



General Education Assessment Processes Supporting Student Choice

How to assess and show progression of learning in General Education courses without prescriptive scheduling

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Introduction

Students have long viewed General Education courses as a necessary, but unimportant, part of their degree program (Shapovalov, Y. A., & Leventhal, B. C., 2023). Students often undervalue what these courses contribute to their academic and professional development, (Cope et al., 2021). Students seem to view General Education courses as less valuable than courses in the major, and they often see them as an obstacle in the way of them getting to the major coursework (Thompson, 2015). Mapping to career-relevant skills and affording students more choice on which General Education classes they can take is a strategy that institutions can implement to influence student perceptions of the value of these courses (Glynn, Aultman, & Owens, 2005). However, it is challenging to scaffold and assess student learning when we do not treat General Education like a program with prescriptive courses and sequences.

Assessment of learning is a critical institutional practice to evaluate student demonstration of learning towards established outcomes at the program level. In the case of General Education, many institutions will treat it like a program and assess learning outcomes over a series of General Education courses in a prescribed order. This enables assessment of learning outcomes at higher learning levels across courses, allowing the institution to monitor whether students are gaining competence and demonstrating learning at progressively higher levels as they persist. Institutions that want to allow students more freedom in which courses they take and when, need an alternative way to assess student performance and show progression of learning to measure student growth and competence. In addition, institutions must develop a systematic process to gather, analyze, and

interpret assessment data to identify any gaps in student learning that may drive curricular improvements or additional student support.

This paper aims to share one institution's process for assessing learning in General Education while allowing students the freedom to choose most of their courses. This is particularly important for institutions serving adult learners. Topics covered include developing General Education Student Learning Outcomes that represent essential 21st Century Skills, using Bloom's Taxonomy to design course assignments at increasing levels of rigor within a course, designing authentic assessments that align to Course Student Learning Outcomes and map to General Education Student Learning Outcomes, and developing a systematic process for collecting, analyzing, and responding to General Education student learning assessment data.

Research Goals and Support for Our Process

The College of General Studies at University of Phoenix sought to develop a process that addresses the specific problem of how to effectively map General Education curriculum to learning outcomes and show progression of learning without sacrificing scheduling flexibility for students. Mapping Course Student Learning Outcomes (CSLOs) tied to summative assessments to General Education Student Learning Outcomes (GESLOs) allows us to evaluate at an institutional level how our students are performing towards those learning outcomes to ensure effective curriculum. This also allows wide visibility to the learning outcomes and aligned skills students experience in each course, which University departments can share with students through advising and the student portal. This supports the University's strategy of aligning course curriculum to relevant-career skills to help students make the connection between what they are learning in class and skills they can use in their professional lives.

In undergraduate programs, students often undervalue General Education coursework (Gump, 2007). In addition to highlighting the career-relevant skills students can gain through completion of their General Education coursework, one way to improve student perception of the value of General Education is to allow them more control over what they will learn, which includes choosing which courses they take (Glynn, Aultman, & Owens, 2005). However, without being prescriptive about which courses students must take and in what order, it is challenging to map curriculum to learning outcomes the College can measure and improve upon.

The College's goal was to develop General Education mapping and assessment processes that would allow us to measure and improve student learning outcomes without sacrificing flexibility in course scheduling. We intended to scale this process to all courses in the General Education catalog to allow maximum flexibility in course selection. The following sections outline the five-step process we developed, which reflects the process we currently use to assess GESLOs.

Step One: Review of Industry Standards

As previously stated, mapping General Education curriculum to learning outcomes that we tied to career-relevant skills, and allowing students to select their classes, builds value for students. For adult students, in particular, the perception of value is a critical component of college persistence and success. The College is situated within a large online university serving adult learners, so

understanding the needs of the non-traditional student is an important backdrop to the work we undertook, which began with refining the mission and objectives of the General Education curriculum.

The College started its General Education reform process with a review of industry standards for General Education learning outcomes, which would inform the revision and refinement of previously established GESLOs. The College reviewed the 2017 Arizona Board of Regents report on General Education Quality and Outcomes for Northern Arizona University, HLC Criteria, Arizona General Education Curriculum, Association of American Colleges and Universities standards, National Association for Research in Science Teaching, the National Science Teaching Association, and Next Generation Science Standards. In addition, the College explored outcomes at comparable higher education institutions including Southern New Hampshire University, California State University (Northridge), University of Nebraska at Omaha, and Maricopa Community Colleges (Arizona). These sources provided helpful insights as we worked to update our learning outcomes to reflect the most important skills we wanted students to gain through completion of their General Education requirements.

