



PennState

Office of Planning and Assessment

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Learning Outcomes Assessment
Undergraduate and Graduate Programs
2016-17 Report
Office of Planning and Assessment

November 27th, 2017

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Executive Summary

This report outlines the process for collecting learning outcomes assessment plans and reports for undergraduate and graduate programs and certificates from Spring 2016 to the present. It presents an accounting of the plans and reports received, the categories of program learning objectives assessed, the types of measures employed, and the extent of rubric use. The report also includes the types of support and resources requested by program coordinators and several example summaries of assessment reports received. Finally, the report outlines areas of focus for learning outcomes assessment for the coming year. The following are highlights of the results.

1. **Rates of submission**: Rates varied by degree level. Graduate programs had the highest rates; associates degrees had the lowest.
 - *4-year programs*: Between 76% and 82% of baccalaureate programs submitted assessment plans; similar percentages submitted reports
 - Agricultural Sciences, Education and IST had the highest rates (100%) at University Park
 - Penn State Abington had the highest rate of submissions of the Campus Colleges
 - Brandywine, Mont Alto, Wilkes-Barre, and York had the highest rates of submission at the University College
 - *2-Year programs*: Between 40% and 55% of associates programs submitted assessment plans; similar percentages submitted reports
 - We will focus our attention on these programs during the 17/18 academic year
 - *Graduate programs*: 80% of graduate programs submitted plans; 70% submitted reports
 - This is particularly impressive given that this was the first year that graduate programs assessed their programs.
 - *Certificate program assessments* are not included in this report; they were minimal.
2. **Learning objectives**: A wide variety of learning objectives were assessed in undergraduate programs; University Park programs tended to focus on *knowledge, critical thinking* and *application*. Campuses emphasized *communication* in addition to *knowledge, critical thinking* and *application*. *Knowledge* was the most frequently assessed graduate program goal.
3. **Assessment measures**: The most frequently employed assessment measures for undergraduate programs were in-course assessments, including capstone papers, exams, and projects. The majority of graduate programs used culminating exams or course grades to assess student learning.
4. **Use of rubrics**: Rubric use for undergraduate assessment ranged between 49% (University College) and 70% (Campus Colleges). Overall rubric use in graduate programs was slightly higher (72%).

5. **Program requests:** Program coordinators expressed interest in general assessment guidance, rubric-specific guidance, examples of other program's reports, resources such as software, materials, facilities and time, and help developing assessment studies to examine learning.
6. **Looking forward:** Future areas of focus for the Learning Outcomes Assessment team include evaluating the assessment process, 2-year degree assessment, certificate assessment, disciplinary community support, the selection and roll-out of an assessment management system, developing strategies for centering learning outcomes assessment within units, and exploring how the process is affecting student learning.

Learning Outcomes Assessment at Penn State: Spring 2016 to Fall 2017

Penn State's formal learning outcomes assessment processes for undergraduate programs underwent a significant transition during Spring 2016 with the addition of Learning Outcomes Assessment (LOA) specialists to The Office of Planning and Assessment (OPA). The transition introduced a new process that included graduate programs and certificates, neither of which had previously been involved in assessment. Under the new process, program coordinators submitted assessment plans and reports online, through Box. OPA staff created Box folders for each UP College and each campus and uploaded assessment plan templates and examples, as well as resources to support the learning outcomes assessment process. Throughout Spring and Fall 2016, OPA staff visited colleges and campuses to share the new processes and expectations, as well as to educate administrators and program coordinators on strategies for developing effective assessment plans. These visits usually consisted of brief presentations and/or one-on-one consultations.

The deadline for the first assessment plans under the new process was set at **Dec. 31, 2016**, in part to allow collection of information necessary to meet the Middle State's Commission on Higher Education's April 1st, 2017 monitoring report deadline. That report was accepted June 26th, 2017 with no additional requirements.

Following the submission of assessment plans in December 2016, OPA staff reviewed each plan and provided feedback for program coordinators that emphasized strengths and/or provided strategies for improvement. During Spring 2017, staff uploaded the feedback on assessment plans as well as report templates and examples to Box folders. We visited UP Colleges and Campuses to respond to any questions about their feedback and to educate administrators and program coordinators about the process and expectations for their assessment reports, due **June 30th, 2017**. Reports included data collected during Spring 16/17 as well as an assessment plan for the 17/18 academic year.

In Fall 2017 (currently), OPA staff are reviewing assessment plans, providing feedback, and visiting UP Colleges and Campuses to update program coordinators and directors of graduate studies, as well as academic administrators on deadlines and next steps for learning outcomes assessment. The next deadline is to submit their 17/18 assessment reports on **June 30th, 2018**. During our visits we are providing resources in response to requests, and emphasizing the importance of making the assessment process meaningful for the program (rather than simply "checking a box").

Throughout the process, we have reached out to groups of program coordinators who offer the same program at multiple locations (disciplinary communities) to offer our support as they work together to develop program-level learning objectives that do not differ by location, to better realize our “one University, geographically dispersed” mission. The University Committee on the Assessment of Learning (UCAL) met regularly with LOA staff to provide guidance.

University-wide Program Assessment Procedure

The first element of a program assessment plan is a set of program learning objectives that articulate the knowledge and skills expected of students when they graduate from the program. Next is a curriculum map, which outlines which courses and experiences address which learning objectives, and at what level (introductory, practice, demonstration of mastery). The curriculum map allows faculty to quickly see how the curriculum fits together and which course(s) will provide the best opportunities to gather evidence that students have met a particular learning objective. Programs can also choose to complete a map of alignment of program learning objectives and indirect measures, such as student exit surveys. The learning objectives and curriculum map set the stage for the actual assessment, which involves choosing one or more learning objectives, choosing and describing an appropriate measure, defining a criterion at or above which students are considered to have met the objective, and describing the process faculty will use to collect the evidence and share it. Unless changes are made, the learning objectives and curriculum map are not re-done each year.

Assessment reports identify the program learning objective studied and include the data collected, whether or not the criterion was met, interpretation of results, and plans for any curricular changes based on the results. Program coordinators can also make requests for support and resources in the assessment reports.

Assessment procedures differ slightly between undergraduate, graduate and certificate programs. Undergraduate assessment plans include a learning concern that guides the assessment. The Graduate School has articulated Graduate Council Scholarly and Professional Goals with which they expect program objectives to align. In addition, doctoral programs have well-defined assessment points built in to their programs, which are reflected in a major milestone map instead of a curriculum map. Learning objectives for certificate assessment are drawn directly from the learning objectives of the courses that make up the certificate. Assessments plans consist of a chosen objective and a measure from one of the courses that make up the certificate.

Programs Accredited by Disciplinary Organizations

Degree programs that are accredited by professional disciplinary organizations are not required to submit plans to OPA using the assessment template if the accreditation body requires the information needed to satisfy Penn State’s and MSCHE requirements for learning outcomes assessment. Instead, these programs are asked to submit their most recent accreditation self-study. In the future, accredited programs will be asked to continue submitting their self-studies to OPA following the schedule and format dictated by their accreditation agencies. OPA staff are available to support accredited programs seeking assessment assistance.

