



OFFICE OF INSTITUTIONAL EFFECTIVENESS

**RESEARCH BRIEF**

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## **Classroom Interventions for Basic Skills Courses at Long Beach City College**

Students arrive at Long Beach City College (LBCC) with a wide range of skills and knowledge. Unfortunately, only the top 10% of first-time students require no remedial coursework. Meaning, 9 out of 10 LBCC students enroll in at least one basic skills course.

In order to bring these students up to transfer level, LBCC offers extensive basic skills coursework in fundamental disciplines (i.e., math, English, and reading). Weaker students place at lower levels so that they have the opportunity to build the skills necessary to succeed in transfer-level coursework within these disciplines. Students who need basic skills intervention often struggle to progress through these classes.

The college has developed initiatives to help address challenges students face with basic skills. In fall 2012, multiple measures placement strategy was introduced through Promise Pathways that uses high school transcript data in addition to Accuplacer results for math, English, and reading<sup>1</sup>. Thus far, about 1,750 students in English and 1,650 in math have moved up in their placement level with multiple measures placement. Even with multiple measures placement, there is still a need for effective basic skills education at LBCC.

Faculty are developing innovations for basic skills courses, such as compressed and ALEKS sections. This brief will describe LBCC basic skills students. Then the brief will describe key innovations in math, English, and reading and the most recent findings related to student success.

### **How many LBCC students are enrolling in basic skills courses?**

A majority of LBCC students enroll in basic skills courses. Prior to multiple measures placement (fall 2012), basic skills enrollments were increasing in all subjects.<sup>2</sup> However, basic skills placement in English and math have decreased since the inception of multiple measures placement (see Exhibit 1).

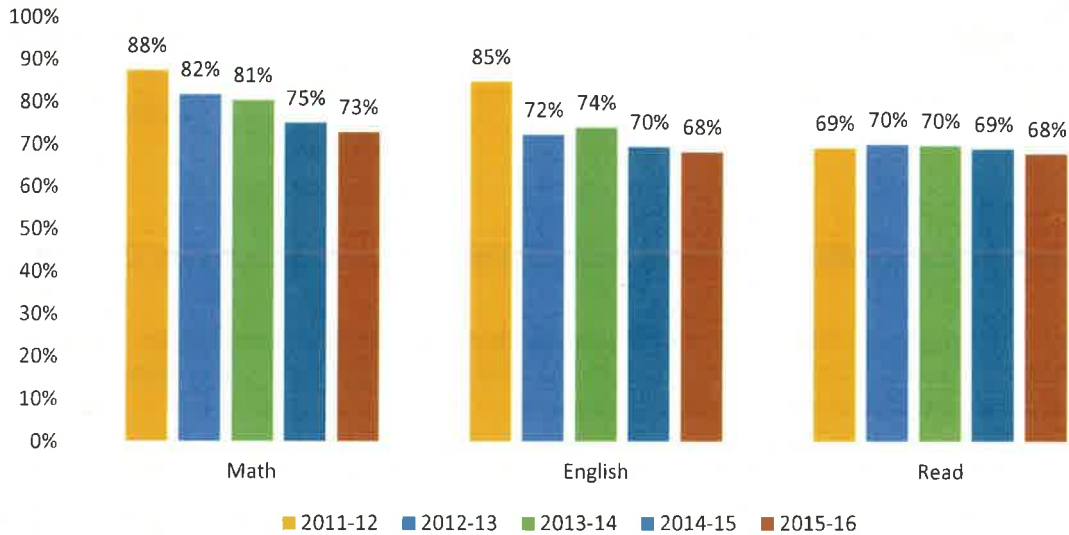
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<sup>1</sup> See the *Promise Pathways Evidence Update* brief. Prepared by the Office of Institutional Effectiveness, September 2015.

<sup>2</sup> See the *How can We Strengthen Student Performance in Basic Skills Courses at Long Beach City College?* brief. Prepared by the Office of Institutional Effectiveness, February 11, 2016.

While multiple measures assessment has discovered a large number of students capable of completing transfer level work who were previously misplaced into basic skills, there remains a large population of students arriving at LBCC who need basic skills courses. In fact, 7 out of 10 students are placed into basic skills math, English, and reading courses, see Exhibit 1.

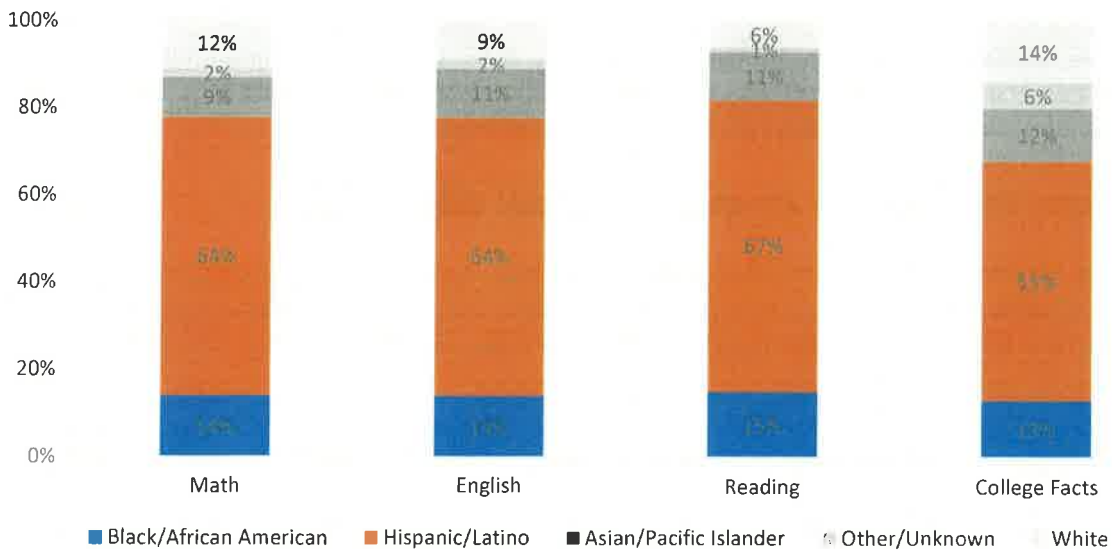
**Exhibit 1.** Percent of first-time students with basic skills placement by subject and academic year



Note: Includes only students who achieve intent to complete (earned 6 units and attempted math or English) within their first year.

