



Year in Review

Scaling a Proven Program for
Dramatically Accelerating Rigorous,
Sustained Learning in Math, Science
and English

December 2015

This update includes independent longitudinal
research conducted for AdvanceKentucky by
the
Kentucky Center for Education and Workforce
Statistics kcews.ky.gov

An Initiative of:

KENTUCKY
SCIENCE & TECHNOLOGY
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In Partnership with:



College Readiness Program Elements of Success



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Statewide Impact

Since AdvanceKentucky began in 2008, Kentucky public high school students have continued dramatic growth in Advanced Placement (AP)* participation and performance in all subjects with long-term impact.

Impact on Individuals

The number of unique students earning qualifying scores continues to surpass the number of all exam takers before AdvanceKentucky began.

New AP Math and Science Courses

AdvanceKentucky high schools produced 75 percent of the 232 new AP math and science courses introduced across Kentucky since 2008-09.

More AP Scholars

By 2014, the number of Kentucky AP Scholars has grown 240 percent, demonstrating the exceptional performance of many more students since the introduction of AdvanceKentucky.

Math-Science-English

Kentucky outpaces the national average in the contribution of math, science and English to total AP participation (exams) and performance measures (qualifying scores).

National Rankings

From 2008 to 2015, Kentucky has increased its national standing in MSE exam takers and MSE qualifying scores:

	<u>2008</u>	<u>2015</u>
Total MSE Exam Takers	28	13
Minority MSE Exam Takers	21	14
Total MSE QS	32	19
Minority MSE QS	20	14

*Advanced Placement and AP are registered trademarks of College Board.



Highlights of Longitudinal Research¹

AdvanceKentucky high schools continue to soar in the number of Advanced Placement qualifying scores earned in mathematics, science and English. First-year increases by every cohort has outpaced national rates of annual growth by 11-18 times.

Class of 2009 Comparison Group

Higher College Going Rates, GPAs and KEES Eligibility: AdvanceKentucky students in the class of 2009 went to college at higher rates and earned higher GPAs each year in college.

Greater College Persistence and Timely Graduation: AdvanceKentucky students exhibited higher persistence to the second year and graduate from college in four years at twice the rate of their colleagues from the class of 2009.

Classes of 2009 through 2012 Comparison Groups

Higher College Going Rates among Low Income and Minority Students: Compared to their underrepresented colleagues in each graduating class, more AdvanceKentucky minority and low income students went to college.

Lower College Remediation among Low Income and Minority Students: Compared to their underrepresented colleagues in graduating class, significantly fewer AdvanceKentucky minority and low income students enrolled in one or more remedial classes in college.

Class of 2012 Control Group

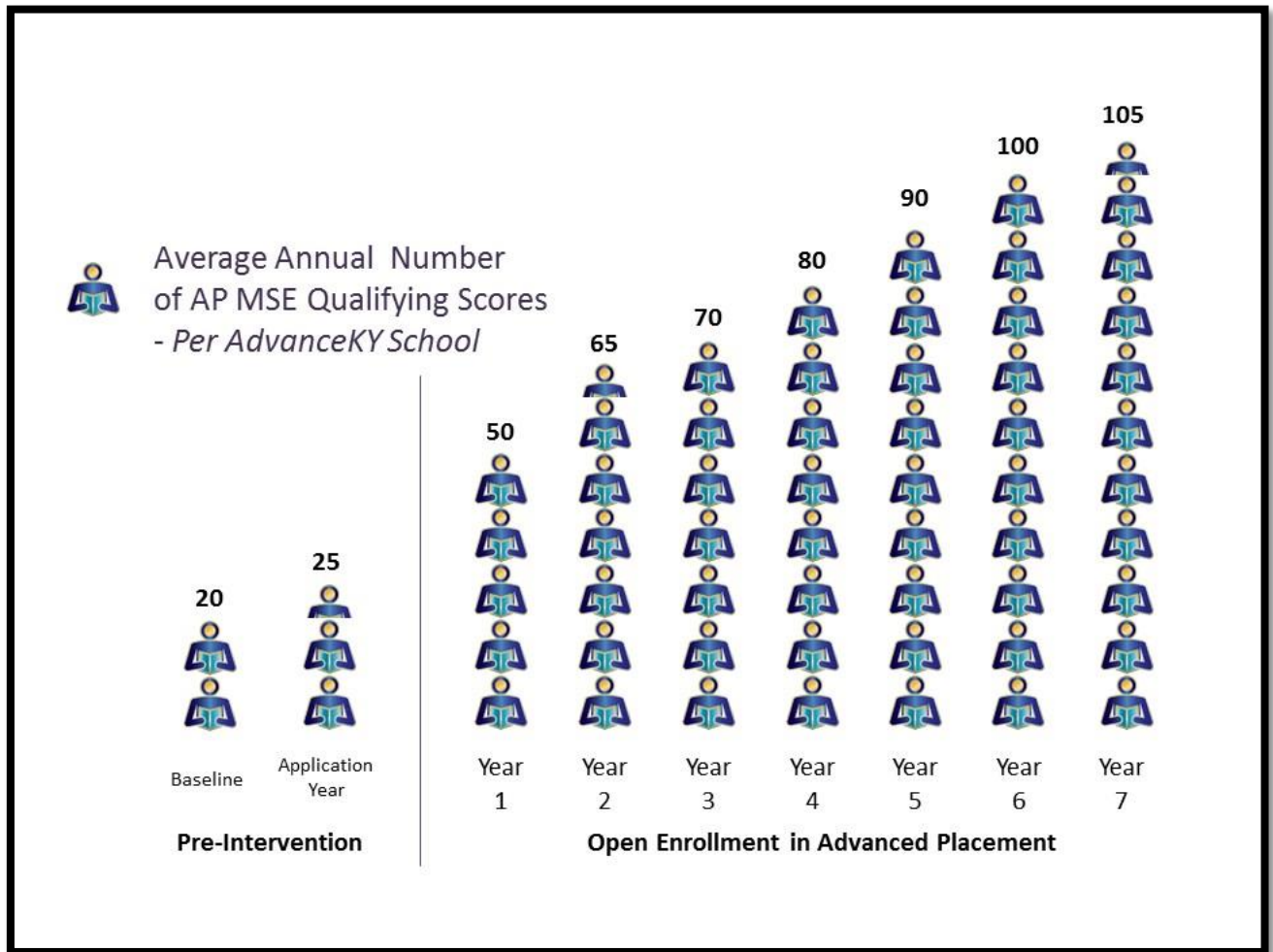
ACT Advantage: AdvanceKentucky students earned a significant 1.7-point advantage on the ACT compared to their peers in the class of 2012.

