Embedded Assessment: Composing a Strategy at Northeastern University

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Northeastern University

Private, Non-Profit, R1 Research University

23,692

Undergraduates

24,078

Graduate students

10/14

Colleges / Campuses

65

Academic Departments

484

Programs

62

Programs with discipline-specific accreditation
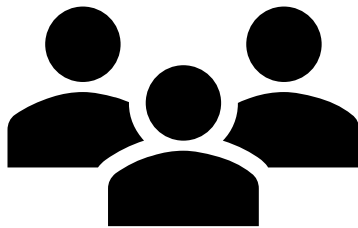
3,391

Faculty

10,683

Sections offered in Fall 2024 (some may be cancelled)

US News & World Report

Assessment at Northeastern

Office of Institutional Assessment & Evaluation

➢ **Created in 2020**

➢ **Located in the Provost's Office, Curriculum and Programs**

➢ **Community of Practice**

OIAE MISSION

- Plan, deploy, and continually evolve the assessment and evaluation ecosystem at the university, and to support assessment for all university academic programs

- Implement and nurture a highly effective and responsive continuous improvement culture throughout Northeastern University's complex educational environment.

NU Assessment Strategy

Framework of Academic Program Quality

Direct Assessment of Program Outcomes

Program Annual Reports

Periodic Program Reviews

NUpath Core Curriculum Assessment

# Direct Assessment of Program Learning Outcomes

Overview

➢ **University-wide process with flexible implementation to customize for colleges and programs**
  - Built on existing processes within each college
    - Identified and developed capacity
  - Relied on Community of Practice

➢ **Technology**
  - HelioCampus Assessment Management Platform
  - Canvas LMS

➢ **Goal**
  - All programs utilizing HelioCampus for assessment by end of Fall 2024

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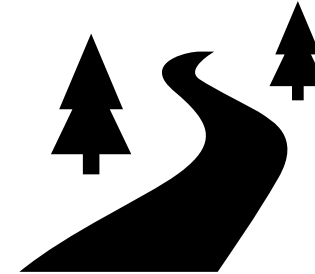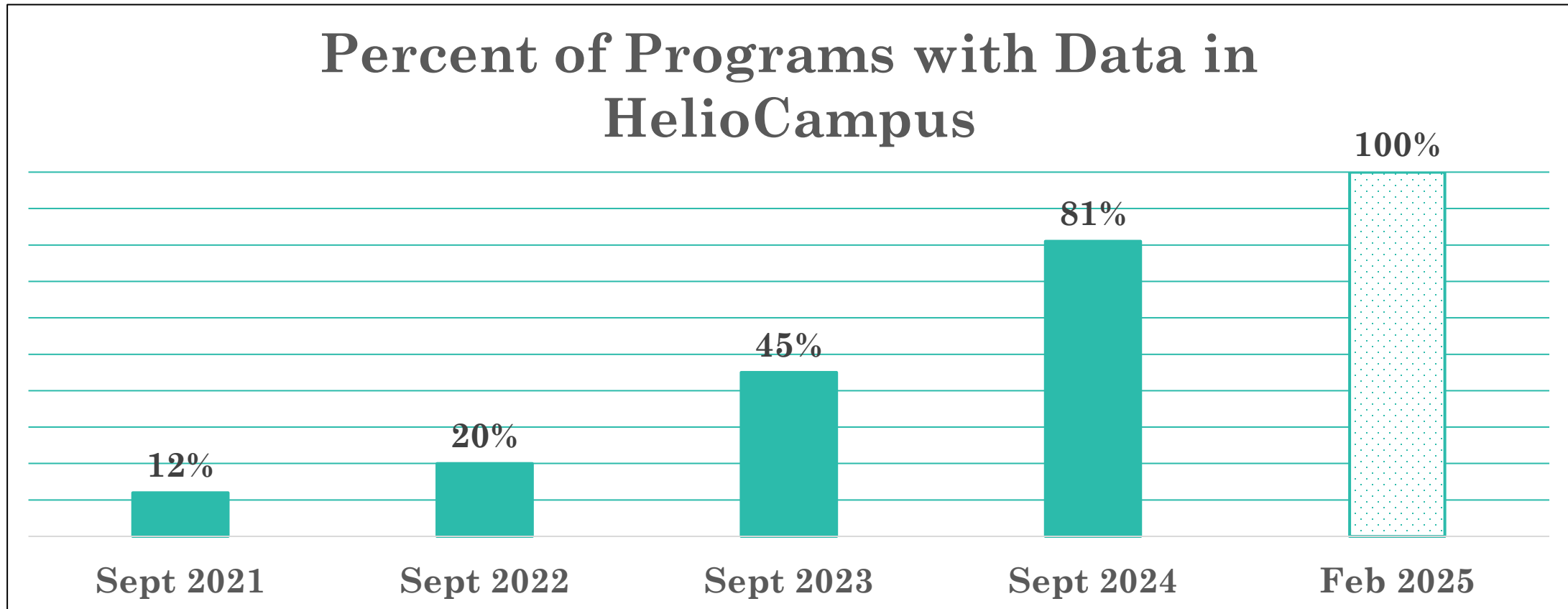
Strategy of Embedded Assessment at Northeastern
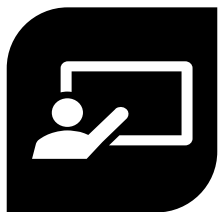
KEY FEATURES