When examining the placement by race/ethnicity, Black/African American and Hispanic/Latino students are overrepresented in basic skills course placements compared to the demographics of our current student body, Exhibit 2 (see the 2016 College Facts).

**Exhibit 2:** Percent of first-time students with basic skills placement by subject, by ethnicity, for the 2015-16 academic year



**How well do LBCC students complete basic skills courses?**

Despite basics skills courses being designed to meet students at their proximate zone of development, many students struggle to pass their courses. In fact in the 2015-16 academic year, only 4 out of 10 students passed math and 6 out of 10 students passed English and reading.

Related to course success is throughput, which is defined by the California Community College Chancellor’s Office as the percentage of students who finish a particular remedial sequence and successfully complete a transfer-level course within the discipline. Exhibit 3 displays the number of students who enrolled in a basic skills course (i.e., N) and the throughput rate. The results show, especially for students who start at lower levels of basic skills courses, the throughput among LBCC students is extremely low. While the throughput varies by initial basic skills course and subject, the story remains constant – **a majority of remedial students never complete basic skills.**

**Throughput:** % of remedial students who complete basic skills and successfully complete a transfer-level course out of all students who start in basic skills.

**Exhibit 3. Throughput by basic skills course**

Course	Course Title	Level	N	Throughput Rate
ENGL801A	College English Skills I	3 below	3,498	17%
ENGL801B	College English Skills II	2 below	1,798	33%
ENGL105	Fundamentals of Writing	1 below	6,256	46%
MATH805	Modern Arithmetic	4 below	1,092	1%
MATH815	Preparation for Algebra	3 below	3,467	3%
MATH110	First Course in Algebra	2 below	8,198	9%
MATH130	Intermediate Algebra	1 below	6,619	25%
READ881	Reading Essentials	3 below	514	8%
READ882	Reading Development	2 below	2,173	19%
READ883	Reading Improvement	1 below	2,819	40%

Note: The "N" represents the total number of students who enrolled in the corresponding course. These numbers reflect a 2-year throughput, spanning from the 2011-12 through the 2015-16 academic years.

Basic skills success, especially in English and math (requirements for ADT degree completion), are

Leading indicators: Early indicators/milestones that lead to longer-term outcomes. Specific policy and practice tend to have more direct influence on leading indicator success.

Lagging indicators: These longer-term outcomes may be influenced by many factors. Most student success efforts of a college are focused on these indicators.

leading indicators for many students’ ultimate goal of completion (a lagging indicator of student success). Until we address the leading basic skills achievement, we cannot expect to see movement on dependent, long-term outcomes.

## What have we done to address low success rates in basic skills courses?

In addition to multiple measures placement, LBCC continues to address low success rates in basic skills courses through other interventions. In fact, LBCC math, English, and reading faculty have implemented key initiatives.

### Math Workshops and Compressed Sections

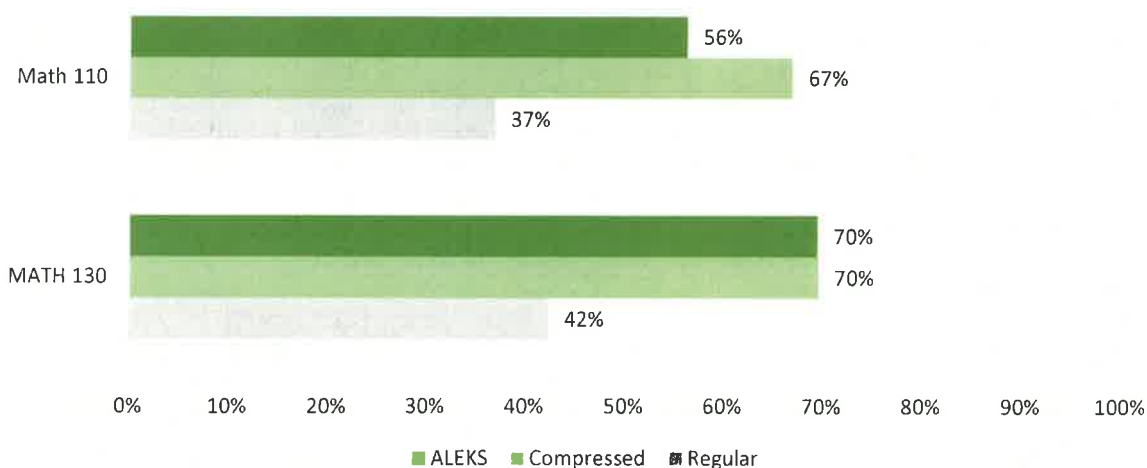
Since winter 2013, the math department has been offering math workshops and compressed sections. Math workshops feature ALEKS software flipped classroom approach<sup>3</sup> for Algebra. The majority of the workshops and compressed sections have been offered in summer and winter terms<sup>4</sup>; thus, the program has been small scale. However, for the first time ALEKS workshops and compressed sections for math 110 and math 130 were offered every term in the 2015-16 academic year.

Compressed sections are 8 weeks instead of 16 weeks with the same number of units. All ALEKS sections are compressed but not all compressed sections are ALEKS.

ALEKS (Assessment and Learning in Knowledge Spaces) is a web-based assessment and learning system. ALEKS typically allows students to advance at their own pace, quickly progressing through material they master easily, but spending more time, often with targeted assistance, on material they find more challenging.