Assessment Plan/Report Submissions

The Office of Planning and Assessment requested 2016-17 program assessment plans and reports from all non-accredited degree programs across the University at both the undergraduate and graduate levels. The following sections present submission rates of 2016-17 plans and reports. These data represent the submissions as of November 1, 2017. We are in contact with some programs that have requested an extension for submitting their reports and are not represented below. Certificate program submissions were minimal and are not included in the charts. See Appendix for assessment report examples.

Undergraduate Programs – University Park

The table below presents submission rates by college for 4-year programs. The colleges of Business, Communications, Engineering, and Nursing are not included in the table; their undergraduate programs are all accredited by the discipline. No equivalent table for 2-year programs is presented because University Park has only four such programs. The colleges of Agricultural Sciences, Education, and Information Sciences and Technology achieved the highest submission rates.

Table 1: AY 2016-17 - (4 YEAR) University Park Undergraduate Program Assessment Submissions

| | UP TOTAL | AA | AGS | CLA | EDU | EMS | HHD | IST | SCI |
|--|----------|-----|------|-----|------|------|------|------|-----|
| Count of programs | 116 | 17 | 16 | 37 | 8 | 13 | 9 | 3 | 13 |
| Accredited programs | 30 | 15 | 1 | 0 | 6 | 5 | 1 | 0 | 2 |
| Non-accredited (PSU assessed) | 86 | 2 | 15 | 37 | 2 | 8 | 8 | 3 | 11 |
| Submitted 2016-17 Assessment PLAN | 65 | 1 | 15 | 21 | 2 | 6 | 8 | 3 | 9 |
| <i>% submitted*</i> | 76% | 50% | 100% | 57% | 100% | 75% | 100% | 100% | 82% |
| Submitted 2016-17 Summary REPORT | 61 | 1 | 15 | 16 | 2 | 8 | 7 | 3 | 9 |
| <i>% submitted**</i> | 71% | 50% | 100% | 43% | 100% | 100% | 88% | 100% | 82% |

*Submitted PLAN percentages are a function of the total non-accredited programs at each school.

** Submitted REPORT percentages are a function of the total non-accredited programs at each school

Undergraduate Programs – Campus Colleges

The following three tables present submission rates by campus for 4-year programs, 2-year programs, and all programs combined. A higher percentage of reports compared to plans submitted indicates that reports were submitted even though plans had not been. Penn State Abington had the highest submission rates, though overall submission rates were good. Submission rates for 2-year programs were significantly lower than 4-year programs.

Table 2: AY 2016-17 – 4-Year Campus College Undergraduate Program Assessment Plan & Report Submissions

| | CC TOTAL | AB | AL | BK | ER | HB |
|--|----------|------|-----|-----|-----|-----|
| Count of programs | 131 | 19 | 21 | 21 | 36 | 34 |
| Accredited programs | 47 | 4 | 5 | 4 | 20 | 14 |
| Non-accredited (PSU assessed) | 84 | 15 | 16 | 17 | 16 | 20 |
| Submitted 2016-17 Assessment PLAN | 69 | 14 | 14 | 12 | 12 | 17 |
| <i>% submitted*</i> | 82% | 93% | 88% | 71% | 75% | 85% |
| Submitted 2016-17 Summary REPORT | 68 | 15 | 14 | 13 | 11 | 15 |
| <i>% submitted**</i> | 81% | 100% | 88% | 76% | 69% | 75% |

Table 3: AY 2016-17 - 2-Year Campus College Undergraduate Program Assessment Plan & Report Submissions

| | CC TOTAL | AB | AL | BK | ER | HB |
|--|------------|-------------|------------|------------|-----------|-------------|
| Count of programs | 17 | 2 | 4 | 4 | 5 | 2 |
| Accredited programs | 6 | 0 | 0 | 1 | 4 | 1 |
| Non-accredited (PSU assessed) | 11 | 2 | 4 | 3 | 1 | 1 |
| Submitted 2016-17 Assessment PLAN | 6 | 2 | 2 | 2 | 0 | 0 |
| <i>% submitted*</i> | <i>55%</i> | <i>100%</i> | <i>50%</i> | <i>67%</i> | <i>0%</i> | <i>0%</i> |
| Submitted 2016-17 Summary REPORT | 7 | 2 | 2 | 2 | 0 | 1 |
| <i>% submitted**</i> | <i>64%</i> | <i>100%</i> | <i>50%</i> | <i>67%</i> | <i>0%</i> | <i>100%</i> |

Table 4: AY 2016-17 - Combined Campus College Undergraduate Program Assessment Plan & Report Submissions

| | CC TOTAL | AB | AL | BK | ER | HB |
|--|------------|-------------|------------|------------|------------|------------|
| Count of programs | 148 | 21 | 25 | 25 | 41 | 36 |
| Accredited programs | 53 | 4 | 5 | 5 | 24 | 15 |
| Non-accredited (PSU assessed) | 95 | 17 | 20 | 20 | 17 | 21 |
| Submitted 2016-17 Assessment PLAN | 75 | 16 | 16 | 14 | 12 | 17 |
| <i>% submitted*</i> | <i>79%</i> | <i>94%</i> | <i>80%</i> | <i>70%</i> | <i>71%</i> | <i>81%</i> |
| Submitted 2016-17 Summary REPORT | 75 | 17 | 16 | 15 | 11 | 16 |
| <i>% submitted**</i> | <i>79%</i> | <i>100%</i> | <i>80%</i> | <i>75%</i> | <i>65%</i> | <i>76%</i> |

*Submitted PLAN percentages are a function of the total non-accredited programs at each school.

** Submitted REPORT percentages are a function of the total non-accredited programs at each school

Undergraduate Programs – University College

The following tables present submission rates by campus for 4-year, 2-year, and combined programs. In some cases, a higher percentage of reports submitted compared to plans indicates that reports were submitted even though initial plans were not. Submission rates for 2-year programs were significantly less than 4-year programs.

