Stated Briefly

Participation and pass rates for college preparatory transition courses in Kentucky

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To improve students' college and career readiness, Kentucky offers college preparatory transition courses (voluntary math and reading courses) to all grade 12 students. These courses are targeted to students scoring just below the state's college readiness benchmarks on the ACT in grade 11. The study found that:

- Participation was nearly four times higher in math transition courses (19 percent) than in reading transition courses (5 percent).
- More than half of students who participated in a math transition course were from the targeted group (56 percent), compared with about a third of students who participated in a reading transition course (30 percent).
- Overall pass rates were 93 percent in math and 97 percent in reading.
- Participation was at least three times higher in nonurban schools than in urban schools, and the pass rate for math transition courses in urban schools was nearly 20 percentage points below the overall pass rate.

This brief summarizes the findings of Mokher, C. (2014). *Participation and pass rates for college preparatory transition courses in Kentucky* (REL 2014–009). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Appalachia. That report is available at http://ies.ed.gov/ncee/edlabs/projects/project.asp?ProjectID=315.

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Why this study?

Many students graduate from high school underprepared for the rigors of college coursework (Bailey, 2009). In 2007/08 Kentucky ranked 47th in the country in bachelor's degree attainment, and 41 percent of first-time freshmen in postsecondary institutions needed remediation in one or more subjects (Kentucky Department of Education, 2010). This, in part, compelled the 2009 Kentucky legislature to declare that the state's education system was in a state of emergency ("An Act," 2009).

In response to growing concerns about college readiness, the Kentucky legislature revised the state's assessment and accountability system to increase the number of students who are ready for college when they graduate. The Kentucky Department of Education and the Kentucky Council on Postsecondary Education responded by redefining college and career readiness, articulating objectives and outcomes to measure progress, and establishing pathways to achieve those objectives.

This study focuses on one of these pathways: college preparatory transition courses in math and reading targeted to grade 12 students who tested just below state benchmarks on the ACT assessment administered in grade 11.

Starting in 2010/11, all Kentucky public high schools were required to offer at least one intervention for students whose grade 11 ACT scores put them in the approaching state benchmarks category (box 1). The Kentucky Department of Education recommended that students scoring 1–3 points below the state benchmarks receive a college readiness intervention in grade 12. Kentucky developed its own curricula for college preparatory transition courses in math and reading (see box 2 for a description of college preparatory transition courses in Kentucky).

Transition courses are broadly defined as "courses, learning modules, or online tutorials developed jointly by secondary and postsecondary faculty and offered no later than 12th grade to students at risk of being placed into remedial math or English in college" (Barnett, Fay, Bork, & Trimble, 2013, p. 2). Transition course programs have been implemented through initiatives in eight states and by schools using locally developed approaches without state oversight in 21 other states. Programs are being developed at the state level in nine additional states (Barnett et al., 2013). Kentucky is one of the states in which school districts use transition courses to prepare students to enroll in college credit–conferring courses and thus to increase their likelihood of success in college.

Box 1. Kentucky college readiness benchmarks

Since 2008 Kentucky has administered the ACT assessment to all grade 11 students to measure their college readiness. In 2010 the Kentucky Department of Education established benchmarks for college readiness in math and reading at three ACT score levels:

- *Meeting state benchmarks:* scoring 19 or higher on the ACT math assessment and 20 or higher on the ACT reading assessment.
- *Approaching state benchmarks:* scoring 16–18 on math and 17–19 on reading.
- *Performing below state benchmarks:* scoring 15 or lower on math and 16 or lower on reading.

The benchmarks are independent for math and reading (for example, a student can be meeting benchmarks in math while performing below benchmarks in reading).

Box 2. College preparatory transition courses in Kentucky

College preparatory transition courses in Kentucky have the following characteristics:

Content. Transition course content must be aligned with the ACT, the Common Core State Standards, and Kentucky's college and career readiness standards (ACT, 2010; Kentucky Department of Education, 2010).

Course credit. Transition courses in math can count toward high school graduation requirements, and transition courses in reading can count toward elective credit on students' transcripts (Southern Regional Education Board, 2011).

Curriculum. Schools can develop their own transition courses or use courses developed by the state or another provider. College preparatory transition courses have been developed by high school teachers, by faculty at community and four-year colleges and universities, and by teams of educators working through the Kentucky Department of Education's Office of Next Generation Learners (Southern Regional Education Board, 2011). The state curricula were made available to schools in 2009/10 for math and 2010/11 for reading.

