

Breakthrough Solutions For Higher Education: Florida Can Do Better than Texas

Presented to and modified by the FSU Board of Trustees

Eric J. Barron
September 8, 2011

EXECUTIVE SUMMARY

A significant part of the prosperity of the United States over the last 50 years has been attributed in large measure to the national investment in universities, and in science and technology (*Rising Above the Gathering Storm*). Public universities and colleges play an important and demonstrable role in the economic competitiveness of every state in the Union. Yet, over the last decade, our nation has experienced a number of troubling trends. We have lost our lead in manufacturing, in technology, in information technology, in space, in the production of engineering degrees, and a host of other areas. The largest producers of new jobs in America are fast food companies, big box retailers like Wal-Mart, and other enterprises that require low-skill workers. The investment in public colleges and universities has also decreased substantially, limiting their ability to promote innovation and making them less nimble in moving resources into areas that will enable the U.S. to compete effectively in a global marketplace. At the same time, public tuition costs in most states have increased significantly, creating worries that higher education will become less accessible.

There is no doubt – public universities and colleges must become more effective and more efficient, and they must take on an expanded role in developing an educated workforce that supports economic development. Our nation’s governors have called for stronger accountability systems, efficiency gains that are achieved without sacrificing student learning, and more emphasis on meeting workforce needs. The State of Florida should become a leader in creating a more efficient and effective system of higher education.

The Texas “7 Breakthrough Solutions” for Higher Education is a prominent example of a proposal designed to change the landscape of higher education through a set of accountability metrics.

The Texas Solutions are focused on

- Measuring the efficiency of individual teachers based on the number of students they teach and their teaching quality as measured by student evaluations.
- Rewarding extraordinary teachers based on student teaching evaluations.
- Separating the roles of teaching and research.

- Requiring evidence for teaching skill for tenure.
- Using results-based contracts between teachers and students.
- Putting state funding directly in the hands of students, and
- Creating a results-based accrediting alternative.

The objectives of the Texas proposal have merit – decrease the cost of educating students while maintaining teaching quality. The Texas proposal draws heavily on the community college model. Community colleges are a workhorse of U.S. higher education, enrolling approximately 45% of all college-bound students and educating them at a low cost. Much like community colleges, the metrics in the Texas proposal encourage larger class sizes, higher teaching loads for faculty, and a use of adjuncts as a way to increase the number of students being taught while lowering the cost. The Texas proposal supports accountability almost exclusively by focusing on the roles of individual faculty members and by measuring quality based on a single index at one point in the education process – the student course evaluation. An assessment of the Texas proposal yields two important conclusions. First, accountability measures should be designed to fit the strategic mission of the university. The mission of research universities and their role in economic development is very different than the mission and role of community colleges. Second, the set of accountability measures proposed in the Texas model are not sufficiently comprehensive to serve the state of Florida.

Florida can do better than Texas.

The Texas proposal is primarily focused on efficiency – the number of students taught per \$ of cost. Experiences in industry demonstrate that the use of simple “speed per cost” metrics has a number of unintended consequences – this type of metric, if they stand alone, sacrifice effectiveness for efficiency. As a case in point, community colleges teach large numbers of students at low cost, but they also have dismal retention (nationally more than one-half of all students drop-out) and graduation rates (only 25% graduate in three years). Low retention and graduation rates at a university level are a significant waste of taxpayer dollars. Further, the Texas proposal uses student course evaluations to assess effectiveness. A wide variety of studies suggest that these evaluations are important, but are insufficient to promote an effective education. We propose an expanded number of accountability measures for Florida so that we promote both efficiency and effectiveness. These metrics include:

- Freshman retention rate
- Student evaluations
- Credit-hour cost effectiveness measures
- Graduation rate
- Post-graduation surveys.

The proposed efficiency, reward, and accounting systems in the Texas proposal stress class sizes, teaching loads, and the creation of faculty with either teaching or

research missions. Although the objectives are worthy, the outcomes for research universities and the economy are problematic. The Texas proposal would significantly disadvantage the production of degrees in science, technology, engineering, and medicine which require high levels of expertise, access to cutting-edge research, and smaller student-faculty ratios. Research universities have a fundamentally different role to play in the economy than do community colleges. Even very large community colleges may have only basic science classes that can be taught in high volume classrooms by adjuncts, as their objective in science and engineering is only to enable students to transition to an upper level university, as opposed to creating chemists, physicists, engineers or doctors. The Texas proposal would also disadvantage the teaching of honors students, yet honors sections are a key ingredient in keeping the best and brightest students in Florida. Losing the top of the Florida talent pool to other states is an unacceptable consequence. It would also disadvantage education in the arts, which requires large numbers of contact hours with students. We propose a more comprehensive model for rewarding effective teaching, based on measuring outcomes and rewarding improvement. Our proposed measures of teaching effectiveness go beyond student course evaluations, and will be applied to every instructor as the basis of a comprehensive reward system. The measures include:

- Student evaluations
- Peer evaluations
- Pre-course and post-course knowledge tests
- Evaluation of the persistence of knowledge in the major
- Post-graduation assessment

The Texas proposal calls for a separation of teaching and research budgets and reward systems, and for departmental and college budgets to be based on the number of students taught and research funding received. Florida already requires the separation of teaching and research in budgeting and Florida State University uses this accounting in its reward system. More than 30 universities have adopted a version of the Texas budgeting model, yielding a large number of case studies.

