KENTUCKY COUNCIL ON
POSTSECONDARY EDUCATION

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Thomas D. Layzell
President

MEMORANDUM

TO: Developmental Education Task Force Members

FROM: James L. Applegate
Vice President for Academic Affairs

RE: Reference Materials for August 8 Task Force Meeting

DATE: August 1, 2006

Thank you for your commitment to the Developmental Education Task Force. I look forward to working with you as we consider state level policies and recommendations to improve the postsecondary success of Kentucky's underprepared students. We look forward to seeing you August 8, 10-Noon EDT, at the Council on Postsecondary Education office, 1024 Capital Center Drive, Suite 320, Meeting Room A, Frankfort. Directions are available at: http://cpe.ky.gov/about/directions.htm

For your calendars we ask that you hold the following dates for upcoming task force meetings. The draft work plan that includes agenda topics for each meeting is included in this packet and will be discussed at the first meeting. All meetings will be held 10 a.m. – Noon ET in Meeting Room A at the Council office.

- Wednesday, September 13, 2006
- Tuesday, October 10, 2006
- Tuesday, November 14, 2006 (tentative)

Attached are the following materials for the Tuesday, August 8, meeting. These materials are also available on the Council's Website at: http://cpe.ky.gov/committees/develop_ed/

Page

- August 8 Meeting Agenda 1
- Developmental Education Task Force Membership 2
- Developmental Education Task Force Work Plan (draft for discussion) 3
- *Underprepared Students in Kentucky: A First Look at the 2001 Mandatory Placement Report* (November 2005)
  Note: The Executive Summary is included at the beginning of the full report 4
- May 22, 2006, Quality and Accountability Policy Group Agenda Item:
  Continuing the Progress in Developmental Education
  (includes task force charge) 39
- *Many Advisers, One Message* at
  http://insidehighered.com/news/2006/07/27/advising *46*

Again, thanks for your commitment to the task force.

JLA:jaw

Attachments

AGENDA

Council on Postsecondary Education

Developmental Education Task Force

August 8, 2006
10 a.m. – Noon EDT
CPE Meeting Room A
(Third Floor)
Council on Postsecondary Education
Frankfort, Kentucky

1. Roll Call

2. Task Force Charge

3. Status of Underprepared Students

4. Kentucky's Student Development Resources

5. Task Force Member Perspectives

6. Plan of Work and Future Meeting Dates
   (All meetings will be 10:00 a.m. – Noon ET in Meeting Room A, CPE, Frankfort)

   A. September 13

   B. October 10

   C. November 14 (tentative)

Task Force meeting materials are available at http://cpe.ky.gov/committees/

Membership
Kentucky Developmental Education Task Force

John Turner, Task Force Chair,
Kentucky Council on Postsecondary Education Vice Chair

The Honorable **Jack Westwood**
State Senator

The Honorable **Harry Moberly, Jr.**
State Representative

Virginia Fox, Secretary
Kentucky Education Cabinet

Thomas Layzell, President
Kentucky Council on Postsecondary Education

Sarah Hawker, Vice President
Kentucky Adult Education

Cheryl Karp, Member
Prichard Committee for Academic Excellence

Gene Wilhoit, Commissioner
Kentucky Department of Education

Karen Sue Cain, President
Kentucky Association of Developmental Education

Gary Cox, President
Association of Independent Kentucky Colleges and Universities

Michael McCall, President
Kentucky Community and Technical College System

Lucian Yates, III, Chair, School of Education
Kentucky State University

Wayne Andrews, President
Morehead State University

Kern Alexander, Interim President
Murray State University

James Votruba, President
Northern Kentucky University

Lee Todd, Jr., President
University of Kentucky

James Ramsey, President
University of Louisville

Sherry Reid, Dean, Bowling Green Community College
Western Kentucky University

Developmental Education Task Force
Work Plan

(Draft for Discussion Purposes)

Tuesday, August 8

- Review the Charge of the Task Force
- Status of Kentucky's Underprepared Students: First-year Students 2002
- Kentucky's Student Development Resources
- Member Perspectives on Kentucky's Developmental Education Issues
- Review Draft Plan of Work and Meeting Dates

Wednesday, September 13

- Review and Recommendations of State Policy for Developmental Student Success
  Dr. Hunter Boylan, Executive Director
  National Center for Developmental Education
- Kentucky's Adult Education Resources
- Member Perspectives on Kentucky's Developmental Education Issues

Tuesday, October 10

- Status of Kentucky's Underprepared Students: First-year Students 2004
- Review Draft Framework for Task Force Report

Tuesday, November 14 (tentative date)

- Review Draft Report Recommendations

Underprepared Students in Kentucky:

A First Look at the 2001 Mandatory Placement Policy

November, 2005

Heidi Hiemstra, Ph.D.
Senior Associate, Research and Policy Analysis

http://cpe.ky.gov

Underprepared Students in Kentucky:
A First Look at the 2001 Mandatory Placement Policy

Kentucky Council on Postsecondary Education
November 2005

Table of Contents Page

Executive Summary 6

Full Report

Kentucky's Mandatory Placement Policy 9
Data and Methodology 10
Underprepared and Prepared Students, College Entrants vs. Recent High School Graduates 10
Preparation Levels of Kentucky's First-year Students in 2002 11
Preparation Levels in Math, English, and Reading 12
Depth of Remedial Needs 13
Preparation Levels by Demographic Characteristics 14
Preparation Levels of Recent Graduates of Kentucky High Schools 16
Maps of Preparation Levels by County of Origin 20
Placement Exams, Students Placing Out of Remediation and Students Pursuing Alternate Forms of Remediation 26
Were Underprepared Students Retained? 28
Did Underprepared Students Take Remedial Courses? 30
How Do Preparation Levels and Remediation Affect Student Outcomes? 36
Campus Practices and Programs 37
Conclusions 38

Underprepared Students in Kentucky: A First Look at the 2001 Mandatory Placement Policy

EXECUTIVE SUMMARY

Kentucky Council on Postsecondary Education
November, 2005

In fall 2001, Kentucky instituted a placement policy mandating that all students entering undergraduate programs at public institutions who receive a score of 17 or below on ACT subject exams in math, English or reading be placed in remedial coursework or receive supplemental help in those subjects. This study examines the incoming class from fall 2002 and follows them through their first two years of postsecondary study, examining their remedial needs, their remedial course-taking, and their retention to the second year.

The data used in this report are administrative data submitted as student-unit records by the public postsecondary institutions to the Council's Comprehensive Database during the 2002-03 and 2003-04 academic years. The report is based on descriptive statistics about the 26,646 students who entered Kentucky's public two and four-year institutions in the fall of 2002 as full or part-time students seeking degrees or other credentials, and for whom CPE received the ACT, SAT or on-campus placement exam scores needed to classify their preparation level.

How underprepared for postsecondary study was Kentucky's college entry cohort of 2002?

This question helps gauge the degree of remedial services that postsecondary institutions need to provide for their students. The number of entering students needing remediation is also seen as a measure of the quality of Kentucky's P-12 education system, although this is not quite true. An incoming college class includes students who graduated from high schools in other states, earned GEDs, or were adult students who graduated from Kentucky high schools before recent educational reforms. To help answer this important policy question, Figure A above presents the preparation levels of the entire

Figure A. Students Entering College Underprepared in Fall 2002 (Scoring 17 and below in ACT subject exams)

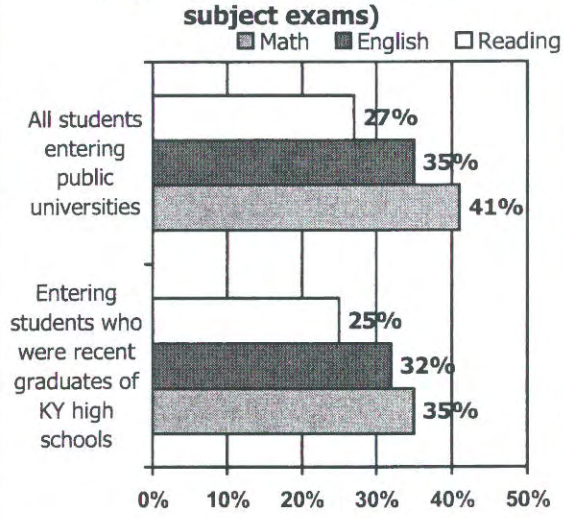
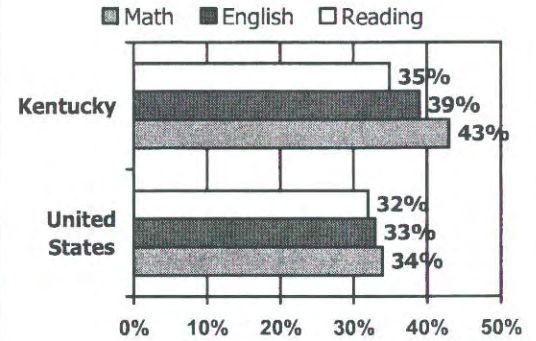


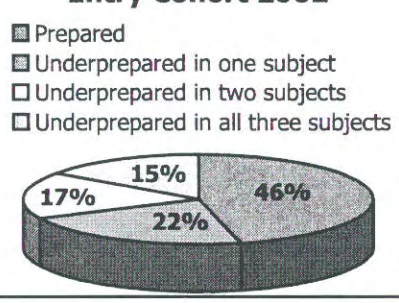
Figure B. High School ACT Takers Scoring 17 and Below on ACT Subject Exams in 2002



fall 2002 entry cohort and of the subset who graduated from Kentucky high schools in 2001 or 2002. These recent high school graduates make up 63 percent of the total entry cohort. National data is also presented for comparison in Figure B.

Overall, a slim majority of 54 percent of students who entered certificate and degree programs at Kentucky's public institutions of higher education in fall 2002 were under-prepared for college-level study in at least one subject. Many of these under-prepared students were underprepared in more than one subject as can be seen below.

Figure C. Depth of Remedial Needs, Entire Public College Entry Cohort 2002



There was wide variation in preparation level among the institutions due to their differing missions and student selectivity, ranging from 15 percent at UK to 85 percent at KSU. Demographically, non-traditional students and students from some racial-ethnic minority groups were much less well prepared for college-level study than their peers (see table 4 in the full report for details).

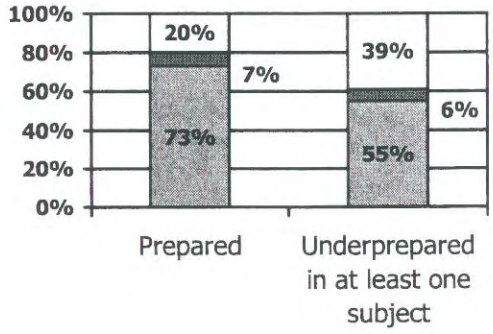
How underprepared were recent graduates of Kentucky high schools?

Recent graduates of Kentucky high schools were slightly better prepared for college than was the entire entry cohort in 2002. Overall, slightly less than half (48 percent) were underprepared in at least one subject, and 29 percent were underprepared in two or three subjects, compared to 32 percent in the college entry cohort as whole. Looking at Figure B, college entrants who were recent graduates of Kentucky high schools compared favorably to ACT takers nationally, although ACT, Inc. counsels against making this kind of comparison given the wide demographic differences between states.

Were underprepared students retained?

Students who came to college underprepared were less likely to return for their second year. Systemwide, nearly three-quarters of prepared students came back for a second year of study at the institution where they started, compared to slightly over half of those who were underprepared in at least one subject (Figure D). Also, underprepared students were twice as likely to drop out of college altogether as were those who were prepared: 39 percent compared to 20 percent.