Format. Although all college preparatory transition courses must be taught by a certified teacher, Kentucky allows wide variation in format. Each school can choose its delivery method (face-to-face, online, or hybrid). Schools can also choose whether to offer courses during or outside the school day, or both.

Results from this study will help Kentucky policymakers understand the statewide availability and use of these transition courses—a key component of Kentucky's college readiness agenda. Analyses of pass rates in transition courses offer one metric for assessing the college readiness of Kentucky students.

This report is a companion to a larger one, *Participation and pass rates for college preparatory transition courses in Kentucky* (Mokher, 2014), that analyzes participation and pass rates for member school districts of the Southeast/South-Central Educational Cooperative (a research partner with the Regional Educational Laboratory Appalachia) and a matched comparison group of districts. This report summarizes participation and pass rates in college preparatory transition courses in math and reading for all Kentucky students in 2011/12 (see box 3 for a description of data and methods).

Box 3. Data and methods

The Kentucky Department of Education's Division of Enterprise Data provided de-identified data for 2011/12 on school participation, demographics, and course records for all grade 12 students statewide. The department's Office of Assessment and Accountability provided de-identified grade 11 ACT scores for the same students.

The study population consisted of Kentucky public high school students who were in grade 12 for the first time during the 2011/12 school year (44,296 students). Students who repeated grade 12 were omitted because they might have participated in a college preparatory transition course the year before. Students whose first participation record for grade 12 occurred after October 1, 2011, were also omitted. Students missing ACT scores, course records in math or English language arts, or data on student or school characteristics were excluded.

The analytic sample comprised 33,928 students (77 percent of the grade 12 population).

What the study examined

Three questions about Kentucky students in grade 12 in 2011/12 guided the study. Each question looks at students in the three state benchmark categories for math and reading: those meeting the benchmarks in grade 11, those approaching the benchmarks, and those performing below the benchmarks. For each question the analysis separates students into these three categories—to better understand the types of students who participated in college preparatory transition courses and how their performance varied by their level of college readiness (as measured by ACT scores).

- What is the percentage of grade 12 students in the three state benchmark categories?
- What are the participation rates in full-semester college preparatory transition courses in math and reading for grade 12 students in the three state benchmark categories?
- Among grade 12 students who participate in full-semester college preparatory transition courses in math and reading, what is the pass rate (percentage of students earning credit for the course) in 2011/12 for students in the three state benchmark categories?

What the study found

The percentage of students targeted for an intervention (those in the approaching benchmarks category) was nearly twice as high in math (38 percent) as it was in reading (21 percent). The percentage of students performing below benchmarks was the reverse, with nearly twice as many students performing below reading benchmarks (36 percent) as math benchmarks (21 percent). The percentages of students meeting benchmarks in math (41 percent) and reading (44 percent) were similar.

Participation in college preparatory transition courses was low across all three benchmark categories, especially in reading. Participation of students targeted for intervention (those in the approaching benchmarks category) was 28 percent in math and 8 percent in reading. These targeted students constituted 56 percent of students who participated in college preparatory transition courses in math and 30 percent of students in reading.

Nearly all students who participated in a transition course passed the course (93 percent for math and 97 percent for reading)—including students who had scored at the performing below benchmarks level (92 percent for math and 96 percent for reading).

The results are disaggregated by student and school characteristics to identify any gaps in performance.

A larger percentage of students were in the approaching benchmarks category in math than in reading

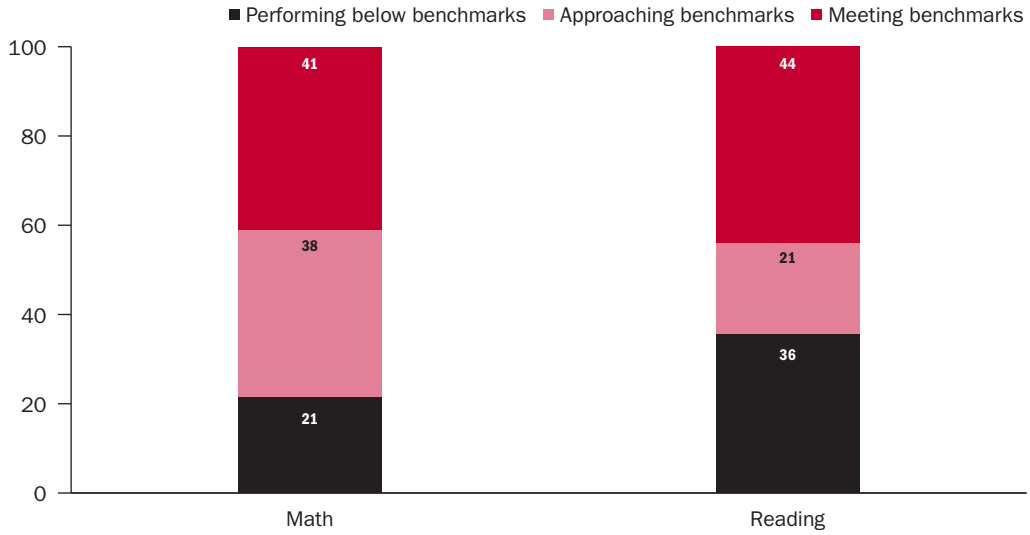
There was little difference between the percentage of students in the meeting benchmarks category in math (41 percent) and in reading (44 percent; figure 1); however, there were differences for the other two readiness categories. More students were in the approaching benchmarks category in math (38 percent) than in reading (21 percent). The opposite was true for students in the performing below benchmarks category: 21 percent of students in math and 36 percent of students in reading.