We propose to:

- Continue, as required by State law, the separate accounting and reward system for faculty time in research and teaching
- Generate a budget model, based on lessons learned from other institutions, that reflects the true cost of educating students, making budgets more transparent
- Increase our emphasis on performance based pay

The Texas proposal calls for evidence of teaching skill for tenure. No faculty member is tenured at Florida State without a demonstrated record of teaching excellence. However, the Texas proposal provides a class size, teaching load, and student evaluation litmus test for tenure that separates teaching faculty from research faculty. We propose a more comprehensive measure of teaching

effectiveness than simply student evaluations, as well as a breadth of evidence of teaching skill.

The Texas proposal calls for contracts between students and faculty and places funding directly in the hands of students. In many regards, Florida's Academic Learning Compacts and the Bright Futures program place Florida ahead of Texas. The successes of the Florida's programs are demonstrable. We propose further strengthening these programs in a way that ensures students understand expectations and how their performance will be measured, and incentivizes students to complete degree requirements in a timely fashion, while making universities more competitive in serving the needs of students.

The Texas proposal argues for more of an outcomes-based approach to accreditation. Florida State supports this objective.

Finally, in focusing solely on the performance of individual teachers and on student evaluations, the Texas proposal fails to incentivize universities to compete at a national and international level to keep the best and brightest students in Florida and to ensure that universities are nimble and effective in meeting the needs of Florida's economy. We propose the development of "enterprise universities" where universities gain increased autonomy and flexibility to innovate in exchange for a much higher level of accountability in meeting the needs of Florida.

The Florida Solutions are based on:

- Promoting cost-efficient and effective graduation of Florida students using five metrics based on retention rates, student evaluations, credit-hour cost analysis, graduation rates, and post-graduation assessment.
- Rewarding of effective teaching as an incentive for continuous improvement using student evaluations, pre-course and post-course knowledge assessment, and retention of knowledge in the major.
- Emphasizing performance-based pay.
- Enhancing measures that ensure teaching excellence is required for tenure.
- Expanding Academic Learning Compacts with students.
- Expanding the Bright Futures scholarship program, promoting students as partners and customers in their education, while also promoting timely graduation.
- Ensuring that accreditation is based on outcomes.
- Creating "Enterprise Universities" in Florida by exchanging flexibility in managing finances and operations for clear, measureable and unambiguous accountability in meeting the needs of the State of Florida.

In each case, these proposed Florida Solutions strengthen accountability and incentivize both efficiency and effectiveness. A discussion of each Texas Solution leading to the improved set of Florida Solutions is contained in the text that follows.



Texas Solution #1. Measure Teaching Efficiency and Effectiveness and Publicly Recognize Extraordinary Teachers

The Texas Solution #1 is focused on measuring and publicizing teaching efficiency and effectiveness:

- (1) Gather the data and measure teaching efficiency and effectiveness
 - a. Compile the following information for each teacher
 - i. Salary and benefit costs
 - ii. Number of students taught in last 12 months
 - iii. Average student satisfaction rating
 - iv. Average percentage of A's and B's awarded
 - b. Divide the total employment cost for each teacher by the number of students taught, and force rank from highest cost per student to lowest cost per student taught
 - c. Compare student satisfaction ratings and grade distributions
 - d. For high-cost faculty, collect and read all research articles published in the last twelve months
- (2) Publicly post the student satisfaction ratings and number of students taught for each teacher in several prominent locations at their respective colleges

Discussion

The goal of Texas Solution #1, to measure efficiency and effectiveness, and to use this data to drive improvement in teaching, has merit. However, Solution #1 is primarily focused on the efficiency of individual faculty through a single metric – number of students taught per \$ of cost. Industry has a long history of developing similar efficiency metrics. Case studies presented by E.I. DuPont to the American Chemical Society (2003) and to the Corporate Technology Council (2000) are particularly illustrative with respect to Texas Solution #1. DuPont's early focus was on simple metrics that combined total expenses or resources employed and the number of chemical compounds processed. Many of these early metrics failed because they were not well connected to corporate strategic objectives and because the use of single stand-alone metrics to study complex systems often have unintended consequences. For example, as might be expected, DuPont became extremely fast in processing compounds, but the use of a single "speed" metric actually discouraged them from focusing attention on particular promising families of chemical compounds. The end result was that they became less effective in delivering worthwhile products to the marketplace. Essentially, a single metric that promoted only efficiency within an overall process had a negative impact on effectiveness. They eventually replaced these early metrics with a more balanced set that were based on the strategic directions of the corporation using more of a "stage-gate" process, intended to break up an assessment of product development into a series of stages that could be reviewed in sequence.

