



College Readiness of Tennessee Students

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Key Points

To meet the societal need for a more educated workforce and to provide greater economic opportunity for individuals, states are working to expand the number of students attending postsecondary education and completing a higher education degree or other credential. Both nationally and in Tennessee, however, large numbers of students who graduate from high school are not adequately prepared or “ready” for postsecondary education.

Public higher education institutions in Tennessee primarily use ACT scores to assess students’ academic readiness for postsecondary education. In 2014, based on an Offices of Research and Education Accountability (OREA) analysis of available ACT scores, 75 percent of Tennessee Board of Regents (TBR) community college freshmen, and 48 percent of TBR university freshmen, did not meet the TBR criteria for college readiness in math, reading, and/or writing. Approximately 28 percent of University of Tennessee freshmen did not meet the criteria set by their campuses for college readiness in math, reading, and/or writing in 2014.

Postsecondary institutions consider measures of college readiness when determining a student’s entry-level college courses (e.g., basic math, algebra, or calculus). Students who do not meet college readiness criteria may also be assigned to some form of remediation. Remediation, also known as developmental education or learning support, generally refers to academic requirements for students assessed as underprepared. Remediation is designed to address students’ weak reading, writing, and/or math skills so they are more academically successful in credit bearing entry-level college courses.

Remediation may take the form of specific coursework to address academic weaknesses or may instead be supplemental assistance tied to a college-level course. TBR community colleges require additional non-credit coursework for students assessed as underprepared. Universities cannot offer non-credit remediation courses according to the Complete College Tennessee Act of 2010, but instead include supplemental learning support as part of college-level courses.

Reducing the need for remediation and increasing remediation's effectiveness are addressed by several recent reform initiatives, including:

- a shift from prerequisite remediation (taking non-credit bearing remediation classes prior to enrollment in credit bearing college-level courses) to corequisite remediation (enrolling in credit bearing college-level courses while simultaneously addressing remediation requirements);
- a change from traditional, lecture-style remediation courses to self-paced, competency-based learning support courses, making greater use of technology and learner-centered teaching techniques; and
- K-12 initiatives to address academic weaknesses prior to postsecondary education through more rigorous academic standards; improving the alignment among high school course content, postsecondary admission requirements, and credit-bearing entry level college courses; and providing remediation coursework just before entry into postsecondary education (e.g., the SAILS program).

Tennessee has shown progress in reducing the percentage of college freshmen assigned to postsecondary remediation. In 2014, 68 percent of community college freshmen in Tennessee were assigned to remediation courses, a decline from 77 percent in 2011. In 2014, 33 percent of TBR university freshmen were assigned to entry-level college courses that included some form of learning support, a decline from 43 percent in 2011. Continued data development and research are needed for policymakers to track the college readiness of Tennessee students at the secondary and postsecondary levels and to evaluate the impact of recent reform initiatives on the need for, and effectiveness of, postsecondary remediation.

Introduction

To meet the societal need for a more educated workforce¹ and to provide greater economic opportunity for individuals,² states are working to expand the number of students attending postsecondary education and completing a higher education degree or other credential.³ However, both nationally and in Tennessee, large numbers of students graduate from high school not prepared adequately for postsecondary education.⁴

Measures of College Readiness

Public higher education institutions in Tennessee primarily use ACT scores to assess students' academic readiness for postsecondary education and to determine students' entry-level college courses (e.g., basic math, algebra, or calculus). ACT has established college readiness benchmark scores for its four subject-area tests (mathematics, English, reading, and science), which are used, according to the Tennessee State Board of Education's Master Plan, to measure the college readiness of high school students. Public postsecondary institutions use different benchmarks than those set by ACT, and for different purposes, such as for placing students in entry-level college courses or assigning them to remediation. See [Exhibit 1](#) for College Readiness Measures used in Tennessee based on the ACT college admission test.

Exhibit 1: College readiness measures, based on ACT subject-test scores, 2015^(a)

College Course or Area	ACT Subject-Area Test	ACT College Readiness Benchmarks ^(b)	TBR Learning Support Guidelines	UT Knoxville Placement Criteria	UT Chattanooga Placement Criteria	UT Martin Placement Criteria
College Algebra	Mathematics	22	19	22 ^(c)	19	20
English Composition	English	18	18	19 + Composite 19	21	19
Social Sciences	Reading	22	19	NA ^(d)	NA	21
Biology	Science	23	NA	NA	NA	NA

Notes:

(a) The Tennessee Higher Education Commission has recently defined academically underprepared for the outcomes-based funding formula. The ACT subject area thresholds match those of TBR. More information can be found in the "Higher Education Funding Formula" section of this report.

