

College for all Texans



**Designing Texas
Undergraduate Education in
the 21st Century**

**A Report with Recommendations
from the Undergraduate Education
Advisory Committee**

January 2009

Texas Higher Education Coordinating Board



Texas Higher Education Coordinating Board

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Mission of the Coordinating Board

The Texas Higher Education Coordinating Board's mission is to work with the Legislature, Governor, governing boards, higher education institutions and other entities to help Texas meet the goals of the state's higher education plan, *Closing the Gaps by 2015*, and thereby provide the people of Texas the widest access to higher education of the highest quality in the most efficient manner.

Philosophy of the Coordinating Board

The Texas Higher Education Coordinating Board will promote access to quality higher education across the state with the conviction that access without quality is mediocrity and that quality without access is unacceptable. The Board will be open, ethical, responsive, and committed to public service. The Board will approach its work with a sense of purpose and responsibility to the people of Texas and is committed to the best use of public monies. The Coordinating Board will engage in actions that add value to Texas and to higher education. The agency will avoid efforts that do not add value or that are duplicated by other entities.

The Texas Higher Education Coordinating Board does not discriminate on the basis of race, color, national origin, gender, religion, age, or disability in employment or the provision of services.

Designing Texas Undergraduate Education in the 21st Century

Executive Summary

Four critical areas should be addressed in higher education policy and practice throughout Texas to enhance undergraduate education in the globally competitive and information-driven environment of the 21st century. These recommendations, based on both scholarship and current national best practices, especially address the goals of the Texas higher education plan *Closing the Gaps by 2015*. In this report, the recommendations for each area are based on evidence and research; they suggest strategies and best practices formulated to implement the recommendations.

A cohesive, action-oriented agenda must be developed – through legislation, through Coordinating Board initiatives, through governing board directives, and at the institutional level – if the recommendations and strategies are to contribute to increasing the quality of undergraduate education throughout the state.

The report is supplemented by several appendices. Appendix A outlines which entity would have lead responsibility for specific initiatives. For a description of the approach taken by the Undergraduate Education Advisory Committee in the development of the recommendations, see Appendix B. The committee membership is listed in Appendix C.

Recommendations

Closing the Gaps

- Create institutional incentives to improve student success, especially for at-risk students.
- Support initiatives to improve developmental education, including determining the effectiveness of any funded projects.
- Strengthen academic and other advising programs to address the personal, social, financial, career, and academic issues that affect student success.
- Provide leadership to establish student success programs for new students.
- Define state accountability data to reflect the multiple intentions of students.
- Audit state laws and policies and eliminate those that create unreasonable barriers to college completion.

Improving the Quality of Undergraduate Education

- Reconsider the Texas Core Curriculum to ensure that it reflects current and future demands on student knowledge and skills.

- Continue to support and fund research and faculty development in the development and measurement of learning outcomes.
- Encourage Texas colleges and universities to internationalize their curricula and campuses to remain competitive.
- Support faculty development to improve teaching.
- Develop a virtual teaching excellence laboratory for faculty to enhance the use of active learning, the cultivation of better student and faculty engagement, and the expansion of instructional technology skills.
- Integrate the *Course Redesign* principles into instruction throughout Texas.

Assuring Excellence of Undergraduate Education

- Provide a website for the posting of best practices in assessment and evaluation, and program review.
- Support research that examines the validity of causal links between standardized assessment models and outcomes and students' institutional/curricular experience.
- Establish a system of program review for existing undergraduate programs by the Texas Higher Education Coordinating Board with common criteria for baccalaureate and common criteria for associate degrees.

Strengthening Funding for Undergraduate Education

- Develop policies and procedures that improve the speed, accuracy, and predictability of financial aid awards to students.
- Significantly increase state-appropriated formula funding to ensure that institutions of higher education are able to meet their instructional and operating costs. To that end, support the recommendations of the Coordinating Board as approved in Agenda Item VI E of the April 24, 2008, agenda.
- Base the semester credit hour counts and associated costs used to calculate formula funding upon a rolling average rather than a single year in order to provide a predictable funding stream that allows for better institutional planning.
- Establish a formula for appropriating need-plus-merit-based financial aid, particularly grants, which is indexed to the statewide average of direct tuition and fees.

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Introduction

The recommendations developed by the Undergraduate Education Advisory Committee are founded on the committee's recognition that higher education must transform itself to meet the needs of 21st-century global society, and the social and economic needs of Texas and the U.S. Undergraduate education in Texas must meet competing demands for change in order to respond to the changing cultural and workforce needs of the state and the nation.

A recently published Educational Testing Service (ETS) report entitled *America's Perfect Storm: Three Forces Changing Our Nation's Future*, characterizes the dilemmas facing American society. The report lists three components of the "storm" that may persist well into the 21st century:

- "...the wide disparity in literacy and numeracy among our school-age and adult populations;"
- "...seismic changes in our economy...resulting in a profound restructuring of the U.S. workplace;" and
- "...sweeping demographic changes," including significant demographic shifts in the age and diversity of the U.S. population.¹

These concerns are echoed and amplified in the corporate/employer perspectives presented in *Are They Really Ready to Work?*² Among employers at over 400 companies surveyed for the study, there was broad agreement that, while young people need excellent competency in a broad range of basic academic skills, and the ability to apply those skills to real-world situations, many of those entering the work force today are insufficiently prepared.

Gordon Davies, writing for the National Collaborative for Higher Education Policy, and relying on data collected by the Organisation [sic] for Economic Co-operation and Development, reported that the U.S. now ranks sixth among 27 nations surveyed in the number of 20 to 24 year-olds who have completed high school; fifth in the number enrolled in college. The U.S. lags even farther behind – 16th of 27 countries – in the number of students who complete undergraduate degrees or certificates. The OECD data show that the U.S. is actually declining in overall educational attainment: "The United States ranks among top nations in the educational attainment of older adults (ages 35 to 64), but it has dropped to a tie for seventh in the educational attainment of younger adults (ages 25 to 34)."³

¹ Kirsch, Irwin, et al (2007). *America's Perfect Storm: Three Forces Changing Our Nation's Future*. Educational Testing Service. (<http://www.ets.org/Media/Research/pdf/PICSTORM.pdf>, retrieved 4-7-2008).

² The Conference Board, the Partnership for 21st Century Skills, Corporate Voices for Working Families, and the Society for Human Resource Management (2007). *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants into the 21st Century U.S. Workforce*. (http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF09-29-06.pdf retrieved 4-8-08).

³ Gordon K. Davies (2006). *Setting a Public Agenda for Higher Education in the States: Lessons Learned from the National Collaborative for Higher Education Policy*. National Collaboration for Higher Education Policy. (http://www.highereducation.org/reports/public_agenda/public_agenda.pdf retrieved 4-8-08). Davies took this data from Alan Wagner (2006). *Measuring Up Internationally: Developing Skills and Knowledge for the Global Knowledge Economy*. National Center for Public Policy and Higher Education (San Jose, CA). http://measuringup.highereducation.org/docs/2006/NationalReport_2006.pdf (retrieved 4-8-08). See also <http://www.oecd.org>.