Participation in transition courses was higher in math than in reading

The percentage of students who participated in college preparatory transition courses was nearly four times higher in math than in reading. Of all grade 12 students, 19 percent participated in a math college preparatory transition course, and 5 percent participated in a reading course.

Figure 1. A higher percentage of students were in the approaching benchmarks category in math than in reading, 2011/12

Percent of grade 12 students, by ACT benchmark category



Note: Percentages may not sum to 100 because of rounding. Tests of statistical significance were not conducted because the analyses include the entire population of students with nonmissing data.

Source: Authors' calculations based on data from the Kentucky Department of Education.

One reason for the higher participation rate in math may be that the percentage of students in the approaching benchmarks category was nearly twice as high in math (38 percent) as in reading (21 percent; see figure 1). The higher percentage of students targeted for a math intervention may have caused schools to put additional resources into offering math interventions instead of reading interventions. Another possible reason is that math transition courses count toward graduation requirements, while reading courses are electives. Additionally, the curricula for college preparatory transition courses were made available to schools in 2009/10 for math and in 2010/11 for reading, allowing schools one additional year to create math courses.

In math transition courses the highest participation rate was among students in the approaching benchmarks category (28 percent), though the rate among students in the performing below benchmarks category (27 percent) was nearly the same (figure 2).

In reading transition courses the highest participation rate was among students in the performing below benchmarks category (9 percent), though the rate was nearly the same among students in the approaching benchmarks category (8 percent; see figure 2).

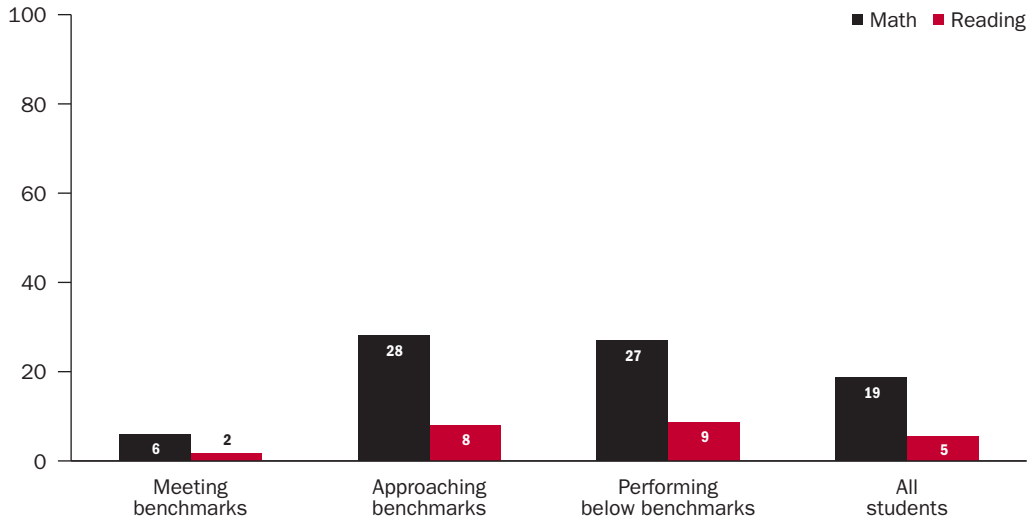
Students in the performing below benchmarks category account for a third of math and half of reading transition course participation

Kentucky schools do not limit participation in college preparatory transition courses to students from the targeted ACT assessment score category. Participation patterns show that these courses attracted students across all three benchmark categories in both math and reading.