Figure D. Student Retention by Level of Preparation

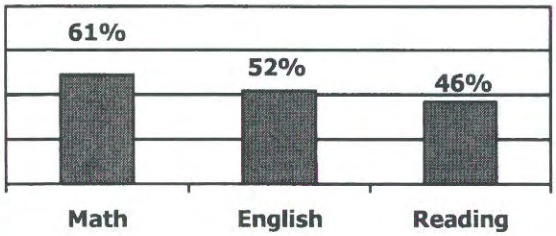


Students who were underprepared in all three subjects were even less likely to be retained – only 50 percent returned for a second year of study.

Did underprepared students take remedial courses?

Systemwide, only a slim majority of underprepared students were remediated in a given subject (Figure E). The leaders in remediation were Morehead State University, Kentucky State University and Eastern Kentucky University, who each remediated between 82 – 95 percent of their underprepared students. Other schools had lower remediation rates, the lowest remediating only 40 percent of their retained, underprepared students in a given subject by the end of their second year. These numbers do not include students who received tutoring and

Figure E. Remediation of Underprepared Students by Subject
(Includes supplemented college-level courses)



other forms of academic support not tracked in remedial course data. Supplemented college-level courses that meet the requirements of the Mandatory Placement Policy are included where that data was available.

While this remediation picture looks poor, it is important to note that these numbers undercount the actual remediation rates because this report does not include on-campus placement exam data from the four-year institutions. Students who enter with low ACT or SAT scores have an opportunity to place out of remediation by passing on-campus placement exams, which would reclassify them as "prepared." Institutions were not required to collect and submit the results of these exams in the 2002 reporting year. Consequently, this analysis does not reflect the reclassification of students who placed out of remediation by taking on-campus placement exams. Also, some schools did not report supplemented college-level courses in 2002, so these remedial efforts are not included here.

Despite the limitations of this data, Council staff believes it is necessary to highlight these remediation rates because they measure the crux of the Council's mandatory placement policy: are underprepared students receiving the help they need to succeed? The Council is committed to pursuing excellence in the provision of services to academically at-risk students, and accountability is essential to this endeavor.

This report examines the college preparation level and remediation of the postsecondary entering class of fall 2002. Some institutions have made substantial changes in their remediation polices since the academic years covered in this report. Also, CPE has been working to improve its data collection concerning remediation and academic supplementation. The Council will continue to evaluate these remedial polices and programs, and hopes to look in more depth at the outcomes of underprepared students in the future.

Underprepared Students in Kentucky: A First Look at the 2001 Mandatory Placement Policy

Kentucky Council on Postsecondary Education

Heidi Hiemstra, Ph.D.
November 2, 2005

In 2001, the Kentucky Council on Postsecondary Education instituted a placement policy that mandates that all students entering undergraduate programs at public institutions with low scores on math, English or reading college entrance exams be placed in remedial coursework or receive supplemented college-level courses in those subjects. This study examines the incoming class of 2002, following them through their first two years of postsecondary study and presenting information on their remedial needs, their remedial and supplemented course taking and their retention to the second year.

Kentucky's Mandatory Placement Policy

The 2001 Mandatory Placement Policy, which can be found in Section 6 of 13 KAR 2:020 on College Admissions, requires that institutions remediate all students scoring a 17 or lower on the ACT subject exams in math, English or reading. The SAT can be substituted for the ACT, and students can also take on-campus placement exams if they have not taken the ACT or SAT or if they scored a 17 or lower and want to try to place out of remediation. On-campus placement exams include standardized exams such as Compass and Accuplacer or custom exams developed by institutions or departments. A crosswalk of standardized exam scores and cut-offs is provided in the appendix of this report.

It is important to note that this Mandatory Placement Policy, which was approved in 2001, is different from the Statewide Public Postsecondary Placement Policy in English and Mathematics that the Council approved in November 2004. The latter policy establishes the skill levels at which students *cannot* be required to take non-credit-bearing remedial courses by their institutions. This policy came about because the Council wanted to develop a clear and consistent statewide placement policy that would communicate to entering students what skill levels they would need to succeed in college-level English and math. The Council was also able to incorporate into this policy some of the standards developed by the American Diploma Project, a national initiative to align high school standards with postsecondary and workplace expectations.

These two remediation policies can be thought of as a floor and a ceiling for remediation. Below the floor, institutions must remediate students and above the ceiling, institutions cannot require that students take non-credit-bearing remedial courses. In English, the floor and the ceiling correspond. Students with an ACT score in English of 17 or lower must be remediated, and students scoring 18 or higher must be placed in a credit-bearing class. In math, ranges of ACT scores were established for entry into different levels of math, from "Mathematics for Liberal Arts Majors" to calculus. This report only addresses the original Mandatory Placement Policy which is currently in its fifth year of implementation. The Statewide Public Postsecondary

Placement Policy in English and Mathematics, passed in 2004, is too new to include in this report but will be examined in the future.

Data and Methodology

The data used in this report are administrative data submitted as student-unit records by the public postsecondary institutions to the Council's Comprehensive Database during the 2002-03 and 2003-04 academic years. These records include enrollment and demographic information, as well as a file that was designed to track the implementation of the Mandatory Placement Policy, the Student Feedback File. This file includes students' scores on entrance and on-campus placement exams, remedial course-taking information, GPAs and students' grades in a few courses, all through the end of their second year of study. Preliminary tables were sent to the institutions for review and comment in August 2005, and institutions were given the opportunity to revise their data at that time.

During the 2002-03 and 2003-04 academic years included in this report, institutions were not required to submit the results of their on-campus placement exams to CPE. KCTCS provided these exam results voluntarily, but the four-year institutions did not. Consequently, for the four-year institutions, only those students who took an ACT or SAT exam are included in this report. This lack of on-campus placement exam data significantly limits the results presented in this report. Underprepared students who placed out of remediation through on-campus placement exams should be reclassified as "prepared," but without on-campus placement exam results for students at the four-year schools, this reclassification cannot be done. The tables that are impacted the most by this data limitation are labeled throughout the report, and efforts are being made to collect this data for subsequent cohorts. Another limitation in the data is that some schools did not record or report supplemented college-level courses in 2002, so these courses are undercounted at the system level.

The methodology of this report is straightforward. It includes descriptive statistics about the 26,646 first-time students at Kentucky's public two and four-year institutions in the fall of 2002 for whom CPE received ACT, SAT or on-campus placement exam scores. An additional 2,397 first time students in the fall of 2002 were excluded from the analysis because of missing exam data, most of whom attended KCTCS. No causal modeling and only limited little inferential statistics are used in this report.

Underprepared and Prepared Students, College Entrants vs. Recent High School Graduates

The first question addressed in this report is how underprepared for postsecondary study were first-time freshmen in the fall of 2002? The answer to this question is important because it gauges the amount of remedial services that postsecondary institutions must provide for their students. The number of entering students needing remediation is also seen as a measure of the quality of Kentucky's P-12 education system, although this assumption is more problematic. An incoming college class includes students who graduated from high schools in other states, earned GEDs, or were adult students who graduated from Kentucky high schools before recent educational reforms. To answer both of these important policy questions, two separate

analyses are presented below, one including all the students who entered college in fall 2002 and another analysis of the subset of those students who graduated from high school in Kentucky in 2001 or 2002. Sixty-three percent of the total entry cohort fell into this group of recent graduates of Kentucky high schools. Data for the entering class as a whole is presented below, with the analysis of recent graduates of Kentucky high schools beginning on page 8 of this report.

Preparation Levels of Kentucky's First-year Students in 2002

Overall, a slight majority of 54 percent of all students entering certificate and degree programs at Kentucky's public postsecondary institutions in Fall 2002 were underprepared in at least one subject. Students entering the different institutions had differing preparation levels, levels that varied according to the institutions' student mix and level of selectivity. KCTCS had very high rates of underprepared entering students – 76 percent overall, compared to 39 percent of those entering four-year institutions. Among the four-year institutions, levels of underprepared students varied widely. The University of Kentucky had the lowest rate, 15 percent, while Kentucky State had the highest at 85 percent.

Table 1. Underprepared Students by Institution and Sector: Incoming Class of 2002

		2002 credential-seeking cohort with placement data	Preparation level of students	
			Prepared	Under-prepared
Two-Year Public	**KCTCS**	**10,545**	**24.0%**	**76.0%**
Four-year public	**Eastern Kentucky University**	2,163	52.1%	47.9%
	Kentucky State University	313	14.7%	85.3%
	Morehead State University	1,418	39.0%	61.0%
	Murray State University	1,434	61.2%	38.8%
	Northern Kentucky University	1,907	40.9%	59.1%
	University of Kentucky	3,671	85.5%	14.5%
	University of Louisville	2,260	76.9%	23.1%
	Western Kentucky University	2,935	52.4%	47.6%
	Sector Total	**16,101**	**60.8%**	**39.2%**
TOTAL		**26,646**	**46.3%**	**53.7%**

Preparation Levels in Math, English and Reading

Examining each of the three subjects individually, math was the subject in which the highest numbers of students were underprepared – 41 percent overall. Math was also the subject in which the most students were underprepared at each of the institutions, with the exception of Murray State, which had more students underprepared in English than in math (Table 2).

Table 2. Underprepared Students by Subject, Institution and Sector

		2002 credential-seeking cohort with placement data	Percent under-prepared in math	Percent under-prepared in reading	Percent under-prepared in English
Two-year public	**KCTCS**	**10,094**	**59.5%**	**39.2%**	**51.8%**
Four-year public	**Eastern Kentucky University**	2,129	36.4%	20.1%	29.1%
	Kentucky State University	270	76.3%	60.7%	74.8%
	Morehead State University	1,357	47.3%	29.5%	39.5%
	Murray State University	1,429	21.0%	15.9%	27.9%
	Northern Kentucky University	1,695	44.8%	30.1%	40.1%
	University of Kentucky	3,359	8.0%	5.5%	6.0%
	University of Louisville	2,063	13.8%	7.6%	9.0%
	Western Kentucky University	2,808	36.4%	24.4%	28.4%
	Sector Total	**15,110**	**28.2%**	**18.2%**	**24.0%**
TOTAL		**25,204**	**40.7%**	**26.6%**	**35.1%**

(1,442 students with missing exam results on one or more of these subjects are excluded from table 2.)

For comparison, the national and Kentucky rates of ACT takers scoring 17 or below in 2002 are as follows:

	All Entering KY PSE Students, 2002 (N = 25,204)	**Subset who graduated high school in KY in 2001 or 2002 (N = 15,990)**	**All ACT takers in Kentucky, 2002[1] (N = 29,532)**	**All national ACT takers, 2002[2] (N = 1,116,082)**
Math	41%	35%	43%	34%
Reading	27%	25%	35%	32%
English	35%	32%	39%	33%

These numbers suggest that while significant proportions of incoming students are not well prepared for college-level work, the rates for Kentucky's recent high school graduates who entered college are similar to or better than national rates. Kentucky's college entrants are substantially better prepared in reading than are ACT takers nationally. However, when looking at all the ACT takers in Kentucky, not just those who entered college, the comparison to national percentages is more troubling, with Kentucky's high school students performing poorly in math. It is important to note that ACT, Inc. cautions against this sort of comparison between state and national ACT results because they reflect differences in income and other demographic characteristics between states as much as differences in P-12 preparation.

