BEST PRACTICES IN PERFORMANCE FUNDING

How Did Last Year’s Proposal Stand Up?

Trey Miller

2013
We conducted an objective, neutral assessment of last year’s GAFAC proposal

Reviewed best practices
Examined last year’s GAFAC proposal
Identified potential considerations for moving ahead

Our work benefitted from input from GAFAC and THECB but was neither vetted nor endorsed by either organization
We found that the proposal incorporated many best practices

- Agree on goals and involve stakeholders in design
- Keep funding formula simple and difficult to game
- Focus on completion but reward progress and success
- Reward degree production in critical fields
- Keep implementation costs down

These factors are key to successful implementation, impact, and sustainability
There may be room for improvement in four specific areas

- Revise the metric that rewards success with at-risk students
- Ensure that the model is sensitive to the missions of institutions
- Ensure that the model is sensitive to student characteristics
- Ensure that funding is sufficient to gain attention

These adjustments may help position a program of performance funding for long-term sustainability
The current "at-risk" metric may be overly inclusive

• The current metric identifies 65% of college students as “at risk”

• Does this undermine the goal of rewarding institutions for serving at-risk students?

• Consider a metric that distinguishes at-risk students from other students with more precision

65% $\rightarrow <65\%$
It may be possible to better acknowledge differences in institutional missions

- Consider differentiating some metrics by Carnegie Classification or other peer-group measures
- Consider including an institution-specific metric set by institutions in consultation with THECB and/or GAFAC
Accounting for student characteristics can help place institutions on a more equal footing

• The graduation rate at some regional institutions may be lower than at flagships simply because of differences in student populations across campuses

• Consider including a “student weighted graduates” metric that weights graduates according to the state’s average distribution of student attributes

• Grouping institutions by mission and improving the “at-risk” metric will help

\[
\text{student weighted graduates} = \left( \frac{\text{institutional graduation rate}}{\text{cohort size}} \right) \times \left( \frac{\text{state distribution}}{\text{cohort size}} \right)\]
Funding may not be sufficient to gain attention

- Best practices suggest that a performance funding program should account for a minimum of 5%–25% the state’s total funding for higher education
- The current proposal is at 5.2%, near the bottom of that range
Dougherty suggests additional potential ways to strengthen the program

- Institute a collaborative process for updating the model
- Insulate the model from swings in the state budget
- Insulate the model from the political process
- Obtain buy-in from stakeholders outside of higher education
CONTACT INFORMATION

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www.RAND.org
A student characteristic metric adjusts total number of graduates to account for student differences across campuses.

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A student characteristic metric adjusts total number of graduates to account for student differences across campuses.

### A: State Six-Year Graduation Rate

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### C: State Student Characteristics

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State graduation rate = A × C = 61.9%
A student characteristic metric adjusts total number of graduates to account for student differences across campuses.

### B: Institution Six-Year Graduation Rate

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<tr>
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### D: Institution Student Characteristics

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Institution graduation rate = B × D = 59.7%
A student characteristic metric adjusts total number of graduates to account for student differences across campuses.

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Student weighted graduation rate = B × C = 69.9%
Testimony on Performance-Based Funding for the Formula Funding Advisory Committee

Trey Miller, RAND Corporation
November 18, 2013

In an effort to better align institutional priorities and activities with state goals and to more efficiently prioritize dwindling state resources for higher education, the Texas Legislature asked the Texas Higher Education Coordinating Board (THECB) to develop a performance-based funding (PBF) model for the state’s public institutions. The process for appropriating state funding to higher education institutions begins with a collaborative effort between THECB and the state’s Formula Funding Advisory Committee (FAC), a group of representatives from the state’s public institutions. THECB and the FAC work together to develop a funding recommendation to deliver to the state legislature each biennium. The legislature considers the recommendation when making its funding allocation, and it then directs the Legislative Budget Board (LBB) to implement its final approved allocation. THECB and the FAC developed a proposal for a PBF model that was incorporated in THECB’s funding recommendation for the 2014–15 biennium, but the legislature did not approve the PBF component of THECB’s recommendation. THECB and the FAC are now finalizing their funding recommendation for the 2016–17 biennium, and PBF remains a strong priority for THECB and the legislature. To improve the model put forth by THECB and the FAC, and to increase its chance of being adopted by the legislature, Commissioner Paredes asked RAND to provide an objective and unbiased review of the PBF model that was included in THECB’s 2014–15 funding recommendation, relate it to best practices in PBF, and develop a set of options for consideration by THECB and the FAC.

