

Annual Report on the Condition of College and Career Readiness

Report to the Coordinating Board for Higher Education

Missouri Department of Higher Education

March 2018



Missouri Department of Higher Education

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Annual Report on the Condition of College and Career Readiness

Executive Summary

The *Annual Report on The Condition of College and Career Readiness* summarizes institutional efforts to replicate best practices in remedial education, as required by 173.005.2(6) RSMo.

Missouri Department of Higher Education staff disseminated a 13-question qualitative survey to all public institutions related to the best practices identified in the *Principles of Best Practices in Remedial Education*. Additionally, MDHE staff utilized data from the annual High School Graduates Report and data collected for Complete College America around remedial education for this year's report.

Missouri's public institutions of higher education are making good faith efforts to replicate best practices in remedial education, which has resulted in lowered remediation rates and improved student success.

- Since Fall 2013, the overall participation rate of recent Missouri public high school graduates enrolled in remedial education has *decreased by 36 percent*.
 - The sharpest decline has been in mathematics, which has declined by 42 percent over the same period.
 - The overall remediation rate for African-American students is down nearly 30 percent from 2013. Likewise, African-American student enrollment in remedial math courses is down nearly 39 percent from 2013.
- Since 2015, more Missouri institutions are offering alternative remedial education models, in both mathematics and English.
 - While still in its early stages of implementation, the data show over 53 percent of students enrolled in a corequisite math course completed a college-level math course within their first academic year, compared to 24.7 percent of students who enrolled in a traditional remedial math course.
- Of the 25 institutions offering remedial education, 24 offer additional academic support to students enrolled in remedial courses, such as tutoring and mentoring, advising, labs and workshops, and student success courses.
 - Since 2015, the number of institutions offering multiple supports has increased, and 21 offer early alert systems to identify at-risk students.
 - More institutions are offering early intervention strategies, too.
- The number of institutions using multiple measures in either reading, mathematics, or English has doubled since 2015 (11 to 22), and eleven institutions use multiple measures for all three subjects.
 - Lincoln University, Three Rivers College, and the University of Missouri-Columbia still do not use multiple measures to place students in credit-bearing courses.
- The Missouri Math Pathways initiative and the Co-Requisite at Scale initiative, both best practices identified in the *Principles*, are progressing according to plan.

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Background

Passed into law in 2012, HB 1042 directed all public institutions of higher education in Missouri to “replicate best practices in remediation” in order to improve student retention and degree completion. To meet this mandate, the Coordinating Board for Higher Education approved *Principles of Best Practice in Remedial Education* in September 2013. This guiding document—developed as a collaborate effort between representatives from Missouri’s public institutions of higher education and the Missouri Department of Higher Education—is based on research from regional educational laboratories, higher education research organizations, and other organizations with subject matter expertise.

In 2015, MDHE staff collected data using a comprehensive survey and available data on remedial education for the first annual *Report on the Condition of College and Career Readiness*. In 2017, MDHE staff followed a similar process, disseminating a 13-question qualitative survey related to the best practices identified in *Principles*. Additionally, MDHE staff utilized data from the annual High School Graduates Report and data collected for Complete College America around remedial education for this year’s report.

Survey Methodology

MDHE staff distributed a 13 question qualitative survey, revised and updated from the original survey which had been developed in conjunction with members of the Committee on College and Career Readiness (CCCR). The survey included questions related to the best practices identified in *Principles of Best Practice in Remedial Education*, collecting information on supports and supplemental services provided to students enrolled in remedial education, alternative remedial education models, early intervention strategies, and institutional placement process.

Quantitative data for the report were collected as part of Missouri’s participation in statewide initiatives developed in collaboration with Complete College America, a national non-profit focused on improving completion and shortening students’ time and credits to graduation.

Each spring, the MDHE and the institutions report to CCA on a range of core metrics. These include measures of enrollment and completion of remedial coursework and related entry-level college (gateway) courses. The data are reported by sector (public two-year, four-year, and four-year research), and broken into various subgroups, including race/ethnicity, age, gender, and Pell recipients. Overall, the core CCA metrics combine data reported by the institutions and data reported by the MDHE, although these particular metrics are dependent on course-level data with the MDHE does not collect.