Depth of Remedial Needs

Looking at students who were underprepared in more than one subject, one-third (33 percent) of incoming students systemwide were underprepared in two or three subjects (Table 3, next page). One in five students were underprepared in just one subject (22 percent). The number of subjects in which a student is underprepared is important because multiple needs require a student to take multiple remedial courses and greatly increase that students' risk of dropping out of college altogether, as can be seen below.

KSU had the largest proportion of students who needed remediation in two or three areas – 75 percent. The depth of remedial need at KSU is demonstrated by the fact that half of KSU's students were underprepared in all three subjects, with another quarter underprepared in two. KCTCS had the next largest proportion of students needing remediation in two or three subjects at 50 percent.

[1] Kentucky figures are from Table 4, page 6 of ACT Inc.'s "ACT High School Profile Report, Graduating Class of 2002, State Composite for Kentucky."
[2] National figures are from Table 4, page 6 of ACT Inc.'s "ACT High School Profile Report, Graduating Class of 2002, National Report."

Table 3. Number of Subjects in which Students were Underprepared by Institution and Sector

		2002 credential-seeking cohort	Number of subjects in which students were underprepared			
			0	1	2	3
Two-year public	**KCTCS**	**10,094**	**23.5%**	**26.3%**	**26.3%**	**23.9%**
Four-year public	**Eastern Kentucky University**	2,129	51.7%	21.8%	15.6%	10.9%
	Kentucky State University	270	13.0%	12.2%	24.8%	50.0%
	Morehead State University	1,357	37.5%	26.7%	17.8%	18.0%
	Murray State University	1,429	61.1%	20.1%	11.8%	7.1%
	Northern Kentucky University	1,695	39.2%	24.6%	18.2%	18.0%
	University of Kentucky	3,359	85.0%	11.0%	3.6%	0.5%
	University of Louisville	2,063	75.8%	18.8%	4.7%	0.7%
	Western Kentucky University	2,808	51.9%	21.0%	13.1%	14.0%
	Sector Total	**15,110**	**59.9%**	**19.3%**	**11.3%**	**9.5%**
TOTAL		**25,204**	**45.4%**	**22.1%**	**17.3%**	**15.3%**

(1,442 students with missing exam results on one or more of these subjects are excluded from table 3.)

Preparation Levels by Demographic Characteristics

There was wide variation in student preparation by demographic characteristics. One of the most significant differences was between racial-ethnic groups. White, non-Hispanics were substantially better prepared for college-level study (50 percent underprepared) than were members of most racial-ethnic minority groups, with the exception of Asians and Pacific Islanders, 44 percent of whom were underprepared. African Americans were the largest minority group and also the least well prepared, with 78 percent needing remediation. Sixty-one percent of Hispanic students were underprepared. These differences follow the same achievement-gap patterns seen in other education statistics and reiterate the need for improved attention to the needs of racial-ethnic minority students at all levels of education.

Table 4. Preparation Level by Student Demographics, All Public Institutions

	Preparation level of students		
	Prepared	**Underprepared**	**Total**
GENDER			
Female	45.2%	54.8%	**14,961**
Male	48.3%	51.7%	**11,278**
FULL/PART TIME			
Full time	49.7%	50.3%	**23,173**
Part time	22.4%	77.6%	**3,066**
RACE			
Nonresident Alien	49.5%	50.5%	**91**
Black, Non-Hispanic	22.5%	77.5%	**2,153**
American Indian or Alaskan Native	30.8%	69.2%	**65**
Asian or Pacific Islander	56.3%	43.7%	**279**
Hispanic	39.2%	60.8%	**237**
White, Non-Hispanic	49.8%	50.2%	**22,259**
Unknown	26.8%	73.2%	**1,155**
RESIDENCY			
In-State	44.4%	55.6%	**22,327**
Out-of-State w/Tuition Reciprocity	49.1%	50.9%	**697**
Out-of-State w/o Tuition Rec.	60.2%	39.8%	**3,197**
Out-of-State, SREB or UK/UF	77.8%	22.2%	**18**
AGE			
17-24 (Traditional)	49.8%	50.2%	**23,355**
25+ (Nontraditional)	19.7%	80.3%	**2,884**
HIGH SCHOOL			
GED	19.6%	80.4%	**1,802**
Kentucky	47.2%	52.8%	**19,571**
Out-of-state	53.7%	46.3%	**4,866**
Total	**46.5%**	**53.5%**	**26,239**

(407 students with missing data on one or more of the variables above are excluded from table 4.)

Kentucky Council on Postsecondary Education, November, 2005

The other large demographic difference in preparation level was between traditional and nontraditional students, with nontraditional students being much less prepared for college-level study. This can be seen along three dimensions, comparing part-time and full-time students, traditional college-age and adult students, and GED holders to high school graduates. Part-time, adult and GED-holding students each made up a small minority of entering, degree-seeking students, but each category required remediation at rates near 80 percent, compared to rates near 50 percent for the more traditional students. This finding reaffirms the need to target nontraditional students for academic assistance on campus and through adult education.

Slightly more male students were prepared for college-level work than were female students, and graduates of Kentucky high schools were slightly less well prepared than were graduates of out-of-state high schools. Out-of-state residents were better prepared for college study than were Kentucky resident students. Students receiving tuition reciprocity were similar to Kentucky residents, while out-of-state residents who did not receive tuition reciprocity were substantially better prepared than their peers.

The breakout of student demographics and preparation by institution is given in the appendix under Table 4. The same demographic patterns seen at the aggregate level persist across all nine institutions. KCTCS and KSU both have high rates of underprepared students across the board, so there is less variation by demographic characteristic at these institutions. Similarly, UK and the University of Louisville (U of L) are the most selective institutions, have the lowest rates of students needing remediation in general, and have less variation in preparation level by student characteristic.

Preparation Levels of Recent Graduates of Kentucky High Schools

What about recent graduates of Kentucky high schools? Tables 5 - 8 present the same information given in tables 1-4, but for the subset of students who graduated from Kentucky high schools in 2001 or 2002. These tables show that first-time students who were recent products of Kentucky's P-12 system were better prepared than first-time students as a whole. Slightly fewer were underprepared in at least one subject, 48 percent compared to 54 percent, and fewer were underprepared in more than one subject. The comparison table of preparation level by subject is given on page 4 of this report and shows that recent high school graduates were slightly better prepared than their peers in all three subjects. Looking at demographic differences in Table 8, the percent underprepared was lower across the board among recent high school graduates than in the entry cohort as a whole, with the same types of differences between racial-ethnic groups, gender and full and part-time status as seen in the entire entry cohort.

While recent graduates of Kentucky high schools compare favorably to all first-time students, it is important to note that between one-quarter and one-third of recent graduates from Kentucky high schools were not prepared for college-level work in a given subject. Fully half were entering with an educational handicap in at least one subject.

Table 5. Recent Graduates of Kentucky High Schools: Underprepared Students by Institution and Sector, Incoming Class of 2002

		Graduates of Kentucky High Schools in 2001 and 2002 who Entered College in Fall 2002	Preparation level of students	
			Prepared	Underprepared
Two-year public	**KCTCS**	**5,050**	**26.4%**	**73.6%**
Four-year public	**Eastern Kentucky University**	1,351	52.6%	47.4%
	Kentucky State University	106	14.2%	85.8%
	Morehead State University	905	37.2%	62.8%
	Murray State University	854	59.5%	40.5%
	Northern Kentucky University	1,258	42.0%	58.0%
	University of Kentucky	2,877	85.6%	14.4%
	University of Louisville	1,901	77.5%	22.5%
	Western Kentucky University	2,043	53.9%	46.1%
	Sector Total	**11,295**	**63.2%**	**36.8%**
TOTAL		**16,345**	**51.8%**	**48.2%**

Table 6. Recent Graduates of Kentucky High Schools: Underprepared Students by Subject, Institution and Sector

		Graduates of Kentucky High Schools in 2001 and 2002 Who Entered College in Fall 2002	Percent under-prepared in math	Percent under-prepared in reading	Percent under-prepared in English
Two-year public	**KCTCS**	**4,874**	**56.0%**	**41.5%**	**52.7%**
Four-year public	**Eastern Kentucky University**	1,346	35.1%	20.7%	29.5%
	Kentucky State University	95	70.5%	63.2%	83.2%
	Morehead State University	904	48.6%	31.4%	42.7%
	Murray State University	854	22.4%	16.5%	28.0%
	Northern Kentucky University	1,209	41.9%	30.3%	40.2%
	University of Kentucky	2,804	7.7%	5.0%	5.8%
	University of Louisville	1,868	12.6%	7.1%	8.7%
	Western Kentucky University	2,036	33.8%	24.4%	28.9%
	Sector Total	**11,116**	**25.4%**	**17.1%**	**22.5%**
TOTAL		**15,990**	**34.7%**	**24.5%**	**31.7%**

(355 students with missing exam data on one or more of these subjects were excluded from table 6.)

Table 7. Recent Graduates of Kentucky High Schools: Number of Subjects in which Students were Underprepared by Institution and Sector

		Graduates of Kentucky High Schools in 2001 and 2002 Who Entered College in Fall 2002	Number of subjects in which students were underprepared			
			0	1	2	3
Two-year public	**KCTCS**	**4,874**	**26.0%**	**23.8%**	**24.1%**	**26.1%**
Four-year public	**Eastern Kentucky University**	1,346	52.5%	21.0%	15.1%	11.4%
	Kentucky State University	95	10.5%	12.6%	26.3%	50.5%
	Morehead State University	904	37.2%	23.9%	18.0%	20.9%
	Murray State University	854	59.5%	21.3%	12.1%	7.1%
	Northern Kentucky University	1,209	41.0%	23.0%	18.5%	17.5%
	University of Kentucky	2,804	85.3%	11.2%	3.1%	0.4%
	University of Louisville	1,868	77.1%	17.9%	4.3%	0.6%
	Western Kentucky University	2,036	53.8%	19.3%	12.7%	14.1%
	Sector Total	**11,116**	**62.9%**	**18.1%**	**10.3%**	**8.8%**
TOTAL		**15,990**	**51.6%**	**19.8%**	**14.5%**	**14.0%**

(355 students with missing exam data on one or more of these subjects were excluded from table 7.)

Table 8. Recent Graduates of Kentucky High Schools: Preparation Level by Student Demographics

	Preparation level of Graduates of Kentucky High Schools in 2001 and 2002 Who Entered College in Fall 2002		
	Prepared	**Underprepared**	**Total**
GENDER			
Female	50.7%	49.3%	**9,009**
Male	53.2%	46.8%	**7,327**
FULL/PART TIME			
Full time	53.4%	46.6%	**15,430**
Part time	24.5%	75.5%	**906**
RACE			
Nonresident Alien	.	.	**7**
Black, Non-Hispanic	27.9%	72.1%	**1,149**
American Indian or Alaskan Native	40.0%	60.0%	**25**
Asian or Pacific Islander	63.6%	36.4%	**184**
Hispanic	48.3%	51.7%	**118**
White, Non-Hispanic	54.5%	45.5%	**14,234**
Unknown	31.2%	68.8%	**619**
Total	**51.8%**	**48.2%**	**16,336**

(Nine students were missing data on one or more of the variables above and were excluded from table 8.)

