Faculty Involvement in General Education Assessment

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Goals of this Presentation

- Describe faculty involvement and Provost's Office support for Gen Ed assessment
- Provide history and logistics of the Gen Ed assessment process at WNE
- Present case studies in Gen Ed assessment
  - Critical Thinking
  - Computer Competence
- Provide results that demonstrate improvement over time

Theme of this Presentation

WNE: Who Are We?

- Private, comprehensive University in Springfield, MA
- 2583 undergraduates & 1060 graduate students
- 5 Academic Units:
  - College of Arts and Sciences
  - College of Business
  - College of Engineering
  - College of Pharmacy and Health Sciences
  - School of Law

When and Why Did WNE Faculty First Get Involved in Assessment?

Concerns from 2002 NEASC Team Report

- Under Planning and Evaluation, the team expressed eight concerns – **seven** of them involved **lack of assessment process**.
- "There is **no universal understanding and implementation of assessment activities** by all academic and non-academic units of the College. Not everyone has 'bought into' the rationale, need and process of assessment, as the 'why, what, how, and use' of assessment is not always understood."

Faculty Involvement in Assessment Process

Involve

- Faculty-driven assessment endeavors
- Learning outcomes and rubrics developed by faculty
- Gen Ed Assessment work done annually by faculty teams

- Suggestions for improvements to LOs and rubrics are made by the faculty
- Logistics coordinated by Directors of Assessment, both of whom were selected from the faculty

Provost's Support for Faculty Involvement in Assessment

Invest

- Director of Assessment position
- Associate Director of Assessment position
  - Stipend
  - Release Time
- Budget
  - Stipends
  - Meals and snacks
  - Luncheons for workshops
  - Cookies for follow-up workshops
  - Professional Development

Gen Ed Requirements
aka General University Requirements (GURs)

Foundations

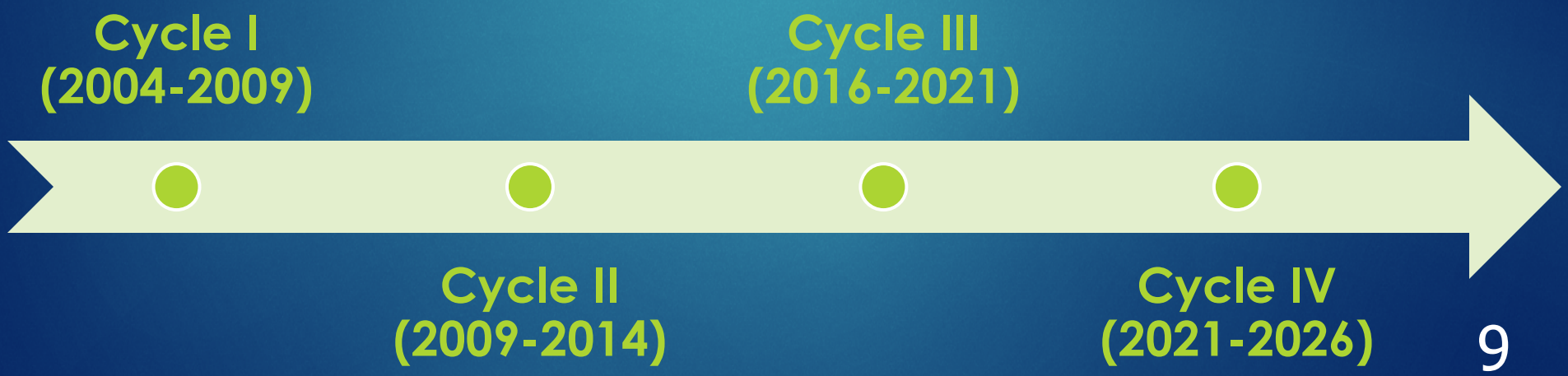
- Computer Competence
- Critical Thinking
- Information Literacy
- Mathematical Analysis
- Oral Communication
- Written Communication