The trend in Texas offers a disturbing mirror of the national situation. Davies writes, "Whereas many of the well-educated workers are older residents who are reaching retirement age, growing numbers of younger residents are ethnic minorities and are less likely to finish high school, enroll in higher education, or receive degrees. For example, in 16 states, a smaller proportion of young adults (ages 25 to 34), as compared with older adults (ages 35 to 64), have an associate's degree or higher. These 16 states include the fastest growing states in the country, including Arizona, California, Colorado, Florida, Nevada, and Texas."⁴

The recommendations and strategies in this report address the aspirations of the higher education community in Texas to improve competitiveness, educate more Texans, improve the quality of undergraduate education, and prepare traditional-age college students, nontraditional students, and adult learners to compete and excel in the rapidly changing world of the 21st century.

⁴ Davies, 2006, 2-3.

Designing Texas Undergraduate Education in the 21st Century

The crucial areas to address in strengthening the quality of undergraduate education are:

- Improving students' access and success;
- Improving quality by enhancing the learning process;
- Assuring excellence through evaluation and assessment; and
- Strengthening funding for undergraduate education.

The report will address each section in turn.

I. Closing the Gaps: Increasing Access and Success

Recommendation 1A: Create institutional incentives to improve student success, especially for at-risk students.

Rationale

Since the passage of the Higher Education Act of 1965, significant strides have been made in increasing the numbers and percentages of students from ethnic minorities who enroll in college. Despite these increases, the percentage of all students who earn a college degree has not increased significantly since 1980.⁵ Numerous studies have shown that college access and success are highly correlated to socioeconomic status, not just ethnicity. A Stanford report found that

In the past 50 years, it has made sense for the U. S. to concentrate its postsecondary education policies on opening the doors to college -- and by and large these policies have a major positive impact. There remain significant gaps in enrollment and completion among ethnic groups, and between low-and high-income families.⁶

Similarly, as Clifford Adelman has noted, "Access to entrance to college...is only half the picture. Students must be given *access to success*."⁷ Furthermore, the number of students enrolled in higher education in need of remediation in reading, writing, and mathematics remains high; approximately 50 percent of students require at least one developmental education course to achieve college readiness.

Since the initiation of *Closing the Gaps*, the Texas Higher Education Coordinating Board has provided leadership for a number of initiatives intended to improve access to and success in

⁵ Venezia, A., M. Kirst, and A. Antonio (2004). *Betraying the College Dream: How Disconnected K-12 and Post-Secondary Education Systems Undermine Student Aspirations*. The Stanford Institute for Higher Education Research.

⁶ Venezia, 46.

⁷ Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion from High School through College*. U.S. Department of Education.

higher education in Texas. The extensive activities, studies, and initiatives of the Coordinating Board and the supporting legislation have generated advances in the areas of:

- increasing public awareness of higher education opportunities, especially among underserved populations;
- increasing institutional focus on access and success in higher education;
- addressing the need for curricular alignment between secondary and higher education;
- addressing the need for stronger developmental education; and
- advocating for increased financial aid for college students.

Many Coordinating Board efforts have been aimed at the front end of the education pipeline, on access and participation. These activities are consistent with scholarship about increasing student participation. However, relatively few initiatives have targeted student success, generally defined as graduation.

The most common student success programs focus on individual student financial aid or academic preparation for college. Considerable research and experience reveal other valuable retention/success programs, but they are expensive to implement and sustain. A major study of national graduation rates revealed that among many correlates for retention to graduation, the highest correlation was found between available institutional resources and graduation rates. The report suggests, "Money trumps all other factors in the ability of institutions to engage and retain students."⁸

In a time of tight resources, finding means of increasing retention will be a challenge. Current initiatives in access to higher education should be continued. However, in order to move the state beyond simply increasing access and toward actually closing gaps in educational attainment, additional resources must be provided to support success. While state efforts should continue a focus on improving readiness, the state must also provide increasing resources to already enrolled students, especially those at risk, and to their institutions.

Strategies

- Provide bonus funding to institutions for developmental students who successfully complete a related college-level course.
- Fund course completions along with enrollments, with bonus funding for completions by disadvantaged, first-generation, and under-prepared students.
- Reward institutions that provide an excellent education for all while maintaining access for low-income populations.
- Give colleges flexibility in the use of their funds to produce desired outcomes.
- Provide funding to design and implement proven retention strategies that increase completion rates and reduce completion gaps related to race, gender, and income.

⁸ Swail, Watson Scott, (January 23, 2004). "Legislation to Improve Graduation Rates Could Have the Opposite Effect," *Chronicle of Higher Education*, B16.

Recommendation 1B: Support initiatives to improve developmental education, including determining the effectiveness of any funded projects.

Rationale

Recent initiatives to improve developmental education in Texas have included strengthening the use of best practices across the state, and potentially reducing the need for developmental education through increasing college readiness has resulted in: the development of statewide college readiness standards; grants awarded to develop innovative instructional designs for increasing the effectiveness of developmental education courses; grants awarded to promote pre-college bridge programs in developmental education; and research to determine effective measures of success for these initiatives.

College readiness initiatives may help decrease the number of students who will eventually require developmental education prior to enrolling in credit-bearing college courses. But developmental education will need continued funding during the implementation period for college readiness standards. The challenge is to make a measurable difference, and the committee affirms that funded projects and other initiatives should reflect verifiable improvements. By 2010, five years will have passed since the Commissioner's Summit on Developmental Education, and many of the recommendations coming from the Summit will have been implemented. Assessing progress and effectiveness of these initiatives will be an important part of the next phase for most of these projects.

Strategies

- Develop a single test with separate minimum scores for both high school exit and college readiness.
- Align current testing mechanisms more accurately with college readiness standards, especially in mathematics (the area of greatest mis-alignment).
- Develop an on-line bibliographic resource for teaching developmental education.
- Continue the use of grants to develop, and measure the effectiveness of, innovative or improved instruction in developmental education classes.
- Use Coordinating Board institutional profiles and surveys to identify high-performing developmental education programs and reward them; sharing their successful strategies with others.

Recommendation 1C: Strengthen academic and other advising programs to address the personal, social, financial, career, and academic issues that affect student success.

Rationale

Academic advising is viewed by many researchers and organizations as a cornerstone for successful retention programs. High quality academic advisement is an important resource leading to student success, but often receives insufficient support and focus. Successful academic advising programs must have dependable financial support, training for professional staff advisors and faculty advisors, and early intervention programs for students. However, advising is the professional role which faculty members are least prepared to perform. In fact, only 55 percent of American colleges and universities provide any preparation or training for advisors of first-year students.⁹ The Carnegie Foundation "...found advising to be one of the weakest links in the undergraduate experience."¹⁰

High quality academic advising is positively related to grades and student satisfaction. It is an important part of successful institutional efforts to educate, retain, and graduate students. Two critical factors in students' decisions to remain enrolled are the initial and extended orientation and advisement programs. A quality academic advising program is, therefore, a critical component in an initiative that strives to improve student retention. Initiatives that facilitate improved advising, especially training of academic advisors, within institutional programs will yield immediate benefits in retention and success.

Strategies

- Establish vertical integration of advising at all levels of education (P-16) in order to significantly improve student success in undergraduate education.
- Create purposeful interactions between students, family, and advisors to design integrated, individualized student-centered educational plans; develop schedules based on students' needs; avoid pushing students toward high educational debt; and establish effective individual academic transfer plans, where appropriate.
- Offer students career-oriented advising prior to or during their first year, in order to foster good choices in their educational planning.
- Redesign the advising processes to reward faculty for advising within the promotion and tenure system.

⁹ Cuseo, Joe (2003). *Academic Advisement and Student Retention: Empirical Connections and Systemic Interventions*. National Academic Advising Association. (<http://www.uwc.edu/administration/academic-affairs/esfy/cuseo/Academic%20Advisement%20and%20Student%20Retention.doc>, retrieved 10-30-08).