(b) ACT scores range from 0-36. (See <http://www.actstudent.org/scores/understand/>.)

(c) UT Knoxville has indicated that 25 is the minimum ACT math subject score needed for placement in calculus.

(d) NA indicates not applicable, i.e., no criteria exist at those institutions.

Sources: ACT, Tennessee Board of Regents, and University of Tennessee.

Postsecondary remediation, also known as developmental education or learning support, refers to assistance provided by higher education institutions to remediate students' weak reading, writing, and math skills to allow students to better succeed in credit bearing entry-level courses. Remediation addresses skills not mastered in high school or skills forgotten by adults returning to higher education.

For example, the Tennessee Board of Regents uses specific benchmarks to identify students who require some type of learning support (remediation), and all TBR institutions – community colleges and universities – use the same benchmarks.^{5, A} Each campus in the University of Tennessee system sets its own benchmarks to determine whether to place a student in an entry-level college course with a learning support component.⁶

ACT Scores - First-Time Freshmen

The Offices of Research and Education Accountability (OREA) analyzed available ACT subject test scores for incoming freshmen at Tennessee public higher education institutions in 2014 to determine how many students did not meet their institution's readiness guidelines. As shown in [Exhibit 2](#), the percentage of freshmen not meeting college readiness guidelines is greater for students entering community colleges (75 percent) than for students entering TBR Universities (48 percent) or UT universities (28 percent). College readiness is lowest for math across all institutions.

ACT Scores - High School Graduates

In 2015, 17 percent of Tennessee public high school graduates met all of the ACT College Readiness Benchmarks. The percent of students meeting benchmarks by subject area varied, at 27 percent in science, 27 percent in math, 35 percent in reading, and 54 percent in writing. [Exhibit 3](#) shows the percent of high school graduates from 2010 to 2015 meeting the ACT College Readiness benchmarks.

^A This report does not include Tennessee Colleges of Applied Technology (TCATs) or the UT Health Science Center (UTHSC). TCATs use a readiness assessment to determine skill level of students; however, readiness requirements at TCATs vary among programs. UTHSC offers professional and graduate health science degrees, not entry-level programs of study.

Exhibit 2: Percent of freshmen not meeting college readiness guidelines at Tennessee Board of Regents community colleges and four-year institutions, and at University of Tennessee institutions, 2014^{(a), (b), (c)}

Tennessee Board of Regents community colleges, 2014

	# First-Time Freshmen	Math	English	Reading	Any Need
Chattanooga State Community College	1,131	69%	47%	48%	78%
Cleveland State Community College	618	62%	39%	43%	74%
Columbia State Community College	825	57%	35%	38%	66%
Dyersburg State Community College	435	65%	39%	44%	75%
Jackson State Community College	806	68%	45%	46%	76%
Motlow State Community College	981	63%	39%	40%	73%
Nashville State Community College	1,012	76%	58%	59%	84%
Northeast State Community College	914	60%	39%	39%	70%
Pellissippi State Community College	1,738	56%	32%	33%	65%
Roane State Community College	1,044	64%	37%	38%	73%
Southwest Tennessee Community College	1,827	85%	68%	67%	90%
Volunteer State Community College	1,103	62%	36%	38%	71%
Walters State Community College	1,233	59%	35%	39%	68%
Total: TBR Community Colleges	13,667	66%	43%	45%	75%

Tennessee Board of Regents four-year institutions, 2014

	# First-Time Freshmen	Math	English	Reading	Any Need
Austin Peay State University	1,294	41%	17%	19%	51%
East Tennessee State University	1,742	35%	19%	21%	45%
Middle Tennessee State University	2,730	37%	14%	19%	46%
Tennessee State University	1,192	76%	55%	54%	82%
Tennessee Technological University	1,778	26%	9%	12%	34%
University of Memphis	2,199	38%	12%	16%	45%
Total: TBR Universities	10,935	40%	18%	22%	48%

University of Tennessee four-year institutions, 2014

	# First-Time Freshmen	Math	English	Reading	Any Need
University of Tennessee, Chattanooga	2,145	27%	23%	NA	37%
University of Tennessee, Knoxville^(c)	4,602	17%	2%	NA	18%
University of Tennessee, Martin	1,129	36%	14%	34%	54%
Total: University of Tennessee	7,876	22%	10%	NA	28%

Notes:

(a) Includes only students with a valid ACT score reported to THEC: 79 percent of community college freshmen, 91 percent of TBR university freshmen, and 99 percent of UT freshmen.