The Texas Solution #1 needs to be modified to prevent similar unintended consequences. As written, this Solution is basically a single metric that would drive universities to offer larger and larger sections for courses, more courses per faculty,

and to teach these courses with adjuncts with lower salaries and less expertise, in order to appear efficient. This is happening in many universities in some subject areas, in direct response to budget cuts. And, in many cases, large classes have proven to be effective for teaching a great deal of subject matter. However, a single metric for all faculty – number of students taught per \$ – would do more than accelerate this trend, it would have negative consequences for science (laboratory classes), medicine, engineering, mathematics, and other highly complex topics which are poorly served by large classes or online classes. In addition, considerable study is available that suggests that undergraduates who engage in research that features intensive faculty-student interactions and who are involved in worthwhile non-classroom activities are more likely to be engaged in post-baccalaureate education essential to these STEM fields. The emphasis on undergraduate research is one of the most promising developments in undergraduate education in recent years. So, Texas Solution #1 would have a significant negative impact on the STEM fields that are likely to be the most significant for Florida in generating high paying jobs and attracting innovative corporations. Other majors and other areas of the educational enterprise would also be disadvantaged. Efforts to focus on honors students would be undercut. Consider another example, the arts requires high levels of contact hours between faculty and students, and these contact hours are not included in a traditional classroom counts. Similarly, graduate education requires significant interaction between faculty and students, and again, these contact hours are not included in a traditional classroom count.

Texas Solution #1 might also create faculty competition to teach courses that are less difficult. The use of a fixed number of A's and B's in grading for every class could act as an equalizer to prevent some professors from giving out more A's than other professors in order to get a better student evaluation, but it is unlikely to act as an equalizer between a general education course that teaches science using, say, the "the chemistry in the world around you" compared to a course that teaches the rigors of organic chemistry required for many majors including medicine, chemistry and materials sciences. Having faculty compete to teach the "fun stuff" because they will get a higher ranking than a faculty member who ensures that the next STEM major is well prepared would certainly be an unfortunate consequence. Finally, a metric that is basically "number of students processed" much like DuPont's "number of compounds processed" could encourage universities to accept more students and to get them into classrooms without regard to graduation rate or overall effectiveness since volume is the only driving metric.

At the same time, this metric also has unintended consequences for university physical plants. In most universities, large classrooms are already fully booked and are expensive to build. This could serve as an incentive to increase on-line learning, but it would discourage those aspects of on-line education that have proven to be effective, such as the use of associated coaches and course mentors.

Ironically, the universities consistently ranked as providing the highest quality education for students are those with the lowest faculty-student ratios and higher

contact hours with students. Many of these universities are recognized for providing excellent value even though their costs are higher. The list of the top 50 colleges and universities provided by Forbes magazine all have tuition levels that are 3 to 10 times higher than Florida public universities. Metrics that encourage state universities toward larger classes and higher faculty-student ratios will lower Florida universities' rankings and make them less attractive to strong Florida students. The negative reputational effect will also make national and international businesses less interested in locating in Florida.

We can do better than Texas by taking advantage of the lessons learned by industry. Industry has promoted the use of:

- (a) multiple, easily understood indices that can be evaluated through time
- (b) metrics that are tied directly to the strategic needs of the corporations, and
- (c) evaluations that address the stages of product development rather than a single point in the production line.

Clearly students aren't equivalent to industrial products but the successes and failures in industry can be used to guide higher education, yielding the following solution:

Florida Solution #1

Strategic Goal: Cost-efficient, effective graduation of Florida students

Design of Metrics: A stage-gate process of assessment from entry, to in-process, to degree completion, and including post-degree.

Metric 1.1. Freshman retention rate. Student drop-outs are costly to taxpayers and therefore retention rates should be a key metric to assess educational efficiencies. In addition, retention rates go beyond single classroom student evaluations by integrating the student experience from advising to multiple classroom experiences. In a stage-gate process, this metric is an early barometer of institutional effectiveness. Because this metric maximizes the university commitment to the student, it tends to incentivize universities to maximize student success.

Metric 1.2. Student evaluations. Universities like Florida State have a long history of student evaluation and use of student evaluations as a basis of faculty evaluation and promotion. Their impact can be enhanced through a rigorous statistical approach to faculty evaluation, using grade distribution, class sizes, type of class (general education vs. pre-requisite vs. major), and other factors to equalize evaluations based on the factors that influence student assessment outside of the quality of course delivery. In many cases, pre-testing and post-testing can be utilized to determine knowledge gained within a class. In addition, we can compare student evaluations with success in subsequent courses that build upon knowledge gained in earlier classes as a measure of effectiveness. Path-breaking research by the U.S. Air Force Academy demonstrates that student satisfaction isn't a predictor for success in later classes. A more rigorous analysis has greater potential to

measure effectiveness. Assessing the persistence of knowledge gained in a class would provide a breakthrough solution to understanding teaching effectiveness. Such a solution would require additional investment in evaluation systems at universities.

Metric 1.3. Credit-hour cost effectiveness analysis. A “cost per student” metric for individual faculty may have some negative unintended consequences, and it also fails to assess learning outcomes. However, if student credit hour data is combined with measures of persistence (retention of knowledge), then the true cost of delivering a curriculum can be assessed. This type of analysis can be completed at multiple levels (major, department, college), providing the type of data that can be used to improve efficiencies at a programmatic level. Assessing efficiency at a program level will serve to improve the rigor of curriculum delivery, without the unintended consequences of the Texas solution.

Metric 1.4. Graduation rate. The higher the graduation rate, the more effective the use of the State dollar in graduating Florida students. Improvements in graduation rate are a clear way of improving efficiencies without adversely impacting quality. Graduation rate can be evaluated at programmatic levels, departmental, and college levels as well as a whole university level. Again, this metric integrates the entire student experience, and in a “stage-gate” process, reflects end success in the effective use of the taxpayer dollar.