Results show that the success rates for math 110 and math 130 with the teaching innovations are outpacing traditional classroom success rates (see Exhibit 4).

**Exhibit 4:** Math 110 and math 130 success rates for ALEKS, compressed, and regular sections for the fall and spring terms of the 2015-16 academic year



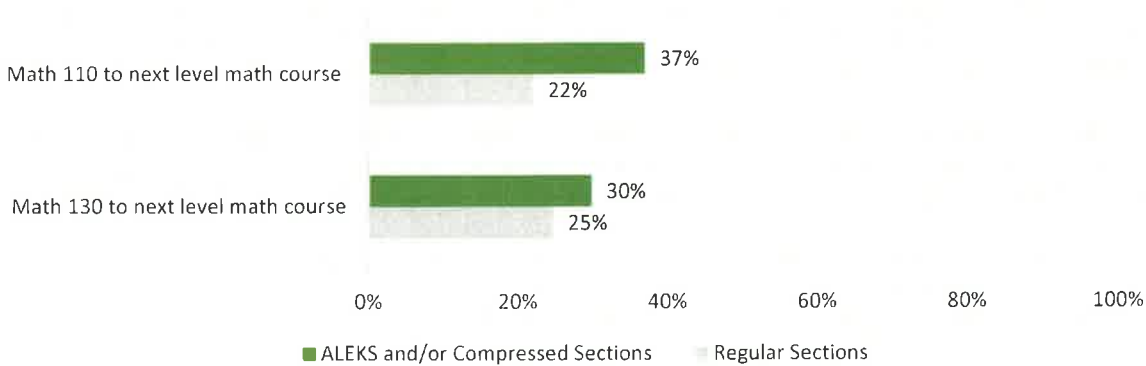
Summer and winter sections were excluded given the unique body of students who choose to enroll in courses during those terms. However, the success rates in the summer and winter terms are similar to those students in the fall and spring terms. See Appendix A, Table A1 for the number of students enrolled in each section.

<sup>3</sup> A flipped classroom is a pedagogical approach which reverses the traditional learning environment by having the student learn the majority of the content outside of the classroom and the homework or activities inside of the classroom (giving students the opportunity to practice what they have learned).

<sup>4</sup> Note: There are challenges with interpreting data from summer and winter terms given the unique body of students who choose to enroll in courses during those terms.

The next Exhibit displays how well students enroll and complete the next level of instruction from their basic skills math course. Students who took an ALEKS or a compressed section math course completed the next level more often than students in a regular section (see Exhibit 5).

**Exhibit 5:** The percent of students who complete the next level course out of the total number of students who started in a lower level course by ALEKS/compressed or regular section participation

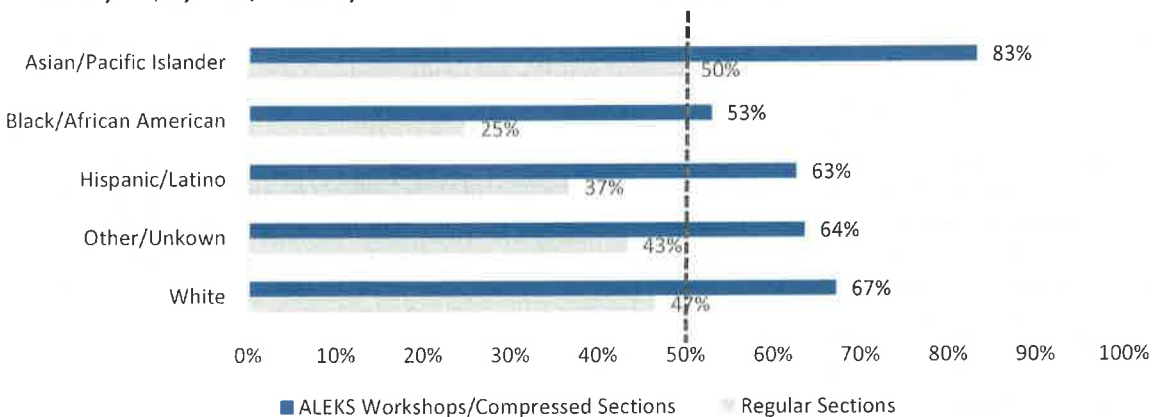


Note: This table represents a 2-year time span for students to move on to the next level math course (i.e., since ALEKS began in fall 2013). For Math 110, these next level math courses include Math 115, 120, 130, or 40. For Math 130, these next level math courses include any transfer level math.

Although achievement gaps are not closing, we see important gains in success rates for all race/ethnic groups who participated in ALEKS workshops or compressed sections for math 110. Below we show the breakdown of success in math 110 by ethnicity, Exhibit 6. All student groups in ALEKS or compressed sections outperform regular course section groups. In fact, even the lowest performing ALEKS/compressed group (i.e., Black/African American) outperform the highest performing regular section group (i.e., Asian/Pacific Islander). Further, our lowest performing group (i.e., Black/African American) are twice as likely to pass an ALEKS/compressed section than a regular section.

Math 130 results of success rates by ethnicity mirror math 110 results and can be found in Appendix A, Exhibit A4.