Specifically, RAND

1. **Reviewed the 2014–15 PBF proposal model.** RAND reviewed documents describing the 2014–15 PBF model and consulted with THECB and FAC staff to gain a full understanding of its details. These include the proposed metrics and the method by which they are tied to funding, the proposed percentage of total formula funding allocated to PBF, the source of funds, as well as other details specific to the proposed model.

2. **Reviewed best practices in PBF.** RAND reviewed literature on PBF models that have been implemented in other states and took inventory of best practices in PBF. We also
endeavored to understand the limitations of current approaches and to propose new and innovative ones where warranted.

3. **Related the 2014–15 PBF proposal to best practices, and provided policy options.** RAND related the current proposed model to the identified best practices and used this information to identify gaps in the 2014–15 proposal and to develop a set of concrete options for consideration by THECB and the FAC.

We begin by describing the 2014–15 PBF proposal. We then describe the literature on PBF models and our approach to identifying best practices. We then discuss alignment between the 2014–15 PBF proposal and the identified best practices. Next, we describe concrete options for THECB and the FAC to consider to alleviate gaps in the model. We close with some lessons on the sustainability of PBF models that may be useful for THECB and the FAC moving forward.

**The 2014–15 Proposed PBF Model**

The 2014–15 proposed PBF model represents a collaborative effort between THECB and the FAC. THECB and the FAC reviewed documents describing best practices in PBF and studied PBF models that have been implemented in other states. They drew on the state’s strategic plan for higher education, *Closing the Gaps by 2015*, and collaborated to define a set of goals for higher education in Texas. THECB developed a proposed model and set of metrics aligned with the state’s goals and best practices and presented the model to the FAC. THECB and the FAC then worked to refine the model based on the FAC’s input.

The final proposal operates outside of the standard Instruction and Operation (I&O) formula, reserving 10 percent of the I&O funds that would have been allocated according to undergraduate weighted semester credit hours (SCHs). It allocates those funds via the PBF model using a three-year rolling average of institutions’ performance on the following metrics. All metrics receive equal weight, except for the “Critical Fields Factor,” which receives double weight:

- **Total Undergraduate Degrees:** Total number of bachelor’s degrees awarded by the institution during the academic year.
- **Time-to-Degree Factor:** Total number of bachelor’s degrees multiplied by the school’s six-year graduation rate. The goal of this metric is to reward timely degree completion.
- **Institutional Mission Factor:** Degrees are divided by full-time student equivalents (FTSEs) and multiplied by 100. The goal of this metric is to adjust total degrees for part-time and transfer students.
- **Cost-to-Degree Factor:** Degrees are weighted using cost-based weights. The goal of this metric is to compensate for varying costs of providing degrees across fields.
- **Critical Fields Factor:** Total number of bachelor’s degrees awarded in fields identified as having critical workforce needs. The goal of this metric is to reward institutions for serving statewide workforce needs.
- **At-Risk Factor:** Total number of bachelor’s degrees awarded to students identified as at-risk of not graduating. The criterion classifies a student as “at risk” if he or she is a federal Pell Grant recipient, part-time student, or GED recipient, or if he or she entered
college at age 20 or older. The goal of this metric is to recognize the differential costs of serving at-risk students and reward institutions for enrolling students that are difficult to graduate.

- **Persistence Factor**: Additional points are awarded for students who complete their 30th, 60th, or 90th SCH at the institution. The goal of this metric is to reward institutions for successfully moving students through key academic milestones in progress toward their degrees.

