ANNUAL REPORT OF
DEVELOPMENTAL EDUCATION IN IOWA COMMUNITY COLLEGES

ISSUED
July
2018

COMMUNITY COLLEGES &
WORKFORCE PREPARATION
PROSPERITY THROUGH EDUCATION
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Published: 2018

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Letter from the Director

Dear Education Stakeholders,

One of the critical functions of the Iowa Department of Education is to provide and interpret educational data. We do this to support accountability, transparency, and the ongoing improvement of our schools. This first-of-its-kind annual report provides an analysis of baseline information about the enrollment, demographic characteristics, and success of students in developmental education at Iowa's community colleges. This report also describes several community college initiatives designed to reduce and accelerate developmental education coursework in order to increase student retention, persistence, and award completion.

Developmental education refers to preparatory instruction that does not count toward a college degree, but should be completed by students who are assessed as being underprepared for college-level coursework. While it offers students the opportunity to improve their foundational skills and pursue postsecondary education and training, developmental coursework can create a barrier to degree completion and the attainment of career goals. To overcome this barrier, reducing the need for developmental education and streamlining the transition into college-level coursework for underprepared adults is a high priority of Iowa's educational system.

In addition, efficient developmental education programming is important to Governor Reynolds' Future Ready Iowa initiative, which calls for 70 percent of Iowans in the workforce to have postsecondary education or training by 2025. A commitment to improving developmental education, particularly to serve individuals who may not otherwise pursue a college education, is essential to the attainment of this statewide goal. Having a clear understanding of the students served in these programs, as well as the current support services and instructional strategies, is necessary to strengthen Iowa's approach to developmental education.

Thank you for taking the time to review this report and for your ongoing support of student success in Iowa. I look forward to working with you on statewide collaborative efforts designed to prepare high school and adult students for postsecondary success. Only through quality education and training programs can we equip Iowans with the skills and knowledge to meet their career and educational goals and become productive members of Iowa's workforce.

Sincerely,

Ryan M. Wise

Ryan M. Wise, Ed.L.D.
Director
Iowa Department of Education

Executive Summary

The Iowa Department of Education (Department) collects information on developmental education (Dev. Ed.) from Iowa's 15 community colleges on an annual basis. Dev. Ed. courses are offered in mathematics, reading, writing, English as a Second Language (ESL), and in other subject areas such as financial literacy and skill building. These credits do not count toward degrees, but typically must be completed by students who are assessed as being academically underprepared before advancing to transfer-level courses.

Developmental Education is important to the mission of the comprehensive community college and is a critical factor in meeting the state's Future Ready Iowa (FRI) goal, which calls for 70 percent of Iowans to have education or training beyond high school by 2025. Because effective Dev. Ed. programs are essential to maintaining Iowa's community college commitment to open-access, high-quality education for all, it is necessary to understand the students served and to analyze the data regarding their success. This report provides data on student demographics, course enrollment, credit hours taken, and success metrics as reported by colleges in the Department's Management Information System (MIS) by fiscal year (FY) for student data before 2016-17, and annual year (AY) for student data starting in 2016-17.

In this report, first-time in college (FTIC*), non-high school students are followed from their cohort years 2013-14, 2014-15, 2015-16, and 2016-17 to establish both Dev. Ed. statistics and outcome trends. This report also shares course success statistics such as persistence and retention data for all cohorts, as well as graduation and transfer "success" outcomes for the 2013 and 2014 cohorts. Future reports will include these outcome metrics for additional cohorts once they have been tracked for three full years.

This inaugural report establishes a baseline of data for future research and analysis and will help determine the efficacy of Dev. Ed. strategies and the impact on meeting the state's ambitious FRI goal.

DEVELOPMENTAL EDUCATION:

Undergraduate courses and other instruction designed to help academically underprepared students get ready for college-level coursework and continued academic success.

DATA REPORTING

In 2015-2016, the Department started collecting community college data based on academic year (AY) rather than fiscal year (FY). This reporting period allows for more accurate and relevant enrollment, completion, and award data since it more closely aligns with a typical school year.