**Exhibit 6:** Math 110 success rates for ALEKS/compressed and regular sections for the 2015-2016 academic year, by race/ethnicity



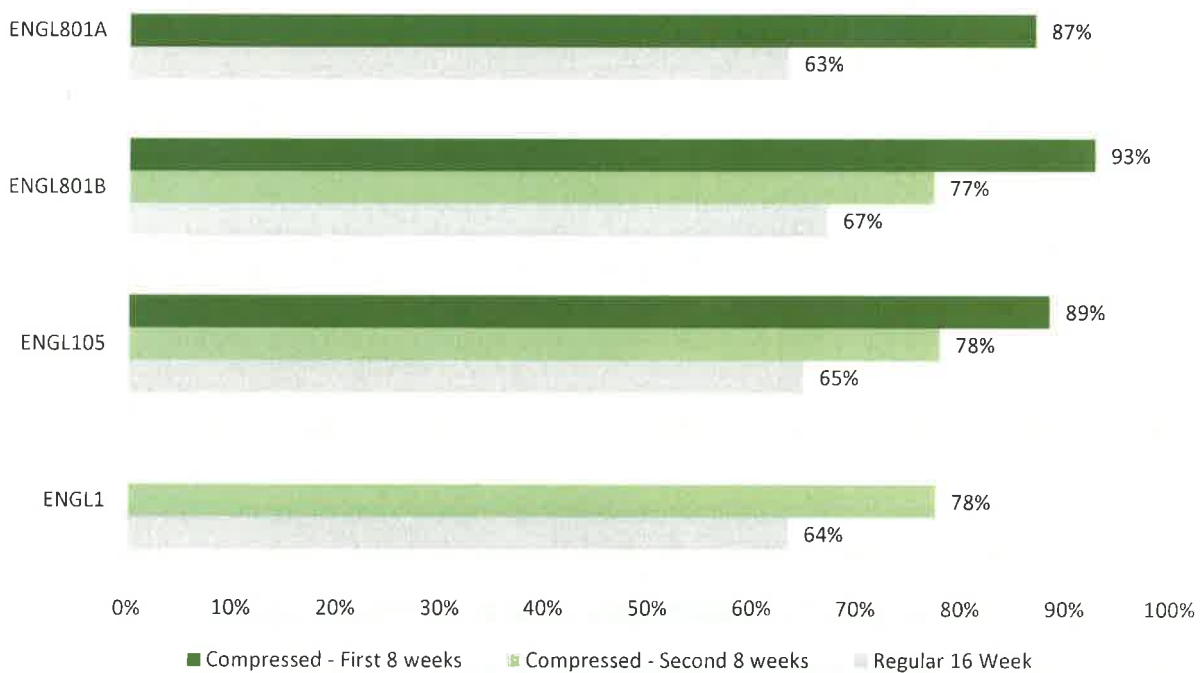
Note: The number of students by race/ethnicity can be found in Appendix A, Table A3.

**Compressed English Sections**

Since fall 2013, LBCC has offered compressed English sections to students in fall and spring terms for English 801A, English 801B, English 105, and English 1<sup>5</sup>. **Compressed** sections fit two complete courses within one 16-week semester. In other words, compressed course sequences provide students the option of completing a two-course sequence in one semester. For example, a student takes an 8-week section of English 801B and then moves on to another 8-week section of the next higher-level, English 105 (that is typically taught by the same faculty member<sup>6</sup>).

The results from this academic year yielded similar results from fall 2013 through spring 2015<sup>7</sup>. For the 2015-16 academic year, success rates are higher for compressed sections when compared to regular sections, see Exhibit 7 (the number of students in each course can be found in Appendix B, Table B1).

**Exhibit 7.** English course success rates by compressed and regular sections for the 2015-16 academic year



Similar to the innovative math sections, the success rates for all racial/ethnic groups are higher for students who take a compressed section when compared to students in regular sections, regardless of the English course, see Exhibit 8 (the other English courses can be found in Appendix B, Exhibits B1, B2 and B3).

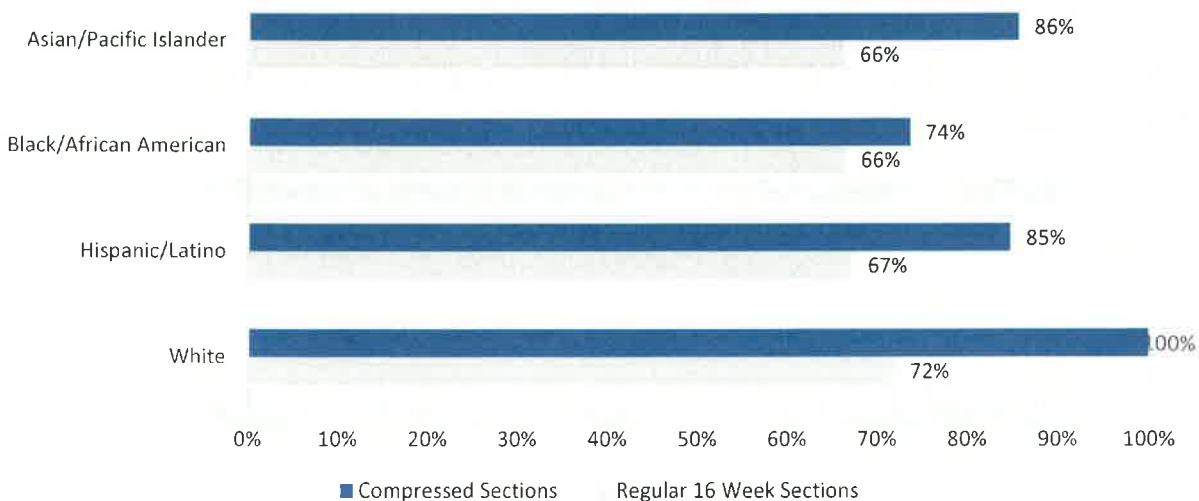
<sup>5</sup> English 1 compressed sections were not offered in fall 2013.

<sup>6</sup> See the “Compressed Reading Sections” in regards to faculty effects.

<sup>7</sup> See *How can We Strengthen Student Performance in Basic Skills Courses at Long Beach City College?* brief. Prepared by the Office of Institutional Effectiveness, February 11, 2016.



**Exhibit 8. English 801B course success rates by compressed and regular sections for the 2015-16 academic year**



Note: The number of students by race/ethnicity can be found in Appendix B, Table B2. Other/unknown was excluded due to the count being less than 5 in compressed sections.