### Best Practices in PBF in Higher Education

Beginning with Tennessee’s pioneering and long-standing program in 1979, PBF has a long history in higher education. Many states adopted PBF models for their higher education systems during the 1980s and 1990s, but many were dropped during the funding crises of the early 2000s. Today, PBF is enjoying a comeback, as many states have adopted, readopted, or are actively pursuing PBF policies in an effort to better align institutions’ activities with state goals during an era of dwindling state resources. According to a 2013 report by the National Conference of State Legislatures, 12 states currently have a funding model that allocates some funding according to performance metrics, four states are transitioning to such a system, and a handful of others are in active conversations toward that end.

Given the long history of PBF funding in higher education, there is a wealth of information for policymakers to draw on. The vast majority of existing studies of PBF models in higher education are qualitative in nature and focuses on issues of implementation and sustainability. These studies offer many useful insights for policymakers focused on successfully balancing stakeholder goals to develop, implement, manage, and sustain a PBF model for higher education. Unfortunately, there are relatively few quantitative studies of the impact of PBF models on institution processes, outputs, and outcomes, and the few quantitative impact studies that do exist are generally of poor quality. In general, the current research base offers many considerations for successful implementation and sustainability of PBF in higher education, but the verdict is still out on impact.

In recent years, a number of researchers and organizations have conducted comprehensive literature reviews of PBF in higher education that distill the large research base into a set of best practices. These include a host of studies by Kevin Dougherty and colleagues at the Community College Research Center (CCRC), as well as studies by the Center for American Progress (CAP), Complete College America (CCA), the National Center for Higher Education Management Systems (NCHEMS), the National Conference of State Legislatures (NCSL), and HCM Strategists.

To develop the set of best practices for PBF to relate to the 2014–15 PBF proposal, we drew from the seven literature reviews described above, collating the best practices identified in each study into a master list. There was considerable overlap in the identified best practices, so we combined best practices with a similar goal or outcome into a single best practice. We also eliminated best practices in cases where the evidence across studies was contradictory. This yielded a comprehensive list of nine best practices, described in the next section. We also drew some additional lessons for sustainability from the CCRC studies.
Relating the 2014–15 PBF Proposal to Best Practices

In this section, we list the best practices we identified, relate them to the 2014–15 PBF proposal, and offer considerations for THECB and the FAC to improve the model, where appropriate. We begin by listing the best practices with which the 2014–15 proposal is aligned. We then turn to areas where there is some misalignment and/or room for improvement.

Areas of Alignment

Overall, we find considerable alignment between the 2014–15 proposal and the comprehensive set of best practices. Specifically, we find strong alignment between the 2014–15 PBF proposal and the following best practices.

Agree on goals and involve stakeholders in design. A successful PBF model must have the buy-in and support of all stakeholders to be successful and sustainable. Successful implementation requires close collaboration at all stages of design and implementation among the state government and/or the Higher Education Coordinating Board and institution administration and faculty.

The collaborative design of the 2014–15 PBF proposal helped to ensure the buy-in of stakeholders, the development of a set of metrics that broadly represents the goals for higher education in Texas, and a perception of fairness across the institutions on the FAC.

Keep the funding formula simple and difficult to game. For a PBF model to be successful, institutions and faculty must have a clear understanding of the metrics to which they are held accountable and of the particular way in which they contribute to funding. This allows them to institute effective policies to improve their performance against those metrics. At the same time, it is important to consider issues of gaming. For example, because most PBF models reward student success outcomes, it is important to include metrics to reward success with at-risk students.

The metrics in the 2014–15 PBF proposal are based primarily on total numbers of graduates and students attaining important academic milestones. Weights are applied to account for important factors, such as differences in mission across institutions, needs for graduates with particular characteristics or in certain fields, and the relative costs of producing graduates in particular fields. The weights are transparent, and, along with the at-risk metric, they help limit opportunities for gaming.

Focus on completion but reward progress and success. To ensure continuous improvement and success with at-risk students, it is important to include metrics that reward the attainment of important academic milestones and other intermediate measures of success toward degrees.