Because of this change, course enrollment, credit hours taken, student demographics and course information included in this report are based on fiscal year for student data reported before 2016-17, and academic year for student data starting in 2016-17.

FIRST-TIME ENROLLED IN COLLEGE (FTIC*)

FTIC refers to students who were enrolled for the first time at a reporting community college. Students who were previously enrolled at a different college are included in this calculation if the reporting colleges consider them to be enrolled for the first time at their respective institutions. High school students who were enrolled in community college coursework were excluded from this group.

Baseline Statistics

Enrollment

- According to the *Annual Condition of Iowa's Community Colleges: 2017* report, 9.0 percent of students were enrolled in a Dev. Ed. course in AY2016-17, as compared to 11.0 percent of students in FY2015-16. The total number of students enrolled in at least one Dev. Ed. course in AY2016-17 actually decreased 19.7 percent from FY2015-16.
- Students enrolled in 63,378 Dev. Ed. credit hours in AY2016-17, which is a decrease of 18.6 percent from FY2015-16. There has been a 34.4 percent decrease in Dev. Ed. credit hours since FY2013-14 and 42.3 percent since FY2012-13.
- There were 19,401 Dev. Ed. courses offered (with prefixes in MAT, ENG, RDG, ELL, and ESL) in AY2016-17, which has decreased 16.4 percent from the 23,203 courses offered in FY2015-16.
- Dev. Ed. credit accounted for 3.5 percent of total community college credit in AY2016-17.
- The most popular developmental courses taken by students during AY2016-17 were Elementary Algebra and College Prep Writing I.

Student Demographics

- The average age of first-time in college (FTIC) Dev. Ed. students in the 2016 Cohort was 20.7 years. For all students taking Dev. Ed. (not just FTIC students), the average age was 23.2 years old.
- Females represented 53.6 percent of FTIC students in the 2016 Cohort. The percent increased to 57.0 percent female when all students taking Dev. Ed. in AY2016-17 were considered.
- Racial or ethnic minorities represented 38.7 percent of FTIC students in the 2016 Cohort compared to 23.0 percent for those not taking Dev. Ed. courses. This percent was significantly higher than that for the AY2016-17 student population that reported racial or ethnic minority status (21.0 percent).
- Black students made up 19.1 percent of FTIC Dev. Ed. students, representing nearly half of all minority FTIC Dev. Ed. students. This is much higher than the proportion of black students in the 2016 non-Dev. Ed. Cohort (8.4 percent) and in the total AY2016-17 enrollment (7.2 percent).
- Low-income students made up 51.4 percent of FTIC Dev. Ed. students in AY2016-17.
- Students who self-identified as ESL/ELL made up 7.2 percent of FTIC Dev. Ed. students.
- Students who self-identified as being disabled made up 7.0 percent of FTIC Dev. Ed. students.
- The majority of FTIC Dev. Ed. students, 77.7 percent, were enrolled full time.
- Of all FTIC Dev. Ed. students, 23.7 percent were enrolled in career and technical education (CTE) programs.
- The majority of FTIC Dev. Ed. students, 90.7 percent, took a face-to-face class.

Student Outcomes and Cohort Comparisons/Trends

Outcomes (2013-14 Cohort)

Dev. Ed. students compared to non-Dev. Ed. students in the cohort show the following differences:

- Dev. Ed. success (graduation and/or transfer rate) was 34.9 percent compared to 52.9 percent for non-Dev. Ed. students.
- Students had a 53.4 percent success in developmental courses as defined by C- or higher.
- Dev. Ed. students had a 58.3 percent success in all courses in the first term compared to 72.5 percent success in all courses by non-Dev. Ed. students.
- These students had a 72.6 percent fall to spring persistence rate compared to 72.1 percent for non-Dev. Ed. students.
- These students had a 48.5 percent fall to fall retention rate compared to 50.2 percent rate for non-Dev. Ed. students.
- Over one-third of students were determined by the colleges to have a developmental course need and of those students, about one-third passed their developmental course. Credential-seeking students passed their developmental courses at 48.9 percent. Of these students, 26.7 percent, passed a transfer math course and 41.5 percent passed a transfer English course.
- Colleges utilized multiple methods and course modes to teach developmental content to the cohorts in AY2016-17.