Table 5: AY 2016-17 – 4-Year University College Undergraduate Program Assessment Plan & Report Submissions

| | UC TOTAL | BR | BW | DS | FE | GA | HN | LV | MA | NK | SL | SV | WB | WS | YK |
|--|----------|-----|------|-----|-----|-----|-----|-----|------|-----|-----|-----|------|------|------|
| Count of degree programs | 114 | 6 | 11 | 5 | 7 | 10 | 8 | 10 | 6 | 9 | 7 | 6 | 10 | 10 | 9 |
| Accredited programs | 17 | 0 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 3 | 1 | 1 |
| Non-accredited (PSU assessed) | 97 | 6 | 10 | 4 | 6 | 9 | 7 | 8 | 5 | 7 | 6 | 5 | 7 | 9 | 8 |
| Submitted 2016-17 Assessment PLAN | 75 | 5 | 10 | 3 | 1 | 5 | 6 | 7 | 5 | 4 | 3 | 3 | 7 | 8 | 8 |
| <i>% submitted*</i> | 77% | 83% | 100% | 75% | 17% | 56% | 86% | 88% | 100% | 57% | 50% | 60% | 100% | 89% | 100% |
| Submitted 2016-17 Summary REPORT | 74 | 5 | 10 | 2 | 0 | 4 | 6 | 6 | 5 | 5 | 4 | 3 | 7 | 9 | 8 |
| <i>% submitted**</i> | 76% | 83% | 100% | 50% | 0% | 44% | 86% | 75% | 100% | 71% | 67% | 60% | 100% | 100% | 100% |

Table 6: AY 2016-17 – 2-Year University College Undergraduate Program Assessment Plan & Report Submissions

| | UC TOTAL | BR | BW | DS | FE | GA | HN | LV | MA | NK | SL | SV | WB | WS | YK |
|--|----------|----|-----|-----|-----|----|-----|----|-----|----|----|----|-----|-----|------|
| Count of programs | 60 | 0 | 3 | 9 | 7 | 0 | 5 | 2 | 7 | 5 | 4 | 6 | 3 | 4 | 5 |
| Accredited programs | 18 | 0 | 0 | 4 | 3 | 0 | 2 | 0 | 2 | 2 | 1 | 2 | 0 | 0 | 2 |
| Non-accredited (PSU assessed) | 42 | 0 | 3 | 5 | 4 | 0 | 3 | 2 | 5 | 3 | 3 | 4 | 3 | 4 | 3 |
| Submitted 2016-17 Assessment PLAN | 17 | 0 | 1 | 3 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 0 | 2 | 3 | 2 |
| <i>% submitted*</i> | 40% | 0% | 33% | 60% | 25% | 0% | 33% | 0% | 80% | 0% | 0% | 0% | 67% | 75% | 67% |
| Submitted 2016-17 Summary REPORT | 15 | 0 | 1 | 2 | 1 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 2 | 2 | 3 |
| <i>% submitted**</i> | 36% | 0% | 33% | 40% | 25% | 0% | 33% | 0% | 60% | 0% | 0% | 0% | 67% | 50% | 100% |

Table 7: AY 2016-17 - Combined University College Undergraduate Program Assessment Plan & Report Submissions

| | UC TOTAL | BR | BW | DS | FE | GA | HN | LV | MA | NK | SL | SV | WB | WS | YK |
|--|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Count of programs | 174 | 6 | 14 | 14 | 14 | 10 | 13 | 12 | 13 | 14 | 11 | 12 | 13 | 14 | 14 |
| Accredited programs | 35 | 0 | 1 | 5 | 4 | 1 | 3 | 2 | 3 | 4 | 2 | 3 | 3 | 1 | 3 |
| Non-accredited (PSU assessed) | 139 | 6 | 13 | 9 | 10 | 9 | 10 | 10 | 10 | 10 | 9 | 9 | 10 | 13 | 11 |
| Submitted 2016-17 Assessment PLAN | 92 | 5 | 11 | 6 | 2 | 5 | 7 | 7 | 9 | 4 | 3 | 3 | 9 | 11 | 10 |
| <i>% submitted*</i> | 66% | 83% | 85% | 67% | 20% | 56% | 70% | 70% | 90% | 40% | 33% | 33% | 90% | 85% | 91% |
| Submitted 2016-17 Summary REPORT | 89 | 5 | 11 | 4 | 1 | 4 | 7 | 6 | 8 | 5 | 4 | 3 | 9 | 11 | 11 |
| <i>% submitted**</i> | 64% | 83% | 85% | 44% | 10% | 44% | 70% | 60% | 80% | 50% | 44% | 33% | 90% | 85% | 100% |

*Submitted PLAN percentages are a function of the total non-accredited programs at each school.

** Submitted REPORT percentages are a function of the total non-accredited programs at each school.

Graduate Programs – All locations

OPA collected 2016-17 program assessment plans and reports from graduate degree programs at University Park and the relevant Campus Colleges. The tables below present submission rates by school/campus for Doctoral, Master’s, and Dual Degree programs. In some cases, a higher percentage of reports submitted compared to plans indicates that reports were submitted even though initial plans were not.

Table 8: AY 2016-17 Combined Graduate Program Assessment Plan & Report Submissions

| | TOTAL | University Park Colleges | | | | | | | | | | | | | College Campuses | | | |
|--|------------|--------------------------|------------|-------------|------------|-------------|-------------|------------|------------|-------------|------------|-------------|-------------|------------|------------------|-------------|------------|-------------|
| | | AA | AGS | BUS | CLA | COM | EDU | EMS | ENG | HHD | HUCK | IST | NUR | SCI | ER | GV | HAR | HER |
| Count of degree programs | 303 | 19 | 39 | 6 | 44 | 2 | 38 | 13 | 40 | 17 | 9 | 4 | 3 | 14 | 4 | 8 | 32 | 11 |
| Accredited graduate degree program | 54 | 15 | 2 | 5 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 4 | 3 | 10 | 2 |
| Non-accredited (PSU assessed) | 249 | 4 | 37 | 1 | 44 | 2 | 28 | 13 | 40 | 17 | 9 | 4 | 1 | 13 | 0 | 5 | 22 | 9 |
| Non-accredited (PSU assessed) | 249 | 4 | 37 | 1 | 44 | 2 | 28 | 13 | 40 | 17 | 9 | 4 | 1 | 13 | 0 | 5 | 22 | 9 |
| Doctoral | 94 | 2 | 15 | 1 | 15 | 1 | 14 | 5 | 13 | 8 | 5 | 1 | 1 | 7 | 0 | 0 | 1 | 5 |
| Masters | 143 | 2 | 21 | 0 | 21 | 1 | 13 | 6 | 27 | 9 | 4 | 3 | 0 | 6 | 0 | 5 | 21 | 4 |
| Dual Degree (NDUAL) | 12 | 0 | 1 | 0 | 8 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Submitted 2016-17 Assessment PLAN | 199 | 3 | 24 | 1 | 34 | 2 | 28 | 10 | 27 | 13 | 7 | 4 | 1 | 10 | 0 | 5 | 21 | 9 |
| Doctoral | 82 | 1 | 10 | 1 | 15 | 1 | 14 | 5 | 10 | 8 | 4 | 1 | 1 | 5 | 0 | 0 | 1 | 5 |
| Masters | 112 | 2 | 13 | 0 | 16 | 1 | 13 | 5 | 17 | 5 | 3 | 3 | 0 | 5 | 0 | 5 | 20 | 4 |
| Dual Degree (NDUAL) | 5 | 0 | 1 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>% submitted*</i> | <i>80%</i> | <i>75%</i> | <i>65%</i> | <i>100%</i> | <i>77%</i> | <i>100%</i> | <i>100%</i> | <i>77%</i> | <i>68%</i> | <i>76%</i> | <i>78%</i> | <i>100%</i> | <i>100%</i> | <i>77%</i> | <i>0%</i> | <i>100%</i> | <i>95%</i> | <i>100%</i> |
| Submitted 2016-17 Summary REPORT | 174 | 2 | 10 | 0 | 32 | 1 | 19 | 10 | 35 | 17 | 4 | 4 | 1 | 4 | 0 | 5 | 21 | 9 |
| Doctoral | 71 | 1 | 8 | 0 | 13 | 1 | 8 | 5 | 12 | 8 | 3 | 1 | 1 | 2 | 0 | 0 | 3 | 5 |
| Masters | 99 | 1 | 1 | 0 | 17 | 0 | 10 | 5 | 23 | 9 | 1 | 3 | 0 | 2 | 0 | 5 | 18 | 4 |
| Dual Degree (NDUAL) | 4 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| <i>% submitted**</i> | <i>70%</i> | <i>50%</i> | <i>27%</i> | <i>0%</i> | <i>73%</i> | <i>50%</i> | <i>68%</i> | <i>77%</i> | <i>88%</i> | <i>100%</i> | <i>44%</i> | <i>100%</i> | <i>100%</i> | <i>31%</i> | <i>0%</i> | <i>100%</i> | <i>95%</i> | <i>100%</i> |