In addition, CCA also occasionally requests special collections to supplement its core metrics. In fall 2017, CCA also requested data on student success before and following the introduction of co-requisite coursework at the institutions. The ‘pre’ data requested the number of first-time students in fall 2013, as well as those assessed with a remedial need in math and English, the number assessed with remedial need in either who completed gateway coursework, reached various benchmarks of credit completion their first year (e.g. 12, 15, 24, or 30 credits), retained in fall 2014, transferred out, and/or completed a degree or certificate. ‘Post’ data were collected for the 2016-17 academic year, and requested the number of first-time students, those assessed with a remedial need in math and English, credit completion benchmarks, retention, or transfer/graduation by the following fall. Statewide data are available, and are broken out into similar subgroups.

Summary

Since Fall 2013, the participation rate of recent Missouri public high school graduates enrolled in remedial education—which *Principles* defines as “coursework and programs designed . . . to improve the skills of underprepared students, both traditional and non-traditional, so that they may be successful in entry-level, credit-bearing courses”—has steadily decreased (see Table 1). While overall rates have declined by nearly 36 percent, the sharpest decline has been in mathematics. While it is difficult to determine causation, MDHE staff believe this has to do, in large part, with the development and implementation of the Missouri Math Pathways and Co-requisite-at-scale initiatives, both of which arose as result of HB 1042.

TABLE 1: Remedial Participation of Recent Missouri Public High School Graduates in Public Postsecondary Institutions						
	2013	2014	2015	2016	2017	% change, 2013-2017
Total	35.6%	30.8%	28.2%	26.8%	22.8%	-35.9%
Mathematics	30.1%	26.2%	23.8%	21.5%	17.6%	-41.5%
English	15.5%	12.3%	10.0%	11.4%	10.1%	-34.8%
Reading	9.7%	7.6%	6.1%	6.6%	6.0%	-38.1%

Data from the High School Graduates Report, which looks at the enrollment of recent graduates from Missouri public high schools, indicates the remediation rates among African-American students are on a downward trend. In fact, the overall remediation rate for African-American students is at its lowest, going back beyond 2012, and down nearly 30 percent from its highest point in 2013. Likewise, enrollment in remedial math courses is down nearly 39 percent from 2013.

TABLE 2: Recent Missouri Public High School Graduate Enrollment in Remediation: African-American Students						
	2013	2014	2015	2016	2017	% change, 2013-2017
Mathematics	57.8%	44.0%	40.4%	43.1%	35.4%	-38.8%
English	37.6%	32.1%	23.8%	32.6%	28.1%	-25.3%
Reading	27.1%	23.9%	18.3%	23.6%	19.3%	-28.8%
Total	65.5%	52.5%	47.0%	52.6%	46.0%	-29.87%

Currently, all but two of Missouri’s public post-secondary institutions offer remedial education; Missouri University of Science & Technology and Truman State University do not offer remedial education. Missouri’s public institutions of higher education appear to be making good faith efforts and great strides to improve remedial education and to replicate best practices.

Of the 25 institutions offering remedial education, 24 offer additional academic support to students enrolled in remedial courses, including tutoring and mentoring, advising, labs and workshops, and student success courses; 23 institutions offer at least three of the above mentioned additional supports. In 2015, 18 institutions offered labs or workshops and 19 offered student success courses. In 2017, 20 institutions offered labs or workshops and 21 offered student success courses. Additionally, only a handful of institutions utilized early alert systems in 2015; in 2017, 21 institutions do.

One of the recommendations of *Principles* was that institutions should offer alternative models of remedial education –which include corequisite models, fast-track courses, and modularize courses, among other – and provide early interventions strategies—such as early assessment, summer bridge programs, and

dual enrollment. Here, Missouri has also seen improvement. In 2015, 21 institutions offered at least one form of alternative remedial education model. In 2017, 23 institutions offered alternative remedial education models, 22 institutions in math and 19 in English. Additionally, 19 institutions offered at least one early intervention strategy in 2015. By 2017, 22 offer early intervention strategies, with 20 institutions offering them for math and 20 offering them for English.

Another recommendation of *Principles* was that institutions should use multiple measures to place students in the proper courses. High-stakes standardized assessment can offer a “snapshot” of a student’s readiness at a particular point in time, but are ineffective in assessing students’ readiness for a particular course. Increasingly, national and institutional data have shown that a more holistic approach, or using multiple measures, is more efficient and effective in placing students in either remedial education or credit-bearing courses. This recommendation is of particular importance in regards to remedial education, and public institutions in Missouri have improved greatly since 2015. In the initial round of data, 11 institutions reporting using multiple measures. In 2017, however, 22 institutions are using multiple measures for placement in either reading, English, and/or mathematics, with 11 institutions using multiple measures for all three. Lincoln University, Three Rivers College, and the University of Missouri-Columbia still do not use multiple measures to place students in credit-bearing courses.