More Students College Ready and College Bound: More AdvanceKentucky students in the class of 2012 were prepared for and went to college, earning higher GPAs.

Average Annual AP Qualifying Scores Per School

¹ The next longitudinal review is underway to continue following these and other new graduating classes.

By Year 3, students increase by **250%** the average number of math, science and English Qualifying Scores (QS) earned above baseline, jumping to a staggering **400%** increase by Year 6.

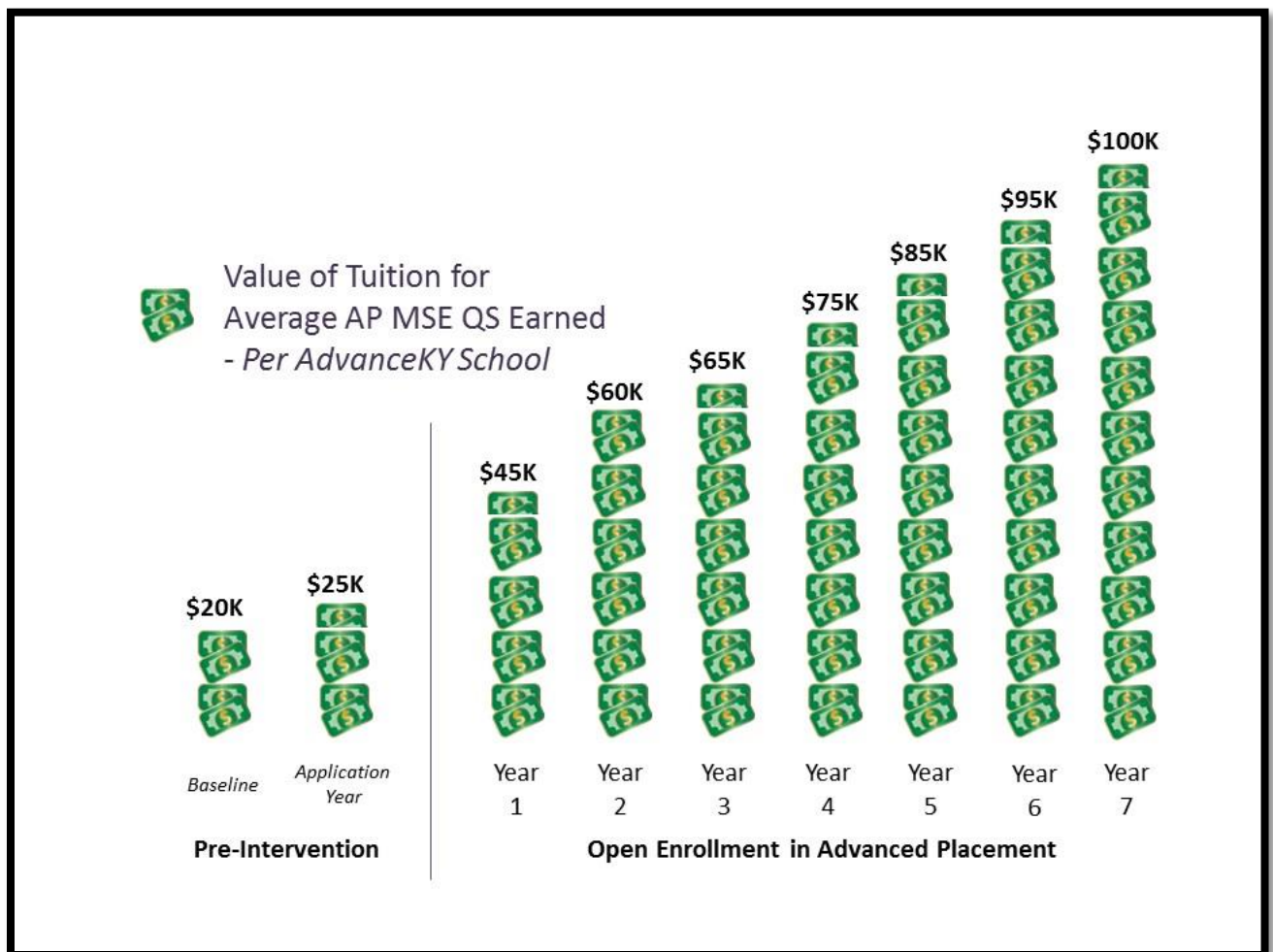




Return on Investment