Statistical Comparisons (within 2016-17 FTIC Cohort)

Characteristics of Dev. Ed. students, as compared to non-Dev. Ed. students in the latest cohort, show the following differences:

- These students comparably were more likely female (by 4.7 percent).
- These students were more likely low-income (by 11.6 percent).
- These students were more likely to be ESL/ELL identified (by 4.7 percent).
- These students were more likely to be full-time students (by 12.7 percent).
- These students were less likely to be CTE students (by 16.2 percent).
- These students were younger on average (by 1.1 years).

Trends (between 2013-16 FTIC Cohorts)

Review of the FTIC cohorts from 2013 to 2016 show the following trends:

- FTIC Dev. Ed. students were increasingly female (53.6 percent), minority (38.7 percent), low-income (51.4 percent) and immediate enrollees (47.0 percent).
- FTIC Dev. Ed. students were decreasingly enrolled full time (77.7 percent) and decreasingly selecting a CTE program of study (23.7 percent).

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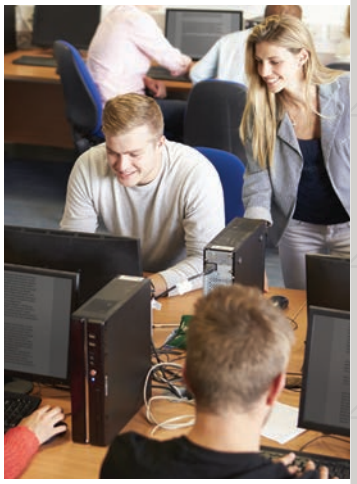


1 Overview

Each year, millions of college students across the nation enroll in developmental education (Dev. Ed.) coursework because they have been identified as being unprepared for college-level (transfer) coursework through assessments or by their own judgments. In fact, national research suggests that about 40 percent of community college students take at least one Dev. Ed. course (Challenges and Strategies for Reform, January 2017).

While Dev. Ed. offers these students the opportunity for a college education by improving their foundational skills, it can also create a barrier to their success and the ultimate completion of college awards and attainment of career goals. In light of concerns regarding student success, completion, and student debt, policymakers have called for a review of Dev. Ed. practices, curriculum, and teaching strategies. This report serves as one such review of Dev. Ed. offered at Iowa's 15 community colleges.

As stated in Iowa Code 260C.1, one of the numerous missions of Iowa's community colleges is to provide "*developmental education for persons who are academically or personally underprepared to succeed in their program of study*." Given this mission, community colleges must find ways to provide academic and student supports designed to help students succeed without preparatory courses becoming a barrier to that success. All of Iowa's community colleges offer at least one Dev. Ed. course and multitudes of support services to help students prepare for college-level coursework, thereby actively addressing the aforementioned concerns.

Iowa is a state highly regarded for achievement and success in education, ranked first in the nation for high school graduation rates. However, Iowa's college attainment statistics are not as impressive (U.S. Census 2011-15 survey). Despite high graduation rates, Iowa has a large segment of high school students who require remediation before enrolling in postsecondary coursework. This report provides information about these students, as well as returning adults, who enroll in community colleges in need of Dev. Ed. to prepare for college-level work.

Also reported in this document are disparities among developmental students based on income and ethnicity. Closing these equity gaps is a major goal of the Iowa Department of Education (Department) and community colleges. For Iowa's societal and economic future, its system of education needs to ensure that all students are prepared for the jobs of the future, the majority of which require postsecondary training and education. A focus on successful pathways from high school to community college and accelerating Dev. Ed. are a few ways the education system can provide this workforce preparation and strengthen Iowa's economy.