Assess authentic student work produced for credit in the context of the students' course work or other program requirements.

Assess all students* in the sections of the selected courses
- *Students enrolled in the program that is being assessed.*

Use the faculty grading of student work as the basis for an assessment score.

Embedded Assessment: Authentic Student Work

Assess authentic student work produced for credit through students' course work or program requirements.

- Best practice
  - One of NILOA 5 principles for effective learning assessment

- More meaningful assessment
  - Synergy of effort between assessment & pedagogy

- Student engagement- work matters to students

- Faculty ownership
  - Can be coursework, doctoral milestones

Embedded Assessment: All Students

Assess all students* in the sections of the selected courses
- ****Students enrolled in the program that is being assessed***

- Allows analyses of disaggregated data by student characteristics, by campus, modality or other variables
  - Current goal to assess sections at network campuses

- Understand patterns of performance and ensure achievement of PLO across all groups.

- Removes the issue of assessing a representative sample of student work

Embedded Assessment: Based on Faculty Grading

Use the faculty grading of student course work as the basis for an assessment score.

- This requires careful curriculum alignment between
  - Program learning outcomes and courses
  - Program learning outcomes and assignments

- Clarify relationship between grading and assessment of PLO

- Faculty are central to the assessment process and are engaged in improving their teaching process, aligning curriculum with outcomes and ensuring student success.

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Curriculum Alignment & Mapping

Curriculum maps: Manage complexity

NU- Highly customizable curriculum

- Regardless of the path students take to the degree, have they had an opportunity work on and then demonstrate their achievement of the PLO?

Maps clarify how flexible curricula still achieve curriculum coherence

- Electives, concentrations, interdisciplinary programs, modality, campus, student entry pathways
- Courses that serve multiple programs

Curriculum Alignment & Assessment Plans

Curriculum maps: Basis for Assessment Plans

Assessment plans based on curriculum maps

- Starting points- partial maps and plans ok!
- Initial strategy
  - "Is there evidence that students have achieved the PLO by the end of their program?"
  - Focus on upper-level, capstone courses
- Set priorities and chunks
  - Group electives, focus on courses or PLO
- Conduct manageable amount of assessment each term so that all PLO assessed within 5 years

Assessment Plan Timeline chart

Program Assessment Timeline			
Year (specify)	List PLO	List Courses	Details/Comments on assignments or assessment measures
Year 1			
Year 2			
Year 3			
Year 4			
Year 5			
Periodic Program Quality Review			

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Assignment alignment: Measure of PLO

Alignment between program learning outcomes and assignments

Assignment as operational definition of the PLO
- Recommend summary assignments
- Clear instructions for students- allow students to demonstrate their understanding
- Iterative process of backwards design to modify assignment

Assignment selection: faculty/program decision
- Strategy for multiple sections
  - Depends on degree of consistency
- Decide which assignment
- Responsible for alignment

Assignment Alignment: Course level key assignments

	Relationship Management	Entrepreneurship	Communication	Social Impact/ Accountability
MGT 4220	Final Paper			
MGT 4230		Business Plan	Business Plan Presentation	
MGT 4850				Trip Trap Case Study

Assignment Alignment : Section level key assignments

		Relationship Management	Entrepreneurship	Communication	Social Impact/ Accountability
MGT 4220	Section 1	Final Paper			
	Section 2	Group Project			
MGT 4230	Section 1		Business Plan	Business Plan Presentation	
	Section 2		Sustainable Business Plan	Group Project Presentation	
MGT 4850	Section 1				B corporation Case Study
	Section 2				Issues and Industry Final Paper