Perspectives

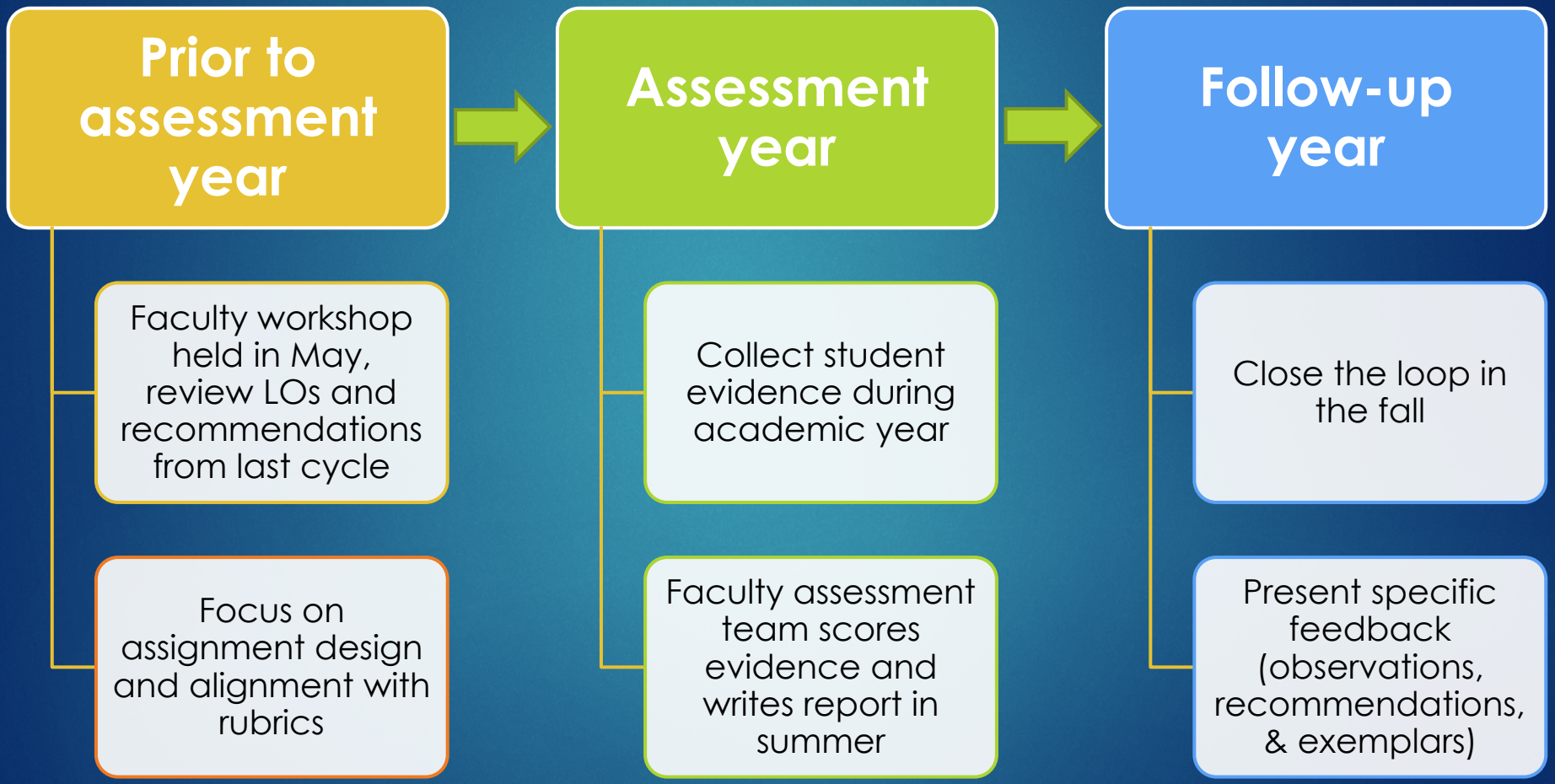
- Aesthetic
- Ethical
- Global Cultures
- Historical
- Natural Science
- Social & Behavioral Science

Five-Year Assessment Cycle

Year	Gen Ed Learning Outcomes Assessed
1	Critical Thinking, Information Literacy, Oral & Written Communication
2	Natural Science, Mathematical Analysis
3	History, Social and Behavioral Sciences
4	Global Cultures, Aesthetics
5	Computer Competence, Ethics