¹⁰ Boyer, E.L. (1987). *College: The undergraduate experience in America*. Harper & Row.

Recommendation 1D: Provide leadership to establish student success programs for new students.

Rationale

Higher education is not simply an equation of “Faculty Input + Student Study Time = Learning.” Learning is influenced by significant cultural factors that students bring with them into classrooms. As Texas seeks to increase the number of people with college degrees, it is necessary to adopt new learning strategies and course designs that best serve the diverse and changing student body.

Substantial research indicates that a student’s experience during the first year of college is critical and that the most critical time in terms of student retention is the first three weeks of a student’s experience. Many students arrive at the university unprepared both academically and socially for the rigors of university life. Without a support network and the proper skill set, they are in danger of leaving the university before they complete their degrees. Noted scholar Vincent Tinto suggests that institutions “design programs that ensure, from the very onset of student contact with the institution, that entering students are integrated into the academic community of the college and acquire the skills and knowledge needed to become successful learners in those communities.”¹¹

Strategies

- Create First-Year Experience programs that include sponsored social events, mentors, orientation programs, supplemental instruction, workshops on coping strategies, and classroom activities.
- Ensure that First-Year Experience programs are engaging and of sufficient length to allow students to develop relationships with faculty, staff, and the institution; and to introduce students to knowledge and skills that support success and retention.
- Offer academic orientations that move beyond simply registering students for classes; instead, set a foundation for academic success. Learning outcomes should be as clearly defined for orientation programs as for any academic course.
- Design freshmen seminars that encourage students to develop relationships within the academic community and help first year students develop skills in critical thinking, writing, research, and presentation skills while effectively transitioning into the university.
- Give careful consideration to the design of the core curriculum and its broad effect on student success.

¹¹ Tinto, V. (1986). Dropping out and other forms of withdrawal from college. In L. Noel, R. Levitz, D. Saluri, & Associates (Eds.), *Increasing student retention* (pp. 28-43). San Francisco: Jossey-Bass.

Recommendation 1E: Define state accountability data to reflect the multiple intentions of students.

Rationale

Through the Accountability System, the Texas Higher Education Coordinating Board has made significant strides in improving data collection so that both policymakers and the public have easy access to honest and accurate information about student outcomes and institutional costs. However, Texas should use more comprehensive measures in areas such as remediation, student success in college, degree or certificate completion rates, the efficacy of placement procedures, and student persistence in postsecondary education. Most state and national performance data center on graduation rates, which places disproportionate emphasis on the traditional full-time college student. Other data collection initiatives target specific groups such as first-time-in-college or underprepared students. However, the official standards offer few meaningful measures of an institution's ability to meet the needs of students who do not aspire to a degree, or for whom success is better measured by individual improvement rather than by academic milestones.

Strategies

- Add accountability measures that reflect the broader scope of student intentions and the various institutional missions that have evolved to serve them.
- Develop success measures for two-year institutions in Texas to reflect a broader range of definitions of success and that include varied student intentions.
- For a more complete record of student success, consider adopting broad-based student record databases that follow individuals from high school through college and the workforce, assessing broader outcomes rather than only degree completion. Databases should include information about students by enrollment status, financial aid award, income level, gender, income, ethnicity, age, and residence by county.

Recommendation 1F: Audit state laws and policies and eliminate those that create unreasonable barriers to college completion.

Rationale

Laws and rules governing undergraduate education may have unintended consequences, creating burdens for students who can least afford them, especially those students central to the success of the *Closing the Gaps* goals. The increasing passage of laws intended to reduce time needed to complete a degree may have a negative impact on the students at highest risk because those students have the least experience in managing college requirements and often are the least prepared academically. They may incur financial and/or academic penalties for repeating courses, dropping courses, and accumulating excess credits.

The withdrawal of state funding for courses repeated or taken in excess forces most institutions to require additional tuition for those courses to cover the costs of instruction – thus passing along to students the additional costs of instruction no longer covered by appropriations. Other policies governing financial aid may also restrict access and success or may result in high debt for those who can least afford it.

Strategies

- Analyze existing data to determine if the limits on excess hours or course repetition are affecting transfer students or economically disadvantaged students disproportionately.
- Analyze existing data to determine whether institutions with the highest levels of diversity and first generation students have the highest percentage of students with excess hours.

II. Improving the Quality of Undergraduate Education: Enhancing the Learning Process

Derek Bok (Bok, 312) recently wrote, "The time has come for America's colleges to take a more candid look at their weaknesses and think more boldly about setting higher educational standards for themselves."¹² While students are generally achieving good levels of learning in their undergraduate major discipline, their more fundamental skills – including writing, reading, and critical thinking – often leave much to be desired. Many graduates are not prepared to apply their specialized learning in the workplace, or to handle tasks requiring higher-order thinking skills. Regardless of their major or field of study, new baccalaureate graduates should take with them educational experiences that provide them with mastery of a core of knowledge and skills and the ability to apply them in all aspects of their lives.

Recommendation 2A: Reconsider the Texas Core Curriculum to ensure that it reflects current and future demands on student knowledge and skills.

Rationale

Approximately one-third of the courses in any undergraduate degree are composed of the legislatively mandated core curriculum (general education) requirements. The Texas Core Curriculum was last revised 10 years ago, when a common statewide framework and content requirements were established to facilitate transfer of credit. The established Texas Core Curriculum also specifies basic intellectual competencies (reading, writing, oral communication,

¹² Bok, Derek (2006). *Our Underachieving Colleges: A candid look at how much students learn and why they should be learning more.* Princeton University Press.

critical thinking, and computer literacy), which are not tied to specific course requirements but are intended to suffuse the entire curricular structure.¹³

There is increasing national concern for improving undergraduate general education. In their transmittal letter, the presidents of the four organizations collaborating to produce the report: *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants into the 21st Century U.S. Workforce*, wrote, "The education and business communities must agree that applied skills integrated with core academic subjects are the 'design specs' for creating an educational system that will prepare our high school and college graduates for success in the modern workplace and community life. These skills are in demand for all students, regardless of their future plans, and will have an enormous impact on our students' ability to compete in the workplace."¹⁴

The American Association of Colleges and Universities (AAC&U) has provided leadership in strengthening general education, working intensively on the issue of general education reform since the early 1980s. The AAC&U general education initiatives "aim to ensure that every undergraduate student experiences a relevant and challenging general education curriculum. In addition to working with campuses to strengthen their general education programs overall or to reform specific aspects of them (e.g. science requirements or diversity requirements), AAC&U initiatives address strengthening general education for transfer students, embedding high expectations and meaningful assessment of student learning, and general education as essential for enhancing curricula and pedagogy."¹⁵ One initiative, *Shared Futures: General Education for Global Learning*, is "a curriculum and faculty development network that combines the best theory and practice of general education reform with the transformative promise of global content."¹⁶

In *College Learning for the New Global Century*, the AAC&U urges institutions to make general education a part of the entire curriculum rather than a self contained requirement. "Keyed to work, life, and citizenship, the essential learning outcomes ... are important for all students and should be fostered and developed across the entire educational experience, and in the context of students' major fields."¹⁷ The AAC&U's essential learning outcomes include: knowledge of human cultures and the physical and natural world; intellectual and practical skills; personal and social responsibilities; and integrative learning (defined as a "synthesis and advanced accomplishment across general and specialized studies").