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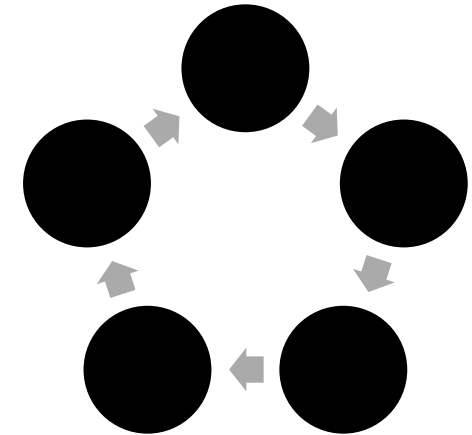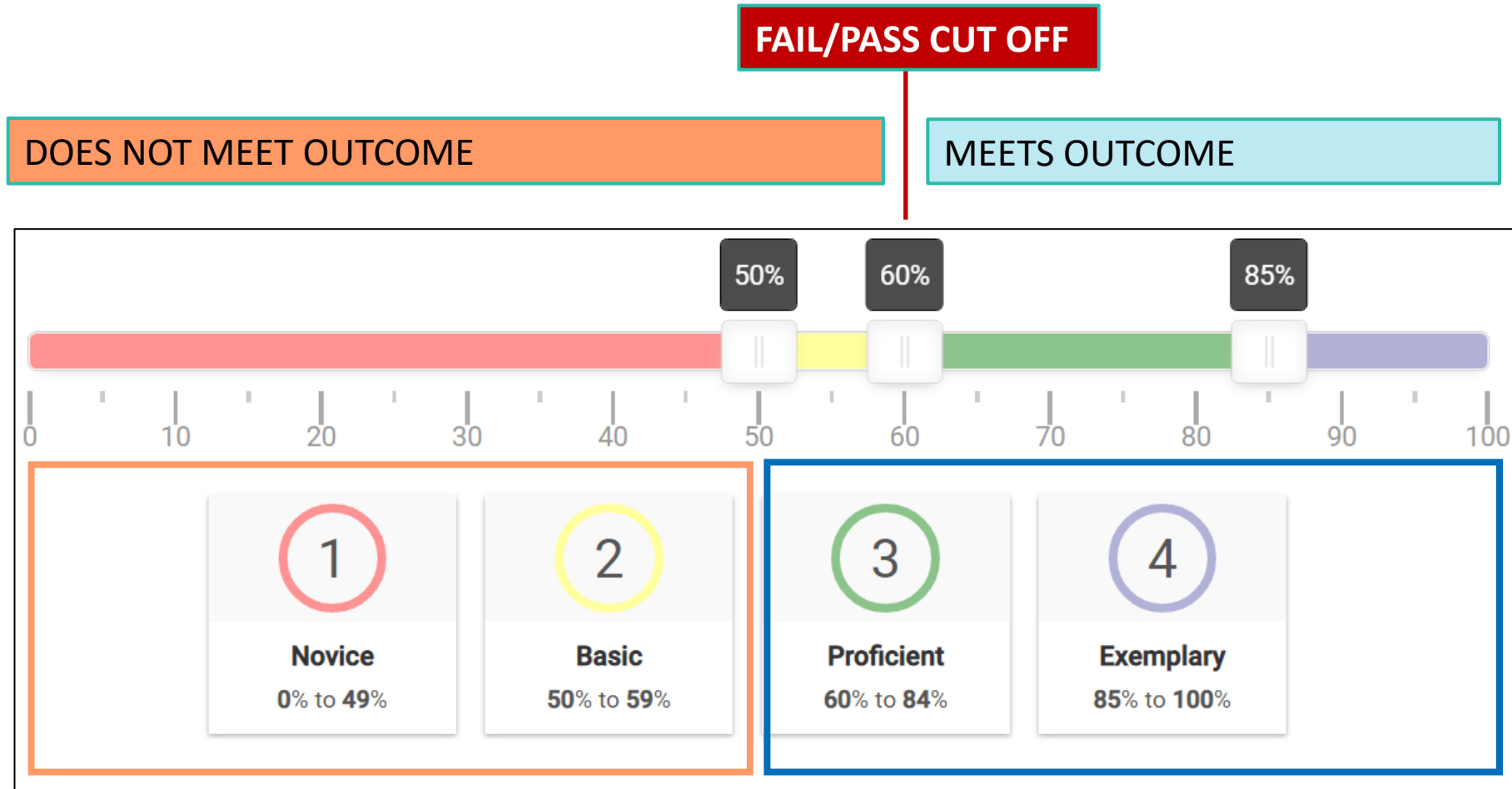
Grading to Assessment: Grading measures PLO

Clarify relationship between grading and assessment of PLO

HelioCampus Process for Program Assessment

- Course mapped to PLO

- Course assignments linked to PLO

- Grade in Canvas converts to an assessment score based on proficiency scale

- Reports can be generated at the level of course section, course, program and accreditor

Grading to Assessment: Proficiency Scale

Grading to assessment: Measure PLO

Increase specificity of assignment grade as a PLO measure

- **Entire grade**
  - Design assignment that isolates performance on the PLO
  - Grade can serve as a measure of the PLO

- **Grading criteria**
  - **Grading Rubrics**
    - One or more rubric rows linked to PLO(s)
  - **Canvas quizzes**
    - One or more quiz questions linked to PLO(s)

Entire Assignment Example: Computer Programming

Program Learning Outcome: Software Design
Exhibit proficiency in the design, implementation, and testing of software.