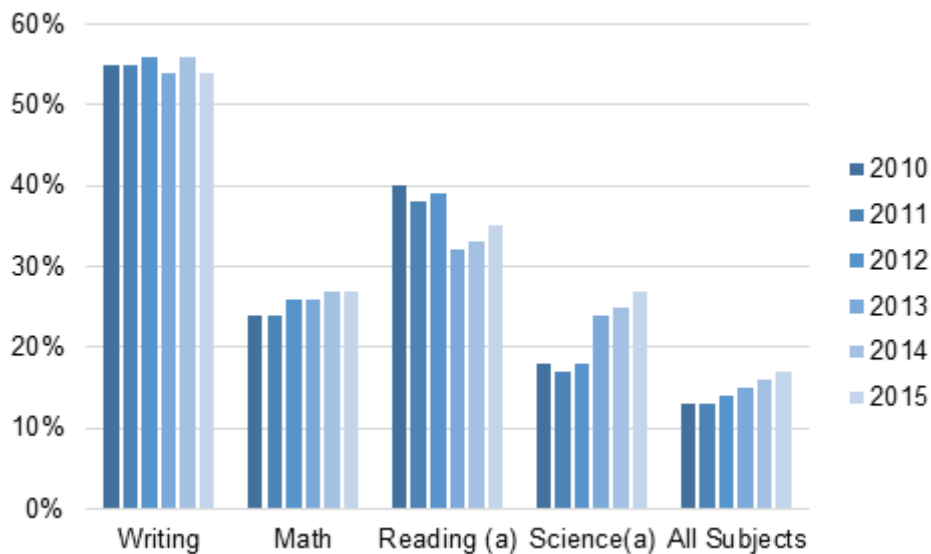
(b) See Exhibit 1 for the specific ACT criteria used for each institution. TBR community colleges and universities used the same criteria and each University of Tennessee institution had its own college readiness criteria.

(c) These figures were calculated by determining the count of students who scored below the threshold (e.g., 18 or less on math subject test) divided by the total number of incoming freshmen to that institution with valid ACT scores.

(d) NA indicates not applicable, i.e., no criteria exist at those institutions.

Source: OREA analysis of data provided by the Tennessee Higher Education Commission.

Exhibit 3: Percent of Tennessee public high school graduating seniors ACT scores compared to ACT College Readiness Benchmarks, 2010-2015



Note: (a) The ACT sub-test scores for college readiness for reading and science changed over the period of time illustrated. The reading benchmark changed from 21 in 2010 to 22 in 2013. The science benchmark changed from 24 in 2010 to 23 in 2013. The benchmarks for writing and math stayed the same over this time period at 18 and 22, respectively.
Source: Tennessee Department of Education.

Assignment to Remediation

Community Colleges

In 2014, 68 percent of community college freshmen in Tennessee were assigned to remediation courses, a decline from 77 percent in 2011. (See Exhibit 4.)^B In 2010, for the 33 states in the Complete College America (CCA) Alliance,^C the median percentage of freshmen enrolled in remediation was 61 percent for community colleges.⁷

As in other states, remediation needs in Tennessee’s community colleges are greater for freshmen who are non-white, over age 20, and/or lower income.⁸