Logistics of Gen Ed Assessment Process



Assessment Preparation Workshops

Inform

- **Who**: Faculty teaching Gen Ed approved courses to be sampled the following academic year

- **Goals**:
  - Inform faculty of assessment process and expectations
  - Review learning outcomes and rubrics
  - Review assessment team's observations and recommendations from previous cycle
  - Assignment design charette: focus on assignment alignment and design

Assessment Preparation Workshops

Invest

Results and Benefits

Provides an opportunity for faculty to invest time focusing on Gen Ed learning outcomes

Promotes collaboration among colleagues within disciplines and across disciplines

Time to intentionally listen to faculty experts in the field

Opportunity for clarifying learning outcomes and rubrics (e.g., History, Ethics, Computer Competence)

Springboard to grassroots efforts to revise learning outcomes

Assessment Preparation Workshops

Feedback from Faculty

- "Very comprehensive and helpful!"
- "Excellent and informative program. I learned a lot, and I feel **better prepared** for [my course] this fall."
- "The meeting was helpful in **clarifying** for me the critical elements of **the LOs** that applied to my course… [this work is] **impacting the quality of what and how we educate students**. Assessment has become more collaborative than the we/they perspective that permeated much of the past. People are much more aware that **this work IMPROVES what we do as educators**."

Team Selection Workshops

- **Who**: Any fulltime faculty interested in serving on summer faculty assessment team for current academic year

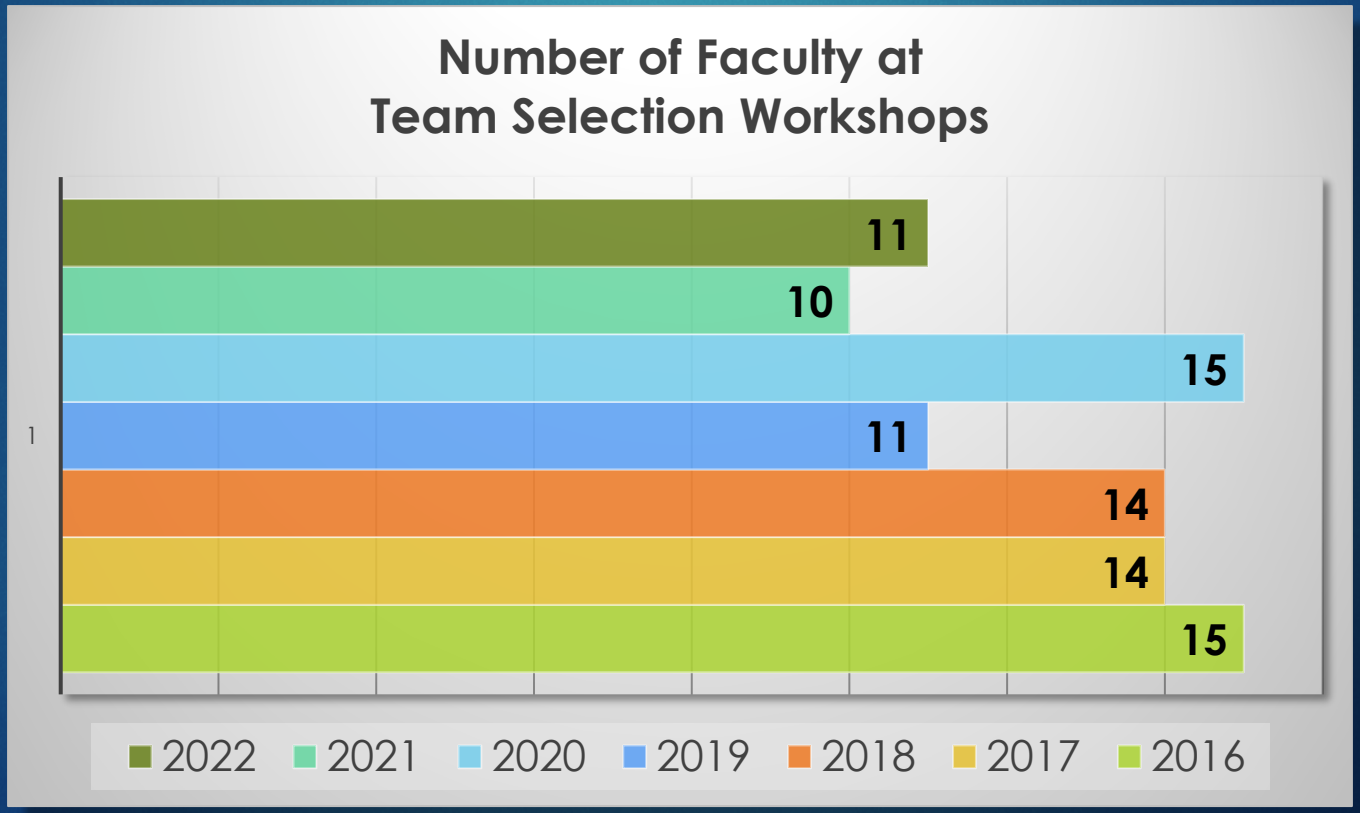
- **Goals**:
  - Inform faculty of assessment process and expectations for serving on faculty assessment team (stipend, schedule, duties)
  - Review learning outcomes and rubrics
  - Sample scoring
  - Discussion of results