The tuition value of these AP scores that qualify for college credit follows this same pattern of transformative growth. By Year 7 of open enrollment AdvanceKentucky high schools, on average, generate an annual value of over **\$100,000** in tuition per school.

By applying this value across more than 100 schools in AdvanceKentucky since 2008-09, students in these schools that sustain an open enrollment approach stand to earn AP qualifying scores in math, science and English equivalent to **\$10 million every year** (using the average tuition for regional universities).

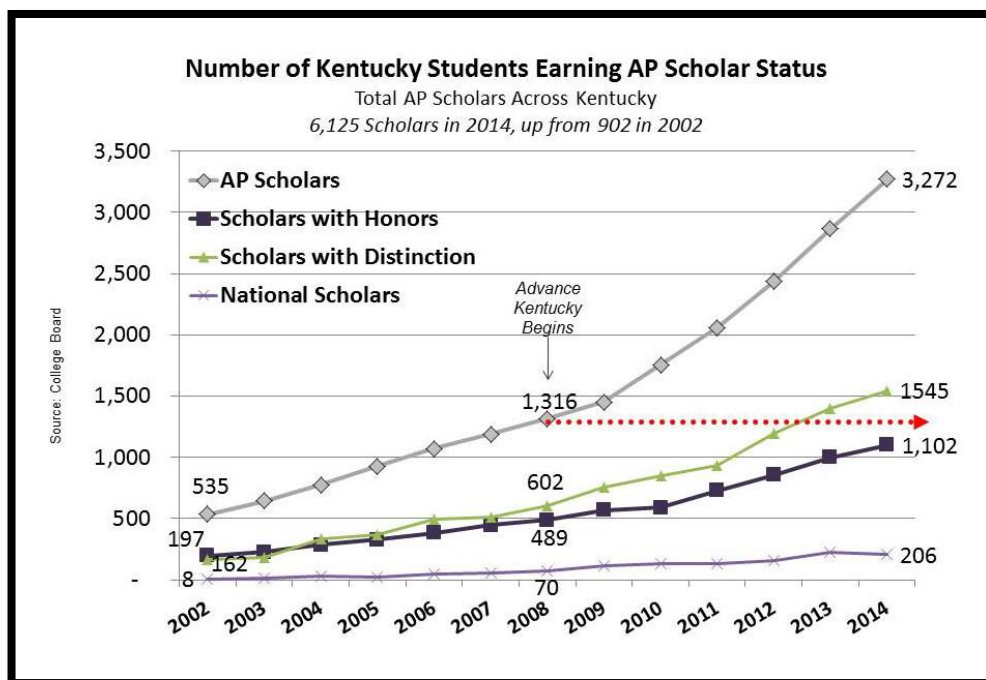
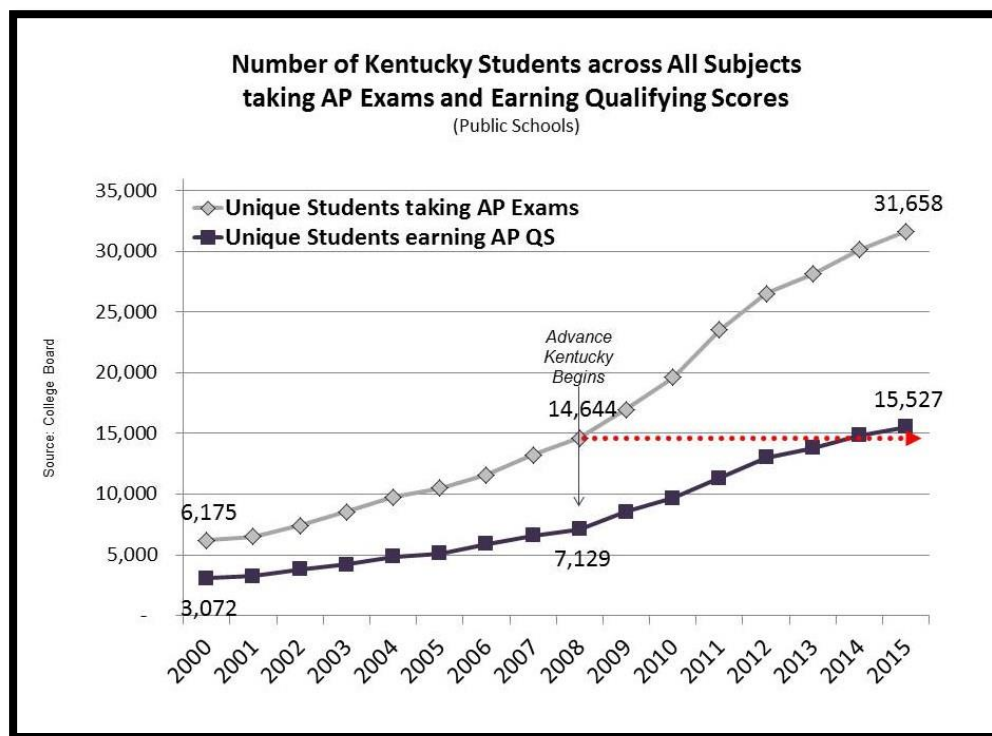