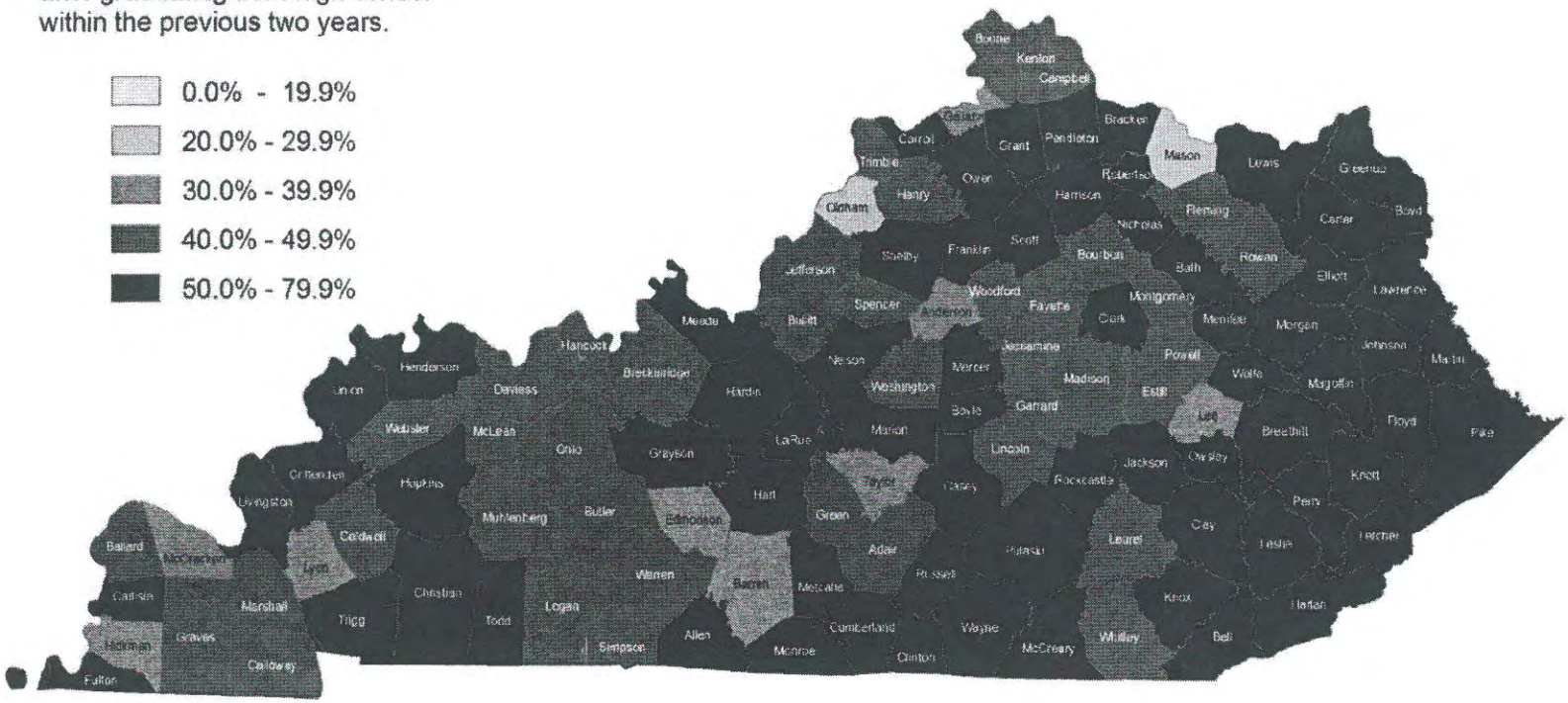
Maps of Preparation Levels by County of Origin

Figures 1 - 5 provide maps that display the county of origin of recent high school graduates who were underprepared for college study. Students who were underprepared in one or more subjects were fairly evenly distributed across the state, with the heaviest concentrations in eastern and southern Kentucky (Figure 1). The greatest proportions of students underprepared in all three subjects also originate from eastern and southern Kentucky (Figure 2). The maps displaying preparation levels for each of the three subjects, math, English and reading, show similar geographic distributions. In math and English, counties from eastern Kentucky sent the highest proportion of underprepared students to college, with a smattering of counties in southern and western parts of the state doing so as well (Figures 3 and 4). Reading was the subject in which students were best prepared, and counties sending large proportions of students underprepared in this subject to college were concentrated in eastern and, to a lesser extent, southern Kentucky.

Figure 1: Percent of Recent HS Graduates Entering College Underprepared in One or More Subjects, 2002

Students scoring less than 18 on one or more of the ACT exams in mathematics, English, and reading as a percentage of all students taking such exams and entering public postsecondary institutions in the Fall of 2002 after graduating from high school within the previous two years.

- 0.0% - 19.9%
- 20.0% - 29.9%
- 30.0% - 39.9%
- 40.0% - 49.9%
- 50.0% - 79.9%

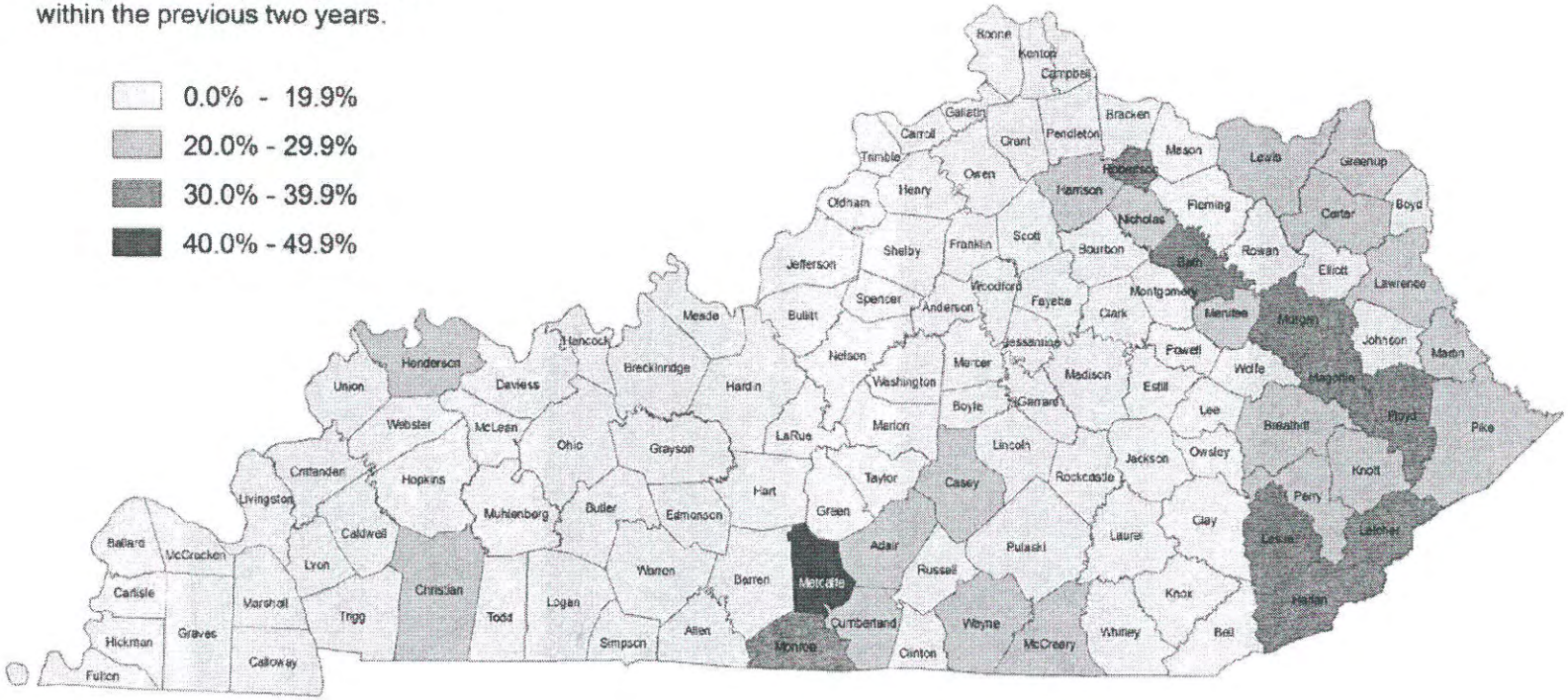


Source: Council on Postsecondary Education Comprehensive Database

Map by Mark Wiljanen

Figure 2: Percent of Recent HS Graduates Entering College Underprepared in All Three Subjects, 2002

Students scoring less than 18 on all three of the ACT exams in mathematics, English, and reading as a percentage of all students taking such exams and entering public postsecondary institutions in the Fall of 2002 after graduating from high school within the previous two years.

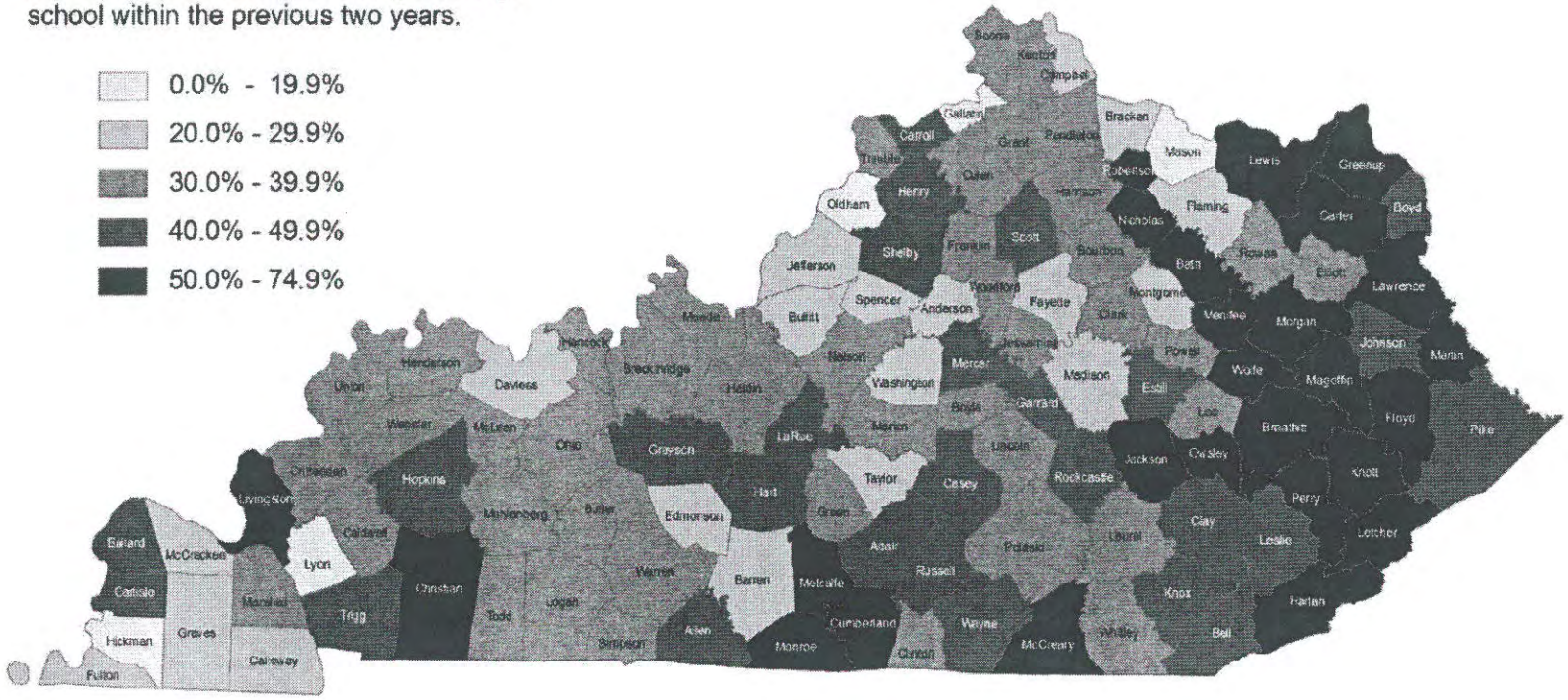


Source: Council on Postsecondary Education Comprehensive Database

Map by Mark Wiljanen

Figure 3: Percent of Recent HS Graduates Entering College Underprepared in Mathematics, 2002

Students scoring less than 18 on the ACT mathematics exam (or the equivalent on the SAT or on-campus placement exams) as a percentage of all students taking such exams and entering public postsecondary institutions in the Fall of 2002 after graduating from high school within the previous two years.