In fall 2016, the English department launched an accelerated course for English 105 (i.e., ENGL105AX – Accelerated Fundamentals of Writing). An **accelerated** class option allows students with 801 (801A or 801B) or 105 placements to complete the sequence in one semester. In other words, this accelerated class allows students in basic skills placement to take and, if they pass, move directly on to English 1<sup>8</sup>. In addition, the accelerated course is designed to be more rigorous in compositional curriculum. The accelerated English 105AX course is one more unit than the regular English 105 course (5 units compared to 4 units, respectively). Currently, 168 students are enrolled in English 105AX (i.e., 79 are new students to LBCC and 89 are continuing students).

**Accelerated** courses allow students to complete the basic skills sequence in one term and are more units than a regular course.

**Compressed Reading Sections**

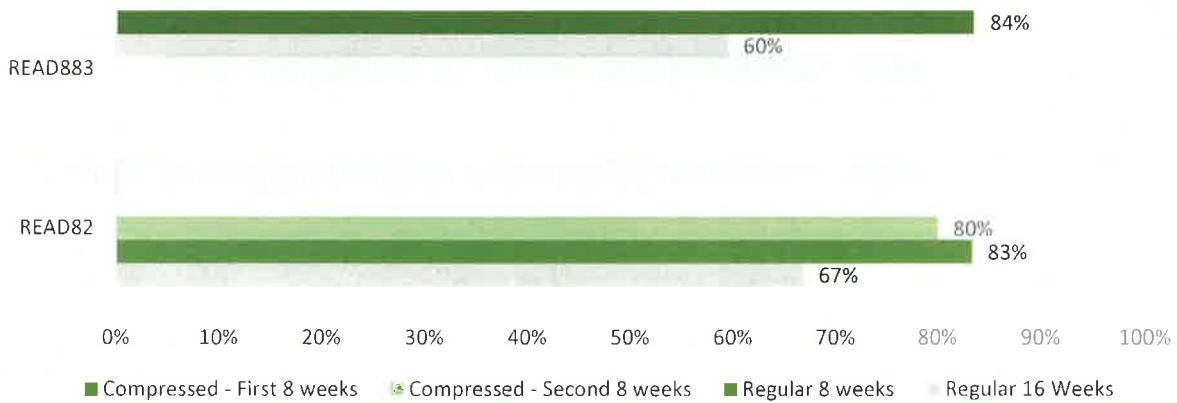
For the fall and spring terms in the 2015-16 year, the reading department offered two alternative sections (i.e., compressed sections and 8-week regular sections) for reading 883 and reading 82. The **compressed** sections in reading are no different from math and English – the course is condensed into 8 weeks instead of 16 weeks. Further, the compressed courses are taught by the same instructor and use a cohort model which focuses on students completing two courses within the 16-week semester. The 8-week regular course is also compressed but does not follow a cohort model; therefore, anyone can enroll in the course.

Currently, one full-time faculty member teaches the compressed sections and another full-time faculty member teaches the 8-week regular course. Thus, it is impossible to rule out a faculty effect. In other words, there is something different about that one faculty member compared to other faculty in the department which may explain the difference in student success other than the innovation.

<sup>8</sup> English 1 meets AA/AS requirement and therefore, is transferable to UC and CSU.

Although preliminary, results from the reading compressed courses are positive. Student course success rates in the compressed sections outpace those in regular sections for reading 883 and reading 82, see Exhibit 9. While positive course successfulness results are very promising, additional implementation to assess faculty effect and student variance is needed.

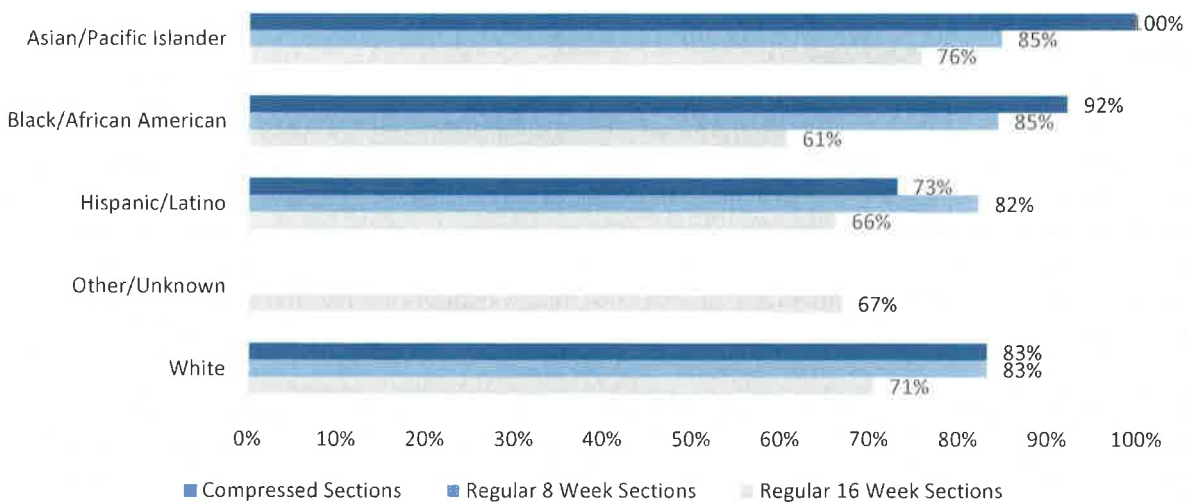
**Exhibit 9.** Reading course success rates by compressed and regular sections for the 2015-16 academic year



Note: The number of students in each course can be found in Appendix C, Table C1 and Table C2.

Compressed reading sections may be another avenue to help close the gap between different racial/ethnic groups, Exhibit 10. While all student groups in the compressed sections outperform groups in the regular sections, Hispanic/Latino students are not as successful as other groups in the compressed sections. The number of students in each racial/ethnic group can be found in Appendix C, Tables C3, as well as the results for reading 883 (see Table C2 and Exhibit C1).