Doctoral Degrees include: PHD, DED, and DMA

Master's degrees include: MA, MFA, MGIS, MLA, MME, MMUS, MPS, MSP, MBA, MACC, MAE, MENG, and MHA

*Submitted PLAN percentages are a function of the total non-accredited programs at each school.

**Submitted REPORT percentages are a function of the total non-accredited programs at each school

Program Learning Objectives Assessed

The program learning objectives (PLOs) assessed by Penn State’s academic programs in the 16/17 AY were numerous and diverse. These PLOs can be examined for similarities and differences within and across campuses, colleges, and departments. These patterns present opportunities for OPA staff to develop resources, identify examples for teaching and development around assessment, and to ascertain broader institutional priorities that are expressed in the objectives programs examine. Percentages are calculated from the total number of PLOs assessed; many programs assessed multiple PLOs.

Undergraduate program objectives assessed

OPA staff coded each PLO from submitted reports into several categories. These categories included: *know*, *critical thinking*, *apply*, *communicate*, *create*, *cultural competence*, *ethics* and *other*. The “*other*” category includes *professional*, *research*, and *teamwork*. Some programs assessed multiple learning objectives. The graphs that follow present the percentage of PLOs assessed in each category by college or campus. The majority of PLOs assessed at University Park were *apply*, *knowledge*, and *critical thinking*. The categories of *critical thinking*, *communication*, *apply*, and *other* were emphasized at the University Colleges. *Critical thinking*, *communication*, *apply*, and *know* were most represented at the Campus Colleges.