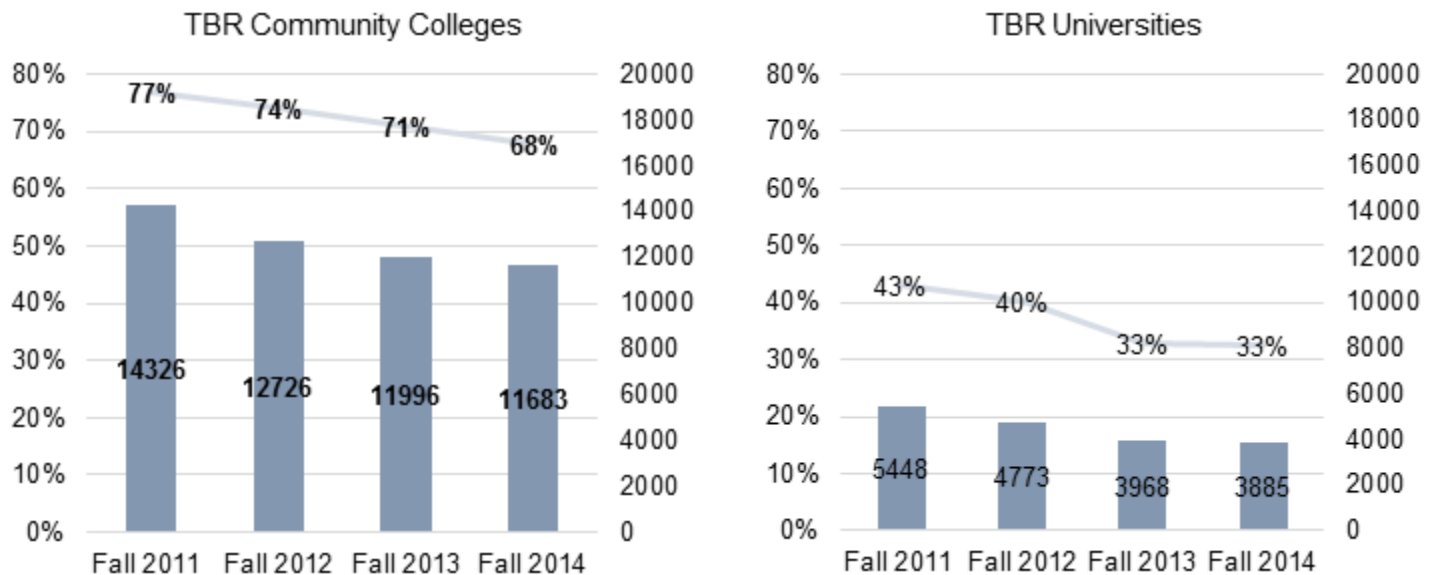
Universities

Universities consider students’ level of college readiness when determining their placements in entry-level college courses, which may include some form of learning support, but are prohibited from offering remediation or developmental *courses*, as required by the 2010 Complete College Tennessee Act (CCTA).^{9, 10} Universities can, however, coordinate efforts with any two-year institution governed by TBR to provide the remediation or developmental courses to university students.¹¹

^B These figures include students assigned to learning support at TBR schools. Figures in Exhibit 2 identify students with ACT subject test scores below the minimum guidelines who may need learning support.

^C Complete College America is a national nonprofit established in 2009 with a mission to work with states to increase the number of Americans with higher education credentials and to close the attainment gap for traditionally underrepresented populations. CCA has developed an Alliance of 33 states, including Tennessee, committed to increasing college completion rates. See <http://completecollege.org/about-cca/> and <http://completecollege.org/the-alliance-of-states/>.

Exhibit 4: Percentage and number of freshmen assigned to learning support, Tennessee Board of Regents community colleges and universities, fall 2011 through 2014



Note: These figures may indicate numbers different from those in Exhibits 2. These figures were provided by TBR directly for the respective semesters and reflect data for first-time freshmen requiring learning support.
 Source: Tennessee Board of Regents, Office of Academic Affairs.

In 2014, 33 percent of TBR university freshmen were assigned to entry-level college courses that included some form of learning support, a decline from 43 percent in 2011. (See Exhibit 4.)

Universities in the UT system generally take into account a student’s academic profile (i.e., skills and abilities in math, reading, and writing based on ACT scores and other academic measures) when assigning students to entry-level courses, which may vary in difficulty and may also include some form of academic assistance based on student need.¹² For example, a UT Chattanooga student’s ACT test scores can determine whether the student’s entry-level math course is general math, college algebra, or calculus, or whether their entry-level English class includes supplemental class time or a writing lab.¹³

Remediation/Developmental Education Reform

The implementation of postsecondary remediation in Tennessee has undergone changes in recent years designed to improve remediation’s effectiveness and reduce the amount of time and money spent on it by students and postsecondary institutions. Reform efforts have included:

Corequisite Remediation

One significant change to postsecondary remediation in Tennessee over the last five years has been a shift from *prerequisite* remediation to *corequisite* remediation. Under prerequisite remediation, students with academic deficiencies must first complete non-credit remediation courses to address their academic weaknesses before enrolling in credit-bearing, entry-level college courses. Under

corequisite remediation, students enroll in credit-bearing, entry-level courses while simultaneously addressing their academic weaknesses, whether through separate remediation courses or supplemental assistance tied to an entry-level college course. For example, a community college student assigned to corequisite math remediation would enroll in a three credit hour, *entry-level* math course as well as a *remediation* math course. At the university level, students with a lower ACT writing score may be required to take a writing workshop as a part of their freshman composition course.

Learning Support Model

From 2010 to 2013, TBR institutions shifted the developmental education model from traditional lecture-style courses to self-paced, and competency-based^D learning support, making greater use of technology and learner-centered teaching techniques. The 2010 changes were based in part on the positive results of pilot projects at six community colleges.

K-12 Initiatives

Policymakers have looked increasingly to the K-12 level to address students' academic weaknesses prior to postsecondary education. Some K-12 initiatives include more rigorous academic standards and improving the alignment among high school course content, postsecondary admission requirements, and credit bearing entry-level college courses.

One program designed to reduce the need for postsecondary remediation is the Seamless Alignment and Integrated Learning Support program, or SAILS. The SAILS program provides high school students an opportunity to complete postsecondary math remediation requirements, and in some cases a college-level math course, as a supplement to the fourth year high school Bridge Math course. In the 2014-15 school year, 11,000 students statewide participated in SAILS Math, with a 91 percent completion rate (i.e., the student successfully addressed their deficiencies in math prior to graduating from high school).¹⁴ A yearlong pilot of SAILS English, projected to serve 135 students in five high schools, began in fall 2015.¹⁵

The TN Achieves Summer Bridge Program is another example of students completing their remediation requirements prior to beginning postsecondary education. The 2015 Summer Bridge Program enrolled 554 Tennessee Promise participants, with 123 students testing out of all identified remediation, 157 testing out of some remediation, and 233 improving their overall scores (but not enough to test out of remediation completely).^{E, 16} TN Achieves plans to continue the Summer Bridge Program and hopes to expand it in the future.

^D Competency-based education is an approach that allows a student to learn at their own pace and awards credit for evidence of proficiency, not for the amount of time students spend in a classroom.

^E Tennessee Promise, a last dollar scholarship program that provides high school graduates with two years of tuition-free attendance at a community or technical college, is designed to increase the number of high school graduates who attend postsecondary education.

Higher Education Funding Formula

Tennessee's outcomes-based funding formula for higher education, created by the Complete College Act of 2010, originally included a remedial and developmental success indicator, which allocated a portion of funding to community colleges based on the percentage of students who completed a credit bearing college-level course within three years of enrollment in a developmental class. In July 2015, the Tennessee Higher Education Commission (THEC) eliminated the remedial and developmental success indicator. Instead, academically underprepared students will be treated as one of three focus populations (adults, low income, and academically underprepared) for which community colleges will receive a funding allocation premium for student progression (credit hours) indicators and degree completion. Students who belong to more than one of the three focus population groups will garner a higher percentage premium (e.g., 80 percent for one of the focus populations; 100 percent for two; 120 percent for all three).¹⁷

Community college students are considered academically underprepared if they meet one or more of the following criteria: (1) the community college identifies the student as requiring remediation; (2) the student scores an 18 or below on the ACT Composite; or (3) the student scores an 18 or below on the ACT reading or math component, or a 17 or below on the ACT writing component.¹⁸

Measuring College Readiness and Remediation Outcomes

Key measures that policymakers can examine to assess college readiness and postsecondary remediation trends and outcomes include:

College Readiness of High School Graduates and Incoming Freshmen at Public Postsecondary Institutions

As noted in [Exhibit 3](#), in 2015, 17 percent of Tennessee public high school graduates met all ACT College Readiness Benchmarks, an increase from 13 percent in 2010. From 2010 to 2015, the percent of students meeting benchmarks in math increased from 24 to 27 percent and writing scores fluctuated between 54 and 56 percent.^F

In 2014, based on an OREA analysis of ACT scores, 75 percent of TBR community college freshmen, and 48 percent of TBR university freshmen, did not meet the TBR criteria for college-readiness in math, reading, and/or writing. Approximately 28 percent of University of Tennessee freshmen did not meet the criteria set by their campuses for college readiness in math, reading, and/or writing in 2014. (See [Exhibit 2](#).)