The following table reflects the five GESLOs the College developed through refining existing learning objectives to better align to the University's educational mission and current General Education standards at the time. Each GESLO encompasses program-level skills also outlined in the table.

<p>Communication: Students will apply effective communication skills in a variety of contexts.</p> <p>Program-Level Skills: Written Communication, Verbal Communication, Presentation Skills, Influencing Skills, Research</p>
<p>Quantitative Reasoning: Students will utilize quantitative reasoning skills for a variety of purposes.</p> <p>Program-Level Skills: Problem Solving, Decision Making, Detail Oriented, Computer Literacy</p>
<p>Scientific Thinking and Inquiry: Students will utilize scientific thinking and inquiry skills for a variety of purposes.</p> <p>Program-Level Skills: Problem Solving, Innovation, Decision Making, Research, Communications, Training and Development</p>
<p>Critical and Creative Thinking: Students will apply critical and creative thinking in a variety of contexts.</p> <p>Program-Level Skills: Problem Solving, Decision Making, Innovation, Prioritization, Research</p>
<p>Intercultural and Interpersonal Awareness: Students will apply intercultural and interpersonal awareness in a variety of contexts.</p> <p>Program-Level Skills: Management, Leadership, Team Leadership, Team Building, Teamwork, Interpersonal Communications, Influencing Skills, Negotiation, Professionalism</p>

After receiving approval of the proposed GESLOs from the University's Academic Council in August of 2020, the College began step two, which was to develop Course Student Learning Outcomes (CSLOs)

for all General Education courses, following the University's framework of designating one CSLO per credit hour for each course. The next section details the work that went into this step.

Step Two: Developing Course Student Learning Outcomes

As you might imagine, the process of developing CSLOs for every General Education course was labor intensive and time consuming, and required the College to identify and prioritize courses we would need to revise to align with the newly developed CSLOs. The goal for every course was to create a more streamlined set of course outcomes with more obvious ties to career skills. It was important to develop each CSLO with an appropriate level of academic rigor to ensure effective scaffolding and progression of learning. This also supported the design teams who would use the CSLO level to guide them in selecting the appropriate learning level for the aligned assessments. The College team used Blooms Learning Levels to inform development of the CSLOs and the assessments.

The following table, included in a handout developed by Iowa State that was adapted from Anderson et al., 2001, provides various verbs to describe what assignments may ask students to do at different learning levels, (Anderson et al., 2001; Iowa State University, 2012). For example, higher learning level assignments may ask students to critique a piece of work as compared to lower learning level assignments that may ask students to describe it. The College used these learning levels to inform how we designed assessments.

lower order thinking skills			higher order thinking skills		
remember	understand	apply	analyze	evaluate	create
recognizing <ul style="list-style-type: none"> identifying recalling <ul style="list-style-type: none"> retrieving 	interpreting <ul style="list-style-type: none"> clarifying paraphrasing representing translating exemplifying <ul style="list-style-type: none"> illustrating instantiating classifying <ul style="list-style-type: none"> categorizing subsuming summarizing <ul style="list-style-type: none"> abstracting generalizing inferring <ul style="list-style-type: none"> concluding extrapolating interpolating predicting comparing <ul style="list-style-type: none"> contrasting mapping matching explaining <ul style="list-style-type: none"> constructing models 	executing <ul style="list-style-type: none"> carrying out implementing <ul style="list-style-type: none"> using 	differentiating <ul style="list-style-type: none"> discriminating distinguishing focusing selecting organizing <ul style="list-style-type: none"> finding coherence integrating outlining parsing structuring attributing <ul style="list-style-type: none"> deconstructing 	checking <ul style="list-style-type: none"> coordinating detecting monitoring testing critiquing <ul style="list-style-type: none"> judging 	generating <ul style="list-style-type: none"> hypothesizing planning <ul style="list-style-type: none"> designing producing <ul style="list-style-type: none"> constructing

Table 2 adapted from Anderson and Krathwohl, 2001, pp. 67–68.

