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SCALING STUDENT SUCCESS

130 Institutions Scaling Student Success Across the Nation

Powered by Publics Learning Memo: The Western Land-Grant Cluster

Each cluster in APLU's Powered by Publics initiative is working to refine, implement, and scale innovative practices that address shared challenges among the participating institutions. This learning memo shares an update on the activities and ideas from the Western Land-grant cluster, which is focused on teaching and learning for student success. A list of institutions in this cluster is included at the end of this memo.

Members of the Western Land-grant cluster are building the initial infrastructure for a clearinghouse of effective teaching practices as well as policy changes that will support student success in the classroom. Institutions in the cluster identified curricular complexity as a roadblock for student progression through a major or program of study and on-time completion of a credential. The group decided to take a deep dive into the course requirements for critical degree programs common across the universities in the cluster, to identify blocking and delay factors. They used Curricular Analytics, a free online tool developed by researchers Chaouki Abdallah and Greg Heileman at the University of New Mexico (Drs. Abdallah and Heileman have since taken appointments at other universities). The tool shows how classes interact with each other and rates each major with a complexity value. It also creates an interactive data visualization so users can examine each potential pathway through the major in isolation.

Cluster Activities

The team from University of Wyoming, a member of this cluster and current user of Curricular Analytics campus-wide, demonstrated the tool via webinar; remaining members of the group then uploaded their course data for four common degree programs: mechanical engineering, psychology, music education, and animal science. Uploading data for a single degree program took from 10 minutes for those who had the right information up front, to about an hour for those who needed to gather course data from scratch. APLU staff synthesized the results to draw conclusions across all 11 universities.

Results

The complexity results mostly fell within expectations, with some surprises (for example, a case in which a music education program was more complex than mechanical engineering). There was wide variation among campuses in terms of complexity for the same degree programs. In one case, a mechanical engineering program was so complex it would simply not be possible for a student to complete in four years unless they had advanced placement courses or prior credit for prerequisites – a clear barrier for underserved, returning adult, and first-generation students. The group had some theories for why programs were complex or not, but there are still unanswered questions they are investigating further.

The cluster's analysis is aimed at informing the group's future collaborative work centered on teaching and learning for student success.

The Curricular Analytics tool is open access, so once a university uploads its course data, the information is accessible to all users with a login. This increases transparency and allows for comparisons across institutions. To view the results for yourself, simply create a free login to Curricular Analytics, and search for the university name or degree type in the search bar.

Conclusions and Next Steps

- Leadership: The primary benefit of these data visualizations is that they can lead to necessary conversations across campus around course and credit requirements. The ability to compare with peer institutions can highlight when complexity levels are not standard, catalyzing change at the department- and college-level.
- Advisors: The graphs provide a critical illustration of key gateway courses and their potential impact. This helps advisors ensure students prioritize the courses that are most critical for success (that are potential high blocking and delay factors).
- Students: The visualizations may help students understand their pathway better and earlier in their academic career, informing their major/degree program choice and improving odds of on-time completion.
- Faculty: The cross-institutional data we gathered may help faculty make changes to course-design and pedagogy in consultation with their peers. The cluster has tentatively decided to hold a fall symposium on teaching for student success at Colorado State and we have begun planning for this event.

To strengthen conclusions, the cluster agreed to take on a summer project in which each institution would upload a larger number of critical degree programs (to be determined by the campus) or, if possible, all programs. Each campus would then correlate the complexity scores with its own student performance data to see if there is a relationship (i.e., are retention and completion rates lower for students in programs with high complexity scores?). The cluster hopes to report out the results of this project at Annual Meeting.

The next step would be to bring this useful tool to scale across many more universities. Imagine many hundreds of unit-level conversations wherein faculty input their own curricular data into the tool and then engage in conversation concerning results. That they would have benefit of comparative analysis across 130 comparable institutions would be an extraordinary benefit for each institution and for each unit within each institution. It would also foster indirect and intangible bottom-up conversations among faculty concerning complexity, time-to-degree, cost of completion, and other fundamental determinants of student success.

Other Resources

- Curricular Analytics online tool.
- Visualizing Student Flows: Busting Myths About Student Movement and Success (*Change Magazine*, 2015).
- Curricular Analytics: A Framework for Quantifying the Impact of Curricular Reforms and Pedagogical Innovations (Heileman, Abdallah, Slim, and Hickman,2018).
- PPT presentation to the Reinvention Collaborative.

Schools in the cluster:

- Colorado State University (lead)
- Langston University
- Montana State University
- New Mexico State University
- North Dakota State University
- Oklahoma State University
- South Dakota State University
- University of Idaho
- University of Nevada-Reno
- Utah State University
- University of Wyoming