The Department annually collects information on Dev. Ed. courses from Iowa's community colleges through its Management Information System (MIS). In past reports, Dev. Ed. students were identified as those enrolled in courses numbered

below 100 (e.g., MAT 060), as established by protocol in the Iowa common course numbering system for courses below the college level. Because of this methodology, Dev. Ed. statistics and research have only reported on students who were advised and enrolled into courses denoted with numbers below 100. However, due to the state's recent participation in Voluntary Framework for Accountability (VFA) research, statistics can now be presented on a broader set of students who are documented as needing Dev. Ed. rather than just enrolling in the courses. As of yet, not all colleges are determining or documenting this student need consistently, but the picture of Dev. Ed. is becoming clearer. (Information on VFA is provided in section 5.)

Typically, colleges offer Dev. Ed. courses in the subject areas of mathematics, writing (English), reading, and English as a Second Language (ESL)/English Language Learners (ELL). Some colleges also offer Dev. Ed. in areas such as personal finance, chemistry, and skill-building, but since these specific courses (accounting for 527 enrollments in Academic Year 2016-17) are not prevalent across multiple colleges, this report does not include these course statistics.

As this report illustrates, the number of Dev. Ed. students, courses, and credit hours has decreased in Iowa community colleges over the past several years. The reasons for these decreases vary. For years, community colleges have been implementing curricular acceleration strategies to move students through Dev. Ed. courses faster. These strategies include, but are not limited to:

- utilizing ALEKS, a research-based online math program, to diagnose math deficiencies and provide customize learning modules for students to improve math skills at their own pace;
- using multiple measures such as high school GPA, standardized test scores, and non-cognitive indicators for Dev. Ed. placement;
- collaborating with local school districts to assess subject matter deficiencies and integrate developmental curriculum into high school courses; and
- creating co-requisite courses, lab modules, and other academic supports to supplement student learning.

Colleges are also implementing proven student support strategies to accelerate students' Dev. Ed. course completion, such as tutoring, intrusive (proactive) academic counseling, early alert systems, mandatory advising, non-cognitive supports, summer bridge programs, and learning communities. These strategies are described in Section 5 of this report, and specific initiatives underway at Iowa's 15 community colleges are presented in Section 6, Initiatives and Best Practices in Iowa Developmental Education.

2 Developmental Education Synopsis

This section provides a synopsis of Dev. Ed. in Iowa community colleges through various statistics of Academic Year (AY) 2016-17 MIS data, which includes data on both First-Time-In-College (FTIC) and non-FTIC students. (See definition of FTIC on page iv.)

Courses

In AY2016-17, math courses accounted for the vast majority of Dev. Ed. enrollment, (53.1 percent or 10,308 out of the total 19,401 Dev. Ed. enrollees). It should be noted that "enrollees" are not the same as "students" because students can enroll in more than one course. After mathematics, English as a Second Language (ESL) and Intensive ESL (i.e., ESI) language development courses had the most students enrolled with 4,074. Developmental writing courses followed with 3,837 enrollees and developmental reading courses had 1,182 enrollees (Figure 2.1). The math course with the highest enrollment was Elementary Algebra with 2,979 enrollees, and the highest writing course enrollment was College Preparatory Writing I with 862 students.

DEVELOPMENTAL EDUCATION HIGHLIGHTS AY 2016-17

19,401 Dev. Ed. course enrollees (duplicated)

Down **16.4%** from FY2015-16

11,967 unique students enrolled

Down **19.7%** from FY2015-16

Of the students enrolled in developmental education:

53.1% of classes taken were in math

57.0% were female

39.6% were racial or ethnic minorities

The total of 19,401 incidences of Dev. Ed. enrollment offered at Iowa's 15 community colleges in AY2016-17, represents a decrease of 16.4 percent from the 23,203 courses offered in FY2015-16. This, in turn, was a 12.4 percent decrease from the number of courses offered in FY2014-15 (26,496).