While most weight in the 2014–15 proposal is focused on graduates, the proposal also includes a metric to award attainment of important academic milestones.

Reward degree production in critical fields. To better align institution programs with statewide and regional workforce needs, states may consider rewarding the production of degrees and other credentials in critical fields. To ensure a rational response to incentives, the rewarded fields should be in areas where there are expected to be long-term gaps in degree production, and the critical fields should be updated at regular long-term intervals.
The proposed model includes a metric to encourage degree production in critical fields. This metric receives double the weight of any other metric in the model.

**Suggestion:** Moving forward, THECB and the FAC should develop a regular and collaborative approach to identifying and updating the critical fields. The approach should encourage the inclusion of fields that are projected to have long term gaps between degree production and workforce needs, and should ensure that the fields chosen for inclusion remain on the critical fields list for a sufficient period of time to encourage institutions to respond to develop programs to respond to workforce needs. To support and inform these efforts, THECB and the FAC could consider drawing evidence from the Texas Workforce Study that RAND is currently conducting for THECB.

**Keep implementation costs down.** To ensure the continued support of institutions, it is important to endeavor to keep implementation costs down. For example, wherever possible and prudent, the state should minimize the data-reporting burden of institutions in support of the PBF model by drawing on administrative data sources that the state already collects.

All data required to calculate the metrics included in the 2014–15 PBF proposal are already being collected by THECB. The only additional cost to institutions is in designing and implementing approaches to effectively respond to the new incentives.

**Areas of Misalignment**

Overall, there is considerable alignment between the 2014–15 PBF proposal and identified best practices. However, there are some areas where the proposal could be improved. Here we describe the areas of misalignment and offer suggestions for improvement that may be of interest to THECB and the FAC.

**Include a metric to reward success with at-risk students.** To ensure adequate incentives to enroll and succeed with at-risk students, the PBF model should include metrics to reward success with at-risk students.

The proposed model includes a measure based on the total number of graduates classified as “at risk” of not graduating. However, a student is classified as “at risk” if he or she is a federal Pell Grant recipient, part-time student, or GED recipient, or if he or she entered college at age 20 or older. By this definition, 65 percent of all students attending public four-year institutions are classified as “at risk.” Classifying such a large proportion of students as “at risk” renders the metric less effective at rewarding success with truly at-risk students. For example, consider a metric that classifies all students as “at risk.” In that case, the at-risk metric would be identical to total graduates, so its inclusion in the model would be tantamount to double-weighting total graduates.

**Suggestion:** To ensure that the “at-risk” metric provides adequate incentives for institutions to enroll and succeed with truly at-risk students, we suggest that THECB and the FAC consider alternative ways to define students as “at risk” of not graduating that identify a smaller proportion of the state’s college students as “at risk,” or by defining relative degrees of risk. For example, THECB and the FAC may use the same or similar criteria to classify students as “at-risk,” but apply different weights to each of those criteria.

**Ensure that the model is sensitive to the missions of institutions.** A successful and sustainable PBF model would recognize the varying missions of institutions and encourage appropriate differentiation that leads to system-wide success.
The 2014–15 PBF proposal includes an “Institution Mission Factor,” which is intended to account for differences in the proportions of transfer and nontraditional students across institutions with varying missions. To achieve this objective, the metric divides total degrees by the total number of FTSEs and multiplies the total by 100. Because the metric divides degrees by a count of students, it is closely related to the institution’s graduation rate, which is not considered a measure of institution mission.

Suggestion: THECB and the FAC should consider other alternatives to account for differences in institutions’ missions. One approach that has shown promise in other states, including Tennessee and Ohio, is to group institutions by mission category or Carnegie Classification and develop specific metrics and/or weights within those groups. Another approach, which has shown promise in Pennsylvania, would allow institutions in Texas to work with THECB and/or the FAC to develop an institution-specific metric that measures progress along some mutually agreed upon dimension of success that is unique to the institution but related to mission enhancement.