It is time to reconsider Texas Core Curriculum in order to better prepare students for the global culture of the new century. The revised core curriculum will have to respond to both the

¹³ A description of the existing Texas Core Curriculum and a discussion of these competencies can be found in *Core Curriculum: Assumptions and Defining Characteristics*, approved by the THECB in April, 1998. (http://www.thecb.state.tx.us/AAR/UndergraduateEd/fos_assumpdef.cfm, retrieved 10-30-08).

¹⁴ The Conference Board (2007), 7-8.

¹⁵ Association of American Colleges & Universities website, general education page (<http://www.aacu.org/resources/generaleducation/index.cfm>, retrieved 10-30-08).

¹⁶ Association of American Colleges & Universities website, global learning page (http://www.aacu.org/SharedFutures/gened_global_learning), retrieved 10-30-08).

¹⁷ Association of American Colleges and Universities (2007). *College Learning for the New Global Century: A Report from the National Leadership Council for Liberal Education & America's Promise*. (http://www.aacu.org/advocacy/leap/documents/GlobalCentury_final.pdf, retrieved 10-15-08).

needs of the global workforce and the intellectual, aesthetic, and social changes emerging during the new century. Graduates will have to be prepared to meet these challenges and to contribute to these changes in a beneficial way.

Within the framework of the existing core curriculum, individual institutions have some latitude in defining their core curriculum. But several mandates effectively constrain the ability of higher education leadership, individual or collectively, to pursue significant changes to the existing general education core curriculum. Particularly, the combination of credit-hour limits, legislative requirements for particular courses, and transferability requirements mean that any significant innovation in the design of the statewide core curriculum must occur at a statewide level. Collaboration among institutions, the Coordinating Board, and lawmakers will be needed.

Strategies

- Consider what knowledge and which skills are essential for 21st century learning.
- Determine whether or not the established core intellectual competencies in reading, writing, oral communication, critical thinking, and computer literacy should receive increased emphasis.
- Reward efforts to strengthen the entire undergraduate curriculum so that it includes the critical knowledge and skills identified in the revision process including demonstrable improvements in student learning outcomes and success.
- Assign the task of revising the Texas Core Curriculum to the Undergraduate Education Advisory Committee.

Recommendation 2B: Continue to support and fund research and faculty development in the development and measurement of learning outcomes.

Rationale

In *Measuring Up 2006*,¹⁸ learning is one of six categories that make up the “national report card” examining how well the fifty states educate and train their citizens. The report points out that the U.S. has no direct comparable measures of student learning. Most states (including Texas) have not yet established measures of learning. Several states (Illinois,

¹⁸ Alan Wagner (2006). *Measuring Up Internationally: Developing Skills and Knowledge for the Global Knowledge Economy*. National Center for Public Policy and Higher Education (San Jose, CA). http://measuringup.highereducation.org/docs/2006/NationalReport_2006.pdf (retrieved 4-8-08).

Kentucky, Maryland, Massachusetts, Missouri, Nevada, New York, Oklahoma, and South Carolina) have begun the work to establish measurable learning outcomes.

In Texas, exemplary educational objectives (i.e. learning outcomes) have long been established as part of the mandated Texas Core Curriculum, but at the component area level for general education, rather than for specific courses or degree programs. The higher education accountability system in Texas reports learning outcomes in some academic disciplines for which licensure rates of state test data are available. The recent college readiness initiative in Texas is already pointing toward the establishment of learning outcomes for a number of college-level lower-division courses frequently undertaken by students entering higher education for the first time, as well as through dual credit.

One national initiative that provides a model for the development of essential learning outcomes and their assessment comes from the previously-mentioned American Association of Colleges & Universities (AACU). In *College Learning for the New Global Century*, several principles for developing excellence in learning appear as part of their "Give Students a Compass" program, "a multi-state collaborative to re-map educational aims, educational practices, and assessment strategies for general education in three public state systems: the California State University System and the state higher education systems of Oregon and Wisconsin."¹⁹ Areas addressed in the project include teaching the arts of inquiry and innovation; engaging the big questions; connecting knowledge with choices and action; fostering civic, intercultural, and ethical learning, and assessing students' ability to apply learning to complex problems. AAC&U's signature program, *Liberal Education and America's Promise (LEAP)*, focuses campus practice on fostering those essential learning outcomes for all students, whatever their chosen field of study, providing a framework for individual institutions or states to develop more specific learning outcomes and measurement instruments.

Strategy

- Review the AAC&U *LEAP* project Essential Learning Outcomes and similar initiatives, incorporating appropriate approaches to the development of learning outcomes and effective measurement procedures for undergraduate education in Texas.

Recommendation 2C: Encourage Texas colleges and universities to internationalize their curricula and campuses to remain competitive.

Rationale

During the second half of the 20th century, U.S. higher education institutions were perceived to be role models for universities around the world. However, international institutions in countries such as India and China are engaged in a concerted effort to increase the quality and the quantity of their colleges, technical institutes, and universities. To remain competitive internationally, Texas colleges and universities must provide students with a

¹⁹ <http://www.aacu.org/compass/index.cfm> (retrieved 1-9-09).

globally informed education. Traditionally, U.S. higher education emphasizes Western (European-based) culture and educational perspectives, while institutions in other parts of the world emphasize U.S./Western-based culture alongside studies in their own native cultural foundations. Students in other countries are not only aware of Western culture, they are able to function within it, and are better prepared than American students to enact a “global citizenship” that operates within different cultural values and practices. Finally, to remain competitive with international higher education, Texas higher education must address declines in production of STEM (science, technology, engineering and mathematics) graduates.

Strategies

- Prepare students to be aware of non-Western cultures, to function within them, and to become “global citizens” who acknowledge and respect different cultural values.
- Infuse international information in every subject taught.²⁰
- Foster critical thinking skills that can be applied to new situations.
- Encourage students to communicate with peers in other countries.
- Require foreign languages, especially those spoken in emerging nations.
- Cultivate civic values and engage students as citizens of the local and global environment.
- Prepare students to reach internationally accepted learning goals.
- Internationalize teacher education at all levels.
- Provide international experiences for faculty development.
- Strengthen cooperative ventures between Texas and international institutions of higher education.
- Establish aspirational peers in other countries.
- Use technology to create international learning experiences.
- Provide incentives for students to graduate in STEM fields.

²⁰ The second through seventh strategies in this list are taken from Vivian Stewart (April 2007). *Becoming Citizens of the World*, Educational Leadership, 8-14.

Recommendation 2D: Support faculty development to improve teaching.

Recommendation 2E: Develop a virtual teaching excellence laboratory for faculty to enhance the use of active learning, the cultivation of better student and faculty engagement, and the expansion of instructional technology skills.

Rationale (for both recommendations 2D and 2E)

Students in the 21st century differ significantly from the population which dominated higher education for most of the 20th century. The entering classes of traditional-age “millennial” students have been exposed to a more diversity-aware and accepting culture than perhaps any other generation of students.²¹ Additionally, there are now much higher numbers of nontraditional (older) students; nationally, only about 40 percent of students are traditional-age students.²²

Faculty usually have little or no direct preparation for teaching an increasingly diverse population of students. Faculty development, through workshops, conferences, or other methods, is needed to prepare faculty to stimulate learning and connect with students of all ages and backgrounds in their classrooms. Faculty members must develop skills that promote active learning and faculty (as well as student) engagement through innovative teaching strategies and uses of technology.