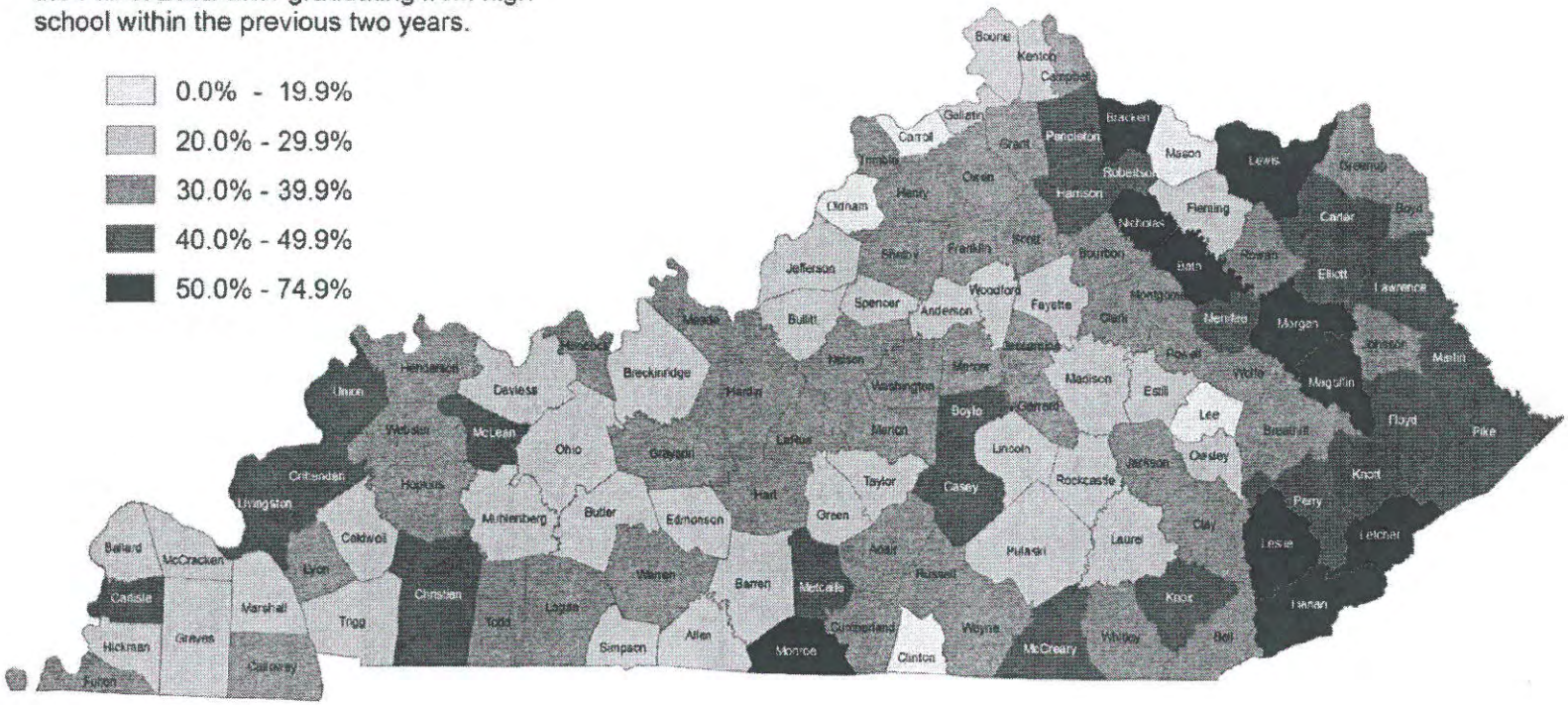


Source: Council on Postsecondary Education Comprehensive Database

Map by Mark Wiljanen

Figure 4: Percent of Recent HS Graduates Entering College Underprepared in English, 2002

Students scoring less than 18 on the ACT English exam (or the equivalent on the SAT or on-campus placement exams) as a percentage of all students taking such exams and entering public postsecondary institutions in the Fall of 2002 after graduating from high school within the previous two years.

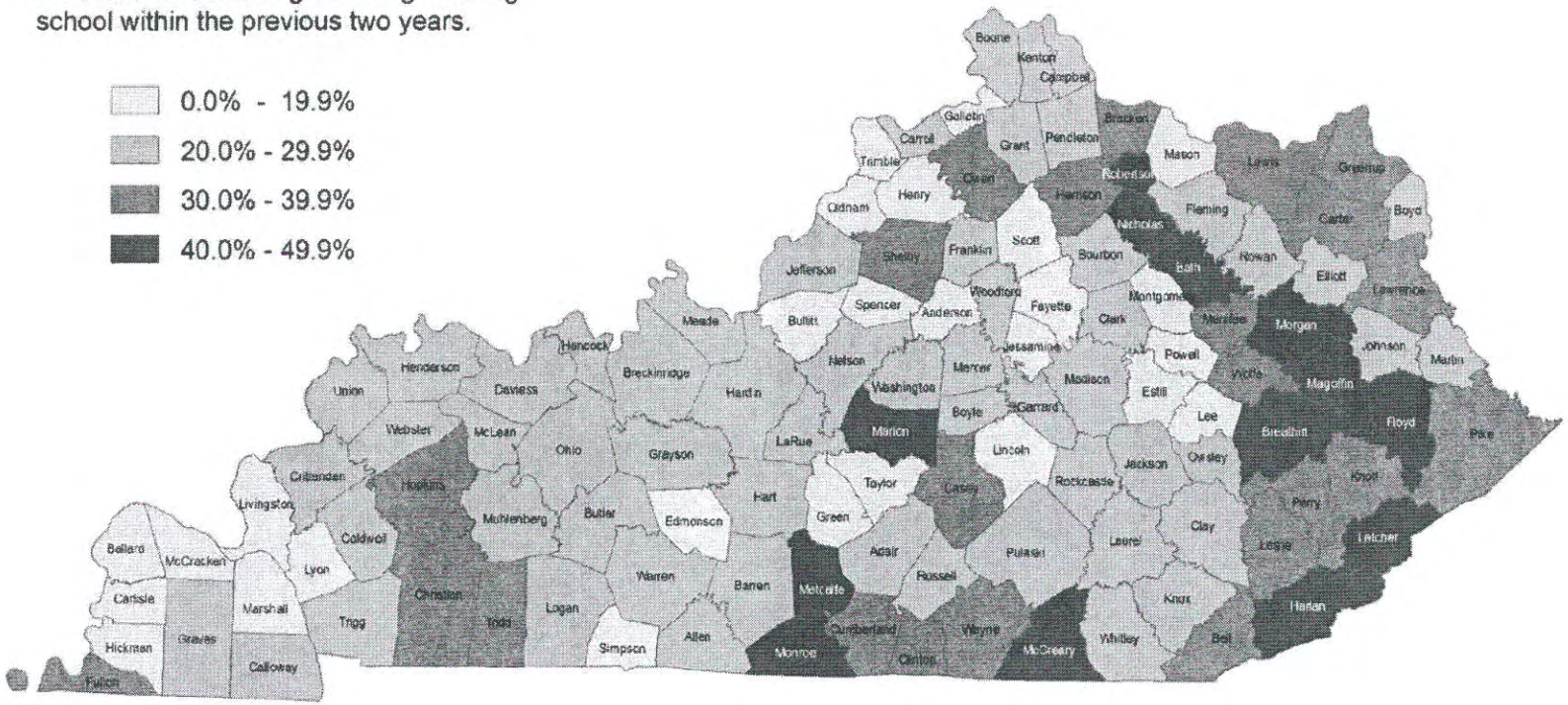


Source: Council on Postsecondary Education Comprehensive Database

Map by Mark Wiljanen

Figure 5: Percent of Recent HS Graduates Entering College Underprepared in Reading, 2002

Students scoring less than 18 on the ACT reading exam (or equivalent on-campus placement exams) as a percentage of all students taking such exams and entering public postsecondary institutions in the Fall of 2002 after graduating from high school within the previous two years.



Source: Council on Postsecondary Education Comprehensive Database

Map by Mark Wiljanen

Placement Exams, Students Placing Out of Remediation and Students Pursuing Alternate Forms of Remediation

Tables 9 and 10 present information about placement exams and remedial placements. Table 9 gives the number and percent of students taking entrance exams at the four-year schools, showing the proportion of students excluded from this study because they did not take the ACT or the SAT. Except for KSU, the vast majority of students at four-year institutions took one of these entrance exams, all but 2 percent.

Table 9. Students at Four-year Schools: Placement Exams Taken and Remediation at KCTCS

		Entrance exams taken				
	2002 credential-seeking cohort	ACT only	SAT only	Both ACT and SAT	Neither	Took remedial course at KCTCS
Eastern Kentucky University	2,165	90.6%	1.6%	7.7%	0.1%	50
Kentucky State University	376	62.5%	11.4%	9.3%	16.8%	1
Morehead State University	1,428	95.2%	4.1%	.	0.7%	32
Murray State University	1,450	98.7%	0.2%	.	1.1%	18
Northern Kentucky University	1,977	85.7%	10.7%	.	3.5%	19
University of Kentucky	3,684	84.4%	8.5%	6.7%	0.4%	21
University of Louisville	2,260	91.3%	8.7%	.	.	19
Western Kentucky University	3,074	84.3%	4.0%	7.2%	4.5%	55
Total	**16,414**	**88.0%**	**6.0%**	**4.1%**	**1.9%**	**215**

(The total in Table 9 includes 313 students with missing exam data who are excluded from the rest of the study, making up 1.9% of the total as given in the 'neither' column.)

Table 9 also lists the number of students who were enrolled in degree programs at four-year institutions and who took a remedial course at KCTCS during the 2002-03 and 2003-04 academic years. Some four-year schools encourage students to take remedial courses at KCTCS, as the tuition is lower and KCTCS offers a wider selection of remedial coursework in some cases. Eastern and Western sent the most students to KCTCS for remediation during this time period. Remedial courses taken at KCTCS by

students from four-year schools are included in this report as remediation at the student's home four-year institution.

As would be expected at an open enrollment institution, students enrolling in certificate, diploma or degree programs at KCTCS were much less likely to have taken the ACT or SAT than were students enrolling at four-year schools (Table 10, below). Sixty percent of KCTCS' students did not take a college entrance exam, but most of these students (73 percent) took on-campus placement exams. The on-campus placement exams reported here are all standardized exams offered through national testing services, such as Compass and Accuplacer. Of the students who took both college entrance exams and on-campus placement exams, 42 percent successfully placed out of remedial study.

Table 10. Placement Exams and Students Placing Out of Remediation: KCTCS Only

			Took on-campus placement exam		Placed out of remedial courses with on-campus exam	
	Number	Percent	Number	Percent of entrance exam takers	Number	Percent of placement exam takers
Entrance exam						
ACT only	5,049	40.1%	1,045	20.7%	440	42.1%
SAT only	33	0.3%	20	60.6%	.	
Both ACT and SAT	6	0.0%	4	66.7%	3	75.0%
Neither	7,488	59.5%	5,469	73.0%	.	
Total	12,576	100.0%	6,538		443	6.8%

(The total in table 10 includes 2,031 students with missing exam data who were excluded from the rest of the study.)