AP Participation and Performance



Kentucky public high school students' Advanced Placement (AP) participation and performance in *all* subjects continue to dramatically outpace all prior years.

AdvanceKentucky was initiated in 2008.



AP Scholars: students earning QS on **3** or more AP exams

AP Scholars with Honor: QS on **4** or more AP exams with average **3.25** QS on all AP exams

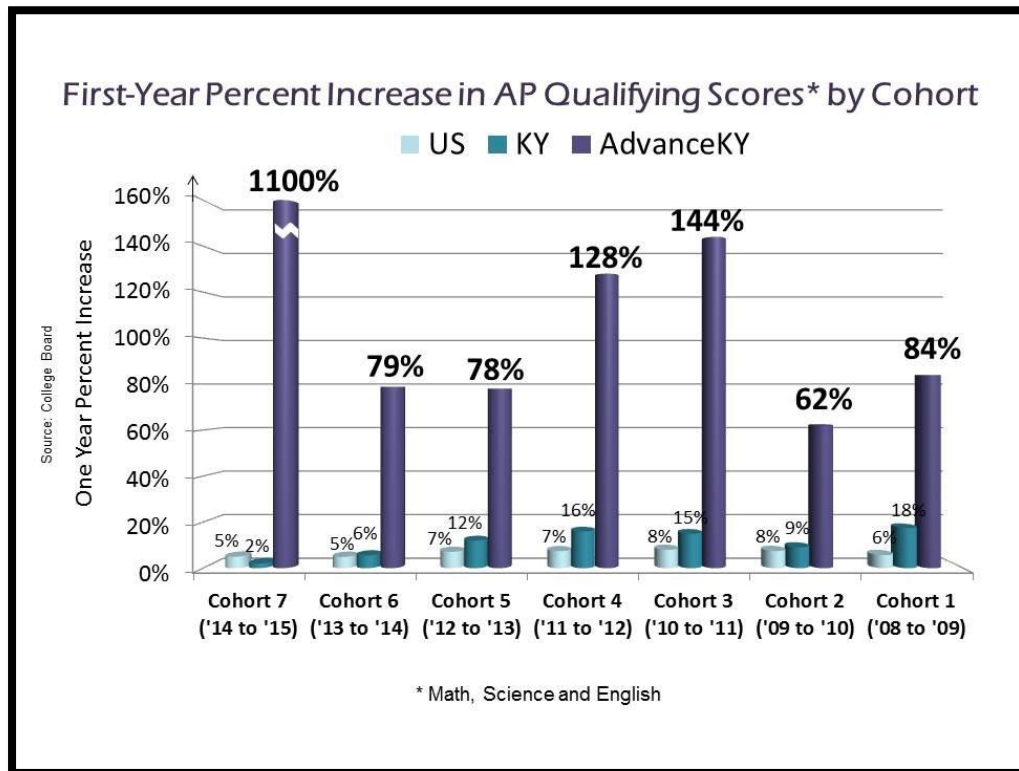
AP Scholars with Distinction: QS on **5** or more AP exams with average **3.5** QS on all AP exams

AP National Scholars: QS on **8** or more AP exams with average **4.0** QS on all AP exams.