**Exhibit 10.** Reading 82 course success rates by compressed and regular sections for the 2015-16 academic year



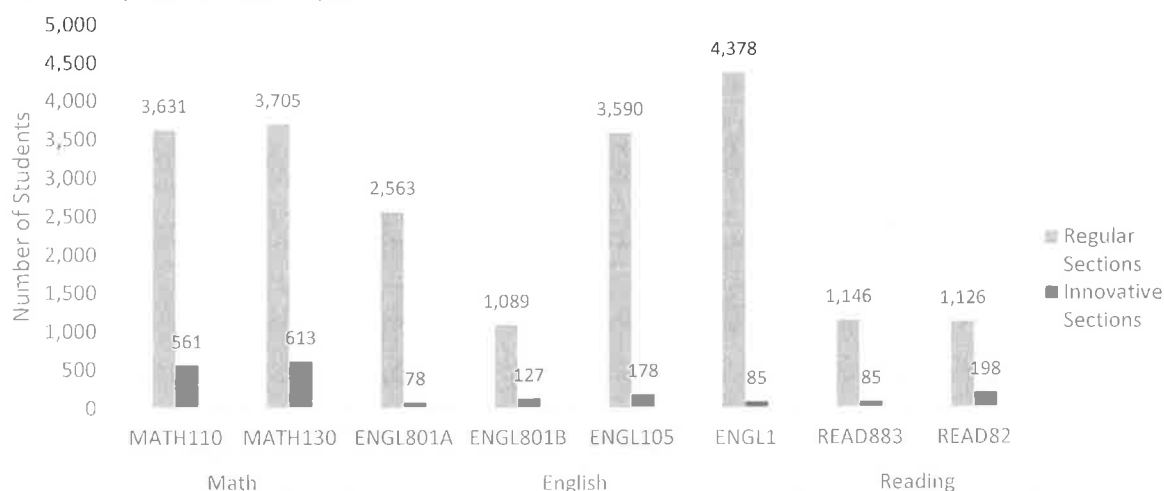
Note: Other/Unknown students in the Regular 8 Week Sections was eliminated from the exhibit due to the count being under 5 (see Appendix C, Table C3).



### Count of Math, English, and Reading Sections

While results look promising for innovative sections, we are only reaching a small group of students, see Exhibit 11. In fact, the innovative sections serve about 14% of students in math, 2-10% of students in English, and 7% and 15% of the students in reading (i.e., reading 883 and reading 82, respectively).

**Exhibit 11.** *The count of students who took math, English, and reading basic skills courses for the 2015-16 academic year, by section type*



### Conclusion and Next Steps

This analysis highlights the basic skills course innovations developed by faculty in the math, English, and reading departments. Results show that students who participate in the intervention tend to have higher success rates when compared to students who participate in regular sections, regardless of the subject (i.e., math, English, or reading). More evaluation must be performed to understand the outcomes of this type of intervention and we need to continue to track the progress of these students.

Although these interventions look promising, we are only reaching a small group of students. In order to reach more students, we need to ask the question of how can these interventions be scaled to effectively support more students? Or, what other interventions can be implemented that will yield similar results but target more students?

Given that a majority of students need basic skills work and basic skills is a leading indicator of college completion, LBCC needs to invest in technology, space, and faculty to better meet the needs of students and effectively serve more students in innovative ways. Currently, one of the biggest limitations of the ALEKS workshops is the physical space to support these types of innovations. LBCC also should provide professional development opportunities to faculty to learn compressed or accelerated techniques. Further, LBCC should consider ways to incentivize or encourage faculty to teach in these innovative ways.

Building faculty expertise and excitement will provide more opportunities for students and a larger number of course implementations will provide more variety of students participating in this innovation which will also strengthen the evidence-base.

Appendices

Appendix A: Math Sections

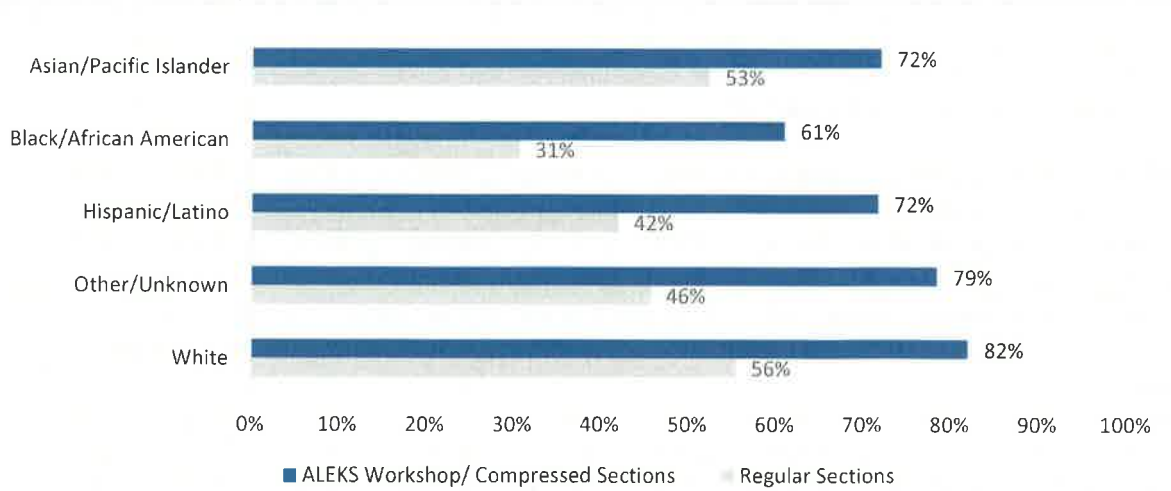
**Table A1:** Student count for math 110 and math 130 courses for the 2015-16 academic year, by section

Term	Section Type	Math110	Math130
Summer 15	Regular Section	101	177
	ALEKS Workshop	180	214
Fall 15	Regular Section	2,033	1,804
	Compressed	82	76
Winter 16	Regular Section	33	33
	ALEKS Workshop	143	165
Spring 16	Regular Section	1,464	33
	ALEKS Workshop	156	165
Total	Regular Section	3,631	3,705
	ALEKS Workshop/ Compressed	561	613