The appropriate use of technology is driving extensive changes in teaching, learning, research, and service, necessitating the development of new budget streams and new cross-disciplinary, interdisciplinary, and even inter-university structures. A wide range of technological resources is available in higher education settings. A recent report from *Educause* asserts that students have an extensive relationship with technology and rely on technology as a partner in their learning experiences.²³ By comparison, faculty may not be as comfortable or well versed in using these emerging technologies to promote learning.

²¹ *Rethinking Diversity: Millennial Student Project* (University of Arizona) (<http://mass.arizona.edu/millennial/index.html> Retrieved 10-15-08). See also Reynol Junco and Jeanna Mastrodicasa (2007) *Connection to the Net Generation: What Higher Education Professionals Need to Know about Today's College Students*, National Association of Student Personnel Administrators, Inc., and Fred B. Newton (November-December 2000) “The New Student,” *About Campus*, 8-15. (<http://www.flinnders.edu.au/teach/t4/teaching/first/newstudent.php>, retrieved 4-21-08).

²² Paulsen, Karen, and Marianne Boeke (2006). *Adult Learners in the United States: A National Profile*. National Center for Higher Education Management Systems (NCHEMS). These students are nontraditional by their age (25 and older); other characteristics are associated with nontraditional students, but age is the most common criterion.

²³ Hawkins, Brian L. and Diana G. Oblinger, (July/August, 2006). *The Myth About the Digital Divide: “We Have Overcome the Digital Divide,”* *Educause Review*, 12-13. (<http://www.educause.edu/ir/library/pdf/ERM0647.pdf> retrieved 4-21-08).

Richer learning environments, whether "smart classrooms" or technologically enhanced instruction delivered online, can and should be supported at the state level. Effective models for teaching the knowledge and skills necessary to contribute to the global society should be aggressively underwritten and demonstrated in an effort to develop strong teaching skills throughout the educational process.

Strategies

A virtual/online Teaching Excellence Laboratory could develop faculty expertise in the following ways:

- Demonstrate how to enhance the use of current and emergent technology in courses taught using traditional classroom and online instruction.
- Strengthen a new scholarship of teaching through increasing familiarity with teaching portfolios and instructionally specific research.
- Assist faculty with their course planning to incorporate active learning strategies, service-learning initiatives, the development of measurable learning objectives, appropriate technology, practical skill building, and ethical decision-making.
- Offer standards for self and peer evaluations of teaching. Faculty could develop teaching portfolios charting their instructional growth, personal evaluations, and ways they embed student learning outcome assessments into their curriculum and instructional methods.

To better prepare faculty for teaching an increasingly diverse student population, faculty development needs to target these strategies:

- Assist faculty in understanding and planning instruction for the unique characteristics and learning styles of "millennial students."
- Assist faculty in understanding the needs of nontraditional students and developing appropriate instructional approaches for those students.
- Assist faculty in developing sensitivity and understanding of other cultures.
- Assist institutions in developing innovative approaches to the semester and course structure and delivery to meet the needs of new types of students.

Recommendation 2F: Integrate the *Course Redesign* principles into instruction throughout Texas.

Rationale

Higher education must collectively redesign the learning process itself. Current efforts through the Texas Course Redesign Project are helping Texas institutions adopt a paradigm shift, which focuses on increasing active learning to enhance student engagement and success in large, lower-division, general education courses. The focus of the National Center for Academic Transformation on increasing learning, using appropriate technology, and creating cost-effective methods for individualizing the “large-course” experience dovetails nicely with cross-course or extracurricular approaches to student engagement, and it advances the nation's understanding of what works effectively to increase student academic success among underserved students. Given the large numbers of public undergraduate institutions in Texas, completing this process will take sustained effort and support from state agencies.

Strategies

- Extend the acceptance of the principles of learner-centered instruction and technology integration throughout the undergraduate curriculum.
- Shift from passive to active learning with an emphasis on students’ reading, discovery, and problem-solving skills.
- Create cost-effective methods for individualizing the “large-course” experience.

III. Assuring Excellence of Undergraduate Education

The national Commission on the Future of Higher Education (Spellings Commission) called for a greater degree of scrutiny of student learning and advocated a greater role for the national government by calling for national accreditation standards.²⁴ The Commission on Colleges of the Southern Association of Colleges and Schools (SACS) has required assessment and evaluation of institutional effectiveness for at least two decades, and recently made institutional effectiveness a core principle of accreditation. It has also explicitly made student learning outcomes central to the accreditation process by incorporating them in the required Quality Enhancement Plan.

Higher education in Texas must respond to the demands of the national government, accrediting bodies, and the state of Texas for accountability with meaningful yet efficient measures. Those measures must satisfy the public demand for accountability while simultaneously respecting the independence and diversity of institutions within the state. The participation of many public higher education institutions in the recently developed, nationwide

²⁴ U. S. Dept. of Education (2006). *A Test of Leadership: Charting the Future of Higher Education*. A Report of the Commission appointed by Secretary of Education Margaret Spellings. (<http://www.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf> , retrieved 6-24-08).

Voluntary System of Accountability (VSA) is an indicator of the strength of demands for greater accountability and the institutions' commitment to meeting this demand.²⁵

Recommendation 3A: Provide a website for the posting of best practices in assessment and evaluation, and institutional program review.

Rationale

The assessment and evaluation of aggregate student learning at the program level is not a new concept for most institutions. In academic disciplines that lead to professions, standardized exams such as the nursing licensure exam or teacher certification exam are effective for determining student learning and, in the aggregate, program effectiveness. But in less career-oriented disciplines, program effectiveness is more difficult to assess and there are only a handful of standardized exams that attempt to do so.

Managing the program assessments, data collection and reporting for institutional effectiveness, for most institutions, remains a challenging process. Each institution is concerned with developing systems that are meaningful, yet efficient. Each institution is concerned with identifying practices that will enhance its mission rather than detract from it. The creation of a statewide website would allow institutions to share their best practices and to borrow from each other.

Strategy

- Locate a host institution to provide a website, and devise a process for determining the inclusion of postings related to institutional best practices in evaluation, assessment, and existing degree program review.

Recommendation 3B: Support research that examines the validity of causal links between standardized assessment models and outcomes and the student's institutional/curricular experience.

Rationale

Many assessment methods and instruments have been developed for higher education. However, there is considerable disagreement about whether the methods and instruments actually demonstrate valid relationships between institutional practices and assessment results. Accountability initiatives in higher education should acknowledge the complexity of these issues, while recognizing that educational practices are increasingly driven by attempts to focus on assessment methodologies or metrics. Greater knowledge of the benefits and limitations of current assessment procedures will encourage adoption and acceptance of the most useful processes.

²⁵ Information about the VSA can be found at <http://www.voluntarysystem.org/index.cfm> (retrieved 10-21-08).

Well designed research studies should be supported that examine the gap between available standardized tests and the extent to which they measure what is being taught and learned. If wide consensus supports the use of interdisciplinary skills such as writing, reading, and critical thinking as benchmarks for assessing the quality of undergraduate education, additional research may be needed to redesign how these skills are taught.

Strategies

- Avoid reliance on a single method of assessment for comparing institutions with varying student characteristics and missions.
- Examine the gap between current standardized tests and the extent to which the tests measure what is being taught and learned in Texas undergraduate education.
- Conduct research to determine whether, or how, basic skills such as critical thinking can be taught more effectively.

Recommendation 3C: Establish a system of program review for existing undergraduate programs by the Texas Higher Education Coordinating Board with common criteria for baccalaureate and common criteria for associate degrees.