First-Year Impact



AdvanceKentucky high schools continue to soar in the number of Advanced Placement qualifying scores they earn in mathematics, science and English. This starts with a transformational increase in the first year that each new cohort of additional schools begins participation. This chart displays this first-year impact among AdvanceKentucky schools compared to the increases in the same year for the U.S. and Kentucky statewide.

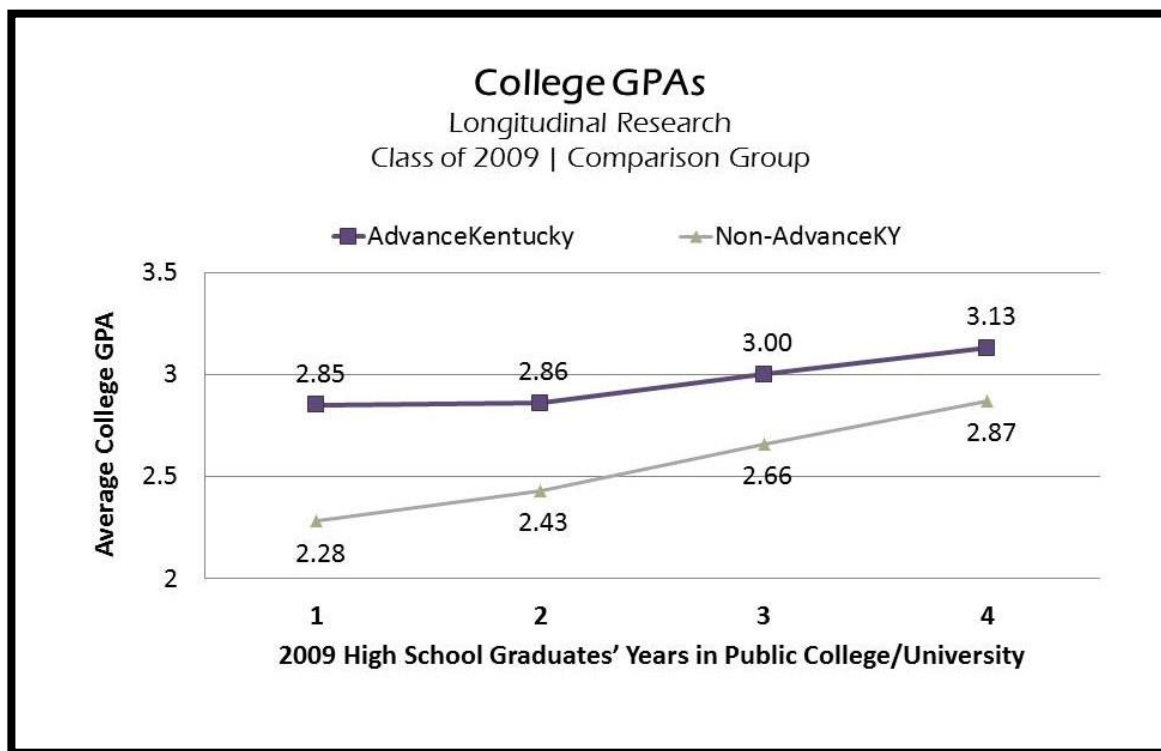


Under the open enrollment approach, AdvanceKentucky cohorts subsequently demonstrate continued annual increases in numbers of mathematics, science and English AP qualifying scores.

2

College Performance

AdvanceKentucky students among the class of 2009 earned higher GPAs each year in college.