Associate Deans for the College developed CSLOs with the intention that they would be the primary unit of measurement for assessment. The College developed the CSLOs in collaboration with faculty and other stakeholders, including industry advisory council members and the College Curriculum manager. We developed CSLOs to reflect the most important curricular content knowledge students should take away from each course, as well as employer-sought skills (Kelly et al., 2023). We tied the CSLOs to the top common skills associated with job posting analytics aligned to the Classification of

Instructional Programs (CIP) and Standard Occupational Classification (SOC) codes for the University's five highest enrolling undergraduate programs, as well as relevant skills identified through industry advisory council input. As outlined in a published paper about skills mapping a Bachelor of Science in Environmental Science program, job posing analytics data included top technical skills and common skills, (Kelly et al., 2023). The College intentionally aligned General Education courses to skills students would build upon in their major coursework, a factor that can improve the value proposition for students (Thomspon, Eodice, & Tran, 2015).

The College followed a General Education mapping process that was similar to the process used to map the Bachelor of Science in Environmental Science program as outlined in, *Uniting academia and industry to bridge the skills gap: Incorporating industry advisory councils in Curriculum-to-Careers Programmatic Mapping in undergraduate environmental science programs*, (Kelly et al., 2023). For each CSLO in each course, the College determined the appropriate level of academic rigor based on the level of the course. Consulting the University's Academic Rigor Degree Leveling Policy, adopted from the Lumina Foundation Degree Qualifications Profile (LFDQP) for associate through master's degree program levels, the College elected to treat 100-200 level courses as associate level and 300-400 level courses as bachelor's level in terms of rigor, (<https://www.luminafoundation.org/files/resources/dqp.pdf>, 2011). The College used the degree leveling policy and Blooms learning levels to establish appropriate levels of rigor by course level.

After the College defined the level of academic rigor appropriate for each course and developed CSLOs at the aligned learning level that mapped to GESLOs, the College was able to assess student learning at the course level and from that infer proficiency towards the aligned GESLO, (Kelly et al., 2023). This alignment of CSLOs to GESLOs and designing assessments at varying Blooms Levels of Learning within General Education courses facilitates analysis of progression of student learning, while maximizing student choice in which courses they take (Kelly et al., 2023).

Elements that are part of the College's skills mapping and course design process include collaborating with faculty to develop CSLOs and design authentic assessments that effectively measure student attainment of the CSLOs. Each CSLO is written with a specific Bloom's verb that sets the learning level and guides creation of the assessment. The maps show how the CSLO learning levels change during a course, allowing the College to measure progression of learning. Courses also include situational career context for the assessments and obvious ties to the linked skills identified for each CSLO.

The process we followed to develop CSLOs and assessments that we tied to course skills and mapped to GESLOs, was not always linear; however, for the purposes of this paper we described the steps in the order in which they would ideally happen. After the College's Associate Deans created CSLOs and tied them to skills and skill descriptors for clusters of General Education courses, they moved onto step three and developed a plan and timeline to revise courses that needed work to align with the new learning objectives they selected.

Step Three: Course Revision & Creation of Authentic Assessments

In step three, the College's design teams began the work of designing assessments constructed to help students recognize the career-relevance and value of their General Education curriculum. The

College designed assessments with progressively higher Bloom's Learning Levels during the five to seven-week course lengths. This design strategy provides students the chance to show progression of learning within the course and frees us from being prescriptive about which classes students take or when. In each three-credit course, we developed three Summative Assessments to measure the three CSLOs. The focus was on creating assessments that asked students to do things and produce deliverables that they may encounter in professional settings, such as change management plans, policy memos, or lab reports. Not all courses had obvious opportunities for authentic assessments, but wherever it made sense the College design team prioritized designing assignments that resembled real-world deliverables or performance.

After designing assessments aligned to CSLOs and skills that map to GESLOs, the College, in collaboration with the Assessment Team, determined a standard of student performance towards GESLO achievement that would inform annual continuous improvement efforts. We set our threshold at 80% of students achieving a score of 74% or higher on the summative assessment with the highest Bloom's level at the latest point in the course. We applied the same threshold to the average of student scores across all summative assessments in the course to evaluate overall performance towards GESLO achievement.

These established standards provided the Assessment Team with guidelines for how to serve up data to the College in a meaningful way, which built our confidence in student achievement on specific GESLOs, while also pointing to assessments and courses needing further review. As skills-aligned courses launched and students completed summative assessments, the University's data platform captured student performance data and fed that to a dashboard visible to the College leaders and various other stakeholders. In the following section, we outline the specific steps we followed to analyze student learning assessment data.

