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Building a Data-Driven System to Improve Educational Quality

Instructional faculty want to improve classroom instruction and care about student learning. Frequently, however, those same faculty who reflect deeply on the process of the courses are not interested in engaging with learning outcomes assessment and indeed there are several institutional barriers prohibiting such work (e.g., higher education's reward structure does not typically recognize such work; Hutchings, 2010). The negative reaction to learning outcomes assessment can be even more pronounced in the case of general education programs, since often faculty responsible for teaching these courses may have little allegiance to general education (i.e., their allegiance is likely more aligned with their discipline than the broader aims of the general education program). Nonetheless, national conversations about the value and cost of higher education, state and federal support for public institutions, and the career readiness of recent graduates demonstrate the need for universities to be able to document as clearly as possible the educational value of the instruction we provide, not just in the specialized academic major curricula, but also in the broad general education we require our students to complete.

Of course, there are more immediate forces driving general education learning outcome assessment as well. Regional accreditors require higher education institutions to articulate student learning outcomes for their general education programs and measure the extent to which students are achieving those outcomes. The Southern Association of Colleges and Schools: Commission on Colleges (SACSCOC), the regional accreditor for Auburn University, requires each institution "identifies expected outcomes, assesses the extent to which it achieves these outcomes, and provides evidence of seeking improvement based on analysis of the results in... student learning outcomes for collegiate-level general education competencies of its undergraduate degree programs." (SACSCOC, Standard 8.2.B, 2017). This standard is effective as of January 1, 2018 and the requirement to seek improvement is new. Prior to the standard's revision, SACSCOC institutions did not have to document use of the general assessment data to improve student learning. The revision is a good one, and it adds a touch of urgency to the process of conducting strong general education learning outcomes assessment.

When all of these forces combine in the context of a large, decentralized research university, the question for those of us interested in general education learning outcomes assessment becomes:

How can we structure a general education assessment process that can do three things:

- 1. provide us with data that the faculty will deem authentic and useable for prompting program improvement;***
- 2. document our commitment to improving our students' general education experience based on data; and,***
- 3. strengthen our narrative to external stakeholders about the value of a broad-based university education?***

Historically, Auburn University employed a course-embedded assessment approach, asking faculty members to measure general education student learning outcomes in their Core Curriculum courses through use of a common rubric which had been developed by a faculty committee that used the VALUE rubrics as models (Rhodes, 2009). While this approach is frequently used at institutions, it did not work well at Auburn. Indeed, faculty mapped their assessments of different kinds of assignments onto the rubric in different ways and with different levels of intellectual commitment. The result was that student competency levels were almost always determined to be “Intermediate,” and very limited plans for instructional improvement emerged because the evidence was unreliable and very general. Following a year of reflection and focus groups evaluating the system, the faculty committee determined that it was asking the faculty to spend a great deal of energy on assessment efforts that did not yield reliable or valid data. It was a system that served primarily to reinforce all of the worst preconceptions about the assessment process.

Following this determination, Auburn University switched from a course-embedded, labor-intensive, unsatisfying process to a centralized, comprehensive approach that is showing promise of delivering to the faculty information that can be used to strengthen the educational quality on the Auburn campus. The new student learning assessment infrastructure, known as SCORE (Student Core Outcomes and Readiness Evaluation), will allow us to use data to pinpoint particular learning outcomes in need of improvement and to disaggregate performance data to identify categories of students who may lag behind in certain areas of competency. With that information in hand, the faculty general education committee and other campus stakeholders will be able to build targeted programs to strengthen student performance.

Evolution of the SCORE

During the aforementioned year of reflection, the University Senate Committee charged with oversight of the program – The Core Curriculum and General Education Committee (CCGEC) -- determined to examine its student learning outcomes before in addition to the assessment process. Previously, all outcomes began, “students will” followed by the learning area. This vague stem presented a question: did the outcome apply to students enrolled in particular general education courses? If so, this presented a challenge at Auburn, given that not all students took their general education courses at the beginning of their educational career, or--even--at Auburn. In the end, the committee decided that general education classes are *foundational*, understanding that students’ general education was reinforced through major coursework as well as co-curricular activities.

That is, students begin honing their skills in these classes, but that does not necessarily mean that their learning on that outcome ends in the Core class. This conclusion emerged from consideration of such studies as that by Huber and Kuncel (2016) that performed a meta-analysis of critical thinking in college found that gains in critical thinking were more substantial across larger time frames (Huber & Kuncel, 2016). Thus, we collectively decided to focus on measuring learning at the graduating senior level, so that we could see the cumulative effect of students’ learning experience.

The committee also agreed that some refinement of learning outcomes was necessary--both as a way to articulate more directly the true objectives of the general education program, but also as a strategy to increase faculty support for the general education program. Consequently, beginning in Summer 2016, working groups were established for each of the general education outcomes, comprised of faculty members in relevant disciplines and a representative from the Office of Academic Assessment as coordinator to help keep the discussion focused on developing assessable revisions; further, a broad working group was charged with developing a strategy for implementing centralized general assessment instruments at the graduating senior level.