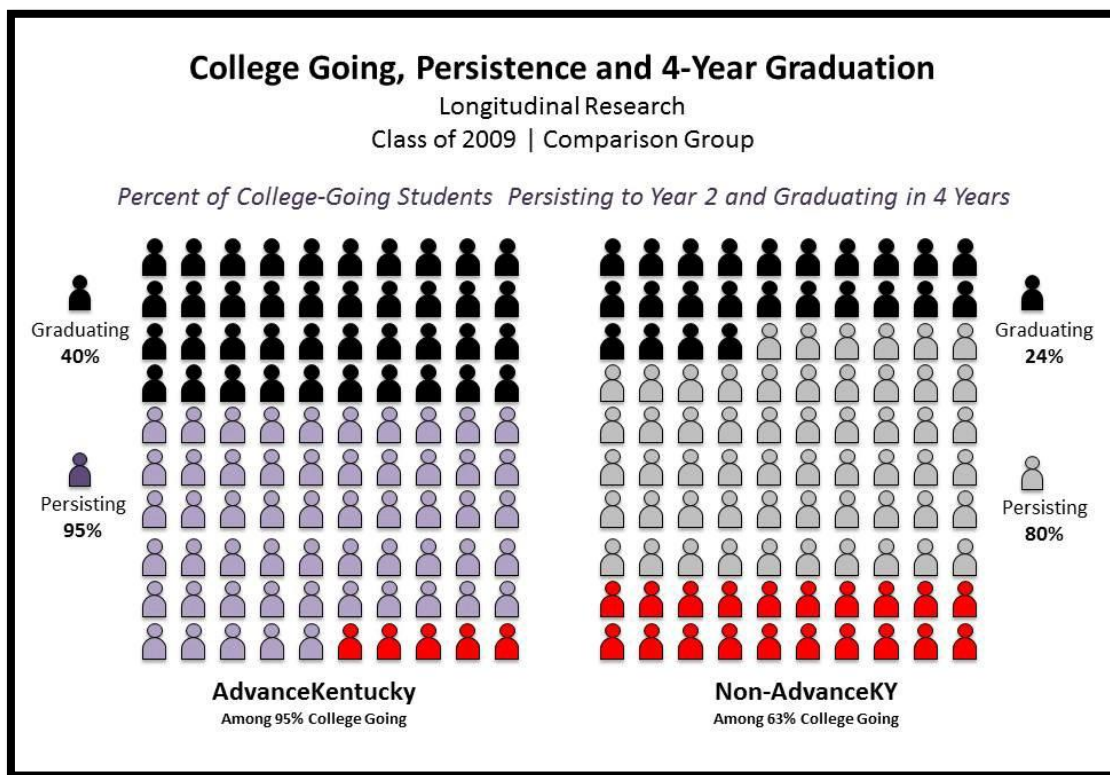
2

Independent research was conducted by the Kentucky Center for Education and Workforce Statistics (kcews.gov). This office defined Comparison Groups as all other, non-AdvanceKentucky students, among a given graduating class. More recently, KCEWS introduced comparisons of AdvanceKentucky students to a control group of students in a given graduating class who earned similar Explore scores in the 8th grade (i.e., within ± 1 standard deviation).

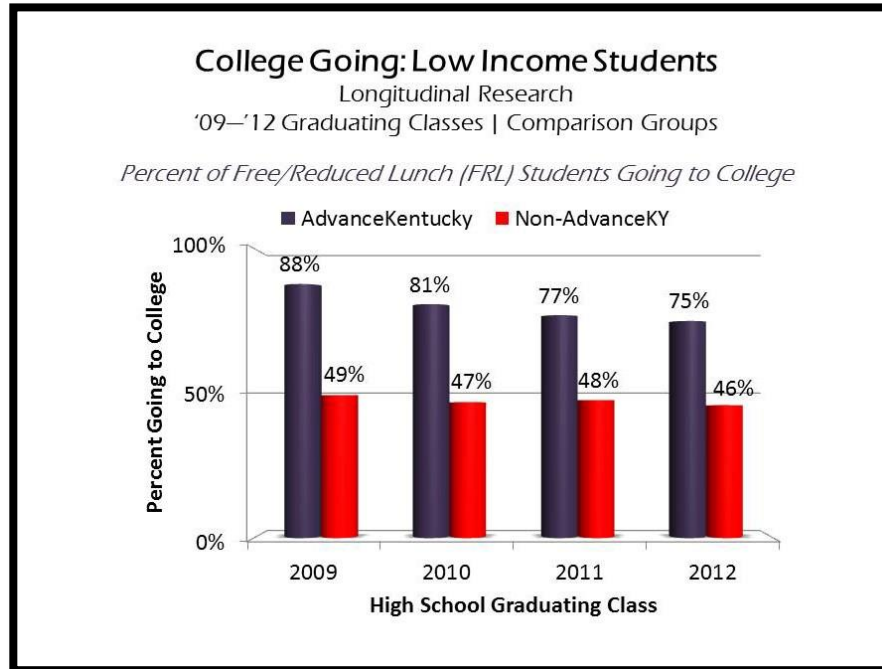
College Persistence and Graduation



AdvanceKentucky college-bound students exhibited higher persistence to the second year and graduate from college in four years at nearly twice the rate of their colleagues among the class of 2009.