The results from the 2017 survey demonstrates that the greatest improvements to remedial education has come in the area of Mathematics. A greater number of institutions are using multiple measures in mathematics than for reading or English, and more institutions are offering alternative remedial education models in mathematics than reading or English. The data bear this out as well; fewer students are being placed in remedial mathematics courses compared to course in reading or English.

Summary of Qualitative Survey Results

All twenty-seven of Missouri’s public institutions of higher education responded to the 2017-2018 Remedial Education Survey; all of the institutions, except Missouri University of Science & Technology and Truman State University, offer remedial education. Additionally, the University of Missouri—St. Louis only offers remedial education in math.

Institutions Providing Additional Support or Supplemental Services

Of the 25 institutions offering remedial education, all but one, the University of Missouri – St. Louis, reported providing additional supports for students taking remedial education courses. The kinds of supports and services vary, and include the following:

- Twenty-four institutions (96 percent) offer additional tutoring/mentoring, and 23 (92 percent) offer additional advising
- Nineteen institutions (76 percent) provide labs and/or workshops
- Twenty institutions (80 percent) offer student success courses
- Twenty institutions (80 percent) offer early alert systems, a drastic increase from 2015

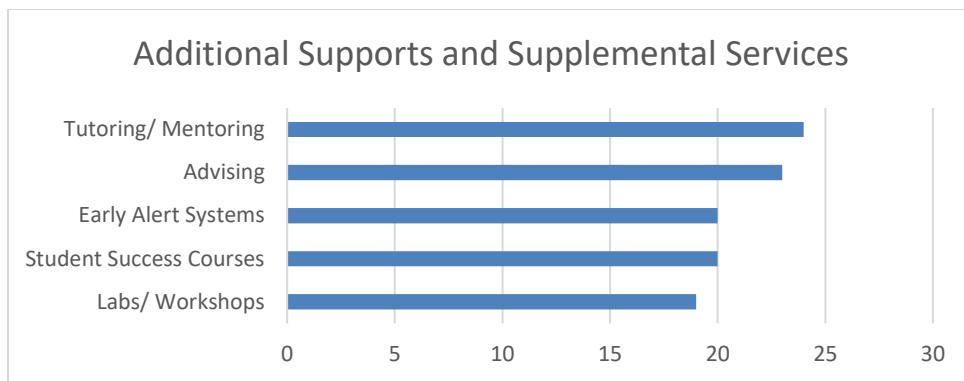


TABLE 3: Institutions Providing Additional Support or Supplemental Services

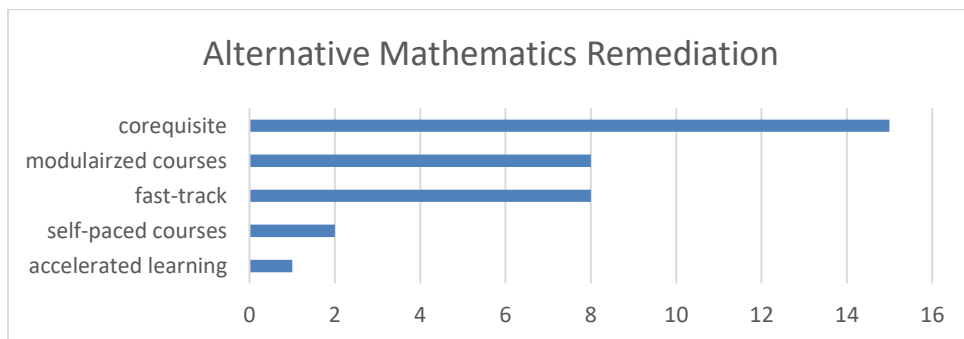
Institution Name	Tutoring/ Mentoring	Advising	Labs/ Workshops	Student Success Courses	Early Alert Systems
Crowder College	Yes	Yes	Yes	Yes	Yes
East Central College	Yes	Yes	Yes	Yes	Yes
Harris-Stowe State University	Yes	Yes	Yes	Yes	Yes
Jefferson College	Yes	Yes	Yes	Yes	Yes
Lincoln University	Yes	Yes	Yes	Yes	Yes
Metropolitan Community College	Yes	Yes	Yes	Yes	Yes
Mineral Area College	Yes	Yes	Yes	Yes	n/a
Missouri Southern State University	Yes	Yes	Yes	Yes	Yes
Missouri State University	Yes	Yes	Yes	Yes	n/a
Missouri State University - West Plains	Yes	n/a	n/a	n/a	n/a
Missouri Western State University	Yes	Yes	Yes	Yes	Yes
Moberly Area Community College	Yes	Yes	Yes	Yes	Yes
North Central Missouri College	Yes	Yes	Yes	Yes	Yes
Northwest Missouri State University	Yes	Yes	Yes	Yes	Yes
Ozarks Technical Community College	Yes	Yes	Yes	Yes	n/a
Saint Charles Community College	Yes	Yes	Yes	n/a	Yes
Southeast Missouri State	Yes	Yes	Yes	Yes	Yes
St. Louis Community College	Yes	Yes	Yes	Yes	Yes
State Fair Community College	Yes	Yes	n/a	Yes	Yes
State Technical College of Missouri	Yes	Yes	n/a	n/a	Yes
Three Rivers College	Yes	Yes	n/a	Yes	Yes
University of Central Missouri	Yes	Yes	Yes	Yes	Yes
University of Missouri - Columbia	Yes	Yes	n/a	Yes	Yes
University of Missouri - Kansas City	Yes	Yes	Yes	n/a	Yes
University of Missouri-Saint Louis	n/a	n/a	n/a	n/a	n/a
Total	24	23	19	20	20