^F As noted in [Exhibit 3](#), the ACT benchmark for science and reading changed slightly during this period; therefore, changes are not reported here.

Freshmen Assigned to Remediation

As shown in [Exhibit 4](#), Tennessee has made progress in reducing the percentage of college freshmen assigned to postsecondary remediation. In 2014, 68 percent of community college freshmen in Tennessee were assigned to remediation courses, a decline from 77 percent in 2011. In 2014, 33 percent of TBR university freshmen were assigned to entry-level college courses that included some form of learning support, a decline from 43 percent in 2011.

Progression of Students Assigned to Remediation

TBR began collecting data in 2011 on the progression of students assigned to learning support. Data included below includes progression information for freshmen entering in fall 2012 and, consequently, does not yet reflect the full implementation of recent TBR developmental education reforms. TBR is continuing to collect data to track and evaluate the impact of different types of remediation (e.g., prerequisite, corequisite, SAILS), student characteristics (e.g., age, gender, race), and level of remediation needed.

UT officials have indicated that they will be collecting data on student support programs for underprepared students.

Completion of Remediation and Entry-level Courses

Preliminary data for 2012 TBR community college freshmen requiring learning support show 12 percent had completed learning support and the associated entry-level college course in math after two semesters; the percentages for writing and reading were 27 and 64, respectively. Students not requiring remediation have higher rates of entry-level course completion within two semesters than those requiring remediation: 57 percent for math, 56 percent for writing, and 82 percent for reading.¹⁹

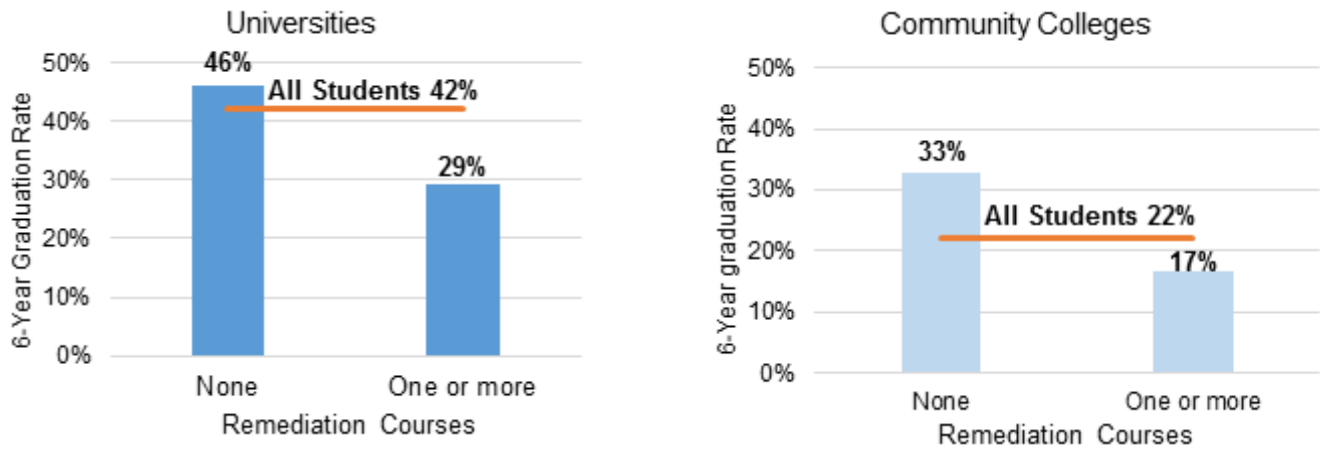
Graduation Rates for Students Requiring Remediation

Six-year graduation rates for freshmen entering TBR community colleges in 2008 was 22 percent: 17 percent for students assigned to remediation, and 33 percent for students not assigned. In TBR universities, the overall six-year graduation rate for freshmen entering in 2008 was 42 percent; the graduation rate was 29 percent for students assigned to remediation, and 46 percent for students not assigned. (See [Exhibit 5](#).)