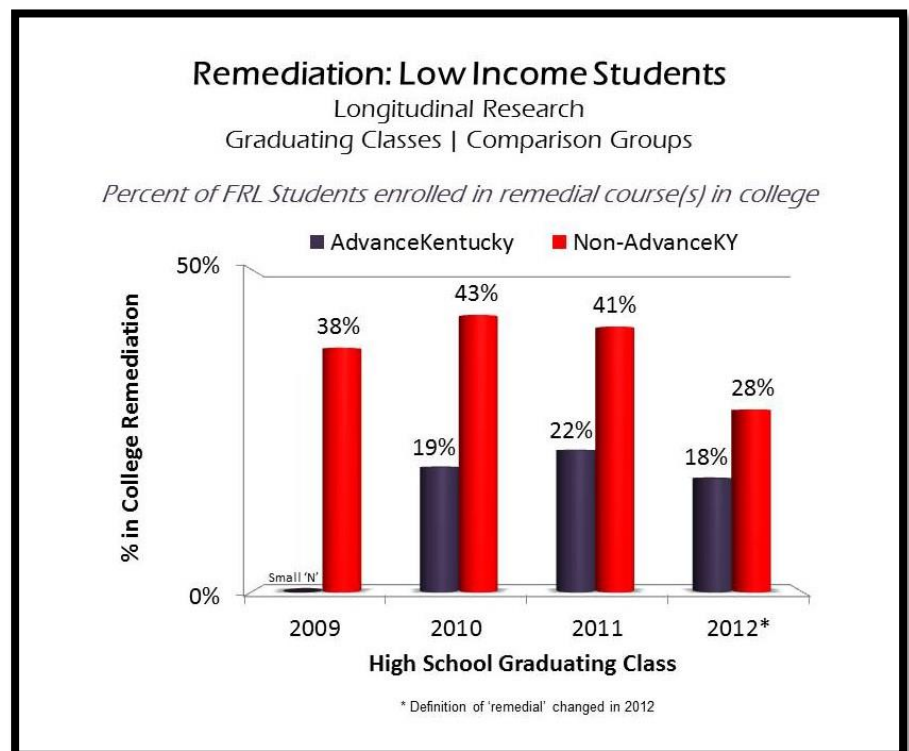


Low Income Students



Compared to their colleagues each year, significantly *more* AdvanceKentucky low income students went to college.

Compared to their colleagues each year, significantly *fewer* AdvanceKentucky low income students enrolled in one or more remedial classes in college.



Minority Students

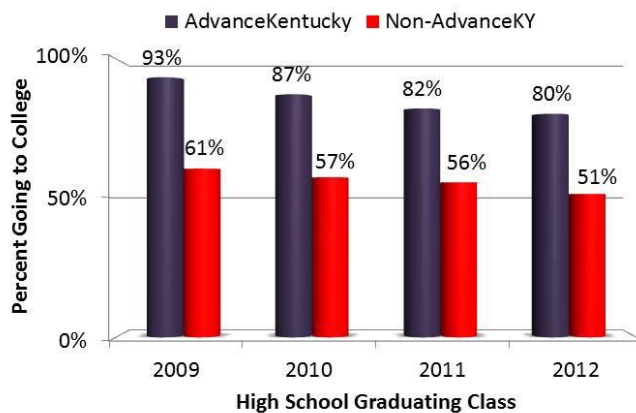
Compared to their colleagues each year, significantly *more* AdvanceKentucky African American and Hispanic students went to college (closing the gap with patterns very similar to their white colleagues).