Team Selection Workshops

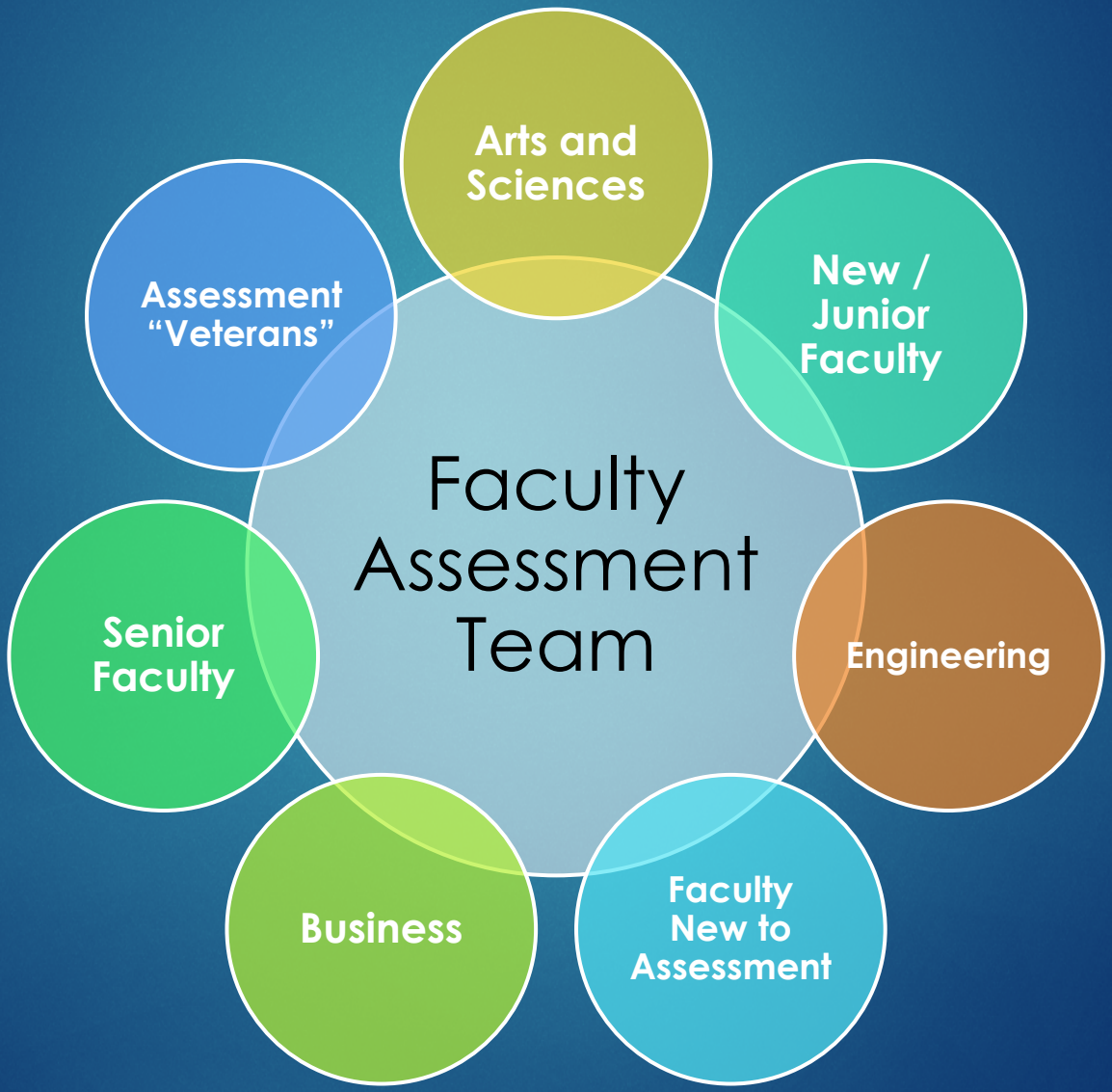
Faculty Participation since 2016

- 90 faculty (56 distinct) have attended a workshop
- 50 Faculty (39 distinct) have served on a faculty assessment team

Involve



Selection of Faculty Assessment Teams



Faculty Assessment Teams

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Opportunities to develop camaraderie and to break down silos across campus.

Covid-19 didn't stop our Gen Ed assessment!
Team discussions were held on Zoom to review results and collaborate on writing the annual Gen Ed Assessment Report

Follow-up Workshops

Inform

- **Who**: Faculty, by discipline, that taught Gen Ed courses that were sampled and assessed in the previous academic year
- **Goals**:
  - Inform faculty of assessment team's observations and recommendations
  - Review exemplar assignments
  - Discuss goals for improvement

CTL Faculty Workshops

Inform

- **Who**: New faculty / All faculty
- **Goals**:
  - Share NSSE Results
  - Increase awareness about high impact practices
  - Facilitate discussions about strengths and areas of improvement in teaching and learning at WNE
  - Encourage conversations about improving academic challenge

Why Faculty Involvement Matters

…the real promise of assessment—
and **the area in which faculty involvement matters**
first and most—
lies precisely in the questions that faculty,
both individually and collectively,
must **ask about their students' learning**
in their regular instructional work:
what purposes and goals are most important,
whether those goals are met,
and how to do better.