Rationale

To ensure that undergraduates in Texas are receiving the kind of preparation they need for the workforce, global society, graduate school, and lifelong learning, a procedure to review the quality of existing educational and degree programs of colleges and universities is needed. While many institutions have developed internal review procedures, a state-level review would allow for better anticipation of workforce needs and encourage continuing improvement statewide.

Strategies

- Utilize, as much as possible, existing institutional program reviews and state accountability measures.
- Employ common practices for program reviews, including the development of a self-study instrument, and the evaluation of the self-study by faculty and administrators in the institution and outside evaluators, where possible.
- Consider common criteria for evaluation such as program enrollment, retention, and graduation rates, numbers of full and part-time faculty, curriculum, assessment of student learning outcomes, use of resources, and consistency with institutional mission.
- Develop a template for online reporting.

- Support a regular cycle of internal program reviews (e.g. every 5 years).
- Develop a plan for THECB reviews that draws on those internal reviews.

IV. Strengthening Funding for Undergraduate Education

Issues of quality, access, success, and excellence are clearly connected to two critical financial aspects of higher education – institutional funding and student affordability – and the relationship between those two parameters and the quality of undergraduate education in Texas. None of the major funding sources for Texas higher education has a direct, objective link between student outcomes and the revenue provided to the institution.

Recommendation 4A: Develop policies and procedures that improve the speed, accuracy, and predictability of financial aid awards to students.

Rationale

Affordability of higher education has decreased in Texas, as it has across the U.S., due to increasing tuition and fees. If grant aid does not increase proportionately, then students rely more heavily on loans, a situation which has serious ramifications.

The adequacy of financial aid cannot be measured by monetary allocation alone. For many individual students, the timing and accessibility of funds is an equally significant issue. In many cases the timing and ease of access are more critical to educational success than the overall award amount, because, prior to the beginning of an academic term a student must make decisions on employment, enrollment, housing, and many other issues that are directly affected by that individual's financial aid allotment and the timing of that award. Any improvement to the speed, accuracy, and predictability of award and disbursement of funds will inevitably improve student outcomes because, from a student perspective, there are many critical factors associated with financial aid beyond simple dollar awards.

Strategies

- Commit specific aid to students as early as possible in the decision cycle to allow them to better balance course load, work hours, and personal expenditures.
- Proactively take financial aid information to parents.
- Produce Spanish literature on the financial aid process.
- Provide workshops to directly assist families to apply online – not all have access to computers or are computer literate. Provide laptops to schools, churches, and community centers to help students and parents in the application process.

- Schedule events that fit the work schedules of these parents.
- Commit grants to universities as early as possible.
- Set up regional financial aid centers that are not tied to a specific institution to let parents and students know where they can seek help.

Recommendation 4B: Significantly increase state-appropriated formula funding to ensure that institutions of higher education are able to meet their instructional and operating costs. To that end, support the recommendations of the Coordinating Board as approved in Agenda Item VI E of the April 24, 2008, agenda.

Rationale

In order for any funding strategy to generate improved performance, sufficient and reliable baseline funding must be provided for ordinary operations.

Incentive funding has been proposed as a method of connecting performance with funding. Recent legislative initiatives (repeated course limits, six-drop limit, incentive funding) indicate rising political impatience with a system that emphasizes enrollment rather than completion. A step toward shifting that emphasis would be to restructure the funding formula toward contact-hour completion rather than contact-hour enrollment. A shift toward including incentives for performance could strengthen the relationship between institutional funding and instructional strategies, but any such modification of current formula funding may have significant unintended consequences.

Strategies

- Incorporate a component of funding based upon semester credit hours completed, rather than enrolled.
- Allocate some funding over a multi-year time frame to allow institutions a reasonable expectation of continued funding for new initiatives.

Recommendation 4C: Base the semester credit hour counts and associated costs used to calculate formula funding upon a rolling average rather than a single year in order to provide a predictable funding stream that allows for better institutional planning.

Rationale

In a system centered on the four-year bachelor's degree, any initiative for improvement must, by necessity, operate over a span of many years before its effects are felt in terms of student outcomes. Texas' biennial funding mechanism, however, frequently leaves many institutions unable to maintain a fiscal plan through the lifetime of any student cohort.

Furthermore, short term aberrations in enrollment that occur during a base counting year can have disproportionate consequences on the resources allocated to an individual institution. Creation of a funding mechanism that provides a more predictable and dependable funding stream would allow institutions greater opportunity to initiate and follow through on long-term strategies for improved student outcomes.

Strategy

- Provide funding based on rolling averages in enrollment and other factors like percentage increases or decreases in enrollment over time.

Recommendation 4D: Establish a formula for appropriating need-plus-merit-based financial aid, particularly grants, which is indexed to the statewide level of direct tuition and fees.

Rationale

The distribution of state funding to students has a direct impact on students' access to higher education and to closing the gaps in enrollment. A 2003 THECB report demonstrates that affordability of higher education has decreased in Texas due to increasing tuition and fees.²⁶ Several studies have shown that this rising direct cost reduces enrollment in general, disproportionately affects the lower-income student, and increases the student's reliance on financial aid.

Typically, tuition and fees are set at a level required to balance institutional budgets in relation to the amount of tax-derived revenues. Lowered state or local appropriations typically result in higher tuition and fee charges to students. As in many other states, in Texas there is an ongoing shift of the cost of higher education from the state to the student.

The Coordinating Board report mentioned above indicates that, "When public funds are in short supply, state legislatures often choose to meet higher education funding needs of institutions by authorizing increased charges to students, leading to ...[rising costs, reduced access, and greater reliance on financial aid, especially loans]. . . . Establishing the appropriate level of charges to students is, therefore, appropriate as the first step in the development of a state plan for financing higher education."²⁷

²⁶ THECB. (2003). *Financing Higher Education: The Appropriate Balance Among Appropriations, Tuition and Fees, and Financial Aid to Achieve the Goals of Closing the Gaps*. (<http://www.thecb.state.tx.us/reports/PDF/0513.PDF>, retrieved 4-24-08).

²⁷ THECB (2003) 7.

Research by the Lumina Foundation finds that the level of student access to higher education can be maintained if decreases in direct funding to schools are offset by increases in need-based financial aid. The Lumina study suggests that the financial allocation for state-funded need-based grants should equal 25 percent of state-wide tuition.²⁸

Strategy

- Incorporate into the funding of higher education a formula in which the total dollar amount appropriated for need-plus-merit-based grants is indexed to the total amount of tuition and fees collected from students.

²⁸ St. John, et al. (2004). *Expanding College Access: The impact of state financing strategies*. Lumina Foundation Research Report. Indiana Education Policy Center at Indiana University.
(<http://www.luminafoundation.org/publications/fiscalindicators/FiscalIndicators.pdf> , retrieved 10-30-08).

CONCLUSION

With this report, the Undergraduate Education Advisory Committee proposes recommendations to strengthen undergraduate education in Texas across three levels of action, including recommendations:

- (1) that the legislature could enact;
- (2) that the Coordinating Board and/or a statewide collaborative effort could achieve through policy development; and
- (3) that institutions could be encouraged or incentivized to accomplish.

Progress has been made in Texas during the last decade, but more needs to be done to assure that Texas students have both access to college and access to *success* in undergraduate education of the highest quality.

If we are to be effective in the state and on behalf of *Closing the Gaps*, all of these agents will need to work collaboratively toward common goals.