Metric 1.5. Post-graduation survey. Many institutions, including Florida State University, are developing a consistent, on-going process of post-graduation survey, with the objective of capturing student opinion on the value of particular classes and faculty after having the experience of employment or graduate/profession school training. In addition, many programs also survey employers to determine the preparedness of graduates or use other indices like student placement. Again, in a “stage-gate” process, this metric reflects end success in effective education.

These five metrics have the advantage of providing a more integrated approach to evaluating the efficiency and effectiveness of any educational institution, primarily because the assessments are not at a single point (student evaluations at the end of a class) but rather include a staged process, and because the metrics are not at a single level (faculty) but rather include faculty, programs, departments, colleges and whole institutional levels. These metrics form the basis of an assessment system that can withstand the type of risk analysis required before undertaking a high stakes deployment of any truly breakthrough solution. The potential for unintended negative consequences of employing a single metric (speed in processing students) is significantly reduced. These metrics will move the State of Florida significantly beyond the Texas Solution.

Public dissemination of this information on efficiency and effectiveness at all levels would only further enhance the impact of employing these metrics and should be a part of Florida’s Solution #1.

Texas Solution #2. Recognize and Reward Extraordinary Teachers

The Texas Solution #2 is focused on rewarding teaching excellence as an incentive for continuous improvement:

- (1) Use existing student evaluation forms to determine the teachers of classes who rank in the top 25% for each semester.
- (2) Provide awards of up to \$10,000 for the top 3%, \$5,000 for teachers of classes rated from 3% to 10%, and \$2,500 for ratings from the top 10% to the top 25%.
- (3) Awards would be based on ratings and the number of students taught to encourage teachers to teach as many classes and students as possible.
- (4) Make the awards voluntary so faculty could refuse the bonus
- (5) Include voluntary limits on A's and B's as part of the bonus plan to curb grade inflation and prevent a "popularity contest."
- (6) Make all teachers eligible for bonuses, whether adjuncts, teaching assistants or tenure/tenure track faculty.
- (7) Use the bonus structure as a mechanism to encourage faculty to teach more students, achieving sufficient financial benefit to pay for the cost of the bonus plan.
- (8) Give the awards in a public ceremony and publicize the results.

Discussion

The goal of recognizing and rewarding extraordinary teachers is truly worthwhile. Florida State University has a long history of providing financial rewards for teaching excellence, as evaluated by students. The University is eager to increase the expenditures for reward of faculty for teaching excellence with the objective of promoting even stronger teaching. However, the design of Texas Solution #2 is problematic for several reasons.

The bonus structure is based on evaluations of individual classes and not individual faculty excellence. The number of eligible classes grows substantially because it is open to all teachers, including graduate assistants. Given these criteria, Florida State would have as many as 21,000 eligible classes each year. FSU teaches approximately 9,670 courses per year, with a large number of sections for laboratories or recitation taught by graduate assistants each with independent course evaluations. The Texas Solution #2 would require more than \$20,000,000 of bonus funds per year based on the eligibility criteria. Alternatively, a bonus fund that is based on the number of courses would yield costs that would approach \$10,000,000 annually.

As recognized by the Texas proposal, a bonus structure of this magnitude would almost certainly drive faculty to want to teach more students as well as to teach in ways calculated to achieve high student evaluations. The Texas proposal argues that the full cost of the awards could be realized by savings generated by increased efficiency from larger class sizes, by having faculty teach more sections, or by replacing regular faculty members with adjuncts as long as they score well on

student evaluations. In fact, community colleges demonstrate that the Texas Solution #2 could pay for itself - higher teaching loads and/or use of adjuncts can be used to serve a larger student body (although their completion rates are low). Again, large classes and use of non-tenure track faculty has merit in many cases. However, research universities are functionally different than community colleges.

First, the Texas Solution #2 sends a signal that teaching Honors sections is not valued. Honors programs have become a key ingredient to attract strong students – the incentive for the student is smaller classrooms and higher contact hours with the faculty. The teaching of small honors sections for gifted students becomes a disincentive for faculty (they are unlikely to receive bonuses that are based on excellence and number of students), yet honors sections are a key ingredient in keeping the best and brightest students in Florida. Students who leave the state are much less likely to return to Florida if they graduate from an institution in another state. Losing the top of the Florida talent pool to other states is an unacceptable consequence.

Second, consider the mission of training the next generation of scientists and engineers. The training of physicists provides a case in point. Research universities not only teach undergraduates to be physicists and to excel in other sciences, they must also train graduate students to be future instructors. In contrast, even large community colleges may only offer two physics courses, because their objective is only to teach physics fundamentals at a level that will allow students to transition to an upper division university. These introductory classes can be taught at a high volume (although lab sections should still be required) and some adjunct faculty may have the expertise to teach these sections very well. A very different breadth of classes and expertise is required for physics majors or graduate studies in physics.

FSU is ranked in the top ten for National Science Foundation funding in the physical sciences (e.g. physics, chemistry, etc.) among public universities and has the strongest physics program in the State of Florida. Physics has 40 faculty that deliver the physics curriculum. The department delivers service courses for non-science majors. In addition, the department offers five courses with lab sections that provide the level of detailed knowledge required for biology, chemistry, medicine and engineering majors. In contrast, undergraduate physics majors choose from a set of 25 courses, including 12 that all physics majors must take, while graduate students had 32 course options during the last year. Student training in physics spans several areas of concentrated study. For example, graduate students can choose full courses of study in eight areas, including atomic physics, astrophysics and cosmology, biophysics, condensed matter physics, high energy physics, material sciences and nanotechnology, and nuclear physics. The level of knowledge required to educate experts in these fields requires a significant number of different courses. The department averages about 110 undergraduate majors and 115 graduate students and therefore the majority of classes in the major and at a graduate level are small.