College Going: Minority Students

Longitudinal Research

'09-'12 Graduating Classes | Comparison Groups

Percent of Minority students going to college

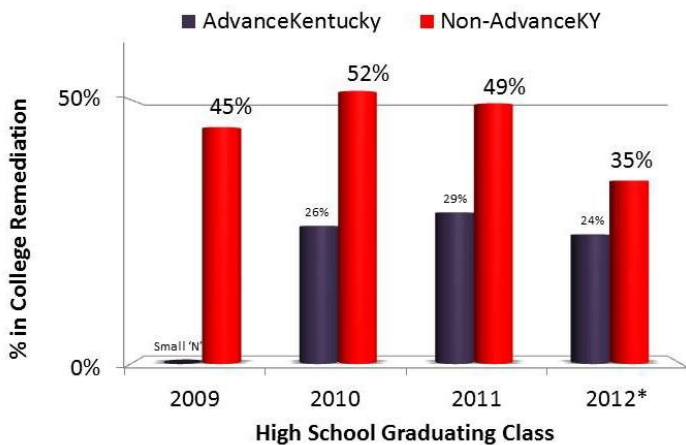


Remediation: Minority Students

Longitudinal Research

Graduating Classes | Comparison Groups

Percent of Minority students enrolled in remedial course(s) in college

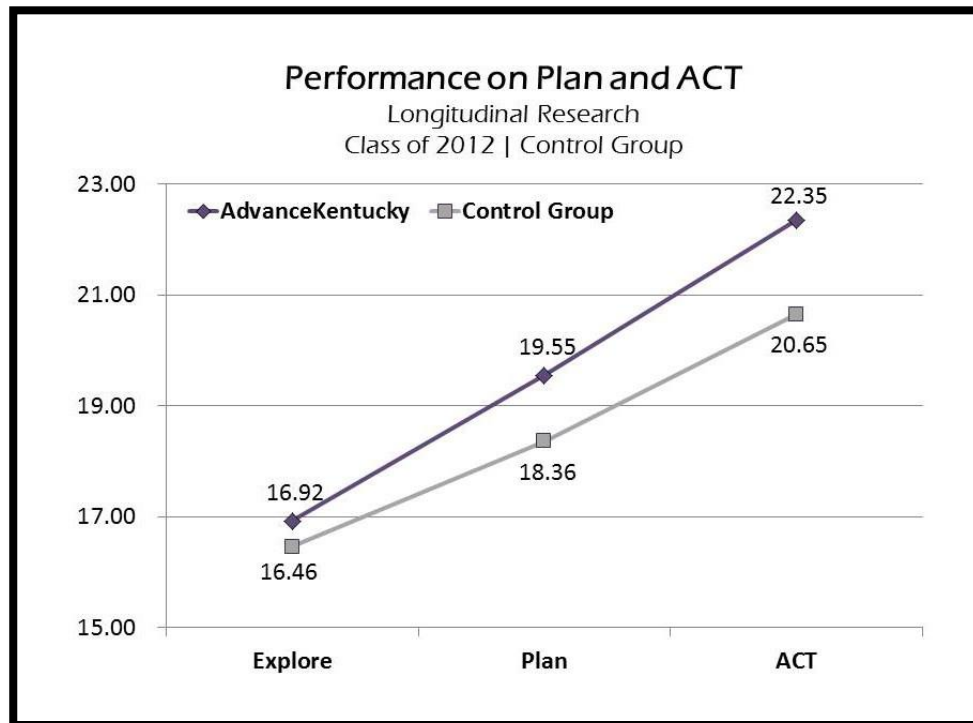


* Definition of 'remedial' changed in 2012.

Compared to their colleagues each year, significantly *fewer* AdvanceKentucky African American and Hispanic students enrolled in one or more remedial classes in college.



ACT and College/Career Readiness



Compared to their peers in the class of 2012, AdvanceKentucky students earned a 1.7-point advantage on the ACT, which is statistically significant, $p < .001$.

More AdvanceKentucky students were prepared for (+11%) and attended (+13%) college with higher GPAs in their first year in college compared to their peers in the class of 2012.

College Readiness, Participation, GPAs

Longitudinal Research
Class of 2012 | Control Group

Class of 2012	AdvanceKentucky	Control Group*
College/Career Ready	79%	68%
College Going	86%	73%
First-Year Median College GPA	2.72	2.52

* Control Group includes 2012 non-AdvanceKY high school graduates who earned within 1 standard deviation of the average Explore score earned by the AdvanceKentucky group



1	Barren Co.	2	Johnson Central	3	Southwestern	4	Owen Co.	6	Madison Central
1	Corbin	2	Madisonville N. Hopkins	3	Trigg Co.	4	Pikeville	6	Madison Southern
1	Henderson Co.	2	Montgomery Co.	3	Western Hills	4	Washington Co.	6	McCracken Co.
1	Lone Oak	2	Paintsville	4	Allen Co. Scottsville	5	Clinton Co.	6	North Bullitt
1	Marion Co.	2	Powell Co.	4	Apollo	5	Danville	6	Seneca
1	North Laurel	2	Warren Central	4	Bell Co.	5	Frankfort	6	Southern
1	Reidland	2	West Jessamine	4	Betsy Layne	5	Garrard Co.	7	Academy @ Shawnee
1	Scott Co.	3	Bourbon Co.	4	Bracken Co.	5	Lincoln Co.	7	East Carter
1	Shelby Co.	3	Carroll Co.	4	Campbell Co.	5	Logan Co.	7	Green Co.
1	South Laurel	3	Christian Co.	4	Daviess Co.	5	Moore	7	Lloyd
1	Warren East	3	Clay Co.	4	Glasgow	5	Murray	7	West Carter
2	Bellevue	3	Franklin Co.	4	Hancock Co.	5	North Hardin	8	Bardstown
2	Bowling Green	3	G.R. Clark	4	Jackson Co.	5	Owensboro	8	Bullitt East
2	Bryan Station	3	Harrison Co.	4	Jenkins	5	Russell	8	Doss
2	East Jessamine	3	Holmes	4	Knox Central	5	Russellville	8	Jeffersontown
2	Franklin-Simpson	3	Hopkinsville	4	Lynn Camp	5	South Floyd	8	Pleasure Ridge Park
2	Graves Co.	3	Martha L. Collins	4	Marshall Co.	5	Valley	8	Somerset
2	Heath	3	Mercer Co.	4	Mayfield	5	Waggener	8	Spencer Co.
2	Highlands	3	Perry Co. Central	4	McLean Co.	6	Bullitt Central	8	Union Co.
								8	Webster Co.