Data Sources

Data and information included in this report came from the following sources:

Association of American Colleges and Universities <http://www.aacu.org>

American Council on Education <http://www.acenet.org>

Commission on the Future of Higher Education
<http://www.ed.gov/about/bdscomm/list/hiedfuture/index.html>

Educational Testing Service <http://www.ets.org>

Lumina Foundation <http://www.luminafoundation.org>

National Association of Student Personnel Administrators <http://www.naspa.org>

National Center for Academic Transformation <http://www.thencat.org>

National Center for Higher Education Management Systems <http://www.nchems.org>

National Institute for Higher Education Policy <http://www.ihep.org>

National Center for Public Policy and Higher Education <http://www.highereducation.org>

National Conference of State Legislatures <http://www.ncsl.org>

Partnership for 21st Century Skills <http://www.21stcenturyskills.org>

Policy Center for the First Year of College <http://www.firstyear.org>

Stanford Institute for Higher Education Research <http://siher.stanford.edu/>

Texas Higher Education Coordinating Board <http://www.thecb.state.tx.us>

U. S. Dept. of Education <http://www.ed.gov>

Selected References

Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion from High School through College*. U.S. Department of Education.

Aslanian, Carol B. (2001). *Adult Students Today*. The College Board.

Association of American Colleges and Universities (2007). *College Learning for the New Global Century: A Report from the National Leadership Council for Liberal Education & America's Promise*. (http://www.aacu.org/advocacy/leap/documents/GlobalCentury_final.pdf, retrieved 10-15-08).

Bain, K. (2004). *What the Best College Teachers Do*. Harvard University Press, Cambridge, MA.

Baird, L. L. (1988). "Value added: Using student gains as yardsticks of learning." In C. Adelman (Ed.), *Performance and judgment: Essays on principles and practice in the assessment of college student learning* (205-216). U. S. Government Printing Office.

Banta, T.W. & Pike, G.R. (2007). Revisiting the Blind Alley of Value Added. *Assessment Update* 19. 1.

Barr, R.B. (1995, Nov/Dec). From teaching to learning – a new paradigm for undergraduate education. *Change*.

Bok, Derek (2006). *Our Underachieving Colleges: A candid look at how much students learn and why they should be learning more*. Princeton University Press, Princeton, NJ.

Boyer, E.L. (1987). *College: The undergraduate experience in America*. Harper & Row, New York City.

Conference Board, The Conference Board and The Partnership for 21st Century Skills, Corporate Voices for Working Families, and the Society for Human Resource Management (2007). *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants into the 21st Century U.S. Workforce*. (http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF09-29-06.pdf, retrieved 4-8-08).

Cuseo, Joe (2003). *Academic Advisement and Student Retention: Empirical Connections and Systemic Interventions*. National Academic Advising Association. (linked from <http://www.nacada.ksu.edu/clearinghouse/advisingissues/retain.htm>, retrieved 10-15-08).

Davies, Gordon K. (2006). *Setting a Public Agenda for Higher Education in the States: Lessons Learned from the National Collaborative for Higher Education Policy*. (http://www.highereducation.org/reports/public_agenda/public_agenda.pdf, retrieved 4-8-08).

Fink, L. (2003). *Creating Significant Learning Experiences: An integrated approach to designing college courses*. Jossey-Bass, San Francisco.

Green, M. F. (2002, May/June). *Joining the World: The Challenge of Internationalizing Undergraduate Education*, *Change*.

Green, Madeleine, et al. (2008). *Mapping Internationalization on US Campuses: 2008 Report*. American Council on Education.

Hawkins, Brian L. and Oblinger, Diana G. (2006, July/August). *The Myth about the Digital Divide: "We Have Overcome the Digital Divide," Educause Review*. (<http://www.educause.edu/ir/library/pdf/ERM0647.pdf>, retrieved 10-15-08).

Junco, Reynol & Mastrodicasa, Jeanna (2007). Connection to the Net Generation: What Higher Education Professionals Need to Know about Today's College Students. National Association of Student Personnel Administrators, Inc.

Kelly, Patrick J. & Jones, D.P. (2005). A New Look at the Institutional Component of Higher Education Finance: A Guide for Evaluating Performance Relative to Financial Resources. National Center for Higher Education Management Systems (NCHEMS). (<http://www.nchems.org/pubs/docs/Policy%20Guide%20Jan2007.pdf>, retrieved 10-15-08).

Kirsch, Irwin, et al. (2007). America's Perfect Storm: Three Forces Changing Our Nation's Future. Educational Testing Service. (<http://www.ets.org/Media/Research/pdf/PICSTORM.pdf>, retrieved 4-7-2008).

National Conference of State Legislatures (2006, October). Transforming Higher Education: National Imperative--State Responsibility. (<http://www.ncsl.org/programs/pubs/summaries/013160-sum.htm>, retrieved 10-15-08).

Newton, Fred B. (2000, Nov/Dec). "The New Student," *About Campus*, 8-15. (<http://www.flinders.edu.au/teach/t4/teaching/first/newstudent.php>, retrieved 4-21-08).

Nutt, Charlie L. (2003). Academic advising and student retention and persistence, National Association of Academic Advising. (securely linked from <http://www.nacada.ksu.edu/Clearinghouse/AdvisingIssues/retention.htm>, retrieved 10-15-08).

Paulsen, Karen, and Marianne Boeke (2006). Adult Learners in the United States: A National Profile. National Center for Higher Education Management Systems (NCHEMS).

Raudenbush, S.W. (2004, Spring). What are value added models estimating and what does this imply for statistical practice? *Journal of Educational and Behavioral Statistics* 29: 121-129.

Ross-Gordon, J. M. (2003, Summer). Adult Learners in the Classroom. Meeting the Special Needs of Adult Students. *New Directions in Student Services* 102:43-52.

Shavelson, R.J. (2007, Jan/Feb). Assessing student learning responsibly. *Change*.

St. John, et al. (2004). Expanding College Access: The impact of state financing strategies. Lumina Foundation Research Report. Indiana Education Policy Center at Indiana University. (<http://www.luminafoundation.org/publications/fiscalindicators/FiscalIndicators.pdf>, retrieved 10-15-08).

Stewart, Vivian (2007, April). Becoming Citizens of the World. *Educational Leadership*. (<http://www.nde.state.ne.us/forlg/ASCD.pdf> retrieved 10-30-08).

Swail, Watson Scott (2004, January 23). "Legislation to Improve Graduation Rates Could Have the Opposite Effect," *Chronicle of Higher Education*.

Texas College Readiness Standards. (<http://www.theccb.state.tx.us/collegereadiness/TCRS.cfm> retrieved 4-21-2008).

Texas Higher Education Coordinating Board (2000). Closing the Gaps: The Texas higher Education Plan. (<http://www.theccb.state.tx.us/reports/PDF/0379.PDF>, retrieved 4-9-08) and updated at (<http://www.theccb.state.tx.us/ClosingtheGaps/> retrieved 4-9-08).

Texas Higher Education Coordinating Board (2003). Financing Higher Education: The Appropriate Balance Among Appropriations, Tuition and Fees, and Financial Aid to Achieve the Goals of Closing the Gaps (<http://www.theccb.state.tx.us/reports/PDF/0513.PDF>, retrieved 4-24-08).

Tinto, V. (1986). Dropping out and other forms of withdrawal from college. In L. Noel, R. Levitz, D. Saluri, & Associates (Eds.), *Increasing student retention* (pp. 28-43). San Francisco: Jossey-Bass.

Twigg, C. (2007). Increasing Success for Underserved Students: Redesigning Introductory Courses. (<http://www.thencat.org/Monographs/IncSuccess.htm#program>, retrieved 10-15-08).