So, how does a physics faculty respond to incentives that are based on teaching a volume of students as well as teaching excellence? First, the only opportunities for teaching a high volume of students are in physics courses for non-science majors and for physical science majors. The Texas Solution #2 system of rewards will reward physics faculty who teach at the lowest level - general education physics courses – if they do it well. Given the level of expertise required to train physicists, the breadth of physics options in demand by employers, and also the small number of students engaged in the study of physics (even at a top notch department), the vast majority of physics faculty would not and could not be eligible for reward. The only opportunity for physics faculty to be rewarded would be to have faculty at the highest level in their respective disciplines teach physics for non-science majors. The only significant option for saving money would be to have fewer faculty teaching the large introductory courses to enable FSU to provide significant bonuses for the remaining faculty that teach more sections of the introductory courses. Another option is to eliminate areas of physics expertise, or to have physics professors teach in areas of study that are not their expertise. This option decreases the quality of the program. The majority of the faculty remain ineligible for bonuses in either option for saving dollars.

As stated in the prior discussion of Texas Solution #1, teaching larger classes has merit in many subject areas, however, the goal to promote larger and larger class sections or more classes is problematic in other areas. It diminishes the effectiveness of teaching in science, medicine, mathematics, engineering, technology and the arts which require smaller sections, laboratory sections, highly specialized training and high contact hours between the faculty and the students. It further acts as a disincentive for graduate education. Instead, the incentive is to teach large sections that are general education courses and there is a limit to the number of general education courses that are needed.

In short, Texas Solution #2 acts as a disincentive for maintaining a talent pool that is equivalent to generating high paying jobs.

Florida Solution #2

Strategic Goal: Reward effective teaching as an incentive for continuous improvement:

- (1) Use a comprehensive set of teaching effectiveness tools, including student evaluation forms, peer assessment, pre-course and post-course knowledge tests, and persistence of knowledge in the major, to determine the top 25% of teachers each year.
- (2) Provide awards for teachers rather than course sections, with up to \$10,000 for the top 3%, \$5,000 for ratings from 3% to 10%, and \$2,500 for ratings from the top 10% to the top 25%.
- (3) Awards would be distributed at all levels required to deliver a curriculum – general education, introductory courses for majors, and courses in the major

- (4) Teachers could be eligible in more than one category, promoting increased interest in teaching at all levels.
- (5) Make all teachers eligible for bonuses, whether adjuncts, teaching assistants or tenure/tenure track faculty.
- (6) Use the bonus structure as a mechanism to encourage faculty to teach more effectively
- (7) Give the awards in a public ceremony and publicize the results.

Texas Solution #3. Split Research and Teaching Budgets to Encourage Excellence

The Texas Solution #3 is focused on rewarding exceptional individuals in research and in education:

- (1) Separate budgets and reward systems will be created to pay teachers to teach and to pay researchers to conduct valuable research
- (2) Faculty with tenure would have the option of shifting to the new, more lucrative reward system but would not be required to do so
- (3) Departmental and college budgets would be based on the number of students taught and sponsored research dollars
- (4) Encourage a culture shift to performance pay

Discussion

The goal of Texas Solution #3 is to encourage excellence in research and teaching, but also encourage more transparency and accountability. The objective of Texas Solution #3 is laudable.

Currently, Florida Statute 1012.945 defines each full-time equivalent teaching faculty member duties in terms of a minimum number of classroom contact hours per week. The statute requires an accounting that distinguishes teaching and research and requires universities to develop and apply a formula designed to equate the time associated with these duties. It also recognizes full-time equivalent positions assigned to research, public service and administration. Annual reviews for faculty are based on assigned duties, which differentiate between the time associated with teaching, research and service. Faculty with instructional assignments are given research assignments precisely because it is the expectation that faculty research will inform teaching of cutting edge scholarship and creativity.

Most universities have a history of changing budget allocations based on changes in enrollments. A significant number of universities have already adopted a variant of the philosophy of Texas Solution #3 through a formal process of budgeting based on student credit hour generation and sponsored research dollars – essentially to define budgets based on the “income” generated by a department or a college. This budget model has various names, including Responsibility Center Management, Resource Based Budgeting, and Resource Centered Budgeting. This type of budgeting process was first implemented by Indiana University in 1987 in order to develop a formal means to distribute resources fairly and equitably. The University of Florida is one of the most recent adherents to this form of budgeting, also citing the goal of “promoting innovative and entrepreneurial activities that are financially viable.” More than 30 universities have adopted this budget model and so there are a significant number of lessons learned from their transition.