**Table A3.** Number of students in math courses in the 2015-16 academic year, by race/ethnicity and section type

Race/Ethnicity	Math 110		Math 130	
	ALEKS/Compressed	Regular	ALEKS/Compressed	Regular
Asian/Pacific Islander	48	285	79	379
Black/African American	109	537	90	413
Hispanic/Latino	335	2,320	373	2,391
Other/Unknown	11	83	15	83
White	58	406	56	439
Total	561	3,631	613	3,705

**Exhibit A1:** Math 130 success rates for ALEKS/compressed and regular sections for the 2015-16 academic year, by race/ethnicity



Appendix B: English Sections

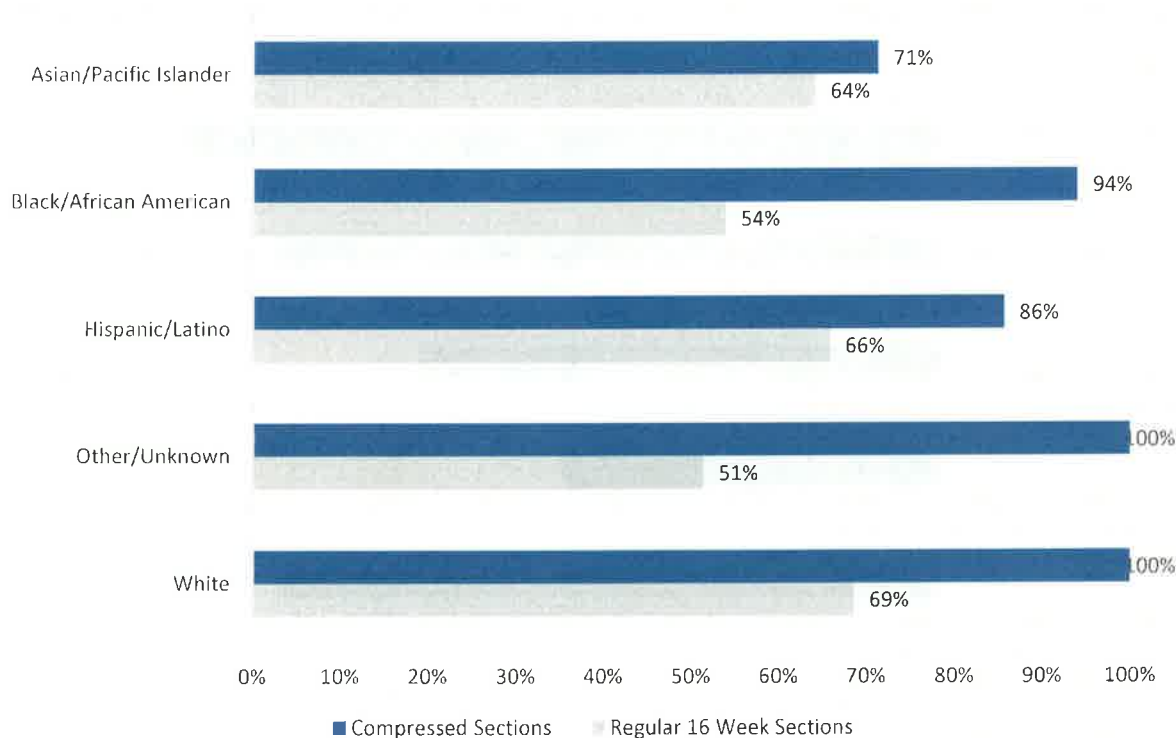
Table B1. Student count for English courses for the 2015-16 academic year

Section Type	English 801A	English 801B	English 105	English 1
Compressed - First 8 weeks	78	56	96	--
Compressed - Second 8 weeks	--	71	82	85
Regular 16 Week	2,563	1,089	3,590	4,378
Total	1,167	2,690	3,768	4,463

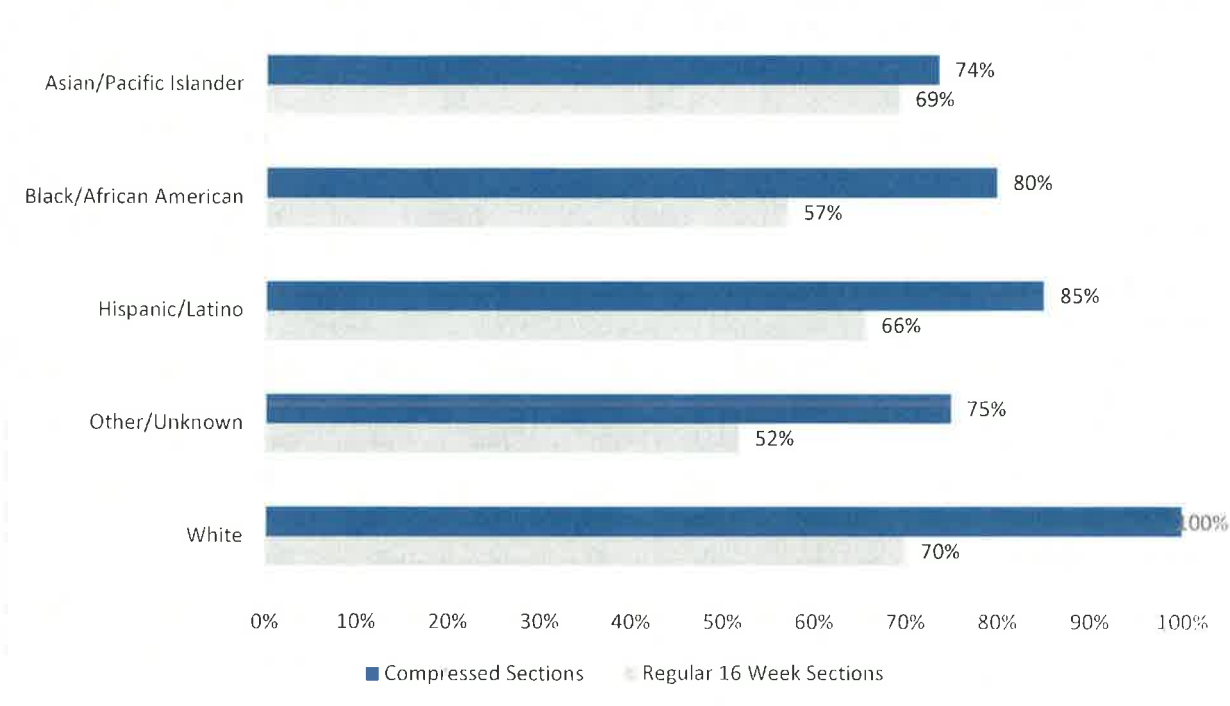
Table B2. Number of students in English courses in the 2015-16 academic year, by race/ethnicity and section type