Comparison of Tennessee to Other States on Progression Measures

Course completion and graduation rates for community college students who complete postsecondary remediation are generally considered low in Tennessee and nationally.²⁰ [Exhibit 6](#) compares the most recent data available for Tennessee and the 33 states in the Complete College Alliance. A higher percentage of Tennessee community college students were enrolled in

Exhibit 5: Six-year graduation rates, Tennessee Board of Regents universities and community colleges, by required developmental / remedial courses, 2008 entering freshmen



Source: Tennessee Board of Regents, Office of Academic Affairs, 2015

remediation^G and a lower percentage completed it. The percentage of students completing both remediation and the associated entry-level course within two years in Tennessee (21 percent) was comparable to the median for the CCA states (22 percent). The three-year graduation rate for community college freshmen requiring developmental courses in 2004 was 12.6 percent for Tennessee compared to the 9.5 percent median for the Complete College Alliance states.

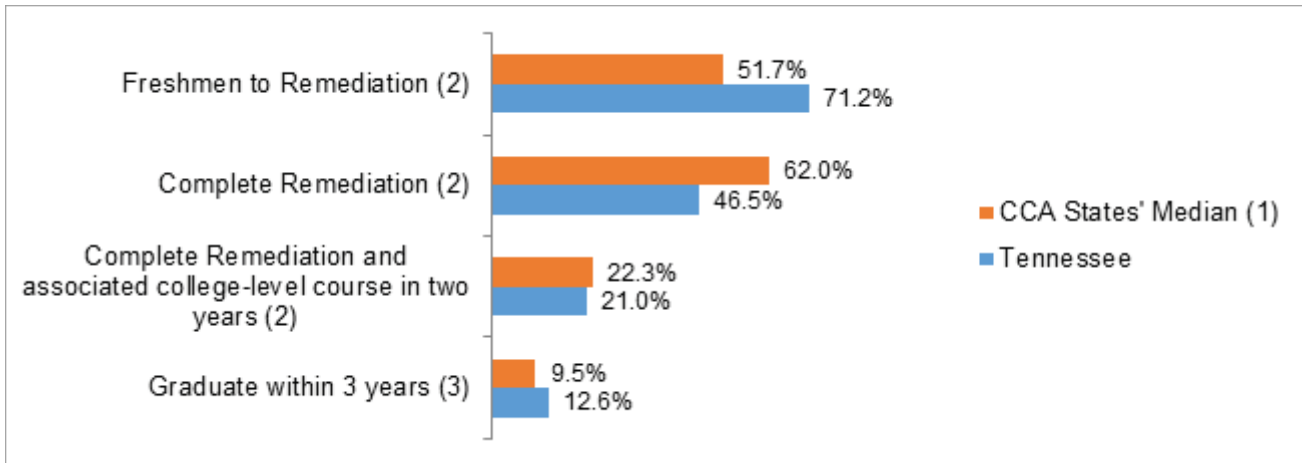
Measures of Effectiveness of Reform Initiatives

Community college students enrolled in corequisite remediation completed entry-level college courses at a higher rate than students enrolled in prerequisite remediation, according to a TBR pilot study.²¹ TBR community college graduation rates and other remediation-related outcome measures will increasingly include students who have participated only in the corequisite approach, as the state’s community colleges shifted to offering only corequisite remediation this 2015-16 school year.

Policymakers should consider the effect of programs such as new K-12 academic standards and assessments, SAILS, and Tennessee Promise when evaluating postsecondary remediation trends and outcomes, such as the percentage of freshmen requiring remediation and the percentage of freshmen who complete remediation and the related entry-level college course. Continued data development and research are needed to track and evaluate the impact and effectiveness of these and other education initiatives on postsecondary remediation in Tennessee.

^G CCA asked states to report the number of first-time freshmen assigned to remedial education courses. The criteria used to assign students could vary from state to state. The CCA analysis focuses more on the progression and outcomes for these students.

Exhibit 6: Public community college remediation progress and outcome measures: Tennessee compared to other reporting states



Notes:

(1) CCA States are the 33 states, including Tennessee, participating in the Complete College America partnership which includes collecting and reporting consistent data measuring postsecondary students' progress and success. See <http://completecollege.org/the-alliance-of-states/>. Not all states reported data for each variable. CCA reports the median value for the states reporting data for each measure.

(2) Freshmen entering in 2006.