Alternative Remedial Education Models

Twenty-three institutions (92 percent) offer some sort of alternative remediation model, the exceptions being State Technical College of Missouri and the University of Missouri -- Columbia. However, institutions vary on the alternative models offered depending on the type of course.

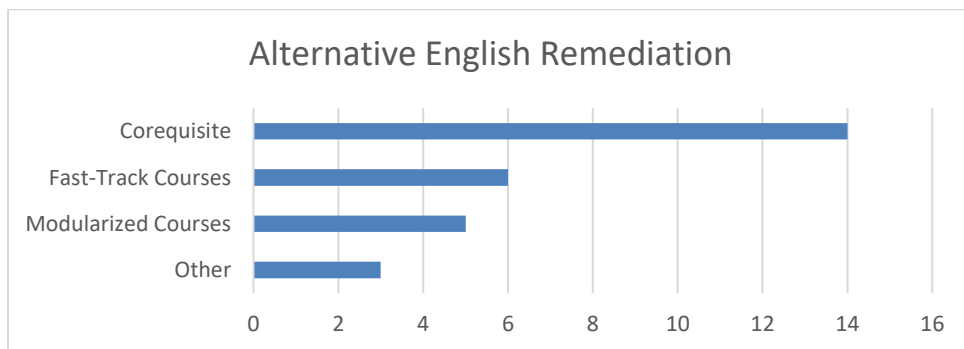
For Math, 22 institutions (88 percent) offer at least one type of alternative remediation model, with nine institutions offering more than one model. These models include the following:

- Fifteen institutions (60 percent) offer corequisite math remediation
- Eight institutions offer modularized courses. Additionally, eight institutions offer fast track courses
- Other models include self-paces courses (offered by two institutions) and accelerated learning (offered by one institution)



For English, 19 institutions (76 percent) offer at least one type of alternative remediation model, with six institutions offering more than one model, and include:

- Fourteen institutions (56 percent) offer corequisite English courses
- Six institutions offer Fast-track courses, and five offer modularized courses
- Other models include accelerated learning, integrated courses, and specialized composition sections for ESL students