First, “pure” income based approaches will disadvantage some programs of high value. For example, music education has a high number of student contact hours

which are not reflected as student credit hours from the classroom. Music tends not to be an area supported by significant sponsored research dollars. A pure income approach would, therefore, make it difficult to support music programs regardless of their excellence. Ohio State University, in implementing a pure income approach, also saw significant shifts in funding to the humanities from the sciences when the budgets were first implemented. First, every Ohio State student had more general education requirements in the humanities than they did in the sciences. General education courses generate a large number of student credit hours (large enrollments) and are viewed as the “cash cows” of resource based budgeting. Hence, the income generated from student credit hours was far greater in the humanities than in the sciences or engineering. Consider the fact that engineering is not a required part of a general education in most universities. The science departments and engineering departments have limited potential to generate income from student credit hour generation. Individual science departments developed new general education courses to gain income, but they were actually involved in a zero sum game in competition with other science departments, since their resource potential was limited by the number of science credits required by all the non-science majors on campus. In addition, Ohio State recognized that the actual cost of teaching mathematics and laboratory science education was much higher per credit hour than the average course at the university. Essentially, the income from a universal tuition rate was too little to support science education but was more than sufficient to support humanities courses.

The disadvantages cited above can be mitigated through one of two mechanisms. First, a base budget allocation can be provided or a separate distribution of a state appropriation can be given to departments and colleges, specifically to ensure that a pure income model does not disadvantage STEM majors or areas of excellence whose inherent cost is higher than other majors. Many universities have taken this route. Second, universities can charge tuition that reflects the true cost of educating a student in a specific major. Majors that cost more (for instance, because of small lab sections) would have a higher tuition. In this case, a separate “base” allocation outside of a pure income model would not be required. Currently, Florida charges tuition rates that are the same for all majors regardless of their true costs of each major.

Most universities report challenges in implementing this type of budget model, but report success after making adjustments to protect important programs or compensate for inherent differences in the cost of delivery of a curriculum.

Florida Solution #3

Strategic Goal: Create a rewards system that reflects and encourages excellence in research and teaching.

- (1) Continue, as required by state law, the separate accounting of faculty time for research and teaching, and the evaluation of performance based on this accounting.
- (2) Base departmental and college budgets on student credit hour generation and sponsored research dollars, as well as other measures of contribution, with an effort to ensure that the true cost of education in specific majors is incorporated either by allocation or change in tuition rate, and provided the department is effective in educating its students (Florida Solution #1).
- (3) Reward departments as well as faculty for efficient and effective education of students.
- (4) Increase the emphasis on performance-based pay to enhance the recognition of excellence in research and teaching.

Texas Solution #4. Require Evidence of Teaching Skill for Tenure

The Texas Solution #4 is designed to ensure that teaching will be considered as an important qualification for tenure:

- (1) Require evidence of teaching skill for tenure
- (2) Customer (student) satisfaction ratings would be used to determine teaching effectiveness

Discussion

The goal of Texas Solution #4 is already recognized in practice at Florida State University. Student teaching evaluations are a part of the faculty record for promotion and tenure, and teaching skill is a requirement for achieving tenure. Faculty simply are not tenured without a record of success in the classroom. Student perceptions of teaching, however, are not the sole criteria for evaluating teaching excellence.

Although the philosophy of Texas Solution #4 is already in practice, the Texas plan provides much more stringent guidelines.

First, the Texas Solution #4 requires that 75% of new tenure appointments will be granted to professors who have proven that they can teach well by having taught on average three classes per semester and thirty students per class for the seven or more years that the teacher is on the tenure track. Although the Texas plan suggests that research will be enhanced because up to 25% of faculty who are tenured can be dedicated to research, some of the most extraordinary teachers are also excellent researchers. The Texas plan seems to force faculty to choose teaching or to choose research in order to gain tenure. Top tier universities like Florida State pride themselves on being able to bring cutting edge research into the classroom and into student-faculty interactions. Literally thousands of students are actively engaged in one-on-one research with faculty through classes called “directed individual study,” a key factor in generating interest in graduate study and preparing students for high-level jobs. We also ask faculty to demonstrate a teaching capability at multiple levels, including both large classes, classes directed at majors, and at the graduate level. The majority of graduate classes are smaller than 30 students. Many majors have lower enrollment, but are highly valued by employers. Upper division classes in such majors rarely have 30 or more students in a classroom. Other majors, such as music, dance, and other fine arts, rarely have 30 students in a class because the level of contact required between faculty and students. The Texas plan, by tying tenure to teaching particular class sizes, may tilt tenure to specific large enrollment majors, and eventually to faculty that teach lower level classes. Teaching effectiveness, as measured by student evaluations, pre and post testing, measures of persistence of knowledge, and post-graduation surveys would be a far better metric to assess teaching skill prior to the award of tenure.

Second, the Texas Solution #4 requires that the average teaching ratings must be a minimum of 4.5 on a 5.0 scale for seven years to award tenure. This ignores some critical realities. Few new faculty achieve the level of score required to receive above a 4.5 on their first classes – practice, experience, and mentoring translate to improved teaching skill. Consequently, to achieve tenure, the faculty member may have to significantly exceed the 4.5 score for all subsequent classes. In a class of 30, if 67% of the students rate a teacher with the highest possible score (5), and 27% of the students rank a teacher with a 4, it only takes two students (perhaps they have failed the course) who rate a teacher with a 1, for the teacher to have a score that is below 4.5. By any measure, a member of the faculty who achieves the highest score possible by two-thirds of the students is performing well in the eyes of the students, yet this faculty member would not be eligible for tenure. Florida State University prides itself on commitment to teaching, yet our strongest evaluations (the “90% club” where 90% of student respondents give the faculty the highest score) recognize between 7 and 18% of faculty in any semester. Interestingly, summer courses have the lowest % of faculty in the 90% club. In contrast, 80% of faculty receive scores of excellent or very good. This data suggests that average scores of 4.5 and above may be difficult to achieve, especially for new faculty.