As one faculty member once told me,
"**assessment is asking whether my students are learning what I am teaching**."

-Pat Hutchings,

"*Opening Doors to Faculty Involvement in Assessment*"

Case Study 1: Critical Thinking

In 2003, the original set of Gen Ed learning outcomes, written by a committee of faculty, included the following two for Critical Thinking:

- **Learning Outcome 1**: Ability to think logically about personal, social, and/or professional problems.
- **Learning Outcome 2**: Ability to formulate arguments grounded in evidence and to recognize and evaluate sound arguments.

Cycle I: Issues and Observations

The 2005 Faculty Assessment Team made these key observations:

- **Some assignment prompts were vague**.
  - For example, *"There is no set page limit for this assignment, just be sure to critically analyze the issue thoroughly."*
- **Some assignments were more effective than others.**
  - Assignments focused on social or professional problems better demonstrated critical thinking than those focused on personal issues.
  - Assignments that required to construct a sound argument were more effective than those focused on logical fallacies.
- Assessment team recommended as follow-up that **WNE faculty consider revising the learning outcomes**.

Cycle I: Follow-up

- At the follow-up workshop, discussions were held with First Year Seminar faculty.
- Faculty felt learning outcomes were not broad enough to include discipline-specific critical thinking skills.
- Faculty also felt it was important for Gen Ed assessment that the learning outcomes had to be appropriate for first year students.