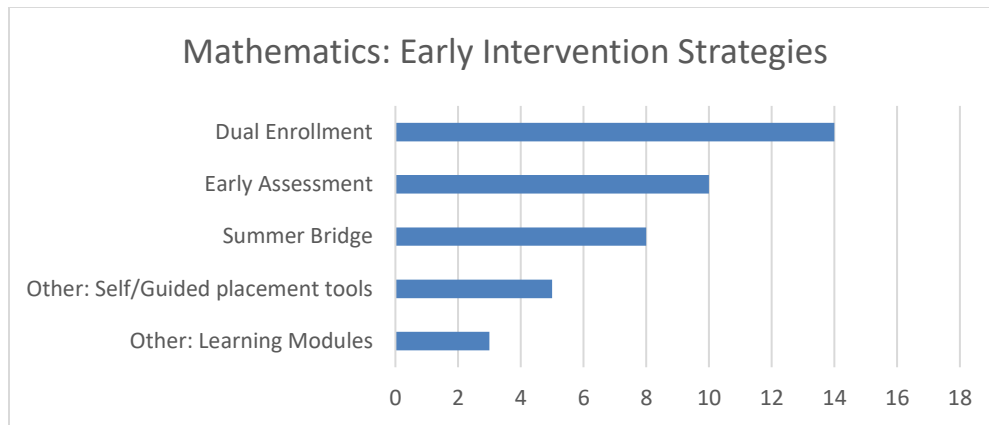
Institution Name	Mathematics	English
Crowder College	Yes	Yes
East Central College	Yes	Yes
Harris-Stowe State University	Yes	Yes
Jefferson College	Yes	Yes
Lincoln University	Yes	n/a
Metropolitan Community College	Yes	Yes
Mineral Area College	Yes	Yes
Missouri Southern State University	Yes	Yes
Missouri State University	Yes	Yes
Missouri State University - West Plains	Yes	Yes
Missouri Western State University	Yes	n/a
Moberly Area Community College	Yes	Yes
North Central Missouri College	Yes	Yes
Northwest Missouri State University	Yes	n/a
Ozarks Technical Community College	Yes	Yes
Saint Charles Community College	Yes	Yes
Southeast Missouri State	Yes	Yes
St. Louis Community College	Yes	Yes
State Fair Community College	n/a	Yes
State Technical College of Missouri	n/a	n/a
Three Rivers College	Yes	Yes
University of Central Missouri	Yes	Yes
University of Missouri - Columbia	n/a	n/a
University of Missouri - Kansas City	Yes	Yes
University of Missouri-Saint Louis	Yes	n/a
Total	22	19

Early Intervention Strategies

Twenty-two institutions (88 percent) offer at least some type of early intervention strategies to help students avoid remediation. As with the alternative models of remedial education, these strategies vary on the type of course, either Mathematics or English. Eighteen institutions, however, provide utilize early intervention strategies for both English and Mathematics; Lincoln University, Northwest Missouri State University, and the University of Missouri – St. Louis did not report providing early intervention strategies.

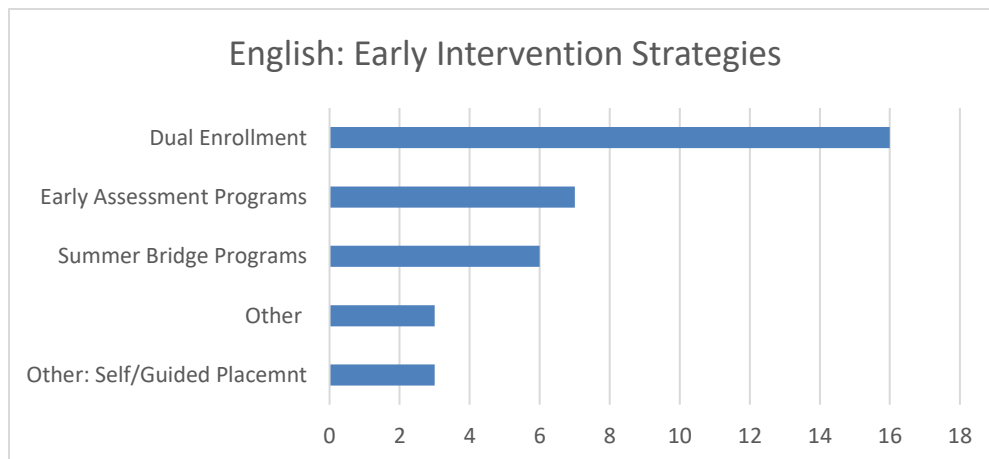
For Mathematics, 20 institutions (80 percent) provide at least one early intervention strategy, with 10 institutions offering more than one. These strategies include:

- Fourteen institutions offer dual enrollment
- Ten institutions offer Early Assessment
- Eight institutions offer Summer Bridge Programs
- Eight institutions reported using other early intervention strategies, which include self/guided placement tools (five institutions), learning modules (3 institutions), and a Senior Summer Start program



For English, 20 institutions (80 percent) provide at least one early intervention strategy, while eight institutions offer more than one. These strategies include:

- Sixteen institutions (64 percent) offer dual enrollment programs
- Eight institutions offer Early Assessment Programs
- Six institutions offer Summer Bridge Programs
- Additionally, six institutions reported using other early intervention strategies, which include self/guided placement tools, Senior Summer Start, and accelerated learning labs