Were Underprepared Students Retained?

A student's preparation level coming into college is strongly associated with retention. Systemwide, 73 percent of prepared students were retained at their native institution, while only 55 percent of those who were underprepared were retained. The college drop out rate can be seen below as those students who are not retained at their native institution or elsewhere in the system. Underprepared students were twice as likely to drop out of college altogether as were those who were better prepared: 39 percent compared to 20 percent.

Table 11. Retention by Preparation Level of Public Postsecondary Students

Retention in Fall 2003 of First-time Freshmen entering in Fall 2002		Underprepared in one or more subjects		
		Prepared	Under-prepared	Total
Not retained in KY PSE system	**Number**	**2,384**	**5,460**	**7,844**
	Percent	19.5%	38.8%	30%
Retained at KY institution other than where started	**Number**	**862**	**849**	**1,711**
	Percent	7.1%	6.0%	7%
Retained at native institution where started	**Number**	**8,969**	**7,760**	**16,729**
	Percent	73.4%	55.2%	64%
Total	**Number**	**12,215**	**14,069**	**26,284**
	Percent	100%	100%	100%

(362 students with missing retention data were excluded from table 11.)
Note: System-level retention includes students who enrolled at any independent or public postsecondary institution in Kentucky in their second year.

Retention rates for underprepared students by institution are presented in the appendix in Table 11. Retention rates for underprepared students at the four-year institutions ranged fairly narrowly between 57 percent and 67 percent, while KCTCS retained 50 percent of their underprepared students.

Retention rates are also associated with the number of subjects in which students are underprepared. Sixty percent of students who were underprepared in only one subject were retained, compared to 50 percent of those who were underprepared in all three subjects, English, math and reading. Drop-out rates increased to 45 percent for this high-need group.

Table 12. Retention by Number of Subjects Underprepared of Public Postsecondary Students

Retention in Fall 2003 of First-time Freshmen entering in Fall 2002		Number of subjects in which students were underprepared				
		0	1	2	3	Total
Not retained at any KY postsecondary institution	**Number**	**2,132**	**1,810**	**1,713**	**1,715**	**7,370**
	Percent	18.8%	33.1%	39.9%	45.3%	**30%**
Retained at KY institution other than where started	**Number**	**838**	**383**	**273**	**174**	**1,668**
	Percent	7.4%	7.0%	6.4%	4.6%	**7%**
Retained at native institution where started	**Number**	**8,354**	**3,271**	**2,304**	**1,897**	**15,826**
	Percent	73.8%	59.9%	53.7%	50.1%	**64%**
Total	**Number**	**11,324**	**5,464**	**4,290**	**3,786**	**24,864**
	Percent	100%	100%	100%	100%	**100%**

(1,782 students with missing exam or retention data were excluded from table 12.)
Note: System-level retention includes students who enrolled at any independent or public postsecondary institution in Kentucky for their second year.

Differences between the institutions in the retention of students underprepared in all three subjects were large, ranging from 46 percent at Eastern to 87 percent at U of L, although U of L's total number of these students was very low. At KCTCS, 47 percent of students who were underprepared in all three subjects were retained.

Another measure of a school's efforts to retain underprepared students is the size of the "retention gap" between the retention of prepared students and the retention of underprepared students. This retention gap ranged from 10 percent at KCTCS (which has lower retention rates across the board) to 19 percent at Eastern. Among the comprehensive and research universities, Morehead stands out with a low retention gap of 11 percent between underprepared and prepared students.

Did Underprepared Students Take Remedial Courses?

These tables present the remedial course-taking of underprepared students in a few different ways. Tables 13 and 14 give a summary overview of remediation by institution, and Tables 15-17 provide a detailed analysis of underprepared students' course-taking at each institution, including remedial and college level courses.

The overview of remediation in Table 13 shows that most students who are in need of remediation have had some contact with remedial programs at their schools. These results provide a very rough introduction to remediation, as it includes students who may have been remediated in only one of several subjects in which they needed help (Tables 15-17 give the results by subject). What this overview does measure is the extent to which underprepared students had any exposure to remedial education, and how many fell through the cracks and received no remediation.

Table 13. Underprepared Students' Remediation in at Least One Subject

		Students Underprepared in One or More Subjects	Underprepared Percent remediated in at least one subject	
			No	Yes
Two-year public	**KCTCS**	**8,012**	**44.2%**	**55.8%**
Four-year public	**Eastern Kentucky University**	1,035	14.9%	85.1%
	Kentucky State University	267	11.2%	88.8%
	Morehead State University	865	14.1%	85.9%
	Murray State University	557	20.3%	79.7%
	Northern Kentucky University	1,127	33.7%	66.3%
	University of Kentucky	534	58.8%	41.2%
	University of Louisville	523	38.4%	61.6%
	Western Kentucky University	1,398	30.5%	69.5%
	Sector Total	**6,306**	**27.6%**	**72.4%**
TOTAL		**14,318**	**36.9%**	**63.1%**

Eastern, KSU and Morehead had 85-89 percent of their underprepared students take some form of remediation (these remediation percentages include students who took college-level courses with supplemental help). UK had the lowest percent of underprepared students receiving remediation at 41 percent, because UK only offers remedial coursework in math. According to a representative of UK, "students who are under-prepared in writing are instructed to use the writing center as a resource, while students who have difficulties with reading may seek out tutoring." The result for KCTCS does not show a particularly strong engagement with remedial education among

their underprepared students, as only 56 percent took any remediation in their first two years.

Table 14 represents the proportion of students with remedial needs in math, English and reading who were remediated in at least one of these subjects, reflecting and institution's outreach efforts to these high-need students. These percentages are higher, showing that students who are underprepared in all three subjects are indeed getting special attention and being directed toward remedial education. All schools remediated between 85 and 95 percent of their neediest students, except KCTCS and UK. Both UK and UofL had a very small number of students needing remediation in all three subjects.

Table 14. Remediation of Students with the Greatest Needs

		Students underprepared in all three subjects	Percent remediated in at least one subject	
			No	Yes
Two-year public	**KCTCS**	**2,350**	**36.4%**	**63.6%**
Four-year public	**Eastern Kentucky University**	231	5.6%	94.4%
	Kentucky State University	132	9.8%	90.2%
	Morehead State University	244	7.4%	92.6%
	Murray State University	101	12.9%	87.1%
	Northern Kentucky University	305	14.1%	85.9%
	University of Kentucky	16	43.8%	56.3%
	University of Louisville	15	13.3%	86.7%
	Western Kentucky University	392	14.3%	85.7%
	Sector Total	**1,436**	**11.5%**	**88.5%**
TOTAL		**3,786**	**27.0%**	**73.0%**

Tables 15 – 17 give the best, most detailed information on underprepared students' remediation and other course-taking. Each table includes only those students who were underprepared in one of the three core subjects and presents students' course-taking in that subject during their first two years of study. All students who are underprepared in a subject fall into one of four possible categories. In their first two years they either (1) took a remedial course in that subject, (2) took a college-level course with supplemental help in that subject, (3) took a college level course in that subject without first being remediated, or (4) did not take a course in that subject, either remedial or college-level.

These tables help us answer three important questions. Are retained students taking remedial coursework? Are students who do not take remedial courses taking college-level work instead, putting them at greater risk of failure? Are students who don

not take remedial courses avoiding taking any courses in the subject? The answers to these questions show how well institutions enforced the mandatory placement policy by ensuring that their underprepared students took remedial courses or college-level courses with supplemental help. It also tells us if students are avoiding taking courses in these subjects altogether, handicapping themselves by not catching up on the fundamental reading, writing and math skills that are needed in any college-level course.

In assessing these numbers, it is important to note that the lack of on-campus placement exam data from the four-year institutions inflates the numbers of underprepared students who took a college level course without first being remediated. This is because some of the students classified as underprepared in this report based on their ACT or SAT score may have placed out of remediation through an on-campus placement exam, and would actually have been exempt from the mandatory placement policy. Placement exam data has been requested from the four-year institutions for future iterations of this report to correct this problem.

Underprepared students' course-taking is presented by retention at the institutional and systemwide level. These results are broken out by retention because retained students have had the longest time in which to take courses, making the remediation of these students the best standard by which to measure an institution's remediation program. If a student has not been remediated by the end of their second year, they will have lost a good deal of ground in their progress toward a degree.

It is also important to factor in retention because there is a circular cause-and-effect relationship between retention and remediation. It is likely that students who are remediated are more likely to be retained. But it is also likely that students who are retained are more likely to be remediated simply because they have had more semesters in school in which to take remedial courses. The data used in this report does not permit the teasing out of these effects, although attempts may be made to do so in future reports. For now, all remediation results are shown by retention status to preserve the differences between students who attended college for one year or less and those who attended for two.

Looking first at Table 15, systemwide, only 67 percent of underprepared students in math who were retained were remediated in math. Twelve percent took college-level math without being remediated (and may have actually placed out of remediation), and 21 percent did not take any math courses during their first two years. This analysis is presented for each institution in the appendix under Table 15. There are considerable differences in math remediation by institution, ranging from 95 percent to 69 percent among the four-year institutions, and dropping to 54 percent at KCTCS. Eastern and Morehead had the best remediation results with a 95 percent math remediation rate among retained students. UofL's rate is close behind at 89 percent. Both Northern and KSU had remediation rates in the low 80 percent range, with most of their nonremediated students not taking math at all. UK, Murray and Western remediated 69-70 percent of these students, with the bulk of those who were not remediated taking college level math anyway. Looking at math avoidance, Morehead, KSU, UK, Western and Northern had below 15 percent of their underprepared students in math not taking any math courses. At KCTCS, almost one-third of retained students who were underprepared in math avoided taking a math course during their first two

years. This may be due in part to the high proportion of part-time students at KCTCS, as part-time students may take longer to enroll in the remedial courses they need.

Table 15. Students Underprepared in Math: Math Courses Taken by Retention Status

All KY Public Institutions			Underprepared in math	Percent
Not retained at any KY PSE institution	Not retained at native institution	Did not take subject		
		Took at college level without remediation*	198	4.8%
		Took at college level with supplemental help	4	0.1%
		Took remedial course	2,125	51.0%
		Subtotal	**4,165**	**100.0%**
Retained at any KY PSE institution	Not retained at native institution	Did not take subject	130	22.4%
		Took at college level without remediation*	25	4.3%
		Took remedial course	425	73.3%
		Subtotal	**580**	**100.0%**
	Retained at native institution	Did not take subject	1,187	21.1%
		Took at college level without remediation*	660	11.7%
		Took at college level with supplemental help	14	0.2%
		Took remedial course	3,769	66.9%
		Subtotal	**5,630**	**100.0%**
Total students underprepared in math		Did not take subject	3,155	30.4%
		Took at college level without remediation*	883	8.5%
		Took at college level with supplemental help	18	0.2%
		Took remedial course	6,319	60.9%
		Total	**10,375**	**100.0%**

* This category includes an unknown number of students who placed out of remediation after taking an on-campus placement exam.