Students in the approaching benchmarks category accounted for more than half of students who participated in math transition courses (56 percent), and students in the performing below benchmarks category accounted for approximately a third (31 percent). The distribution was nearly reversed for reading transition

Figure 2. The percentage of students in the approaching benchmarks category who participated in college preparatory transition courses was more than three times higher in math than in reading, 2011/12

Percent of grade 12 students who participated in a college preparatory transition course, by subject



Note: Tests of statistical significance were not conducted because the analyses include the entire population of students with nonmissing data.

Source: Authors' calculations based on data from the Kentucky Department of Education.

courses: Students in the performing below benchmarks category accounted for 57 percent, and students in the approaching benchmarks category accounted for 30 percent (figure 3).

Participation in college preparatory transition courses is low in urban areas

Using the school locale variable in the Common Core of Data (U.S. Department of Education, 2012), the study team identified schools as urban, suburban, town, or rural and examined whether there were differences in participation patterns by locale.

In both math and reading (and for all three benchmark categories), the percentages of students who participated in college preparatory transition courses were lowest in urban schools (figure 4). The percentages were more than three times higher in nonurban schools.

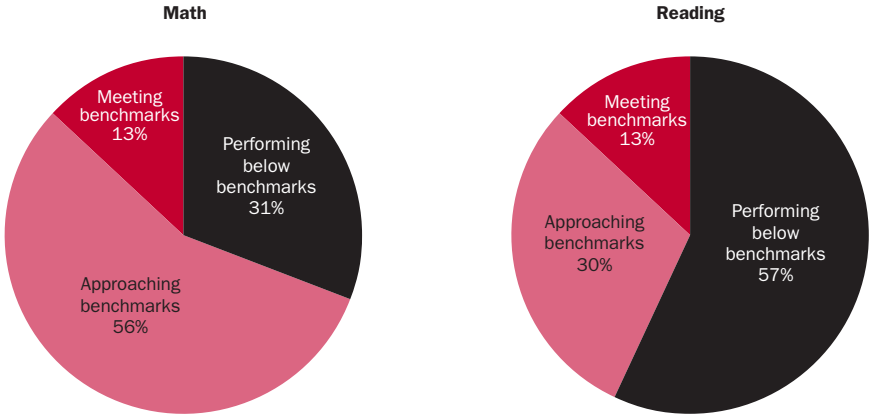
Most students who participated in a college transition course passed

Because curricula and grading criteria for college preparatory transition courses vary across districts, course outcomes (such as grades) are not comparable and may or may not indicate college readiness. Still, overall pass rates for transition courses illustrate the degree to which students demonstrate proficiency in course material.

Nearly all grade 12 students who participated in a transition course passed it. The pass rate for students in every state benchmark category was above 90 percent (figure 5). Statewide, the pass rate was 93 percent for math transition courses and 97 percent for reading transition courses. The high pass rate for students performing below benchmarks suggests that students who participated in transition courses were capable of handling the course material.

Figure 3. Participation patterns show that college preparatory transition courses attract students across all three benchmark categories in both math and reading

Percent of grade 12 participants in a college preparatory transition course, by ACT benchmark category



Note: Tests of statistical significance were not conducted because the analyses include the entire population of students with nonmissing data.

Source: Authors' calculations based on data from the Kentucky Department of Education.

Figure 4. Participation rates in college preparatory transition courses were lowest in urban schools, 2011/12

Percent of grade 12 students who participated in a college preparatory transition course, by subject and school locale

Note: Tests of statistical significance were not conducted because the analyses include the entire population of students with nonmissing data.