Assessment and Placement Practices

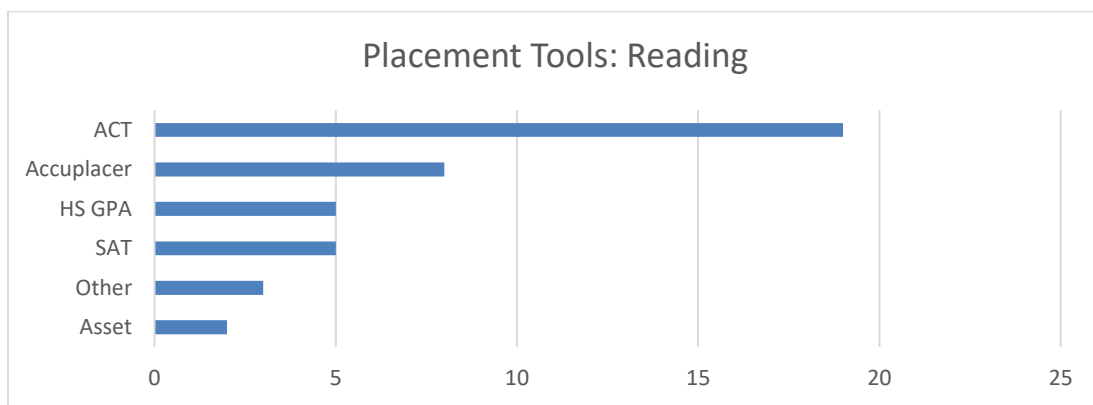
The best practice for placing students into appropriate college-level courses must be based on at least two measures so as to provide a more accurate and holistic assessment of a student's ability to succeed in college-level coursework. Institutions may use an assortment of assessment instruments to place students in college-level courses, including—but not limited to— SAT or ACT scores, high school grade point average, high school end-of-course examination scores, or an institutional created assessment instrument. Institutions using an assessment identified in the [Principles of Best Practice in Remedial Education](#) must also use the statewide placement score listed in the document. All institution using, for example, the ACT subscore in mathematics, must use 22 as the cut score for determining the appropriate mathematics placement for students. (see Section 9.2 in [Principles of Best Practice in Remedial Education](#))

Placement Exams and tools

All 25 institutions report using standardized assessments to place students in remedial or credit-bearing courses, for either Reading, English, or Mathematics. Eighteen institutions (72 percent) use assessments for all three types of courses. Additionally, 11 institutions reported using High School GPA and/or coursework for placement purposes.

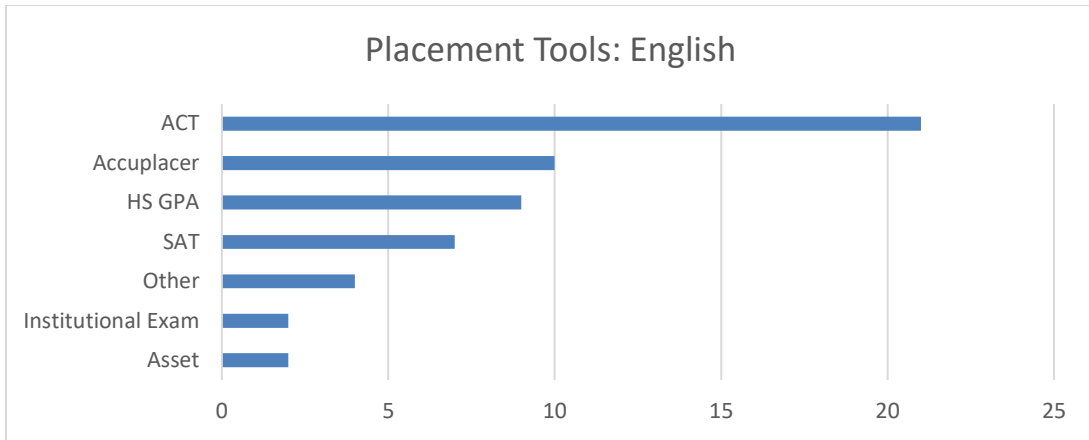
For Reading, placement tools include:

- Twenty institutions (80 percent) utilize either the ACT or SAT for placement, with 19 using the ACT and 5 using the SAT
- Eight institutions use Accuplacer
- Five institutions reported using High School GPA
- Two Institutions utilize ASSET scores, while other institutions still honor Compass scores and use other assessment like Wonderlic or institutional specific assessments