Figure 1: University Park - Categories of Undergraduate PLOs Assessed

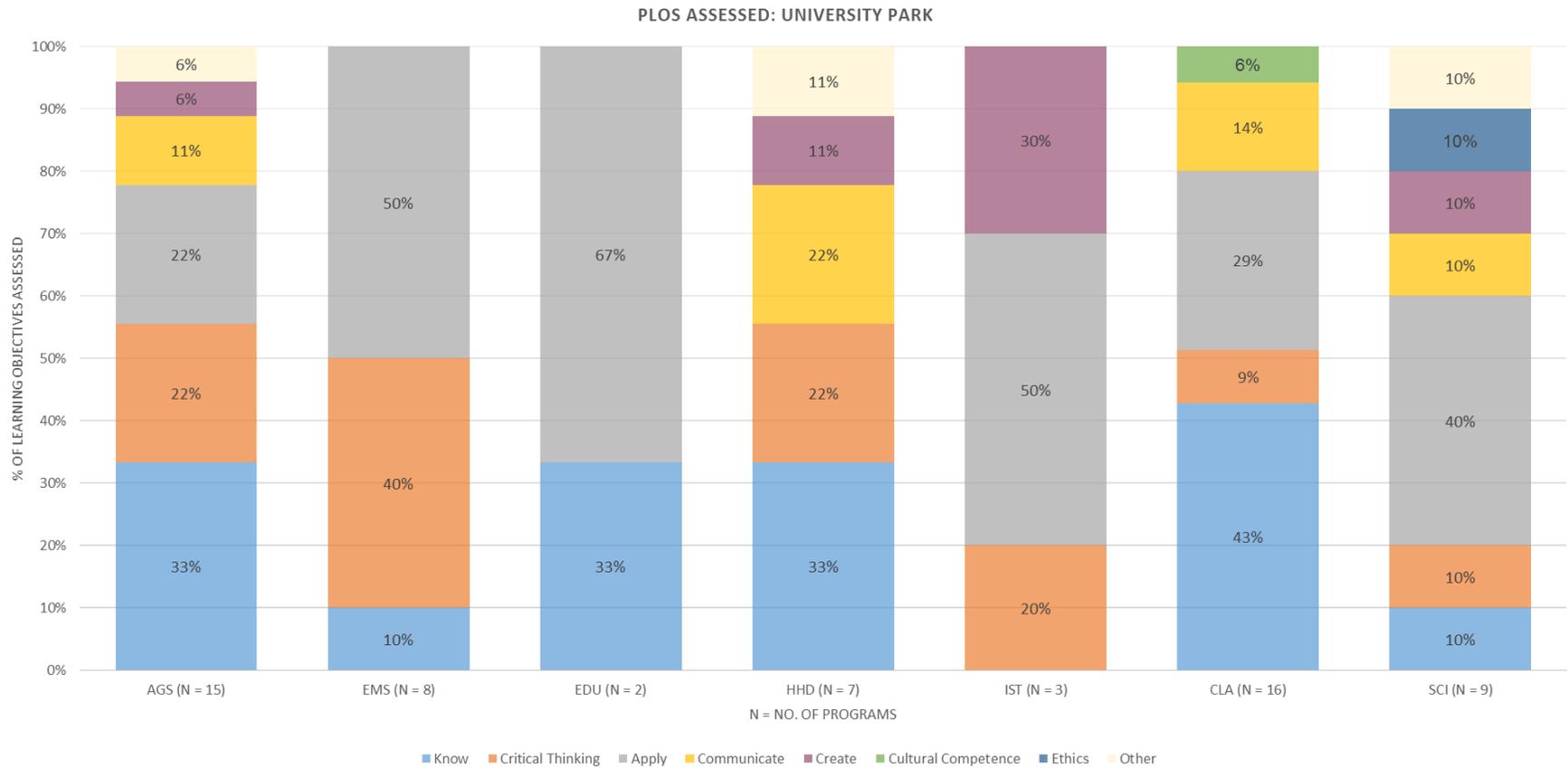


Figure 2: Campus Colleges - Categories of Undergraduate PLOs Assessed

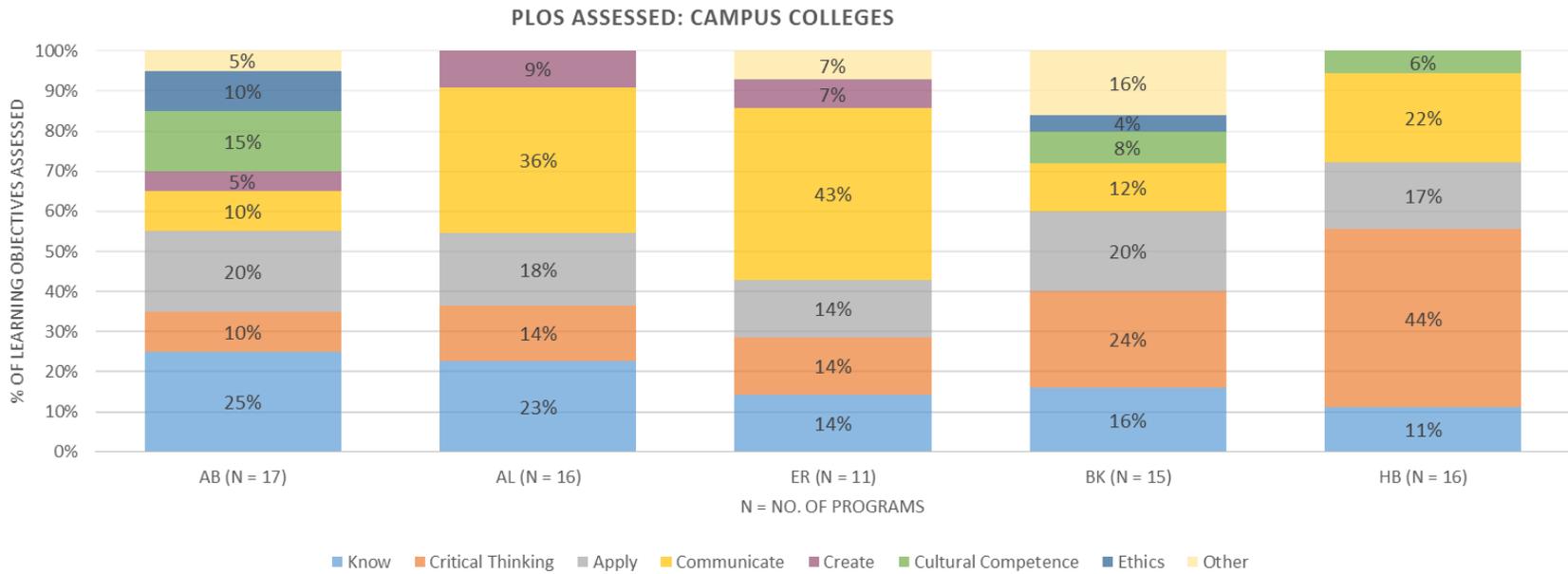


Figure 3: University College – Categories of Undergraduate PLOs Assessed

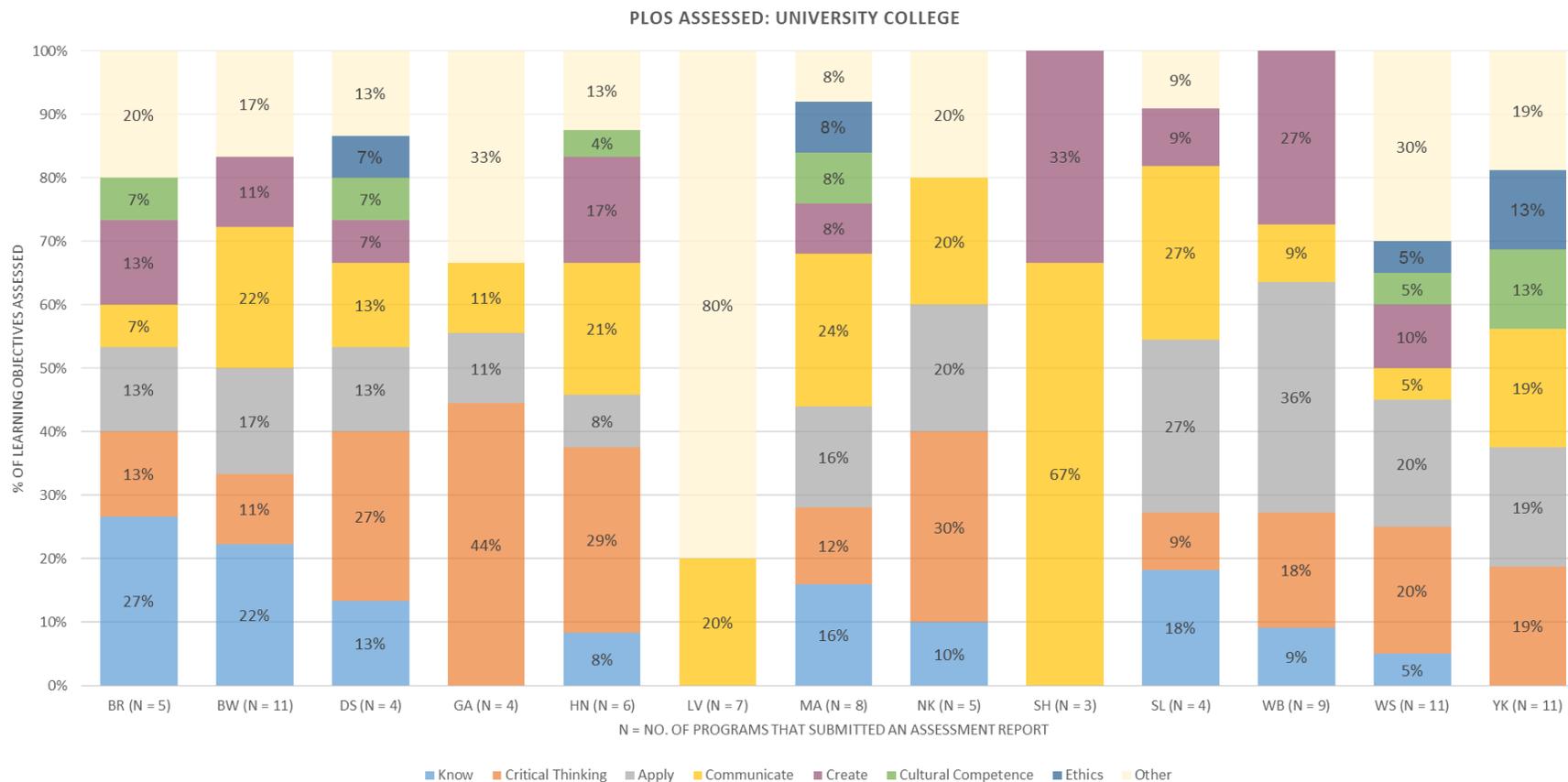
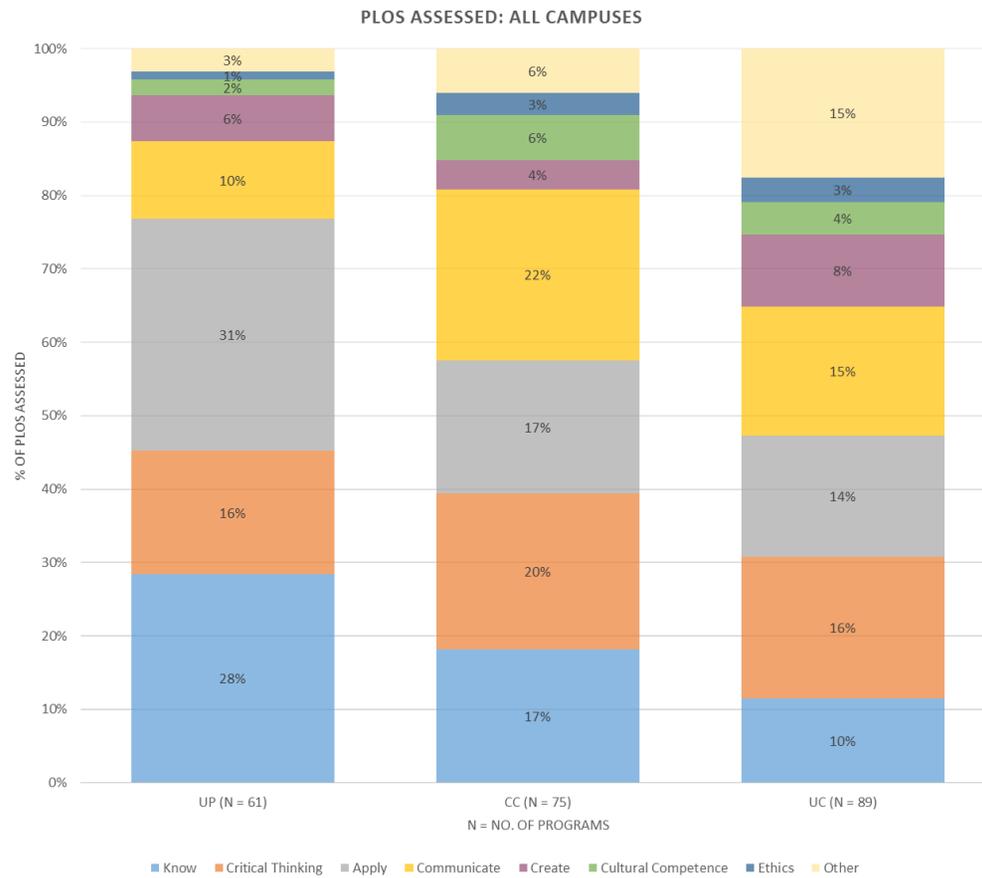