DEVELOPMENTAL MATH COURSES

A math course with a number below 100 offered at a community college that does not meet graduation credit requirements for certificate, diploma, general studies or associate degree programs. The intent of these courses is to raise the student's math skills to college level. The developmental math course with the highest enrollment, Elementary Algebra, is a first course in Algebra which covers the beginning concepts through properties of exponents.

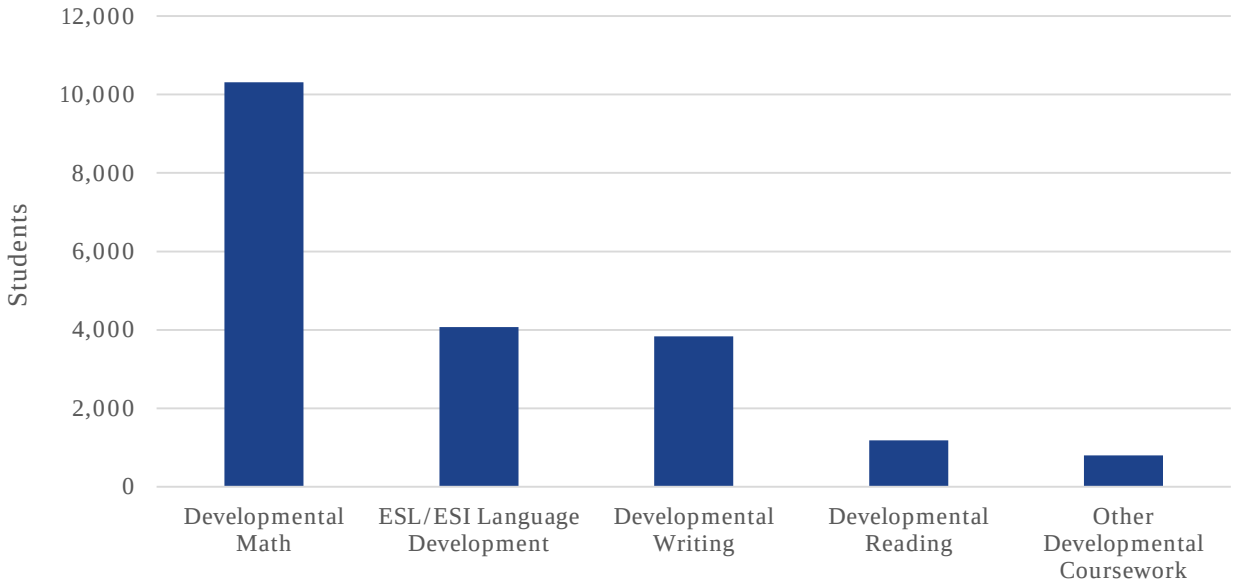
ESL AND ESI COURSES

Non-intensive ESL courses are designed for students whose second language is English. These may include ESL reading, writing, listening, and speaking courses. Intensive ESL (ESI) courses provide students with English language and academic preparatory skills to be successful when pursuing postsecondary education. Students gain experience in all forms of English communication while developing academic skills needed for postsecondary success.

DEVELOPMENTAL WRITING AND READING COURSES

A writing or reading course with a number below 100 offered at a community college that does not meet graduation credit requirements for certificate, diploma, general studies or associate degree programs. The intent of these courses is to raise the student's reading and writing skills to college level, The developmental writing course with the highest enrollment, College Preparatory Writing I, introduces students to writing at the basic sentence and paragraph levels. Developmental reading courses emphasize communication, vocabulary, and comprehension.

FIGURE 2.1: ENROLLEES IN DEVELOPMENTAL COURSES GROUPED BY TYPE (AY2016-17)



Enrollment

During the 2016-17 academic year, 11,967 students (9.0 percent of total headcount) enrolled in at least one Dev. Ed. course, which represents a 19.7 percent decrease from FY2015-16, and is down 45.3 percent since FY2012-13. These students enrolled in a total of 63,378 credit hours of Dev. Ed. during AY2016-17, which was an 18.6 percent decrease from the previous year. As mentioned on the previous page, these students accounted for 19,684 incidents of enrollment (i.e., enrollees) in math, writing, and ESL/ELL courses, illustrating that many students enroll in more than one Dev. Ed. course.