U. S. Dept. of Education, (2006). A Test of Leadership: Charting the Future of Higher Education. A Report of the Commission appointed by Sec. of Education, Margaret Spellings. (<http://www.ed.gov/about/bdscomm/list/hiedfuture/reports/final-report.pdf>, retrieved 10-15-08).

Venezia, A., Kirst, M., and Antonio, A. (2004) *Betraying the College Dream: How Disconnected K-12 and Post-Secondary Education Systems Undermine Student Aspirations*. The Stanford Institute for Higher Education Research.

Wagner, Alan (2006). *Measuring Up Internationally: Developing Skills and Knowledge for the Global Knowledge Economy* (San Jose, CA: National Center for Public Policy and Higher Education). (http://www.highereducation.org/reports/public_agenda/public_agenda.pdf, retrieved 10-15-08). See also <http://www.oecd.org>.

Appendix A

Suggested Assignment of Responsibility for Implementing Recommendations

RECOMMENDATION	PRINCIPAL NEED/S	FOCUS of RESPONSIBILITY
1A. Create institutional incentives to improve student success, especially for at-risk students.	Fiscal, regulatory	Legislature, Coordinating Board
1B. Support initiatives to improve developmental education, including determining the effectiveness of any funded projects.	Fiscal, Programmatic	Legislature, Coordinating Board, and Institutions
1C. Strengthen academic and other advising programs to address the personal, social, financial, career, and academic issues that affect student success.	Fiscal, Programmatic	Legislature, Coordinating Board, and Institutions
1D. Provide leadership to establish student success programs for new students	Fiscal, Programmatic	Legislature, Institutions
1E. Define state accountability data to reflect the multiple intentions of students	Regulatory	Coordinating Board
1F. Audit State laws and policies and eliminate those that create unreasonable barriers to college completion	Regulatory	Coordinating Board (potential charge for UEAC), then Legislature
2A. Reconsider the content of the Core Curriculum to ensure that it reflects the current and future demands on student knowledge and skills.	Regulatory	Coordinating Board (potential charge for UEAC), then possibly Legislature
2B. Continue to support and fund research and faculty development in the development and measurement of learning outcomes.	Programmatic	Coordinating Board, Institutions
2C. Encourage Texas colleges and universities to internationalize their curricula and campuses to remain competitive	Regulatory, Programmatic	Coordinating Board, Institutions

2D. Support faculty development to improve teaching.	Fiscal, Programmatic	Coordinating Board, Institutions
2E. Develop a virtual teaching excellence laboratory for faculty to enhance the use of active learning, the cultivation of better student and faculty engagement, and the expansion of instructional technology skills.	Programmatic	Coordinating Board, Institutions
2F. Integrate the <i>Course Redesign</i> principles into instruction throughout Texas.	Fiscal, Programmatic	Coordinating Board, Institutions
3A. Provide a website for the posting of best practices in assessment and evaluation, and program review.	Programmatic	Coordinating Board, Institutions
3B. Support research that examines the validity of causal links between standardized assessment models and outcomes and the student's institutional/curricular experience.	Programmatic (potentially Regulatory)	Coordinating Board, Institutions
3C. Establish a system of program review for existing undergraduate programs by the Texas Higher Education Coordinating Board with common criteria for baccalaureate and common criteria for associate degrees.	Regulatory, Programmatic	Coordinating Board (potential charge for UEAC)
4A. Develop policies and procedures that improve the speed, accuracy, and predictability of financial aid awards to students.	Regulatory	Coordinating Board
4B. Significantly increase state-appropriated formula funding to ensure that institutions of higher education are able to meet their instructional and operating costs. To that end, support the recommendations of the Coordinating Board as approved in Agenda Item VI E of the April 24, 2008, agenda.	Fiscal	Coordinating Board, Legislature

<p>4C. Base the semester credit hour counts and associated costs used to calculate formula funding upon a rolling average rather than a single year in order to provide a predictable funding stream that allows for better institutional planning.</p>	<p>Fiscal, Regulatory</p>	<p>Coordinating Board, Legislature</p>
<p>4D. Establish a formula for appropriating need-plus-merit-based financial aid, particularly grants, which is indexed to the statewide level of direct tuition and fees.</p>	<p>Fiscal, Regulatory</p>	<p>Coordinating Board, Legislature</p>

Appendix B

Undergraduate Education Advisory Committee Process

The Texas Higher Education Coordinating Board's Undergraduate Education Advisory Committee was convened in November 2006 with an inaugural charge to perform a study of undergraduate education in Texas and provide recommendations for the improvement of undergraduate education throughout the state. The study findings and recommendations included in this report were developed through a series of eight committee meetings, and substantial sub-committee work between meetings, during the period from November 2006 through April 2008.

The report and recommendations are founded on Coordinating Board data and background materials prepared for the committee, some of which was presented to the Coordinating Board as Part One of the study during the January 2007 Board meeting. Additionally, committee members conducted extensive research into local, state, and national practices, and examined the national literature related to educational best-practices. At its April 24, 2008, meeting, the committee reviewed all the recommendations presented herein to ensure that they reflected awareness of the most current actions of the Coordinating Board (as of the April 23, 2008, regular quarterly meeting), and to re-affirm that each recommendation was considered with the principal goal of helping implement the Texas higher education plan, *Closing the Gaps by 2015*.

The committee has provided recommendations for state-level (agency or legislative) action to improve the quality of undergraduate education in the state. However, these recommendations can also serve as a conceptual basis for individual institutional initiatives as well. The recommendations in this report reflect the aspirations of the higher education community to improve competitiveness, educate more Texans, improve the quality of undergraduate education, and prepare "millennial students," as well as nontraditional students and adult learners for a continually changing culture.

The Undergraduate Education Advisory Committee identified crucial components of quality undergraduate education and divided itself into sub-committees focused on those topics:

- Improving students' access and success;
- Improving quality by enhancing the learning process;
- Assuring excellence through evaluation and assessment;
- Strengthening funding for undergraduate education; and
- Designing undergraduate education for the 21st century.

The organization of this report reflects these topics, with the exception that the final area, Designing Education for the 21st Century was viewed as the overarching goal of the recommendations, and is thus subsumed into and reflected in all aspects of this report.

APPENDIX C

Undergraduate Education Advisory Committee 2006-2008

Current Roster

Judith Bean, Co-Chair 2006-2008	Texas Woman's University
Larry Garrett, Co-Chair 2008 -	Victoria College
Michael J. Ahearn	University of Texas MD Anderson
Mohamed Ben-Ruwin	Texas A&M International University
Ronald C. Brown	Texas State University – San Marcos
J. Michael Coleman	University of Texas at Dallas
Agnes DeFranco	University of Houston
Timothy Gilbert	Tarrant County College
J. Martyn Gunn	Texas A&M University
Desmond F. Lawler	The University of Texas at Austin
Russell Lowery-Hart	West Texas A&M University
Dorothy Martinez	Austin Community College
Rex Peebles	Midland College
Juan Carlos Reina	Houston Community College
Betty Reynard	Lamar Institute of Technology
Tommy Thompson	Cedar Valley College (Dallas CCCD)
Bill Waggoner	Alvin Community College
Friederike Wiedemann	Midwestern State University

Former Members Who Contributed to the Report

Thomas Baynum, Co-Chair 2007-2008	Coastal Bend College
Ray Williams, Co-Chair 2006-2007	Trinity Valley College
Wallace Daniel	Baylor University
Jacqueline Fleming	Texas Southern University
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