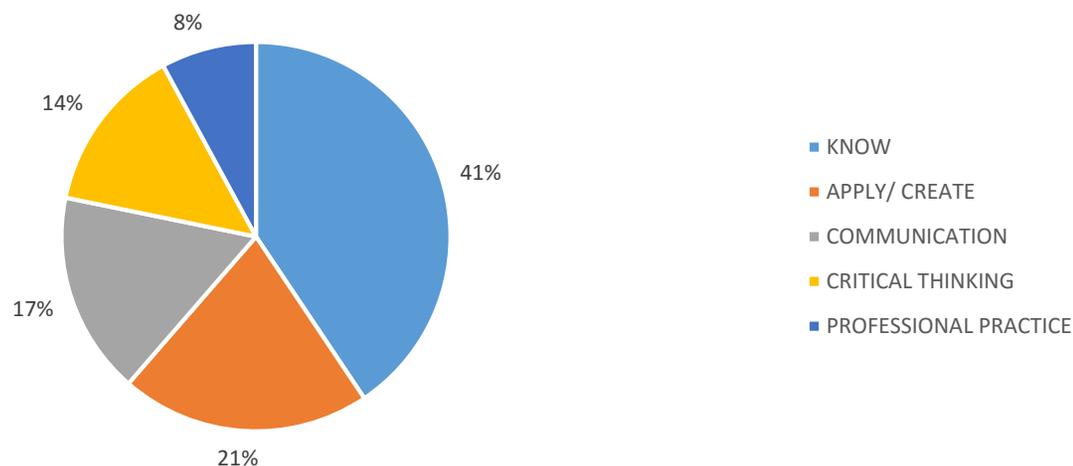
Figure 4: All Campuses - Categories of Undergraduate PLOs Assessed



Graduate

Graduate programs were required to align PLOs with the Graduate Council’s Scholarly and Professional Goals. The following chart shows the percentages of program learning objectives assessed by Graduate Council Goal category. Over 50% of PLOs assessed by graduate programs were categorized as “know” or “apply/create.”

Figure 5: Percentage of measures to address each Graduate Council goal



Measures Employed in Assessment Studies

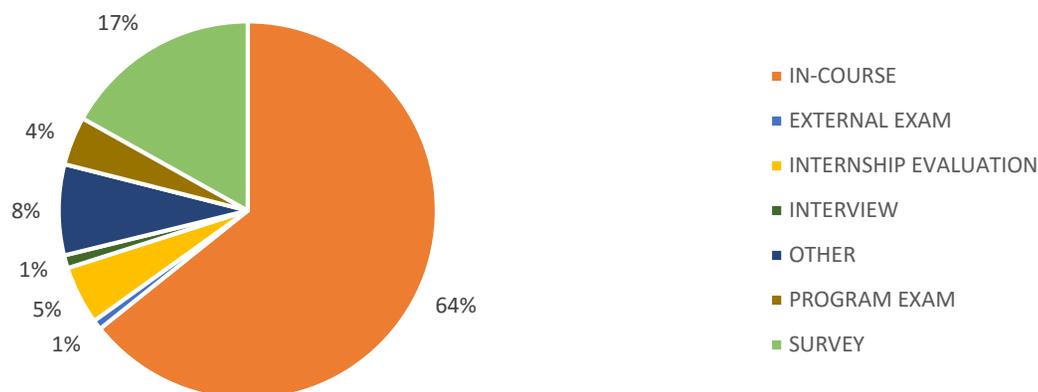
A wide variety of assessment measures were used to examine achievement of program learning outcomes during the 2016-17 academic year. Due to differences in their missions and contexts, Penn State’s undergraduate and graduate programs tend to employ distinct sets of measures in their assessment activities. The following sections present categories of assessment measures employed at each level across the University. Percentages are calculated from the total number of assessments; many programs employed multiple assessment measures.

Undergraduate Measures Employed

Overall, 64% of measures in undergraduate assessment reports were employed within the context of a course (in-course). These represent direct measures of student learning, which provide the strongest evidence. External exams (major fields tests, or other disciplinary exams), internship evaluations, interviews, program exams (authored by program faculty), and surveys, as well as other novel measures, were also employed by a few programs.