Option A		Novice	Basic	Proficient	Exemplary
Software Design Project Graded 1-100		Assignment grade converted to assessment score			

Option B			Novice	Basic	Proficient	Exemplary
Software Design Project	CLO 1	Test a design component using xyz	• CLO mapped to PLO • Each CLO graded and converted to assessment score • CLO can be assessed across assignments			
	CLO 2	Create a design in graphical notation				
	CLO 3	Implement a well documented solution in xyz				
	TOTAL ASSIGNMENT SCORE		Assignment grade converted to assessment score			

Rubric Example: Entrepreneurship

Program Learning Outcome: Entrepreneurship
Analyze the challenges of entrepreneurship especially for a small business and develop a business plan that can be used to run a new small business enterprise.

	Assignment: Business Plan Alignment & Scoring Rubric				
PLO Alignment		**Novice**	**Basic**	**Proficient**	**Exemplary**
X	**Challenge analysis**				
X	**Business Concept: Product & Services**				
X	**Competitive Analysis**				
X	**Marketing & Financials**				
	Organization of plan				
	Level of Innovation				

Mapped Test Questions Example: Biology Capstone

Test questions mapped to Multiple PLO
- Common exam given across sections
- Complements Capstone Project

PLO	Linked to Questions	1	2	3	4
1. Evolution: Mechanisms & Mutations	Q1, Q3, Q17, Q18	Each test question graded on a scale of 1-4			
3. Gene Expression & Transmission	Q4, Q5, Q6,Q8,	Average score per PLO converted to assessment score per student			
7. Energy Transformation	Q2, Q11,Q13, Q14	Categories: Novice Basic Proficient Exemplary			
10. Systems: Communication & Homeostasis	Q8, Q9, Q10, Q12,				

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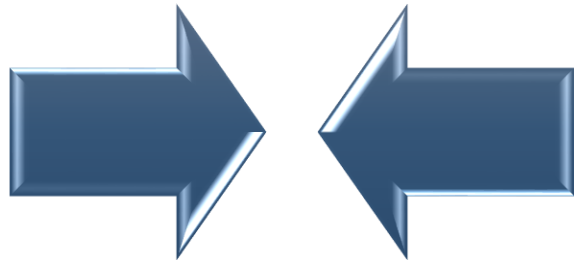
Embedded Assessment: Based on Faculty Grading

What is the role of faculty in assessment at your institution?

Think
Pair
Share

Wordcloud

Prompts
➤ Decide on assessment process
➤ Design measures of PLO
➤ Assess their own student work
➤ Score other faculty work
➤ Participate on committees
➤ Interpret and use assessment results for improvement
➤ Other ?

Embedded Assessment: Faculty Experts & Partners

Faculty role as experts and partners

- Faculty have a central role as experts

- Faculty are partners in the assessment process

- This role supports faculty engagement and ownership

Embedded Assessment: Implications for Faculty Role

Conceptual shifts and potential benefits

- **Shift to view course in context of the program**

  - Relationship between PLO, course, and assignments explicit

- **Shift from a focus on objectivity to a stronger emphasis on validity.**

  - Faculty define valid measures and use results for improvement

  - Trust faculty expertise to grade

    - Rely on faculty expertise to assess

Embedded Assessment: Purpose of assessment

Focus on continuous improvement

Role of Office of Institutional Assessment

- Provide information for faculty for improvement of curriculum and pedagogy within programs
  - Faculty, as owners of curriculum, are responsible for improvement

- Provide support, expertise and coordination of shared process
  - Ensure **that** each program is engaged in assessment, not monitoring of programs or student performance

- **Focus on improvement, and compliance will take care of itself.**

Challenges & Next Steps

Embedded assessment directly supports the ultimate goal of supporting student success, improving pedagogy and curriculum

Challenges & Next Steps

- Increasing complexity of curriculum/university
- More focus on assignment design and rubric adoption
- Better articulated PLO- add CLO
- More systematic: assessment plans and continuity of work each term
- Improve use of data for decisions (data literacy)
- Institutionalize assessment

Embedded Assessment

Authentic student work

Assess all students

Faculty grading -> assessment score
- *Curriculum alignment*
- *Grading alignment*
- *Faculty as central*

Thank You

Northeastern University