Step Four: Analysis of Assessment Data

In step four, we analyze assessment data to understand student demonstration of learning. We established a structure for gathering and analyzing GESLO assessment data annually for each of the five GESLOs. Analysis of assessment data, along with other course metrics such as completion rates, satisfaction rates and feedback, and faculty input, helps identify courses that warrant further review based on set standards of student performance. Each quarter, the College analyzes assessment data for 1-2 GESLOs and produces a report that identifies courses that fell short of one, or both, of the established minimum thresholds. For each identified course, College leaders outline contextual elements that may have contributed to lower than desired student performance, and we develop plans to further investigate, monitor, or revise courses with lower student achievement towards the mapped GESLO.

Below is an example of our GESLO assessment analysis report – in this case it is for the Communication GESLO. We answer questions about student performance on all the Summative Assessments in a course, as well as on the Summative Assessment designed at the highest Bloom's Learning Level at the latest point in the course. If students do not meet one or both thresholds, the report will include insights and any actions the College plans to take in response to the data.

Indicators to Flag (College will investigate further any courses that flag on either indicator):

- Fewer than 80% of student scores meeting the 74% University target (course level – all CSLOs combined)
- Fewer than 80% of students meeting the 74% University threshold on the assessment aligned to the highest level of learning at the latest point in the course

GESLO 1: Communication

Question	Answer	Action Item(s)
1. Does overall performance on the GESLO (GESLO averages) meet the criteria for success as defined above? a. If not, on which summative assessments and in which courses are students not performing well? i. Does College have any insights into why students aren't performing well on those summative assessments?		
2. Did students meet the criteria for success as defined above on the SA aligned to the highest level of learning at the latest point in the course? a. If students did not meet the criteria for success on the SA aligned to the highest level of learning at the latest point in the course, at what level are they meeting the 74% target score for that SA and how does that compare with the criteria for success? b. Are there any factors the college is aware of that could be contributing to this outcome?		

GESLO Assessment Data Report: criteria for further investigation of courses where students fall below the established thresholds and what we document as part of our continuous improvement processes. College of General Studies, 2021.

In response to courses where performance is lower than the established thresholds, the College gathers additional information to determine why students did not perform at the desired level. We may review additional data points such as withdrawal and fail rates for the course, student, and faculty feedback, or we may identify revisions we know we want to make to the course. The final step of our process goes into more detail about the follow up actions we take when courses are not meeting minimum thresholds for student performance towards GESLO achievement. Reviewing additional data points and incorporating student and faculty feedback is an important part of our process for evaluating the course holistically to understand how effectively it is meeting the learning objectives.

Step Five: Course Review

This step in our process of assessing GESLOs is where we would make strategic changes to address courses that did not meet established standards. The College added courses identified as needing further review to a roadmap to gather faculty feedback either through a college-specific feedback process or the University's Rapid Assessment Process (RAP). The RAP uses a standard faculty survey that asks questions about faculty perception of the alignment of assessments to CSLOs, the effectiveness of materials to prepare students to complete the assessments, and how well the

assessments measure the CSLOs and aligned skills. Below is an example of faculty feedback we collect; in this case it is for an Introduction to Oral Communication course.

Section 2: Week 1- Summative Assessment: Persuasive vs Informative Speeches Worksheet	
Question	Percentage of 'Yes' responses Most pertinent qualitative responses. Direct quotes from survey
Is this summative assessment reflective of what students might do in their careers?	86%
What should be changed to make this summative assessment reflective of what students might do in their careers?	Students review the speech to determine if it is informational or persuasive. Some respond that it is both which is incorrect. Providing an example in the assignment of how being able to deliver each type of speech will benefit the student will be helpful. The current example shows the student how to complete the worksheet which is task focused.
Does the course content (e.g., readings, videos) build student learning so that students may successfully complete this summative assessment?	86%
What changes need to be made to the course content (e.g., readings, videos)?	The is no textbook for this course. Students do not read the course materials. Bongo is not used in a local course.

Sample questions posed to faculty as part of the Rapid Assessment Process (RAP). College of General Studies, 2023.

The College analyzes faculty responses to questions about the alignment of Summative Assessments to CSLOs, the effectiveness of materials meant to prepare students to complete the Summative Assessments, and if there are any assessments that are confusing or problematic for students because of the way we designed them. If faculty feedback reinforces what the assessment data pointed to in terms of Summative Assessments that are not performing as desired, the College will typically add the course to its revision schedule to address the assessments that are underperforming. Some assessments will be more challenging for students because of the nature of the content. We expect this for courses covering topics that are harder to grasp. In this case, the College may not revise the assessment, but may look at additional course materials to support student learning of the concepts.