Figure 6: Undergraduate Assessment Measures Employed (types and distribution)

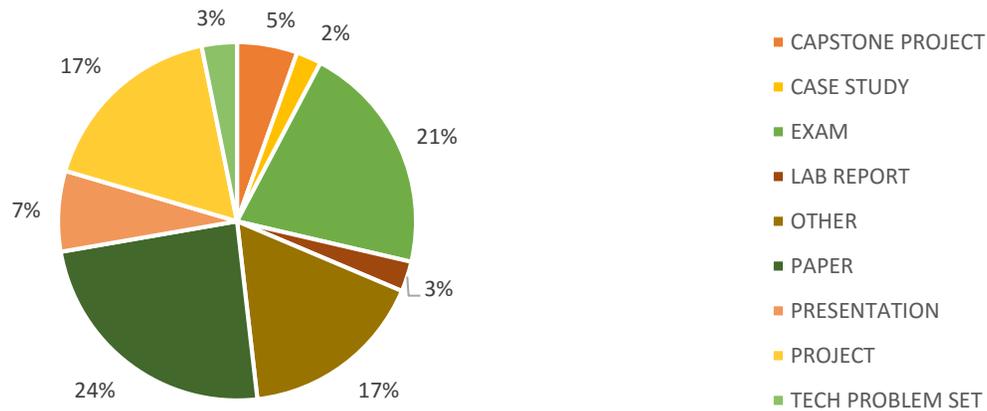
Distribution of undergraduate program assessment measures employed in AY2016-17



When examined more closely, within the category of “in-course” assessment measures, programs further employed a diverse range of approaches to examine learning outcomes. Papers were the most common in-course assessments (24%). An additional 55% of measures included exams, projects and “other.” Other measures include team projects and peer reviews. A graph displaying the categories and distribution of those measures follows.

Figure 7: “In-Course” Undergraduate Assessment Measures Employed (types and distribution)

Distribution of "In-Course" Assessment Measures Employed in Undergraduate Program Assessments

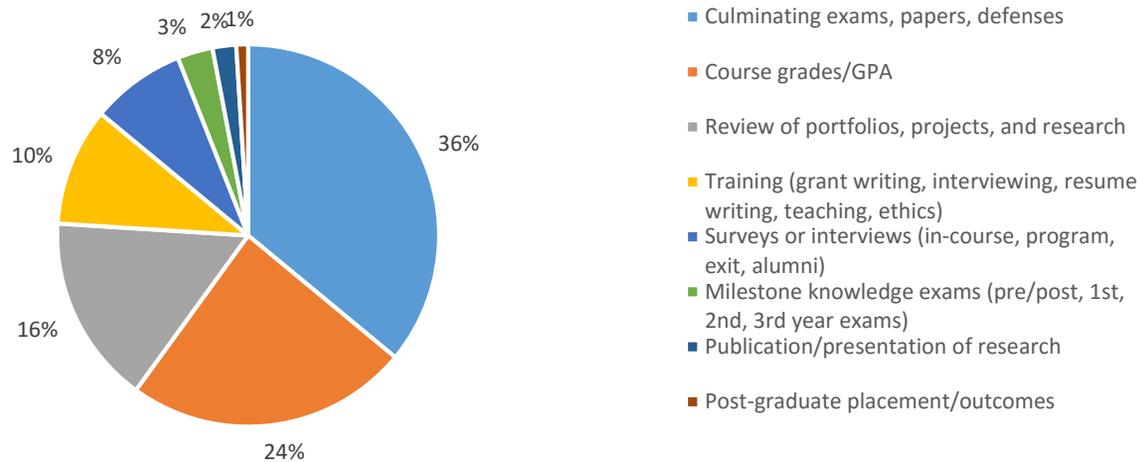


Graduate Measures Employed

Over a third (36%) of the assessment measures employed by graduate programs were culminating demonstrations of knowledge or skills, including comprehensive exams, papers or theses, and proposals or final defenses. Another quarter (24%) of the assessment measures incorporated grades in specific courses, or GPA across a specified set of courses. Formal review of portfolios, projects, and research made up 16% of the measures.

Figure 8: Graduate program assessment measures employed (type and distribution)

Distribution of graduate program assessment measures employed in AY2016-17



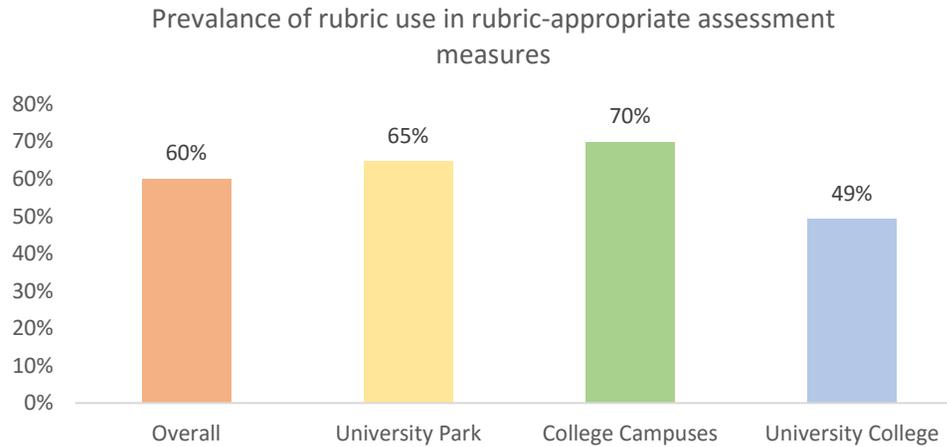
Rubric Use

One assessment practice promoted by OPA staff during the 2016-17 cycle was the use of rubrics –when appropriate– for the assessment measure(s) being examined. Employing rubrics when assessing learning objectives in papers, presentations, essays, and more allows faculty to determine student performance on multiple elements of an assignment at one time, which is preferable to an overall score because it can reveal strengths and weaknesses in specific components even if overall scores meet performance criteria.

Undergraduate Program Rubric Use

The following graph presents the percentage of program assessment studies that employed rubrics where rubrics were an appropriate choice for the measure. Rubrics were used most frequently at Campus Colleges.

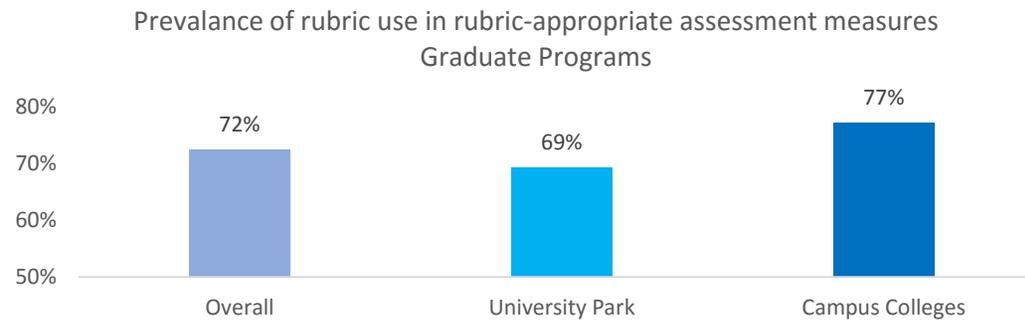
Figure 9: Rubric Prevalence in Undergraduate Program Assessment



Graduate Program Rubric Use

The following graph presents the percentage of graduate program assessment studies that employed rubrics where rubrics were an appropriate choice for the measure. As with undergraduate programs, rubrics were used most frequently at Campus Colleges.