Table 16 presents the English courses taken by students who were underprepared in English. Systemwide, 56 percent of these students who were retained were also remediated. One-quarter took a college-level course without remediation (and may have actually placed out of remediation) and only 15 percent did not take any English course. Summarizing the institutional tables in the appendix, institutional variation is on this measure is large. Morehead has the highest remediation rate with 94 percent and Eastern, Western and KSU are also doing well at 80-84 percent (including supplemented courses). Both Northern and KCTCS remediated a majority of their underprepared students in English, with remediation rates of 61 percent and 54 percent respectively. Murray had the lowest remediation rate in English at 39 percent, with the majority of their retained, underprepared students taking college-level English without remediation, although it is likely that many of these students placed out of remediation. Neither UK nor U of L offer remedial courses in English. UK refers these students to their writing center, and UofL provides college-level courses with supplemental help rather than remedial courses. Unfortunately, UofL's supplemented courses are not distinguishable from regular college courses in the data used for this report, but this problem will be fixed in later reports.

Comparing math and English overall, it appears that remediation rates in English are lower than in math, both institutionally and statewide. And despite the fact that math remediation is offered at all of Kentucky's public institutions so statewide rates would be expected to be higher, students who were underprepared in math were more likely to avoid taking math classes than were underprepared students in English to avoid English classes. Students who were underprepared in English either took remedial courses or took college-level courses without remediation; very few of them avoided taking English.

Table 16. Students Underprepared in English: English Courses Taken by Retention Status

All KY Public Institutions			Underprepared in English	Percent
Not retained in KY PSE system	Not retained at native institution	Did not take subject	1,447	38.9%
		Took at college level without remediation*	483	13.0%
		Took at college level with supplemental help	40	1.1%
		Took remedial course	1,748	47.0%
		Subtotal	**3,718**	**100.0%**
Retained at any KY PSE institution	Not retained at native institution	Did not take subject	106	20.7%
		Took at college level without remediation*	142	27.8%
		Took at college level with supplemental help	13	2.5%
		Took remedial course	250	48.9%
		Subtotal	**511**	**100.0%**
	Retained at native institution	Did not take subject	738	15.4%
		Took at college level without remediation*	1,208	25.2%
		Took at college level with supplemental help	149	3.1%
		Took remedial course	2,704	56.3%
		Subtotal	**4,799**	**100.0%**
Total students underprepared in English		Did not take subject	2,291	25.4%
		Took at college level without remediation*	1,833	20.3%
		Took at college level with supplemental help	202	2.2%
		Took remedial course	4,702	52.1%
		Total	**9,028**	**100.0%**

* This category includes an unknown number of students who placed out of remediation after taking an on-campus placement exam.

As there are no college-level courses in reading, per se, Table 17 only presents information on remedial course-taking by students who were underprepared in reading. Overall, a little over half (52 percent) of retained, underprepared students took remedial reading courses. The highest remediation rates were at Morehead (96 percent), Western (83 percent), Eastern (82 percent) and Northern (74 percent). KSU and Murray were in the middle, having remediated 58-61 percent of their retained students who were underprepared in reading. KCTCS and UofL both had low remediation rates of 36 percent and 32 percent respectively. UK does not offer remedial courses in reading. Their underprepared students in reading are encouraged to work with reading tutors.

Table 17. Students Underprepared in Reading: Remedial Reading Courses Taken by Retention Status

All KY Public Institutions			Underprepared in reading	Percent
Not retained in KY PSE system	**Not retained at native institution**	**No remedial course**	1,706	61.0%
		Took remedial course	1,090	39.0%
		Subtotal	**2,796**	**100.0%**
Retained at any KY PSE institution	**Not retained at native institution**	**No remedial course**	201	52.3%
		Took remedial course	183	47.7%
		Subtotal	**384**	**100.0%**
	Retained at native institution	**No remedial course**	1,691	48.1%
		Took remedial course	1,823	51.9%
		Subtotal	**3,514**	**100.0%**
Total students underprepared in reading		**No remedial course**	3,598	53.7%
		Took remedial course	3,096	46.3%
		Total	**6,694**	**100.0%**

How Do Preparation Level and Remediation Affect Student Outcomes?

When planning this study, CPE staff had hoped to include two additional student outcome measures, GPA at the end of the second year and grades in college-level courses in math and English. Unfortunately, the lack of on-campus placement exam data prevents this analysis at this time, as is detailed below. CPE is working with the institutions to correct this data problem, and hopes to conduct this analysis in the future.

Without complete, accurate data on students' on-campus placement tests, it cannot completely be determined which students need remediation. In the data available for this report, if students take on-campus placement exams and place out of remediation, they would be wrongly categorized as being underprepared but not

remediated. But how do we know if this has happened? If some of these underprepared students had actually placed out of remediation, one would expect these students to have been "less underprepared" and to have higher ACT scores than those who did not place out of remediation with on-campus exams. So, if underprepared students who were *not* remediated had higher ACT scores than underprepared students who *were* remediated, it is more plausible that many of the nonremediated students actually did place out of remediation.

This hypothesis was tested by examining differences in ACT scores between underprepared students who were remediated and those who were not remediated. Looking at the correlation between ACT score and remediation among underprepared students, slight to moderate, statistically significant correlations were found at some schools and in some subjects (correlation results available upon request). These correlations show that at these institutions, students are less likely to be remediated as their ACT scores increase from 10 to 17. Other schools and subjects did not have statistically significant correlations and there were no correlations that would contradict this hypothesis. In summary, it appears likely that a substantial number of underprepared, unremediated students had actually placed out of remediation, conflating these two categories and preventing the analysis of the affect of remediation on student outcomes at this time.

Campus Practices and Programs

A quantitative report can give only a partial view of institutions' efforts to meet the developmental needs of their underprepared students. Some institutions submitted additional information about their remedial education programs to include in this report, information which is included here and which provides some important context to the numbers reported above.

A representative of Northern Kentucky University describes how their applicants are screened for additional academic attention. "At NKU, for example, every applicant is initially screened by admissions staff for pre-college curriculum qualifications and ACT scores. Records for students who are not clearly qualified for full 'regular' admission are referred to the Academic Advising and Resource Center."

The University of Louisville has changed their remediation program in recent years to emphasize college-level courses with supplemental help. They write, "UofL has 'enhanced' or supplemented classes whereby students who would normally be enrolled in remedial courses may register into an entry level general education course that meets more frequently and has mandatory attendance requirements...UofL enforces our supplemented study program by a thorough review of the academic registration of all students who are reported as underprepared in the supplemented areas. We contact those who have mis-registered in their first term, and we make administrative changes to insure their registration in the appropriate supplemented course. We are attempting to extend this supplement by connecting these courses with additional support through learning communities with associated academic orientation classes (GEN101) and with other resources to assist these students in their successful transition to college."

Institutions also described some of the difficulties inherent in providing remedial education. Students who require remediation are often surprised that they were not

adequately prepared for college level course work in high school and resent this fact. Also, some students may avoid taking remedial courses because this coursework is not credit bearing. Underprepared students can spend a considerable amount of time in remediation, especially if they are underprepared in more than one subject, time that significantly delays their academic progress.

Conclusions

In summary, substantial numbers of students who entered Kentucky's public postsecondary system in 2002 entered with remedial needs. Between one-quarter and two-fifths of entering students required remediation in math, English or reading, and fully half required remediation in at least one of these subjects. Rates were lower for recent graduates of Kentucky's high schools, but still ranged between one-quarter and one-third. Also, this report suggests that being underprepared for college level work is associated with not being retained to the second year. These numbers underscore the need for strong remedial and supplemental programs at the postsecondary level to help all students achieve their education goals. These numbers also argue for improved college preparation at the P-12 level and in adult education.

How well are these students being remediated at the postsecondary level? This study suggests that only a small majority of students who entered college in 2002 needing to be remediated actually were remediated during their first two years. Some of the students who were not remediated dropped out of college and others avoided taking any courses in the subjects in which they needed remediation. Because of limitations in the data, this report overestimates the size of this problem, yet remediation rates are low enough at some schools to suggest that there is room for improvement from these 2002 rates.

It is important to note that this report encompasses students who started college in fall 2002, and that some institutions have made substantial changes in their remediation polices since that time. Also, CPE has been working to improve its data collection concerning remediation and other forms of academic supplementation and will continue to do so. It is the intent of CPE to continue to move forward with the evaluation of remedial polices and programs, and to look in more depth at the outcomes of remediation and other forms of academic support. The Council is committed to pursuing excellence in the provision of services to academically at-risk students and accountability is essential to this endeavor.

Council on Postsecondary Education
Quality and Accountability Policy Group
May 22, 2006

Continuing the Progress in Developmental Education

Kentucky shares with the nation a challenge to (a) reduce the number of traditional and non-traditional students coming to postsecondary education underprepared and (b) improve the success rates of underprepared students admitted to Kentucky institutions. These findings were recently evident in the November 2005 report, *Underprepared Students in Kentucky: A First Look at the 2001 Mandatory Placement Policy*. More than half of the first-time freshmen entering Kentucky institutions are underprepared in at least one subject. Furthermore, the first-year drop-out rate of underprepared students is twice the rate of academically prepared freshmen. The following efforts are underway to address these challenges.

College Readiness

On May 18, the 2002 High School Feedback Reports were released. These reports provide college enrollment and performance information about the 2002 high school graduates. Reports are available for most high schools and provide comparison information for the district and the state. These reports were sent to principals and superintendents along with an extensive list of resources to assist in improving college readiness of high school graduates. School personnel and parents can access information about ACT-tested graduates who attended participating Kentucky postsecondary institutions. Average ACT scores, college grade point averages, first-year college retention rates, and mathematics and English developmental course placements and pass rates are reported.

The data refinements in the 2002 report and the lack of complete participation of all independent institutions make prior year comparisons difficult. However, the 2004 reports will be released later this fall and will provide more direct trend information to compare the graduating classes of 2002 and 2004.

This report underscores the usefulness of P-16 data exchanges to inform high schools about the impact of reform on high school graduate readiness and success in college. It also provides information that postsecondary educators can use when collaborating to improve teacher preparation programs and collaborations with local K-12 educators.

Underprepared Student Success in College

The significantly higher dropout rate of underprepared students calls for greater attention from Kentucky's postsecondary educators. All campuses participated in the 2006 Kentucky Conference on Developmental Education and have provided outlines of immediate plans to improve services based on the conference sessions. The following excerpts reflect the diversity of steps for improvement.

Eastern Kentucky University

To improve developmental education, EKU discussed the need to address each of the following:

- Have an online version for the EKU developmental instructor faculty training by fall 2006, based on best practice models.
- Place developmental education coordinators for each of the content areas (reading, writing, and mathematics) by fall 2006. The coordinators would be faculty within the academic units.
- Work with academic departments and the university administration to support the developmental education program and faculty teaching developmental education courses.
- Support new full- and part-time developmental education faculty with faculty partners within the academic units and content areas.
- Include part-time faculty members in developmental education discussions and committees.
- Increase student participation in summer retention-based programs, such as the *First Step to College Success* program and other programs under consideration, the Mathematics and Science Academy, and a workforce to postsecondary program.
- Collaborate with the Office of Academic Advising and Retention to develop advisor training programs for student advisors with developmental education needs.
- Collaborate with Kentucky Adult Education to develop workforce to postsecondary initiatives and create additional support services for students in developmental education courses.
- Collaborate with the Office of Academic Testing to develop online developmental placement tests.
- Work with high schools in the service area to communicate college-level expectations for reading, writing, and mathematics, specifically the need to address rhetorical versus cognitive approaches to writing and the need for students entering the university to have a strong algebra background to enter college level mathematics courses.

Kentucky Community and Technical College System

- Facilitate collaboration among Career Pathways, Developmental Education, and Adult Education to improve the remediation component of each Career Pathway.
- Construct a specialized CP/DE advising model.