Through the working group process, the following learning outcomes were developed and approved by the CCGEC and the University Senate as a whole. The submeasures, or definitions, of each of the outcomes remained a draft document internal to the committee:

In order to become lifelong learners and use their education to solve practical problems, by the time of graduation, students will be able to effectively:

- a. locate, evaluate, and use information.
- b. read and think critically.
- c. apply mathematical methods.
- d. write and revise for a variety of purposes.
- e. create and deliver oral presentations.
- f. analyze their own society and its relationship to the larger global context.
- g. interact in intercultural situations.
- h. apply scientific principles.
- i. analyze and value creative artistic endeavors.

Alternative Implementation Methods

The CCGEC developed several possible methods for gathering centralized assessment data from seniors near graduation:

- a. Recruit student volunteers, incentivizing participation with reward
- b. Recruit faculty members teaching capstone classes to assign assessment instruments to their students.
- c. Make completion of an assessment instrument mandatory for all students who wished to complete the online diploma application and graduation paperwork.

Student Volunteers

Seeking student volunteers was piloted during Summer 2016. All enrolled students who had completed 105 credits were sent an email asking them to participate in the assessment process. In exchange for an hour of their time, these students were promised a 1-year membership in the alumni association, an Auburn Alumni Association portfolio, a free official transcript (\$12 value), and a chance to win a \$200-value diploma frame, and pizza. Of the more than 1000 students who received the email, only 37 volunteered.

Capstone Courses

In Spring 2017, we piloted this approach and encountered several limitations including: 1) Not all majors required a capstone course, and some capstone courses permitted students to enroll prior to their senior year; 2) Not all faculty agreed to participate, making the range of students

assessed not representative of the student body as a whole; 3) Some tests were assigned during class sessions, but some required students to make a special visit to the Testing Center to complete the assessment; 4) Student willingness to make that extra effort depended greatly on their faculty members' enthusiasm for the project and on the time during the semester when the assessment was scheduled; 5) Students were much more likely to participate if the assessment was scheduled to be administered during the early weeks of the semester; and finally, 6) The method proved very administratively time-consuming: encouraging faculty to participate, explaining the process to students, scheduling labs for assessments scheduled during class times, scheduling exam proctors (required for HEIghten tests), etc. made this a very labor-intensive approach for the Office of Academic Assessment. Further, this approach did not allow us to gain a random, representative sample of students for each student learning outcome.

Mandatory Graduating Senior Assessment

Given our inability to gain a random, representative sample through other means, we determined to require graduating seniors to take an assessment. To test this approach, we partnered with one of our 12 academic colleges—the College of Science and Mathematics. To incentivize participation, students could not access their diploma application (which triggers the diploma to be sent to the correct address) unless they took a one-hour assessment randomly assigned to them based on the last digit of their student ID number; this approach allowed us to get a random sample for each student learning outcome. Testing occurred within a 4-week range and we achieved 95% compliance.

With this successful pilot, our Provost agreed to move forward with requiring all graduating seniors to take a one-hour assessment in order to access their application for their diploma. To market this new requirement, the name “SCORE” was created and shared with seniors graduating in the summer of 2018.

Rather than assessing every outcome every year, the CCGEC decided to focus on three outcomes per semester (grouping summer and fall together). This approach would yield larger sample sizes and allow a more focused effort for the improvement initiatives that the committee and individual academic units might develop in response to SCORE data.

In total, 98.5% of summer graduates were compliant with this new requirement. More specifically, ~75% of students took the test and ~25% received a waiver because they were completing an off-campus internship or study abroad experience. In preparation for Fall 2018, a comprehensive marketing campaign was created to encourage students to register for their SCORE assessment. For example, a video featuring Auburn University's beloved mascot, Aubie, will be disseminated via social media.

Improvement Strategy – Inclusive Engagement

Overall results will be shared following testing. Additionally, an important emphasis has been placed on investigating questions of equity. That is, rather than solely trying to improve an

outcome overall, we will disaggregate the data in a variety of ways to determine if there are gaps in learning between certain groups (e.g., do transfer students have the same levels of learning at graduation as native students?).

To generate learning research questions focused on issues of equity, we called together a group known as SCOREKEEPERS from across campus. Specifically, faculty, Associate Deans, Institutional Researchers, Student Affairs personnel, Advisors, and Instructional Librarians all came together to explore available data and pose learning research questions. Once fall testing is complete, these questions will be answered and the results will be shared with this group, the CCGEC, and others as necessary to inspire improvement initiatives.

Conclusion

Although Auburn University is in the beginning stages of requiring the SCORE, there is already visible engagement in *student learning* from stakeholders from across campus that was not previously seen. Indeed, the learning data being collected has sparked many interesting conversations and interests in refining and strengthening the educational experience at Auburn. We hope to continue to improve the testing process (including strengthening test-taking motivation) and work to align high-impact practices with the SCORE data to tell a rich story about student learning.

References

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