Iowa community colleges have reported at least a five-year decline in credits taken and students enrolled in Dev. Ed. statewide. AY2016-17 saw a 42.3 percent decrease in Dev. Ed. credits taken since FY2012-13. As stated in the overview, the reason for this decrease is not necessarily that students are entering college better prepared, but rather is due to colleges' efforts to improve and accelerate Dev. Ed.

Student Demographics

Similar to the general population of community college students in AY2016-17, in which 54.0 percent were females, they also represented the majority of Dev. Ed. students (57.0 percent). While this represents a slight gender disparity, it is minor when compared to the disparity of Dev. Ed. students belonging to a racial or ethnic minority as compared to the total student body in AY2016-17 (39.6 percent vs. 21.0 percent).

RESEARCH HIGHLIGHT

Why the diversity disparity?

Why is the percentage of racial and ethnic minority students so much higher among Dev. Ed. students than the total student population?

In AY2016-17, students from ages 15 to 59 took Dev. Ed. courses. These students had an average age of 23.7 years, which was slightly higher than the general population's average of 21.7 years.

Credit Hours per College

Figure 2.2 shows the percentage of developmental credits taken in the fall 2016 semester, by community college. These credits were taken by the "2016 Cohort" of FTIC - First-Time-In-College, but non-high school - students enrolled in Iowa's community colleges.

Note that Northwest Iowa (Region 04), Western Iowa Tech (12), Iowa Western (13), Southwestern (14), and Indian Hills (15) reported significantly smaller percentages of students taking Dev. Ed. credits. This is largely due to the fact that they utilize alternate methods to place students into college-level courses. Figure 2.3 on the next page shows the credit-type breakdown by college for the 2016 Cohort.

FIGURE 2.2: DEVELOPMENTAL EDUCATION BY COMMUNITY COLLEGE REGION AS A PERCENT OF TOTAL FALL CREDITS (2016 COHORT)