Race/Ethnicity	English 801A		English 801B		English 105		English 1	
	Comp.	Reg.	Comp.	Reg.	Comp.	Reg.	Comp.	Reg.
Asian/Pacific Islander	7	218	7	104	19	349	11	542
Black/African American	17	478	19	161	30	492	16	496
Hispanic/Latino	49	1,695	92	760	114	2,290	48	2,638
Other/Unknown	1	35	1	7	4	83	2	118
White	4	137	8	57	11	376	8	584
Total	78	2,563	127	1,089	178	3,590	85	4,378

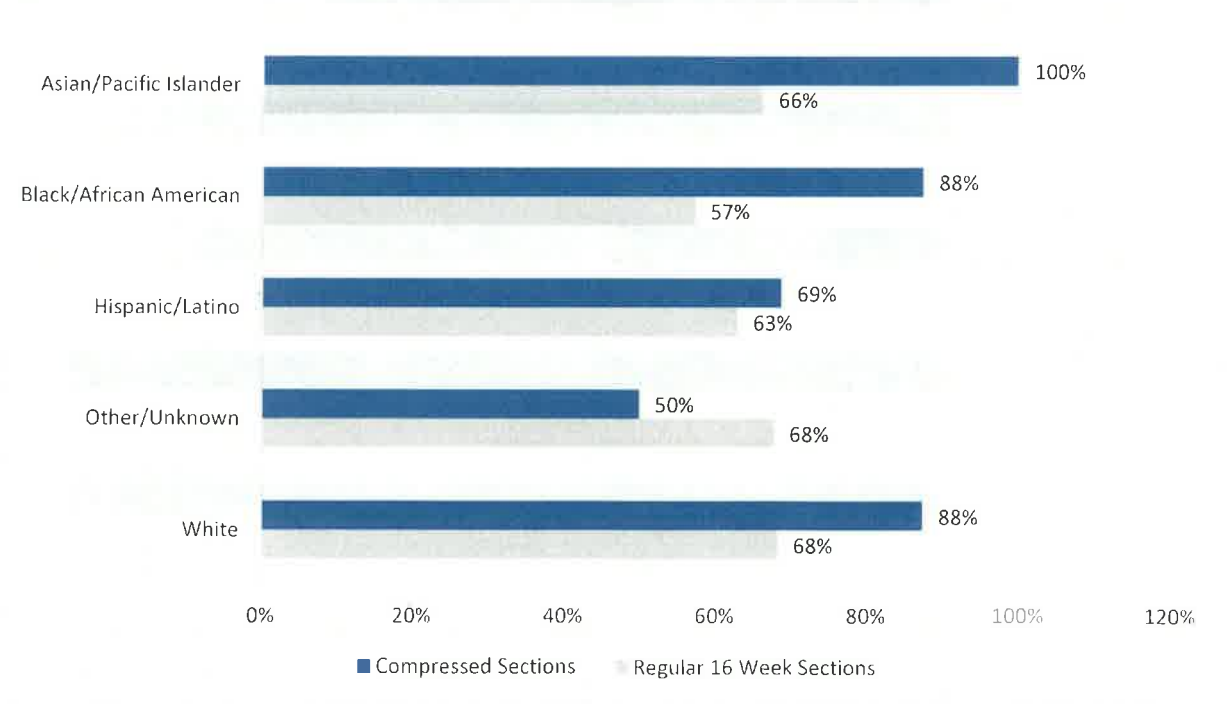
Exhibit B1. English 801A course success rates by compressed and regular sections for the 2015-16 academic year



**Exhibit B2.** English 105 course success rates by compressed and regular sections for the 2015-16 academic year



**Exhibit B3.** English 1 course success rates by compressed and regular sections for the 2015-16 academic year



Appendix C: Reading Sections

**Table C1.** Student count for reading course for the 2015-16 academic year

Section Type	Read 883	Read 82
Regular 16 Weeks	1,146	1,126
Regular 8 weeks	--	108
Compressed - Second 8 weeks	--	90
Compressed - First 8 weeks	85	--

**Table C2.** Number of students in Read 883 courses in the 2015-16 academic year, by race/ethnicity and section type

Race/Ethnicity	Regular 16 Weeks	Compressed
Asian/Pacific Islander	125	9
Black/African American	155	8
Hispanic/Latino	783	62
Other/Unknown	16	0
White	67	6
Total	1,146	85

**Table C3.** Number of students in reading 82 courses in the 2015-16 academic year, by race/ethnicity and section type

Race/Ethnicity	Regular 16 Weeks	Regular 8 Weeks	Compressed
Asian/Pacific Islander	137	20	9
Black/African American	130	13	13
Hispanic/Latino	766	68	56
Other/Unknown	18	1	0
White	75	6	12
Total	1,126	108	90

**Exhibit C1.** Reading 883 course success rates by compressed and regular sections for the 2015-16 academic year