- Create a student success model appropriate to CP, including career exploration and planning and contextualized GE 101.
- Create multiple delivery methods and flexible scheduling for instruction.
- Create contextualized instructional materials for CP initiative.
- Seek budget resources for implementing and sustaining CP initiatives.
- Create and/or link appropriate college support services.
- Create a repository for KCTCS CP/DE materials.
- Create a CP/DE model for other programs/pathways.
- Flag these students as "CP" from the beginning for data collection.
- Post on the system Web site a graphic model to show that the DE component of a CP does not stop with completion of the highest level DE course.
- Ensure accurate placement of students.

Kentucky State University

- The first step will be to advocate for better coordination of developmental courses, programs, and services available. The team recommended the establishment of an advisory council on developmental education. The group should be broad-based and inclusive of instructional and academic support areas as well as counseling units.

Morehead State University

The following summary identifies initiatives and next steps which are being planned to increase successful completion of those courses and appropriate assessments to measure effectiveness of the initiatives:

Administrative Model:

- Students who are admitted with developmental needs are assigned to departments for academic advising if they have declared a major and to Academic and Career Services if undeclared. The ACS office also is responsible for tracking, monitoring of developmental course drops, and outcomes reporting. Communication between the departments and ACS is often limited.
- Beginning with fall 2006, each department will be asked to identify a specific faculty member who will serve as liaison to the Developmental Education Task Force and work closely with ACS in monitoring and tracking developmental course completion.

Enrichment Academy:

- In summer 2006, MoSU is planning to sponsor a five-week enrichment academy modeled after the EKU First Step to College Success program. Developmental students with two or more needs will earn credit for two developmental classes and an academic success class which integrates orientation, study skills, and career planning.

UAR 128.01 Enforcement:

- University Academic Regulation 128.01 requires that students complete developmental needs by the time they have attempted 45 credit hours. Failure to meet the requirement results in a student not being able to register for any other classes except developmental courses. Enforcement of the policy will be reevaluated in summer 2006.

Developmental Student Advisement:

- Students who declare a major are currently moved into a department even if they have three or more developmental course needs. A policy which prohibits declaration of a major until developmental needs are met will be revisited in summer 2006. At least one department (nursing) is currently developing a similar policy for students interested in their programs.

Murray State University

- Improve communications about the community college program and developmental classes:
  - Communicate with administrators, teachers, and counselors in local high schools, campus support programs, and adult education programs.
  - Speak up and advocate for developmental students explaining their needs and noting their potential.
  - Increase awareness of current support courses and tutoring.
  - Extend tutoring hours.

- Work toward an understanding and proper attitude about assessment testing and course placement:
  - Talk with orientation leaders about appropriate enrollment which can lead to greater student success.
  - Provide a less intimidating and more personable atmosphere for students taking assessment tests during orientation sessions.
  - Meet with parents at orientations while students are testing to offer an understanding of the importance of correct placement for their students.
  - Improve the language used to describe developmental coursework, both verbal and written.
  - Track students who have tested into entry-level classes to develop a better placement test for MuSU classes.

- Expand advising/counseling using the community college advisor and staff to talk with students in all community college courses (not just restricted-status block classes) as soon as signs of difficulty arise.

- Train and seek to motivate all staff, including adjuncts, graduate assistants, and tutors, to respect, properly guide, and motivate developmental students.

- Strongly encourage individual student conferences with students in all developmental courses.

Northern Kentucky University

- Use modular developmental mathematics classes (improve persistence).
- Offer study tables with faculty tutors available.
- Offer special incentives (contracts) for students who are repeating developmental classes.
- Develop a special developmental program for students who have two academic deficiencies.
- Front-load remediation in a summer bridge program and make reducing developmental needs a condition for admission to the university.
- Require every student admitted with a mathematics, reading, or writing deficiency to participate in an academic assistance program.
- Restructure the developmental reading class to emphasize skills needed for academic reading.
- Explore requiring completion of a developmental reading class as a prerequisite for ENG 101 for any student with a low ACT reading score.
- Explore offering reading courses to high school students that would prepare them for college-level reading expectations.

University of Kentucky

- Conduct exploratory analyses of data captured in the Mandatory Placement Report to develop a better understanding of students requiring developmental help. UK has submitted follow-up data on students enrolled in developmental and college-level courses as part of the Student Feedback File submitted annually to the Council's comprehensive database. However, a demographic analysis of students who score below the statewide placement standards would improve UK's ability to assist certain segments of the freshman cohort in bringing their skills and knowledge up to statewide placement standards.

- Develop more effective assessment instruments for placing students into courses. UK recently conducted an analysis of a new test designed to place students into mathematics courses. Preliminary data suggest that the exam does not perform any better than the ACT mathematics sub-scale in predicting final grades in college-level mathematics. UK will explore options for improving the placement of students in mathematics and other courses.

- Examine the feasibility of remediating some students during one of the summer sessions. UK will explore the possibility of offering instruction to a limited number of students who fall below statewide placement standards in the summer. Students enrolled in this

developmental program also will participate in UK 101, a course that provides an orientation to the university, support services, and campus life.

University of Louisville

- In 1998, UofL operated a unit (Transitional Studies) with the primary purpose to provide developmental classes and related services to students who are admitted conditionally to the university. In most cases, these students had not completed the pre-college curriculum with satisfactory grades, had not scored sufficiently high on the ACT, or did not have the required high school GPA to be admitted to UofL. The decision to begin to increase minimum admission criteria and to admit students directly into their college of choice resulted in changing the way the university dealt with students with developmental needs.

- In 2000, the university contracted with Jefferson Community and Technical College to provide developmental classes on UofL's campus for students who needed developmental coursework in mathematics, English, and reading. Students who did not score above certain minima on their ACT subscores were tested with COMPASS and placed into developmental courses on the basis of the COMPASS scores.

- In subsequent years the university began to mainstream all students into English 101 classes. This was accomplished by increasing the number of instructors, which enabled the English department to limit the class size to 22 and, thereby, provide more one-on-one help to students. UofL also phased out the developmental reading/reading comprehension courses by coupling reading assistance to specific general education courses that required a significant amount of reading as part of the normal course. In this way, the reading assistance helped improve students' reading abilities as well as providing better comprehension of the course material. Both of these strategies have provided good results and have permitted students to move directly into credit-bearing classes. All developmental courses in English and reading/reading comprehension have been eliminated.

- Mathematics remediation has proven to be a larger and more difficult task to address. UofL continues to offer developmental mathematics taught by JCTC instructors for students whose ACT mathematics scores fall below a threshold value. In addition, UofL offers special enhanced mathematics classes for students whose mathematics ACT score is slightly below the threshold value for credit-bearing classes. These supplemental classes meet four or five days (compared to the normal three or four) per week and require the students to sign a contract limiting their absences. These classes have proven to be remarkably successful in terms of both performance and retention. UofL also is beginning to experiment with one-hour mathematics modules that might replace the three- or four-hour developmental courses. These modules will target specific areas of weakness (e.g., trigonometry) rather than require a student to spend a full semester in a developmental class.

Western Kentucky University

At the time of printing, Western Kentucky University had not submitted plans to improve services to underprepared students.

Postsecondary Developmental Student Success Task Force

The Quality and Accountability Policy Group has requested that a task force be appointed to review issues related to developmental education and to improve developmental student success in college. Recognizing that Kentucky's high school and adult education curriculum reforms and college readiness assessments are effectively being addressed, this task force will be directed to focus on the postsecondary student experience. The following charge is proposed to guide the work of the task force:

> The Postsecondary Developmental Student Success Task Force is charged with constructing a comprehensive plan for improving the outcomes of developmental education with accountability measures, goals, and timelines for improvement to be reviewed by the Council for implementation in 2007. To the extent possible, standards for institutional and state level services and outcomes for underprepared students should be identified based on national developmental education research.

Members will be announced at the July Council meeting and will include representatives from institutional academic affairs, developmental education, and assessment areas. The task force will be asked to deliver its findings at the end of 2006 in support of the release of the review of Mandatory Placement Policy outcomes for the first-year students of 2004.

Staff preparation by Sherri Noxel

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July 27

Many Advisers, One Message

Throughout her career at Oregon State University, Susie Leslie has overheard this conversation, or variations of it, a few too many times for her taste:

"Academic adviser?"

"Oh, you mean that person who counts my credits and allows me to register for classes?"

While that is the extent of the adviser-advisee interaction for many students, particularly those at large public universities, Leslie said advising offices generally set the bar higher for themselves. They can talk students through academic suspensions and departmental transfers — but only if word gets out about the services they offer.

Problem is, many campuses have advisers who are embedded in academic departments. Some are full-time advisers; others are faculty members for whom advising is a small, and not necessarily highly rewarded, part of their job. They operate from different buildings and rarely communicate with each other, resulting in an advising system that is highly decentralized.

That's why creating a unified message and delivering it to students is crucial, said Leslie, the academic programs and assessment coordinator at Oregon State.

"One thing that students complained about in past years was inconsistency," Leslie said. "When they changed majors, they heard a different story and got different information from advisers in another department."

Oregon State has attempted to rectify that problem by creating a group made up of head advisers from each college, who together developed a best practices list. When students make their mandatory once-a-year visit to their advisers this year, every adviser will have similar talking points and every incoming student will have access to a week-by-week calendar explaining how to survive the academic year. A number of colleges have taken similar steps to bring their disparate advising offices and departments closer together in mission.

Charlie Nutt, associate director of the National Academic Advising Association, said that by having a common goal in mind, advising programs are able to more clearly articulate their purposes to students. At the group's summer seminar, Nutt is leading a session called "Developing Mission Statements," a practice he said still isn't widespread.

"Institutions have to be more aware that developing a strong (student-adviser) relationship is key to the idea of student engagement, which numerous studies have shown is tied to retention rates," he said.

At the University of Louisville, increasing student retention was the motivating factor behind the recent creation of the office of undergraduate advising practice.

Janet Spence, the office's director, said undergraduate colleges were operating almost autonomously when it came to academic advising. The office has created an online program consisting of six modules that intends to give incoming students consistent information — and advice — about how to handle the first year of college. Topics include technology, general education and faculty-student interaction. Students must score 70 percent on each module before signing up for classes in their second term.

The College of DuPage, a community college in Illinois, recently hired a full-time staff member to coordinate advising on the campus. If departments within the college change their academic requirements, for instance, the staff member enters the information into a database for all advisers to see. The college has also created a web-based advising calendar on the student portal with descriptions of advising events.

"Everything was working in isolation before. We had academic affairs vs. general advising, and there was no communication," said Jocelyn Harney, DuPage's dean of students.

On the recommendation of the National Academic Advising Association, both DuPage and the University of Arkansas at Fayetteville developed adviser awards. At Arkansas, a newly established council made up of one faculty and staff member from each college distributes money to the winners.

Karen Boston, assistant dean for undergraduate programs at Arkansas, said the provost appointed the committee to develop an adviser training program and to agree on how to assess the advising system.

Colleges with a limited budget for advising have to be particularly creative. At the Information and Academic Support Center, Portland State University's lone centralized advising office, advisers often determine which students they see not by major but by broader categories — including veterans, community college transfers and those who are academically at risk.

Mary Ann Barham, interim director of the Information and Academic Support Center, said the idea is that while keeping a central mission is important, allowing advisers to personalize their message is equally important.

Leslie, the Oregon State coordinator, said that colleges will continue to have advising programs that reflect the institution, but that "consistency within the college" is paramount.

— Elia Powers

The original story and user comments can be viewed online at http://insidehighered.com/news/2006/07/27/advising.

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