Revisions Made

- Research was done by faculty, looking at other institutions' rubrics and the newly developed VALUE rubrics for both critical thinking and problem-solving.
- Learning outcome and rubric were revised and approved by faculty in 2009.
- **Revised Learning Outcome:**
  Ability to reason logically and to evaluate & analyze arguments or problems

Rubric for New Learning Outcome

Learning Outcome	4 Thorough	3 Adequate	2 Limited	1 Weak	0 Unscorable
Ability to reason logically & analyze arguments or problems.	Clearly demonstrates logical reasoning and analysis based on evidence Completely analyzes pros & cons of an argument or thoroughly & correctly solves problem Demonstrates sound judgment and defends conclusion in clear & convincing manner	Reasoning demonstrates some use of logic and analysis, but not fully developed or supported Identifies some of the pros & cons of an argument or solves problem such that solution is mostly correct Defends conclusion and provides some reasonable support	Reasoning is used, but not supported by logic or based on evidence (may appeal to emotion) Analysis of argument is incomplete or solution to problem is only partially correct Doesn't defend conclusion in a clear & convincing manner	Presents argument or solution to the problem with no reasoning or analysis Uses illogical reasoning Does not analyze argument or solves problem incorrectly	Evidence is not applicable

Cycle II: Issues and Observations

The 2010 Faculty Assessment Team made these key observations:

- New learning outcome and rubric worked well.
- Results showed improvement from Cycle I to Cycle II.
- **Still needed further improvement in assignment design.**
  - Some assignments only prompted students to make observations; **the assignments lacked clear prompts to analyze those observations or generate logical conclusions**.
  - Students must be directed very clearly **to explain, in their own words, their rationale and/or the process by which they reached a solution to a problem.**

Cycle III: Issues and Observations

- Based on inter-rater reliability tests, there was no significant difference in scoring between the Cycle II team and the Cycle III team ($p = 0.139$).
- Results showed improvement from Cycle II to Cycle III.
- The 2016 Faculty Assessment Team observed:
  - Overall, **assignments were much better designed and aligned with the learning outcome**.

Critical Thinking Results

Improve

Cycle	Year	Mean	% Adequate or Better
Cycle I	2005	2.06 1.89	42% 27%
Cycle II	2010	2.50	62%
Cycle III	2016	2.92	79%

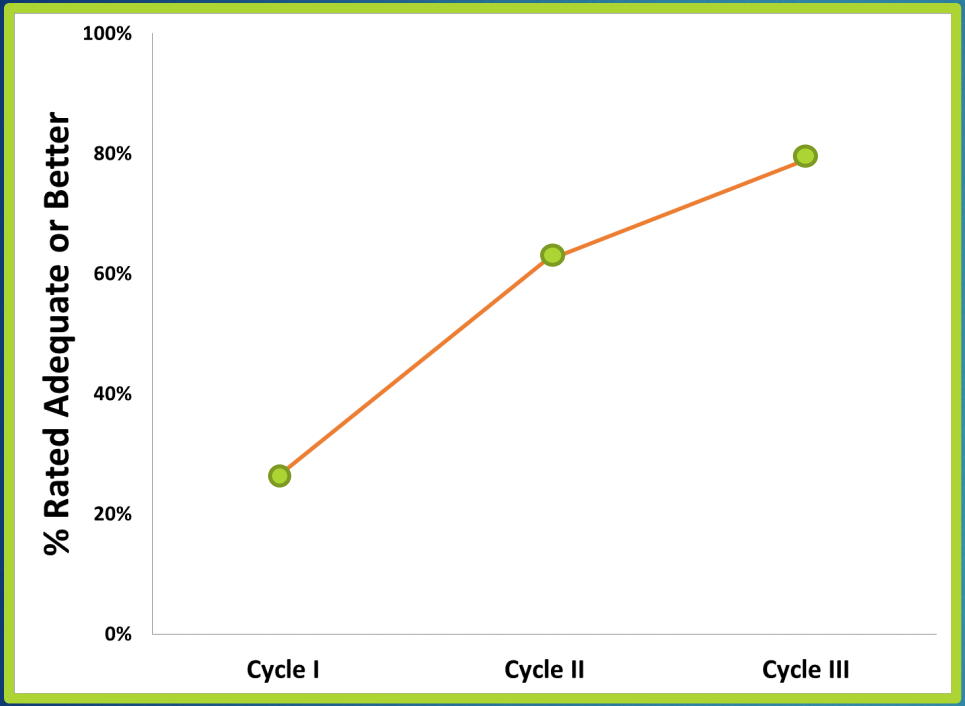
Student evidence is rated using the following scale:

4 = Thorough 3 = Adequate 2 = Limited 1 = Weak

Institutional Goal: At least 75% rated Adequate or Better

Significant Improvement in Critical Thinking Results

Improve



In Cycle III (2016), we reached the University goal of 75% Adequate or Better in Critical Thinking assessment for the first time since we began assessing this in Cycle I (2005).

How Faculty Involvement Lead to Improvement

- **Faculty buy-in** for new learning outcome and rubric ("We all teach critical thinking.")
- Assessment Preparation Workshops focused on **assignment design**:
  - Assignment design charrette modeled after workshops done by NILOA (National Institute for Learning Outcomes Assessment)
  - Faculty collaborated to make assignments more **clear, explicit, and intentional**.
- Faculty also made changes and **improvements to the delivery of course material**.

NILOA Assignment Library Initiative

- Online collection of faculty-designed, peer-reviewed assignments:
  - Browse: NILOA Assignment Library
- Great resource for institutions looking for exemplar assignments

"…the ultimate goal of such work is not to create perfect assignments; it is to stimulate better teaching and learning."

from "*Catalyzing assignment design activity on your campus: Lessons from NILOA's assignment library initiative*"

Improving Teaching and Learning

"**Assignments are pivotal** to a college education, but **professors get little guidance** on how to create them."

"**Improving teaching can seem like a huge task**. It may sound like it requires wholesale changes or a radical rethinking of the professor's role in the classroom. The **changes driven by the rubrics tend to be comparatively modest**. But **a small adjustment can still be powerful**."

- Dan Berrett, "The Next Great Hope for Measuring Learning", *The Chronicle of Higher Education*

Case Study 2: Computer Competence

In Cycles I & II, WNE had two learning outcomes for Computer Competence:

- **LO 1**: Ability to use presentation software
- **LO 2**: Ability to use spreadsheet software

Motivation for Change

Invest

- Faculty felt learning outcomes & rubrics were outdated and limiting – **too narrowly focused and skill based**.
- There was a strong faculty desire to:
  - Broaden the scope of the learning outcome
  - Allow for varied uses of technology and discipline-specific software
  - Increase the emphasis on using technology to **solve problems, interpret data, and think critically**

Inter-Disciplinary Collaboration and Proposal for New GUR LOs

Involve

Proposal was initiated by a CS faculty member, in consultation with Directors of Assessment and faculty from Arts and Sciences, Business and Engineering.

"…it is critical for students to have the ability to **use tools appropriate to their primary discipline** for the purposes of computation, data collection, and/or data analysis."

21st Century Learning Outcomes

New learning outcomes developed and approved by the faculty

Involve

- **LO 1**: Ability to create digital computational artifacts (e.g., spreadsheets, SAP/SPSS reports, source code, etc.) used to solve problems
- **LO 2**: Ability to apply appropriate computing tools to solve problems, describe data, and/or analyze models

Types of Courses and Assignments

- Courses in different disciplines:
  - CS, Engineering, Business, Political Science, Psychology, Physics
- Wide variety of assignment types:
  - Homework assignments, projects, capstone assignments
  - Using various software: Access, Excel, Mathematica, MATLAB, Python, SPSS
  - Many were more open-ended, requiring students to analyze and interpret data, problem-solve, provide rationale, etc.

Cycle II vs. III Results

Improve

Cycle II		
Learning Outcome	**Mean**	**Percent adequate**
LO 1: Presentation software	2.01	32.5%
LO 2: Spreadsheet software	2.84	82.7%

Cycle III		
Learning Outcome	**Mean**	**Percent adequate**
LO 1: Create digital artifacts	3.15	89.8%
LO 2: Apply computing tools	2.96	81.7%

Improvements in Teaching and Learning

The 2020 Faculty Assessment Team made these key observations:

- The new learning outcomes seemed to be **more meaningful and appropriate** for today's college graduates.
- Expanding the types of software allowed for **more interesting, relevant, and discipline-specific assignments**.
- The second learning outcome seemed to encourage a **higher quality of student evidence**… and is clearly aligned with the goal of teaching our students **higher order, critical thinking** skills.

