



CRACKING THE CODE ON STEM

A People Strategy
for Nevada's Economy

Promote STEM Within the NSHE Funding Formula

Problem

The new Nevada System of Higher Education (NSHE) funding formula passed by the legislature last year is a substantial improvement to the prior formula. The shift from student enrollment as the primary funding mechanism to course completion and performance metrics is a critical advance. However, it remains to be seen if the new formula will promote the state's STEM and workforce training objectives. In particular, it is far from clear that the STEM performance metric—which awards schools points based on the number of STEM graduates—and course weights incentivize STEM education strongly enough. Based on the 2011–12 academic year the STEM portion of the performance pool accounted for between 0.3 and 0.8 percent of the total funding for respective Nevada institutions of higher education. Even when the performance pool maxes out at 20 percent of the total formula, the average NSHE institution will only see roughly 2.2 percent of its budget come from the STEM performance metric. Furthermore, the legislature did not mandate that the performance pool would increase over time, so NSHE institutions are left with uncertainty regarding the future of the STEM performance metric.

In addition, the course weights by discipline are based on the estimated cost per student, not course relevance to the state's economic priorities. For example, a basic-level mathematics course—the entry point for any STEM discipline—has a weight of 1.0, the lowest of any course.

Finally, the new funding formula relies on the same metrics for both two-year and four-year institutions. Community colleges, unlike four-year colleges and universities, are not research institutions and have distinct educational priorities. While much of the funding formula for community colleges and four-years can be identical, some elements of the formula should reflect each type of institution's specific contributions to the Nevada economy.

Recommendation

Implementation of the new NSHE funding formula should be closely monitored to ensure that it adequately incentivizes STEM instruction. If it does not, the formula should be amended to: 1) Increase the performance pool portion allocated based on the number of certificates and

associate, bachelor's, master's, and doctoral degrees awarded in STEM fields to a percentage that will more greatly incentivize STEM; 2) Supplement the discipline cluster weights based on relevance to the state's economic mission; and 3) Add metrics specifically for community colleges.

Implementation Specifics

Improvements to the NSHE funding formula would:

- **Increase the performance pool portion allocated to STEM degrees** to a more meaningful level. At less than 1 percent of total funding, STEM degrees and certificates are not sufficiently incentivized in the current funding formula. Although the economic development metrics are weighted at 20 percent, low graduation rates in STEM mean that no school currently receives close to 20 percent of their performance pool funds from the STEM metric. To accelerate STEM graduation rates, the STEM portion of the performance pool should be elevated from 20 to 50 percent for the next three years.
- In addition to increasing the STEM portion of the performance pool, the Nevada Legislature should **mandate that the performance component of the funding formula increase to 20 percent in four years**. Currently a number of states' performance metrics are mandated to increase with time, including Louisiana and Tennessee. Other states, such as Ohio, allocate 100 percent of higher education funding based on performance metrics.
- The current formula allocates course weights based on the presumed cost per student for each course. **Additional weight should be given to courses that align with the Governor's economic strategy, with each STEM discipline receiving an additional one to three points in the overall weighting.**
- Finally, **the NSHE formula should add specific metrics for community colleges**. Currently a number of states—including Arkansas, Kansas, Massachusetts, Michigan, Missouri, New Mexico, Ohio, and Tennessee—have distinct metrics for community colleges based on their specific economic impact. In addition, some states allow community colleges to pick from a list of additional metrics by which they can choose to be measured. While each state varies in its metrics for community colleges, a common theme is the importance of industry-relevant credentials. The funding formula could be amended to add additional weight to community college students that receive industry credentials in STEM fields.

Budget Implications

Any changes to the formula that are not accompanied by additional resources may benefit some institutions while penalizing others but will not necessarily demand an increase in the overall level of funding.

References

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