

Why not use grades to assess outcomes?

Student transcript

Electric Circuits I	78
Electromagnetics I	56
Signals and Systems I	82
Electronics I	71
Electrical Engineering Laboratory	86
Engineering Communications	76
Engineering Economics	88
...	
Electrical Design Capstone	86

Course grades usually aggregate assessment of multiple objectives, and are *indirect* evidence for *some* expectations

How well does the program prepare students to solve open-ended problems?

Are students prepared to continue learning independently after graduation?

Do students consider the social and environmental implications of their work?

What can students do with Knowledge? Can they communicate effectively?

Norm referenced evaluation

Grades (y-axis)

Student: You are here! (67%)
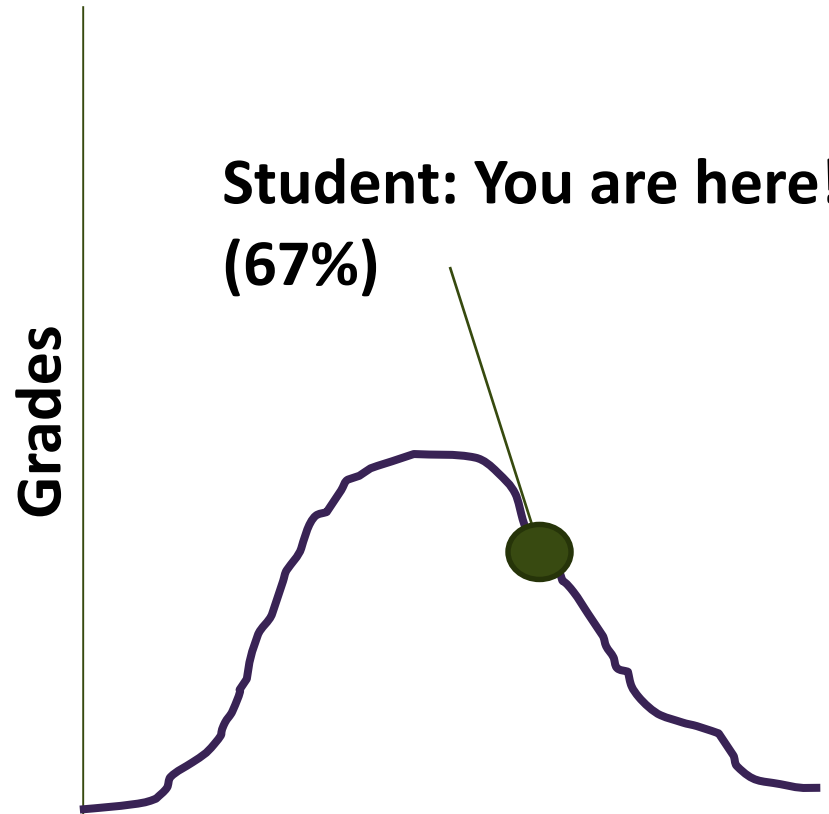
Used for large scale evaluation to compare students against each other

Criterion referenced evaluation

"Student has marginally met expectations because submitted work mentions social, environmental, and legal factors in design process but no clear evidence of that these factors impacted on decision making."

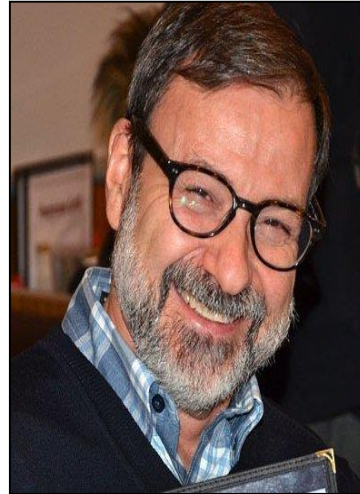Used to evaluate students against stated criteria. Useful for feedback to student and conversation within a program

brian.frank@queensu.ca

Thank you to today's experts

Dr. Natasha Jankowski is Associate Director of the National Institute for Learning Outcomes Assessment and Research Assistant Professor with the Department of Education, Policy, Organization and Leadership at the University of Illinois Urbana-Champaign.

njankow2@illinois

Gary Kapelus is the chair of the Office of Academic Excellence at George Brown College.

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Brian Frank is an associate professor in the Department of Electrical and Computer Engineering, the DuPont Canada Chair in Engineering Education Research and Development, and the Director of Program Development in the Faculty of Engineering and Applied Science.

brian.frank@queensu.ca

Higher Education
Quality Council
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Save the dates for our next webinars!
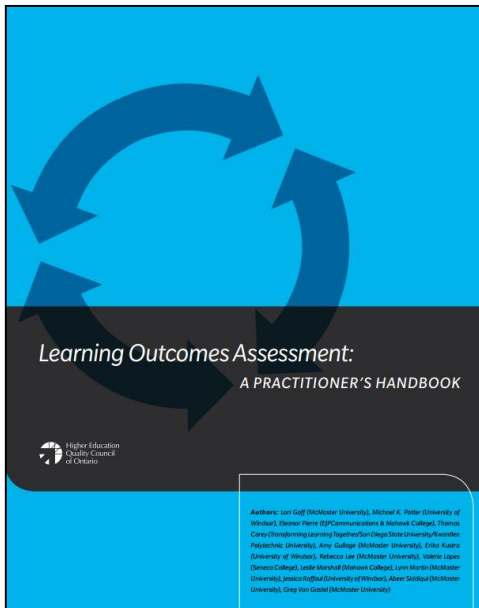
April 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Webinar 2, April 30, 2015

Common ground: The language of learning outcomes

Before beginning to assess learning outcomes, we need to decide what skills are to be assessed and clearly describe successful skill development. The second webinar explores the importance of **terminology** and the **value of creating a common language** when designing and assessing learning outcomes.

May 2015

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Webinar 3, May 28, 2015

Building a better toolkit

Armed with the learning outcomes big picture and a common language, you're ready to choose and develop the tools to assess students' achievement of learning outcomes. The third webinar will help you **set smart parameters** for your learning outcomes assessment project.

Check out our helpful resources

A step-by-step resource to help faculty, staff, academic leaders and educational developers **design, review and assess program-level learning outcomes**

We invite you to submit an RFP to join our **Learning Outcomes Assessment Consortium Expansion** (Universities and Colleges)

And learn more at heqco.ca

Colleagues couldn't make it?
Our webinars will be posted on our website shortly.
Stay tuned!