(3) Associate degree students first enrolling in 2004.

Source: Complete College America, *Remediation: Higher Education's Bridge to Nowhere*, 2012, pp. 6, 8, 10, 14, 90, and 91, <http://completecollege.org/> (accessed July 6, 2015).

Endnotes

- ¹ Anthony P. Carnevale, Nicole Smith, and Jeff Strohl, *Recovery: Job Growth and Education Requirements through 2020*, Georgetown University, Georgetown Public Policy Institute, Center on Education and the Workforce, June 2013, pp. 2 and 15, <https://cew.georgetown.edu/> (accessed July 9, 2015); Offices of Research and Education Accountability, *The Alignment of Tennessee's Education Initiatives: Public Chapter 529, 2011*, March 2012, p.1, <http://www.comptroller.tn.gov/> (accessed Dec. 3, 2015).
- ² U.S. Department of Labor, Bureau of Labor Statistics, 2014, <http://www.bls.gov/> (accessed July 9, 2015).
- ³ Lumina Foundation, *Strategic Plan 2013-2016: Executive Summary*, www.luminafoundation.org (accessed Oct. 26, 2015).
- ⁴ Complete College America, *Remediation: Higher Education's Bridge to Nowhere*, April 2012, pp. 8 and 92, <http://completecollege.org/> (accessed Oct. 26, 2015).
- ⁵ Tennessee Board of Regents, Academic Guidelines, *Learning Support: A-100*, <https://policies.tbr.edu/> (accessed June 2, 2015).
- ⁶ Katie High, Vice President of Academic Affairs at UT; Jerald Ogg, Provost for Academic Affairs at UT-Martin; Robert Hinde, Vice Provost for Academic Affairs, UT-Knoxville; and Jerald Ainsworth, Provost for Academic Affairs, UT-Chattanooga, interview, Sept. 23, 2015.
- ⁷ Complete College America, e-mail attachment, Sept.9, 2015.
- ⁸ Complete College America, *Remediation: Higher Education's Bridge to Nowhere*, April 2012, p. 92, <http://completecollege.org/> (accessed Oct. 26, 2015).
- ⁹ Tennessee Public Acts, 106th General Assembly, Second Regular Session, 2010, Public Chapter 3, An act relative to higher education; *Tennessee Code Annotated* 49-7-147.
- ¹⁰ John Cade, Interim Vice President, Division of Enrollment Management and Support Services, Tennessee State University, interview, May 5, 2015; High, Ogg, Hinde, and Ainsworth, interview, Sept. 23, 2015.
- ¹¹ *Tennessee Code Annotated* 49-7-147.
- ¹² High, Ogg, Hinde, and Ainsworth, interview, Sept. 23, 2015.
- ¹³ Melissa Jenkins (on behalf of Katie High), e-mail attachment, May 11, 2015.
- ¹⁴ Chattanooga State Community College, *SAILS*, www.chattanoogastate.edu/sails (accessed Oct 14, 2015).
- ¹⁵ Robert Denn, Dean of Honors and Academic Affairs, Chattanooga State Community College, phone interview, June 1, 2015.
- ¹⁶ Jackie Hartmann, Director of Operations, TN Achieves, interview, Oct. 15, 2015.
- ¹⁷ Tennessee Higher Education Commission, *THEC 2015-2020 Outcomes-Based Funding Formula Overview*, p. 2, <http://tn.gov/> (accessed Oct. 14, 2015); Tennessee Higher Education Commission, *Postsecondary Attainment in the Decade of Decision, The Master Plan for Tennessee Postsecondary Education 2015-2025*, <https://www.tn.gov/> (accessed Dec. 3, 2015).
- ¹⁸ Tennessee Higher Education Commission, *THEC 2015-2020 Outcomes-Based Funding Formula Overview*, p. 2, <http://tn.gov/> (accessed Oct. 14, 2015).
- ¹⁹ Tennessee Board of Regents, Office of Academic Affairs, Learning Support Success data, fall 2012 cohort.
- ²⁰ Complete College America, *Remediation: Higher Education's Bridge to Nowhere*, April 2012, pp. 12 and 93, <http://completecollege.org/> (accessed Oct. 26, 2015).
- ²¹ Chris Tingle, Assistant Vice Chancellor for Research and Assessment, Tennessee Board of Regents, interview, April 28, 2015.



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