Ensure that the model is sensitive to student characteristics. A regional master’s level institution may produce fewer graduates than a flagship with the same number of students because the students that the former institution serves have fewer resources, less existing knowledge, and fewer existing skills. A successful and fair PBF model would include measures to place these institutions on an equal footing by accounting for differences in student characteristics. These goals must be balanced with those of transparency and simplicity.

The 2014–15 PBF proposal includes some measures aimed at alleviating differences in student characteristics across institutions. These include the “at-risk” measure and the “institution mission factor.” However, as discussed earlier, both metrics could be improved.

Suggestion: THECB and the FAC should consider additional options for placing institutions with differing student populations on a more equal footing. In the appendix, we describe one potential measure: the “student-weighted graduates” metric. This metric weights graduation rates within narrowly defined student subpopulations according to the average distribution of students within the state. It then multiplies this number by the total cohort size to predict the number of graduates each institution would have if its student body mirrored the statewide distribution of college students.

Alternatively, THECB and the FAC could consider comparing institutions to their peers as described earlier under the “institution mission” section. Doing this and improving the “at-risk” metric could enable the model to adequately account for differences in student characteristics across institutions.

Ensure that PBF funding is sufficient to gain attention but not too large to create instability. To ensure that institutions have sufficient incentives to develop and implement effective policies to support improvement aligned with the PBF model, the PBF system must have adequate funding. At the same time, the funding tied to outcomes should be sufficiently stable to ensure that institutions can adequately forecast funding streams and engage in effective long term planning. Studies present various recommendations for levels of PBF funding to support effective change, ranging from 5 percent to 25 percent of overall state higher education funding.

The 2014–15 PBF proposal is funded with 10 percent of I&O funds for undergraduates only. This translates to approximately 5.2 percent of total state appropriations to four-year universities, which is near the bottom of the range identified as best practice.
Suggestion: THECB and the FAC should consider increasing the funding for PBF in the 2016-17 proposal.

Additional Considerations for Long-Term Sustainability

Our review of the research base on PBF models uncovered a number of additional considerations for long-term sustainability of PBF models. As described earlier, PBF has enjoyed varying degrees of support and popularity since it was first implemented in Tennessee in 1979. Many states adopted measures during the 1980s and 1990s, but many of these were dropped during the economic downturns of the early 2000s. We are currently witnessing resurgence as states seek to optimize scarce resources in the current fiscal crunch. Importantly, many states that have implemented PBF models have subsequently dropped them. This experience offers a significant body of evidence about factors that have lead to the demise of PBF models in particular states. Although it is tempting to treat the instability of PBF models as evidence of PBF’s ineffectiveness, a careful read of the literature suggests otherwise. Indeed, in a review of the experience of eight states, Kevin Dougherty and coauthors (2012) find that the primary factors leading to the demise of PBF models are

- **Political instability.** In many cases, the key champion in the state government left office, and the new leadership did not support PBF or were less willing to battle to keep it intact.
- **Budgetary instability.** Particularly during the 2000s, as states were facing budget crises, institutions lobbied to keep their core funding intact and to sacrifice their PBF funding. When economic conditions improved, there was no push to reinstate PBF, and the additional funding was absorbed into institutions’ core funding.
- **Inadequate planning for updating the PBF model.** Many states had an unorganized process for updating their PBF models over time. This lead to many instances in which the model was substantially revised from year to year in ways that substantially affected funding levels. For example, some states added or eliminated metrics on a regular basis or changed the level of funding allocated via PBF drastically from year to year. This led to unstable funding levels and made it difficult for institutions to plan and develop effective policies aligned with PBF goals, which ultimately contributed to the PBF model’s demise.