Florida Solution #4

Strategic Goal: Ensure that teaching excellence is required for tenure.

- (1) Require a breadth of evidence of teaching skill and effectiveness for tenure
- (2) Customer (student) satisfaction ratings are one tool to determine teaching effectiveness, but evaluations should include other significant measures, including persistence of knowledge, pre and post testing of knowledge, and post-graduation surveys.
- (3) Undertake a systematic, on-going review of teaching performance in pre-tenure faculty and continue assessments as a part of meaningful post-tenure review of faculty.

Texas Solution #5. Use “Results-Based” Contracts with Students to Measure Quality

The Texas Solution #5 is designed to require contracts between Deans, department heads, and teachers so that the promises of each degree program are clearly stated to every student:

- (1) Universities will provide each applicant with a “learning contract” that discloses, at a minimum:
 - a. The graduate rate, placement rate and average starting salaries for each student with equivalent entering test scores and major
 - b. The average class size
 - c. Teaching evaluations for the faculty who will be teaching their classes
 - d. Grade distributions
 - e. The skills, tools and lessons that the curriculum is designed to transmit
 - f. How education value will be measured
- (2) Teachers will provide for each student enrolling in a course a classroom learning contract that discloses, at a minimum:
 - a. The skills, tools and lessons that the course is designed to transmit
 - b. The grading policy for the course
 - c. The method that the students will use to evaluate the course and the teacher on whether the learning promise was met.
- (3) Students and teachers must sign a copy of the contract.

Discussion

Although the use of the term “contract” begs the question of whether universities will be subjected to a barrage of litigation, many universities (including Florida State University) are actively moving toward providing the information outlined in Texas Solution #5 and are providing information that serves as a “compact” with the students. Florida’s State Board of Governors has directed each university to develop Academic Learning Compacts (ALCs). Florida State University goes beyond this requirement by providing students with a more extensive Academic Program Guide. For each of the majors in the guide, students have access to:

- a) a detailed program description
 - a. Description of the major
 - b. All requirements for completion
 - c. Competency requirements
 - d. Minimum program requirements
 - e. Employment information
- b) an academic map that is designed to promote timely graduation and a full understanding of all pre-requisites
 - a. Schedule of courses for 8 terms that will enable graduation, with completion of all requirements in 4 years
 - b. Milestones required (e.g. a GPA requirement or pre-requisite)
- c) a link to the department

- d) access to the Academic Learning Compact
 - a. Learning expectations
 - b. Assessment to determine how well the student learning matches those articulated expectations

At Florida State, only a limited set of information in Texas Solution #5 is not currently provided to students. First, the university has access to starting salaries for only a portion of its students. Second, the university maintains class size information but we have not posted this information by major although there is no reason not to do so. Third, teaching evaluations at FSU are currently protected by collective bargaining agreement, but many peer universities are releasing summary data. Finally, grade distributions are not released, but these are a topic of statistical analysis to assess university performance and there is no reason not to release such information.

Florida Solution #5

Strategic Goal: Ensure that students can understand expectations, understand how they will be measured, and are enabled to compete degree requirements in a timely fashion.

- (1) Expand the Academic Learning Compacts with students and the Academic Program guide to include additional characteristics of programs (class sizes, teaching evaluation summaries, grade distributions, and employment data where available).

Texas Solution #6. Put State Funding Directly in the Hands of Students

The Texas Solution #6 is designed to change the allocation of higher education funding by directing money to students – making students the real customers, providing universities with a new incentive to compete for students, and by increasing access by demystifying the cost of college.

- (1) Provide each in-state student with a scholarship for undergraduate and graduate education – they lose the resources if they don't go to college
- (2) Fund scholarships using current direct appropriations to universities
- (3) Increase college access by marketing the scholarships in middle school
- (4) The scholarship is not financial aid – all students get the same dollar amount; need-based aid is in addition to the state appropriation to each student
- (5) Encourage timely graduation by capping the number of credit hours

Discussion

Some states, including Florida, already provide some funding directly into the hands of students. Bright Futures scholarships essentially put scholarship funds directly in the hands of more than 175,000 college-bound high school students. The lowest level award in Bright Futures (Gold Seal) has a minimum GPA of 3.0 and minimum combined scores on the SAT in critical reading and in math of 980. These minimums promote access through scholarships to Florida's colleges and universities for a large number of state students. Bright Futures has demonstrably increased the number of students staying in-state to go to college and has increased access to college. Bright Futures also has restrictions on the number of credits that will be funded and is applicable for only 5 years, in both cases to encourage timely graduation.

In many ways, Florida's Bright Futures program is a model for placing taxpayer dollars directly in the hands of students and places Florida ahead of Texas in implementing Solution #6.