Scholarship of Assessment

Involve

Scholarly work resulting from revisions to Computer Competence LOs:

- Publication:

  Hansen, Lisa and O'Neill, Brian, *Modernizing a General Education Requirement in Computing to Emphasize Critical Thinking*, SIGCSE 2021: Proceedings of the 52nd ACM Technical Symposium on Computer Science Education. Association for Computing Machinery, New York, NY, 488-494. https://doi.org/10.1145/3408877.3432531

- Presentations:
  - NEean Fall Forum on November 6, 2020
  - SIGCSE 2021 Technical Symposium on March 17, 2021

Faculty Collaboration in Revising Learning Outcomes

- Critical Thinking
- Computer Competence
- Information Literacy
  - collaboration with Information Literacy librarians and First-year Writing Program Director
- Three of the six Perspectives:
  - Aesthetics
  - Ethics
  - Global Cultures

Faculty Collaboration in Revising Learning Outcomes

Involve

- In Cycles I and II, the learning outcomes for all six Perspectives were the same:
  1) Ability to identify **key elements** of the discipline or perspective area.
  2) Ability to explain or utilize the approach or **method of analysis** in the perspective.
  3) Ability to recognize some of the contributions of the discipline or perspective area to **contemporary issues**.
- During Cycle III, we collaborated with faculty in three Perspectives (Aesthetics, Ethics, and Global Cultures) to revise learning outcomes to be more relevant and discipline-specific.

Improvement Over Time: Gen Ed Snapshot

Improve

Source: WNE Gen Ed Highlights and Success Stories

Improvement Over Time: 2016 vs. 2020 NSSE Results

Improve

Theme	Engagement Indicator	2016 WNE Students compared with national average: First-year	2016 WNE Students compared with national average: Senior	2020 WNE Students compared with national average: First-year	2020 WNE Students compared with national average: Senior
Academic Challenge	Higher-Order Learning	–	▽	–	–
	Reflective & Integrative Learning	▽	▽	–	▽
	Learning Strategies	–	▼	–	–
	Quantitative Reasoning	△	–	△	△
Learning with Peers	Collaborative Learning	–	–	△	▲
	Discussions with Diverse Others	–	▽	–	–
Experiences with Faculty	Student-Faculty Interaction	△	△	△	▲
	Effective Teaching Practices	△	–	△	–
Campus Environment	Quality of Interactions	▲	–	△	–
	Supportive Environment	–	–	△	–

Improvement Over Time: Accreditation Feedback

Excerpts from 2022 NECHE Team Report

- "There was evidence of **robust assessment of the General University Requirements**."
- "The University has a **strong culture of assessment**, program review, and evaluation with respect to its academic programs."

Involving Faculty in Assessment

Six Recommendations:

1. Build Assessment Around the Regular, Ongoing Work of Teaching and Learning
2. Make a Place for Assessment in Faculty Development
3. Build Assessment into the Preparation of Graduate Students
4. Reframe the Work of Assessment as Scholarship
5. Create Campus Spaces and Occasions for Constructive Assessment Conversation and Action
6. Involve Students in Assessment

"There is no single best way to support greater faculty engagement with assessment."

-- Pat Hutchings,
"*Opening Doors to Faculty Involvement in Assessment*"

Resources

Berrett, Dan, "The Next Great Hope for Measuring Learning", *The Chronicle of Higher Education*, October 16, 2016.

Hutchings, P., (2010). *Opening Doors to Faculty Involvement in Assessment*. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA).

Hutchings, P., Jankowski, N. A., & Ewell, P. T. (2014). *Catalyzing assignment design activity on your campus: Lessons from NILOA's assignment library initiative*. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NILOA).

VALUE Rubric Development Project, Association of American Colleges & Universities, www.aacu.org/value/rubrics

Thank You

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