Suggestion: In light of these observations, THECB and the FAC should begin to consider options to stabilize the PBF model over political and budgetary cycles, and to develop a regular process for reasonable updates to the model that minimizes swings in funding levels and affords institutions sufficient time to respond to the changes. Tennessee is often held up as a model in this regard, and has achieved success by instituting a five-year cycle for collaboratively reviewing and modifying the PBF model, and by incorporating PBF directly into its I&O funding model. Tennessee has also worked to buffer its PBF model from political and budgetary instability by building strong support from a wide range of stakeholders outside of the higher education community, including leaders from business and other areas of government.
Conclusion

The Texas legislature asked THECB to develop and recommend a PBF model for higher education in Texas. In an effort to improve the model put forth by THECB and the FAC and increase its chance of being adopted by the legislature, Commissioner Paredes asked RAND to provide an objective and unbiased review of the PBF model that was included in THECB’s 2014–15 funding recommendation, relate it to best practices in PBF, and develop a set of options for consideration by THECB and the FAC.

We found that THECB and the FAC engaged in a collaborative process to design a model that is aligned with the state’s goals for higher education, is largely perceived as fair and equitable, and embodies most best practices for PBF models. We suggest that THECB and the FAC consider

- improving the at-risk metric
- better accounting for differences in institution mission
- better accounting for differences in student characteristics
- increasing funding attached to the PBF model

Moving forward, we also suggest that THECB begin to consider options to insulate the PBF model from the political and budgetary process, and to develop a regular process for updates to the PBF model that minimizes swings in funding levels and affords institutions sufficient time to respond to changes.


Appendix: A Potential Metric to Account for Student Characteristics

One concern with PBF models voiced by many institutions is that focusing on outcomes often ignores important differences in student characteristics across institutions. A regional master’s level institution may have fewer graduates per FTSE than a flagship simply because the students it serves come to the institution with less knowledge, fewer skills, and fewer other important resources than the students attending the flagship. While including an “at-risk” metric helps place these institutions on a more equal footing, it does not reward institutions for success with students of all types. In this appendix, we propose one alternative class of metrics that THECB and the FAC may consider to achieve the objective of accounting for student characteristics and rewarding success with all types of students. The metric draws heavily on concepts from a set of “input-adjusted outcome measures” of higher education performance that Miller developed for THECB and the Bill and Melinda Gates Foundation (Cunha and Miller, 2008; Cunha and Miller, 2012).

The metric simply divides students into subgroups defined by characteristics of interest (e.g., SAT scores and Pell eligibility), calculates a six-year graduation rate within each cell, and then weights the cells by the statewide distribution of students across those cells. It then multiplies the weighted six-year graduation rate by the institution’s cohort size to calculate the number of graduates the institution would have if its student population mirrored that of the state.

Consider an institution with a student body with the following characteristics:

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The institution graduation rate is a weighted average of the cell-wise graduation rates, where the weights are the distribution of students across those cells (B × D). In this case, the institution’s graduation rate is 59.7 percent.
Now, assume that the average student characteristics statewide are as follows:

**A. State Six-Year Graduation Rate**

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In this case, the statewide graduation rate is simply a weighted average of the cell-wise graduation rates, where the weights are the statewide distribution across those cells \((A \times C)\). With these values, the statewide graduation rate is 61.9 percent—higher than the institution’s graduation rate.

Now, the “student-weighted graduation rate” is simply the weighted average of the cell-wise institution graduation rates, using the statewide distribution across those cells as weights \((B \times C)\). This gives us the graduation rate the institution would have if it achieved the same levels of success with its students but had the statewide distribution of students. In this case, the student weighted graduation rate is 69.9 percent.

Note that, in this example, the institution had a graduation rate of 59.7 percent—less than the state average of 61.9 percent. However, when we take account of the institution’s student population, its student weighted graduation rate is 69.9 percent—considerably higher than the state’s average. This is because the institution had relatively high graduation rates in each cell but had a student population with relatively low SAT scores and high levels of Pell eligibility. In other words, the institution had high graduation rates for the types of students it served.

To get the student weighted graduates for this institution, we simply multiply the student weighted graduation rate of 69.9 percent by the cohort size upon which it was calculated. Assuming the institution had 1,000 students per cohort, it would have a total of 619 graduates and 699 student-weighted graduates.