Implementation and Findings

The College implemented the five-step process outlined in this paper in 2022, and we have mapped 85% of our General Education courses to GESLOs since that time. We have been able to monitor student achievement on assessments tied to CSLOs that map to GESLOs without limiting students to certain courses in a specified order. After two cycles of this process, we have gained a better understanding of how well students are demonstrating knowledge of the GESLOs and we have been able to focus our attention on making improvements in courses that warrant it. We can also track how performance changes over time. For example, students' average assessment scores for the Communication GESLO improved 1.00% from 2022-2023.

Insights gained from analysis of assessment data drive further investigation, which helps the College identify courses in need of revision. We can be strategic in our efforts to improve course quality,

curriculum delivery, and student learning without sacrificing students' desire to select the General Education courses they wish to take.

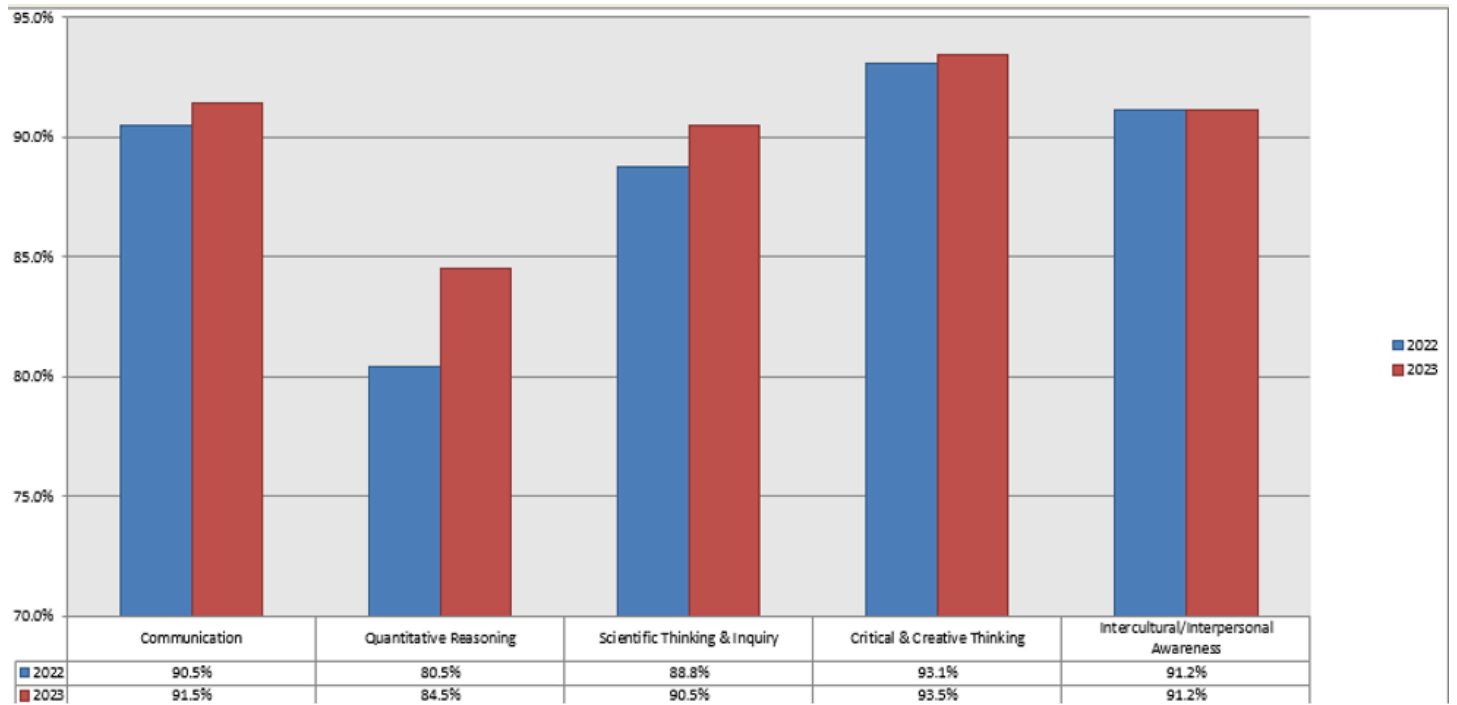


Chart 1. Average Assessment Scores Aligned to Each GESLO. College of General Studies, 2023.