It is also interesting to examine where Bright Futures students attend university. The distribution of Bright Futures students is overwhelming focused on Florida's tier-one research universities that provide comprehensive academic programs and bring cutting edge research into the classroom. The distribution of scholars also mirrors the national rank of the institution. The indices used to rank U.S. universities include: incoming student test scores and grade point averages, freshman retention rate, financial resources for the faculty, student-faculty ratios, peer rankings, graduation rate, predicted graduation rate based on student scores vs. actual graduation rate, grants and contracts to faculty, faculty awards, and alumni giving rate. It is instructive that colleges and universities that promote high teaching loads for faculty and large class sizes are not the choice of students that have state funding directly placed into their hands. Texas Solutions 1-3, if implemented as stated, appear to be counter to creating universities that effectively compete for students in the marketplace.

Florida Solution #6

Strategic Goal: Make sure students are true partners in the educational process.

- (1) Expand the Bright Futures scholarship program while maintaining strict standards on credit hours allowed and years to complete the degree to promote timely graduation
- (2) Increase the incentives to complete degrees in 4 years, as well as use Bright Futures scholarships and accelerated credits to acquire a Masters Degree in 4 years.

Texas Solution #7. Create Results-Based Accrediting Alternatives

The Texas Solution #7 is designed to support the creation of a new results-based national accrediting process to replace a current system that is based on inputs or processes.

- (1) Establish a Securities and Exchange Commission model for accreditation
- (2) This outcomes-based approach focuses on results, not the inputs and processes
- (3) Texas Universities could participate in a pilot while staying under SACS accreditation

Discussion

Accreditation has traditionally focused on inputs and demonstration that appropriate processes are being followed, in large part because these are the easiest measures to collect and to evaluate. Over the last seven years, accreditation has increasingly centered on utilizing data on student learning outcomes to improve student programs, although substantial amounts of information collected is still focused on inputs and processes. Quality of programs is much more difficult to assess. Outcomes-based approaches provide greater evidence for quality.

Florida Solution #7

Strategic Goal: Improve universities by creating a results-based accrediting system.

- (1) Establish an alternative model for accreditation or act to make SACS accreditation more outcomes-based.
- (2) This outcomes-based approach should focus on results, and less extensively on inputs and processes
- (3) Florida Universities could participate in a pilot while staying under SACS accreditation

An additional Breakthrough Solution.

The Texas Solutions are focused primarily on the performance of the individual teacher, and then on empowering students by magnifying the importance of student evaluations, creating contracts with students, and by placing state appropriations directly in the hands of students. The only direct mention of quality in the Texas Solutions occurs in the title of Texas Solution #5, where it refers to the measurement of quality. The proposed Florida version of these solutions presented above, argues for both efficiency and effectiveness at all levels of an institution, and presents a broader set of accountability standards. Even so, these solutions fail to incentivize universities to compete at a national and international level.

Most public education institutions have a growing burden of regulations and restrictions, combined with decreased funding, that limit their ability to compete in the marketplace. Several states are addressing this issue by exchanging increased flexibility in managing finances and operations for clear, measureable and unambiguous accountability in meeting the state's needs. By relaxing regulations and rules in exchange for accountability, these states are attempting to create more nimble universities that are more competitive nationally.

There are already several examples:

The State of Virginia signed the Restructured Higher Education Financial and Administrative Operations Act to enable the University of Virginia, Virginia Tech, and the College of William and Mary to become charter universities, granting them increased autonomy in exchange for a much higher level of accountability in meeting the needs of Virginia's citizens. The Governor of Ohio and the Chancellor of the Ohio University System have proposed to create "Enterprise Universities," to "free our great universities from burdensome, duplicative, and sometimes outdated laws that restrict universities' abilities to innovate as entrepreneurial enterprises." This mandate relief is associated with increased accountability and productivity expectations for the universities, as well as a Preeminent Scholars Award Foundation focused on keeping the brightest students in-state.

Areas discussed as offering increased autonomy for universities include:

- Ability to buy and sell property
- Exemptions from state construction procurement requirements
- Exemptions on state purchasing requirements
- Review of rules and regulations requiring the preparation of numerous reports to determine their need
- Ability to set different tuition and fees
- Ability of a Board of Trustees to go into executive session
- Ability of universities to self-insure
- Explicit authority for the Board of Trustees to purchase, sell, lease, and grant easements
- Ability to set tuition based on actual costs of academic programs

- Ability to develop Human Resource structures and employee incentive programs
- Increase in bid limits
- Ability to issue debt

Areas discussed as requirements to achieve increased autonomy (for example the Ohio plan names 9 benchmarks for which universities need to exceed 7 in order to be eligible):

- Exceed a benchmark for freshman retention rate
- Exceed a benchmark for 5-year graduation rate
- Endowment assets above a threshold (a % of total operating expenses)
- Exceed a benchmark for unallocated funds
- Exceed a benchmark for research expenditures (e.g. Carnegie Tier-One status)
- STEM degree production rate
- Affordability or accessibility (e.g. % of budget allocated to need-based aid or tuition benchmarks to peer institutions, or tuition growth relative to the CPI)
- Articulation agreements with community colleges
- Exceed a benchmark for participation in internships

Florida Solution #8

Strategic Goal: Incentivize universities to compete at a national and international level.

- (1) Establish Enterprise Universities, releasing universities from costly mandates in exchange for greater accountability, and as a reward for reaching benchmarks that demonstrate excellence
- (2) Build technology-rich university experiences in which all students acquire the tools to succeed in the 21st century
- (3) Incentivize increased deployment of professional degrees and post-graduate activities integrated with business and educational opportunities