Figure 10: Rubric Prevalence in Graduate Program Assessment



Program Coordinators' Requests

The 2016-17 undergraduate reports included two questions for program coordinators to express the additional resources or expert support they felt they needed to successfully complete their annual reports. The following table shows the categories of requests. The majority of requests were for general assessment guidance, rubric-specific guidance, examples of other program's plans/reports, resources, and developing assessment studies to examine learning. OPA staff are currently addressing these requests by providing additional resources or consultation.

Programs asked LOA staff about support/resources for...

| Assessment Consulting | |
|---|----|
| General assessment guidance | 19 |
| Rubric specific guidance | 17 |
| PLO specific guidance | 7 |
| Assessing small populations/programs with non-prescriptive curricula | 4 |
| Setting criteria levels | 1 |
| Designing assessment studies to examine learning | 11 |
| Can we have additional/different feedback? | 4 |
| Access to... | |
| Other programs' plans/reports (as examples) | 21 |
| Instruments (surveys, scales, inventories) | 3 |
| People (analysts), roles (gatekeepers), or data | 8 |
| Exit/alumni/graduate survey information | 4 |
| Resources: software, materials, facilities, more faculty or time | 14 |
| Coordination with... | |
| Disciplinary, or other group coordination (and support) | 7 |
| Increasing faculty participation/campus collaboration | 4 |
| Making program better reflect employers' or career path needs | 3 |
| Adjusting pedagogies to address assessment findings | 2 |
| Other | |
| Administrative clarity (of program and inter-program relationships, policies, priorities) | 3 |

Next Steps for Learning Outcomes Assessment at Penn State

OPA staff will focus on several key areas in Spring 2018. One priority is to evaluate the assessment process through the University Committee on Assessment of Learning (UCAL).

As noted earlier, both 2-year program assessment and certificate assessment plans and reports were not submitted at the same rates as graduate and 4-year undergraduate programs in the past year. We will focus efforts on supporting the faculty responsible for assessing these degrees and certificates. Assessment of 2-year programs can be challenging for program coordinators because they find it difficult to develop learning objectives that differ from those for 4-year programs. Furthermore, some 2-year programs have far fewer graduates, making assessment of their objectives more difficult.

We will continue to focus on disciplinary communities and support their efforts to work together on curricula and learning outcomes assessment. Collaboration on assessment across locations presents several challenges beyond the difficulty of having faculty agree on program learning objectives. Though many faculty members are interested in collaborating on assessment, the variation in resources and course offerings makes it difficult for programs at multiple locations to do so.

We expect to have selected an assessment management system by mid-summer 2018. As we continue through the process of acquiring a system, we will begin developing a plan for rolling it out with the goal of having all programs using it by Fall 2019.

Another area of focus for Spring 2018 is to begin exploring strategies for centering learning outcomes assessment processes within the units so that they take greater responsibility for the process. One possible strategy is for assessment professionals or assessment committees, like those that already exist at several campus locations, to take more ownership of the review process of the learning outcomes assessment process. Under this model, OPA staff would provide support and expert assistance where and when needed.

Counting assessment plans and reports is a good first step. Now that a system for doing so has been established, we can move beyond counting to explore the quality of assessment plans and measures as well as innovative assessment practices that can be shared across the university. We can use the information gathered to answer important questions. What kinds of changes are programs making based on their learning outcomes assessment efforts? How are these changes improving student learning? Do some changes have a stronger or wider impact on student learning than others? How might we connect University-wide student data with learning outcomes assessment efforts? We look forward to addressing these questions and more in the future.

Appendix - Assessment Report Examples

The following are examples of well-done assessment studies, and represent some of the diversity in approaches to assessment being conducted at Penn State.

Political Science/International Studies (UP, HB, AL, WC)

During the 2016-17 assessment cycle, Political Science (PLSC)/International Politics (INTPL) faculty at UP, HB, AL, and WC collaborated on an assessment study to examine students' abilities to identify and apply essential concepts, theories, and debates from the two disciplines. They focused on these essential learning outcomes, in part, because faculty observed gaps in foundational knowledge in many upper level students. Faculty across both introductory and advanced courses worked together to design a quiz to test students' abilities to both identify and apply essential ideas in the field.

Students across 400-level courses at each campus completed the quiz, which also collected additional information from the students, including patterns in prior course taking. Statistical analyses and tests revealed that, overall, students were meeting faculty expectations on the quiz, as well as program learning objectives. The data further also showed that, on average, INTPL majors outperformed PLSC majors, and that those who had taken an introductory, foundations course (PLSC 14) also performed significantly better than the average. At the same time, they found taking more PLSC courses below the 400-level to be uncorrelated with increased quiz performance.

Taken together, faculty concluded that PLSC 14 is beneficial to students in either major, and further interpreted that INTPL majors likely benefit from the introductory course, and the more structured program curriculum, neither of which is required of PLSC majors. Likewise, the study also revealed opportunities to strengthen curriculum across sub-400 courses to ensure coverage of key ideas. As a result of these findings, faculty are now considering potential changes to degree requirements and pre-requisites, as well as the choice and breadth of content they cover in lower-level courses.

Biochemistry & Molecular Biology (BK)

An important learning outcome in the Biochemistry & Molecular Biology (BMB) program is that students graduate with the ability to “read, understand, and critically interpret primary scientific literature.” To examine this outcome, BMB faculty designed an assessment examining the performance of upper-level students to ensure that their performance met program expectations.

Specifically, students in a 400-level BMB course were given a primary research article to read prior to their final exam. The exam included a series of prompts that invited students to demonstrate their abilities to read and interpret the article critically. BMB faculty scored their students' responses using a rubric designed to evaluate four distinct aspects of the overarching outcome.

Analysis of the scores revealed that, as a group, students had not met faculty expectations in three out of the four categories. As a result, faculty concluded their students are not receiving enough opportunities and support to successfully achieve the outcome, and subsequently recommended a number of changes to the program to address the deficit areas. These included using their curriculum map to identify additional places early on in the curriculum where it would be appropriate to introduce students to primary scientific literature. They further plan to develop additional assignments that require use of primary sources, and intend to provide more –and better— opportunities for students to both practice, and receive additional targeted instruction in critically reading such sources.

Energy and Mineral Engineering (M.S)

The assessment study conducted for the master's students in Energy and Mineral Engineering addressed the ability to “demonstrate deep understanding and proficiency in project evaluation methods, optimization and application of mechanistic, thermodynamic, fluid flow, and kinetic analysis methods for integrative design of energy and mineral engineering systems.” Faculty examined this objective through the M.S. thesis defense.

Though students met the criteria, faculty noted that 23% scored at the borderline of the criteria. Further exploration through conversations revealed that student who scored near the borderline typically were lacking the ability to present their research findings clearly but passed because of technical competency and quality of their research. However, the measure used to evaluate the defense was not sensitive enough to differentiate between the skills.

As a result of the 16/17 assessment outcome, the faculty have proposed two new rubrics - one for English competency and one for technical competency. The 17/18 assessment plan is to assess an additional learning objective through the M.S. thesis using the revised rubrics.