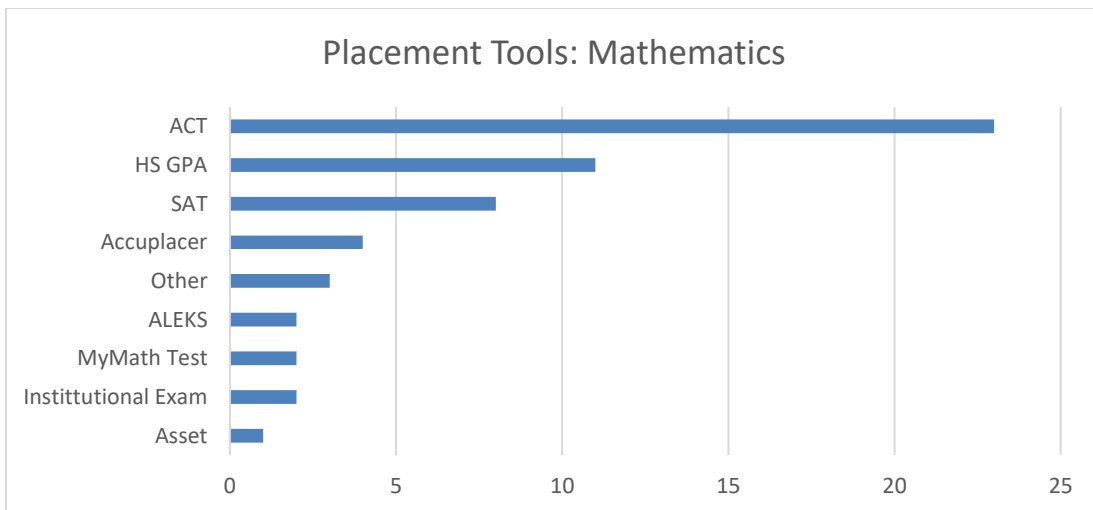
For English, placement tools include:

- Twenty-one institutions (84 percent) utilize either the ACT or SAT for placement; 21 institutions use ACT and seven use the SAT
- Ten institutions use Accuplacer
- Nine institution report using High School GPA and coursework for placement
- Two institutions use ASSET
- Additionally, other placement tools are used; three institutions report using either an institutional exam or and institutional specific metric, while one institutions uses Wonderlic and another still honors Compass scores.



For mathematics, placement tools include:

- Twenty-three institutions (92 percent) use either the ACT or the SAT for placement; 23 institutions use the ACT and eight use the SAT
- Eleven institutions report using High School GPA and coursework
- Four institutions use Accuplacer scores
- Eight institutions reported using other assessment; two use ALEKS, two use MyMath Test, two use institutional exams, and one uses the Missouri Math Test.

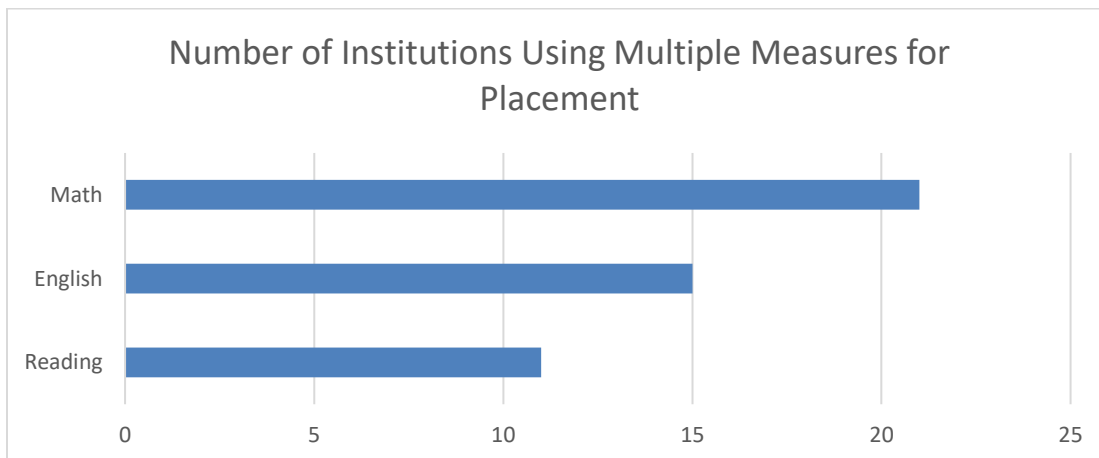


Multiple Measures

Twenty-two institutions (88 percent) report using or planning to implement multiple measures for either Reading, English, or Mathematics in order to place students in either remedial or credit-bearing coursework. Of those institutions, 11 institutions uses multiple measures for all three types of courses. However, it appears that neither Lincoln University nor Three Rivers College use multiple measures for placement.