We have successfully integrated this process into the College's operating plans over the past two years and it is working well in terms of being able to evaluate student achievement of the GESLOs. However, as outlined in the next section, there are nuances and limitations to our process. In addition, it does not include a way to measure student perceptions of the value of General Education coursework, which reflects a gap in our understanding of how our work addressed the problem we aimed to solve. We do have data measuring student completion and persistence rates in General Education courses, and we can assess their satisfaction levels and feedback through our end of course surveys. These mechanisms give us some indication of how students feel about General Education courses, but we still have work to do to gain a deeper understanding of student perceptions.

Next Steps (Implications)

As mentioned in the preceding section, we have 85% of our General Education catalog designed in a skills-aligned format with one CSLO for each credit hour mapped to one GESLO. We have approximately 19 General Education courses that have not yet been skills mapped and all are part of a roadmap to complete within the next year. Our highest priority next steps are to revise our remaining courses into our skills-aligned design and continue to collect and analyze GESLO assessment data for all courses already mapped. We hope to continue to see students meeting our thresholds of performance on most of the GESLOs regardless of when students take specific courses. We will also continue to refine our process and work towards resolving the limitations we acknowledge are inherent in our current process.

One limitation is that we have courses within our catalog that do not lend themselves to authentic assessments. Courses we designate as technology-enhanced leverage third-party tools to enhance

the learning experience for students, including providing immediate assignment feedback, which supports learning and meets a key student preference. The challenge with our technology-enhanced courses is that there is no effective way to design authentic assessments that still allow us to leverage the third-party tools. Though student learning is still valid and skills-aligned in these courses, the lack of authentic deliverables does not fully align with our curriculum-to-career design approach. This issue is one for which we continue to explore solutions.

Another limitation of our process is that unlike programs that are aligned to technical skills based on assigned CIP/SOC codes, General Education courses do not have CIP/SOC designations, so soft skills were selected from job posting data for five of our bachelor's programs and from insights gained through discussions with our Industry Advisory Council. The issue we ran into is that there are only so many soft skills and most are shared across many fields, so we ran into duplication, which limited the differentiated skills students would see. The way we tried to address this issue was to pull from the soft skills associated with our top five highest enrolling bachelor's programs. However, we still duplicated some of our skills across multiple courses because it was more important to us that we tightly aligned the content to the skill than avoiding any duplication. We also worked with our Industry Advisory Councils to validate additional skills we developed, but that did not entirely resolve this issue.

We have also had to contend with the fact that we have many General Education courses that are also required course of study courses in either our Environmental Science or English program. Students enrolled in one of our Liberal Arts degree programs will take these courses to fulfil their program requirements; however, students in any other undergraduate program may take them to fulfill General Education requirements. We had to work with our assessment partners to determine how we would isolate the data to analyze student achievement towards the GESLOs or the Program Student Learning Outcomes (PSLOs), depending on their program of study. The College had to map all shared courses to the appropriate GESLOs and PSLOs to account for students taking the course to fulfil General Education or program requirements. Mapping shared courses to PSLOs allows us to analyze how Environmental Science or English program students are performing towards the PSLOs by filtering the data to just students enrolled in those programs. When we exclude those program students from the data, we can see how all other program students taking the shared courses perform towards the GESLOs. Shared courses also present challenges when it comes to designing summative assessments that are well-aligned to specific GESLOs and PSLOs. Our design approaches have improved over time, but it remains difficult to address both learning outcomes without developing overly complex assessments.

Conclusion

Despite the challenges outlined in the previous section, the College has achieved its goal of designing a systematic process to assess GESLOs at higher learning levels within courses. Developing CSLOs at the appropriate level of rigor for each assessment in a General Education course and scaffolding that learning across the course was a critical component that allowed us to show progression of learning without limiting which courses students could take or when. Implementation of this process has afforded the College confidence in knowing that students can select the General Education courses

that align with their interests, and it will not disrupt our ability to assess how students are performing towards the most critical learning objectives tied to General Education.

New undergraduate students enrolling at University of Phoenix will experience skills-aligned General Education courses that are innovative, engaging, and appropriately leveled. In addition, our learning assessment model, which includes a structured process of data evaluation, course performance metric review, timely student and faculty feedback, and documentation of actions allows us to promptly identify and address areas of opportunity within courses. We are committed to this process of continuous quality improvement wherein we learn from student data and faculty and student feedback where to focus our improvement efforts.

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