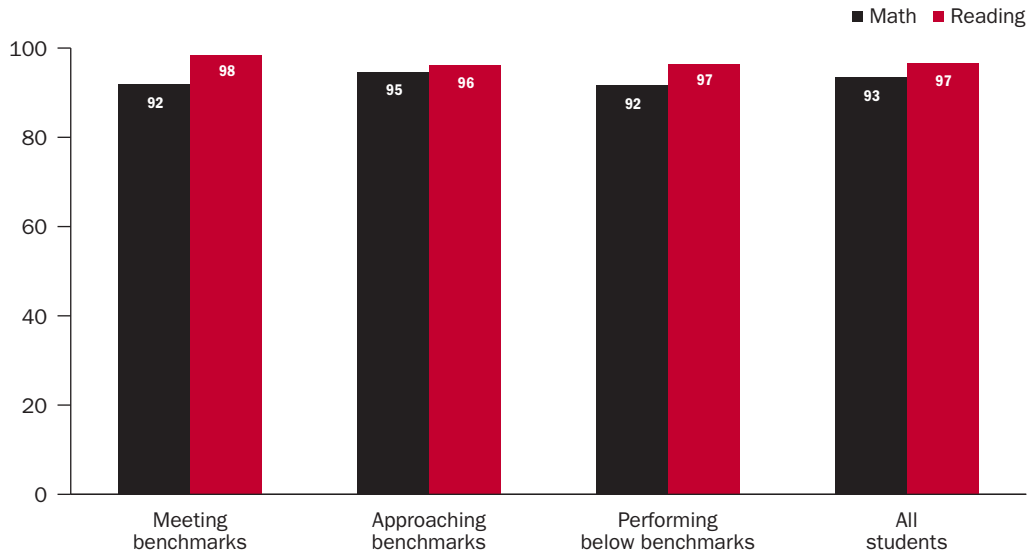
Source: Authors' calculations based on data from the Kentucky Department of Education.

Pass rates were lowest for students participating in math transition courses at urban schools

The pass rates for students who participated in transition courses were above 90 percent in all locales, except for math transition courses in urban schools (74 percent; figure 6). This pass rate was more than 20 percentage points lower than the next-lowest math transition course pass rate (95 percent, for rural schools). In contrast, pass rates in reading transition courses were comparable for students in all locales.

Figure 5. Nearly all students who participated in a college preparatory transition course passed

Percent of grade 12 students who participated in a college preparatory transition course and passed the course, by subject and benchmark category

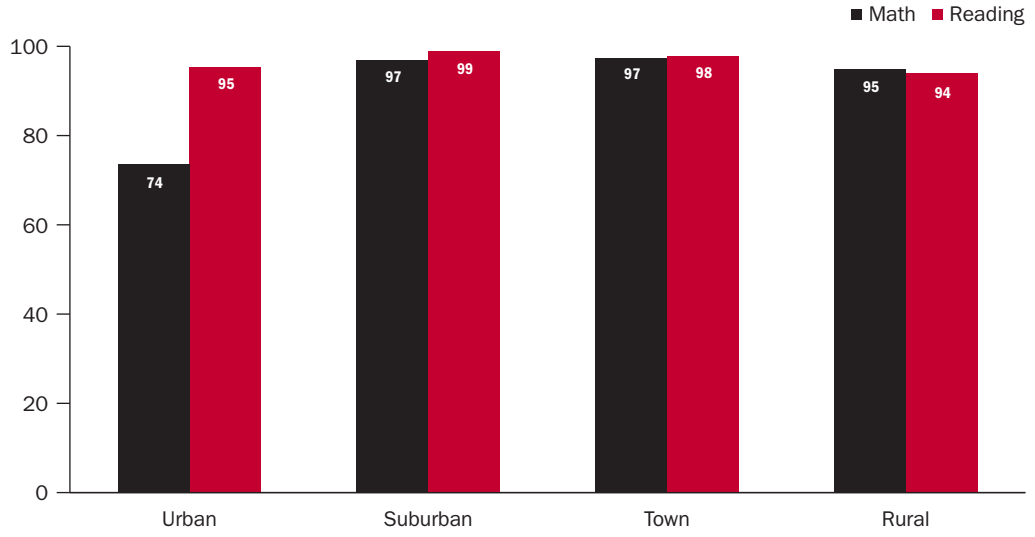


Note: Tests of statistical significance were not conducted because the analyses include the entire population of students with nonmissing data.

Source: Authors' calculations based on data from the Kentucky Department of Education.

Figure 6. Pass rates were lowest for students in math transition courses in urban schools

Percent of grade 12 students who participated in a college preparatory transition course and passed the course, by subject and school locale



Note: Tests of statistical significance were not conducted because the analyses include the entire population of students with nonmissing data.

Source: Authors' calculations based on data from the Kentucky Department of Education.

Implications of the study findings

The findings in this report suggest several opportunities for future research on college preparatory transition courses in Kentucky, including:

- Exploring the reasons for lower participation rates in transition courses among students in urban schools and the substantially lower pass rates in math transition courses among students in urban schools.
- Examining the relationships between passing a transition course and student outcomes, such as grade 12 ACT assessment score, enrollment in remedial courses in college, and obtaining a postsecondary certificate or diploma.
- Exploring whether pass rates in transition courses could remain high if the distribution of students participating in transition courses by benchmark category changes.

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