TABLE 5: Use of multiple measures for placement

Institution Name	Reading	English	Mathematics
Crowder College	Yes	Yes	Yes
East Central College	Yes	Yes	Yes
Harris-Stowe State University	Yes	Yes	Yes
Jefferson College	Yes	Yes	Yes
Lincoln University	n/a	n/a	n/a
Metropolitan Community College	Yes	Yes	Yes
Mineral Area College	Yes	Yes	Yes
Missouri Southern State University	n/a	Yes	Yes
Missouri State University	n/a	n/a	Yes
Missouri State University - West Plains	Yes	Yes	Yes
Missouri Western State University	Yes	Yes	Yes
Moberly Area Community College	Yes	Yes	Yes
North Central Missouri College	n/a	Yes	n/a
Northwest Missouri State University	n/a	n/a	Yes
Ozarks Technical Community College	n/a	Yes	Yes
Saint Charles Community College	n/a	Yes	Yes
Southeast Missouri State	n/a	n/a	Yes
St. Louis Community College	n/a	n/a	Yes
State Fair Community College	Yes	Yes	Yes
State Technical College of Missouri	Yes	Yes	Yes
Three Rivers College	n/a	n/a	n/a
University of Central Missouri	n/a	n/a	Yes
University of Missouri - Columbia	n/a	n/a	n/a
University of Missouri - Kansas City	n/a	n/a	Yes
University of Missouri-Saint Louis	n/a	n/a	Yes
Total	11	15	22



Remediation Rates

While MDHE have just started collecting data on the benefits of corequisite models of education, the initial results continue to show great promise. While only 24.7 percent of students who enrolled in a remedial math course completed a college-level math course within their first academic year, just over 53 percent of students enrolled in a corequisite math course completed a college-level math course.

Table 6: Students assessed as needing math remediation, remedial course and gateway course completion within one academic year, 2016-17

Remediation Type	First-Time Students	Students Needing Remediation who Enrolled in a remedial Math Course within their First Academic Year		Remedial Students Completing a College Level Course in Math within their First Academic Year	
		#	%	#	%
Corequisite	Full-Time	937	10.4%	448	47.8%
	Part-Time	584	11.2%	361	61.8%
	Total	1,521	10.7%	809	53.2%
All other types of remediation	Full-Time	6,340	70.1%	1488	23.5%
	Part-Time	2,209	42.5%	189	8.6%
	Total	8,549	60.1%	1677	19.6%

The same appears to hold true for English; forty-three percent of students enrolled in English remediation completed a college-level English course with one academic year. When broken out by type of remedial course, over 65 percent of students enrolled in an English corequisite course completed a college-level gateway course within one academic year.

TABLE 7: Students assessed as needing English remediation, remedial course and gateway course completion within one academic year, 2016-17

Remediation Type	First-Time Students	Students Needing Remediation who Enrolled in a remedial English Course within their First Academic Year		Remedial Students Completing a College Level Course in English within their First Academic Year	
		#	%	#	%
Corequisite	Full-Time	1,279	19.0%	952	74.4%
	Part-Time	442	10.0%	175	39.6%
	Total	1,721	15.5%	1,127	65.5%
All other types of remediation	Full-Time	2,999	44.6%	1,355	45.2%
	Part-Time	1,785	40.5%	354	19.8%
	Total	4,784	43.0%	1,709	35.7%

While decreasing the number of students taking remedial education is part of this work, the goal is to increase the number of students completing gateway college-level courses, and ultimately the completion

of a post-secondary credential. MDHE staff are establishing baseline data on college-level course completion for students enrolled in remedial education and hope, moving forward, to improve this rate.

Recommendations

1. Improve the use of multiple measures for placement in all subjects at all institutions. The use of multiple measures has increased since 2015, but not every institution is using multiple measures in every subject for placement. Because multiple measures offers a more holistic and complete evaluation of a student's ability – and recognizing that once students start down the path of remediation, it is difficult for them to move on to credit-bearing coursework – MDHE strongly recommends that develop and utilize multiple measures of placement

2. Offer multiple models of remedial education. Statewide, more institutions are offering alternative models of remediation instead of the traditional remedial coursework sequence. While multiple measures takes a more holistic approach, there are students who may still be in need of, or may benefit from, remedial education. The early results from the corequisite model seem to indicate that students enrolled in corequisite models complete a college-level gateway course at a higher rate than students enrolled in other forms of remediation.

3. Ensure that institutions offer multiple early intervention strategies to give students the support they need. While 80 percent of institutions offer at least one early intervention strategy for English and 88 percent offer at least one strategy for math, MDHE staff encourage institutions to offer multiple strategies. Dual Enrollment is by far the most popular strategy, but MDHE reaffirms the 2015 recommendation that improve intensive summer programs and engage in partnerships with local high schools to do so.