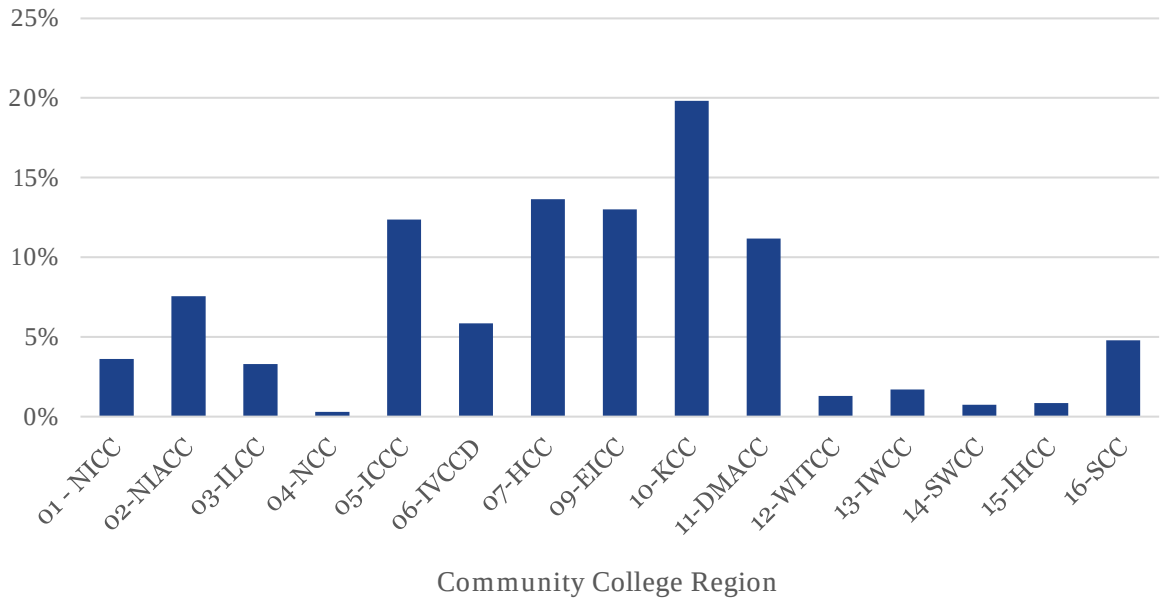
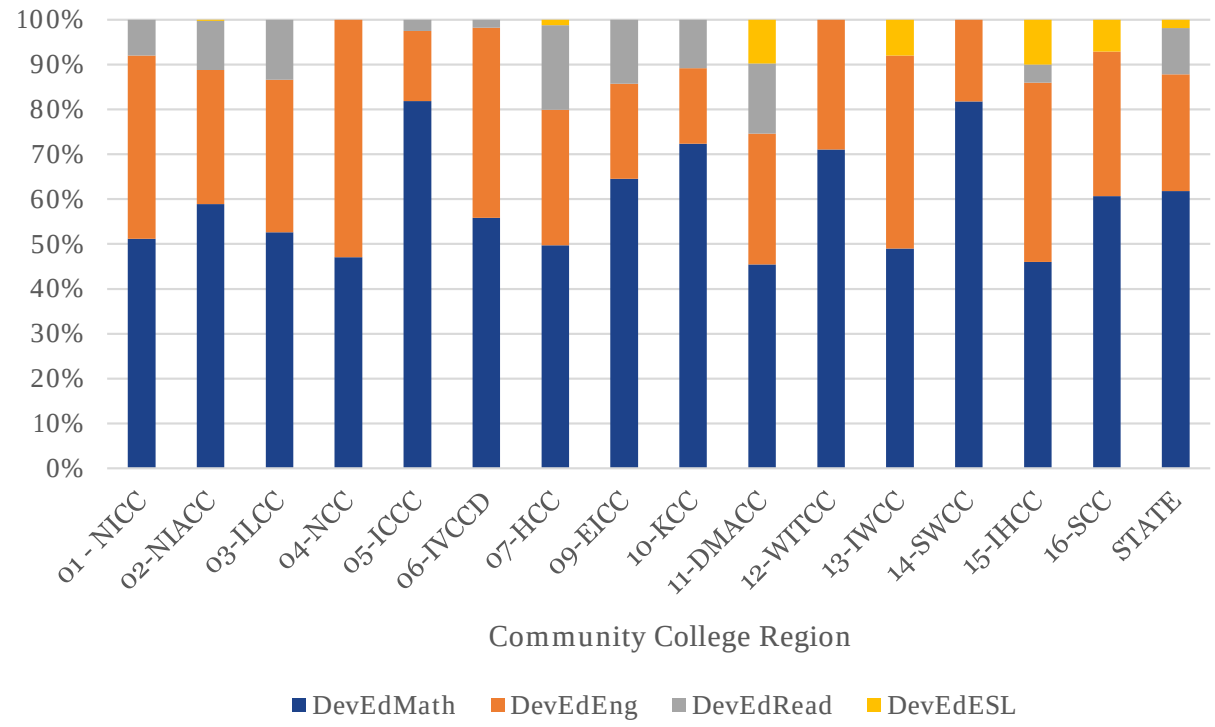


FIGURE 2.3: DEV. ED. COURSE TYPE BY COMMUNITY COLLEGE (2016 COHORT)



As mentioned in the overview and discussed later in this report, the decreases in Dev. Ed. students, courses, and credits can be attributed, in part, to the strategies that community colleges are implementing to accelerate students into college-level coursework. Many of these strategies involve curriculum realignment and instructional delivery modes, including, but not limited to, paired or co-requisite, online, blended or hybrid, self-paced, web-enhanced, modularized, and accelerated courses. (These methods are further described in Section 5, with best practices from each college provided in Section 6.) Regarding who teaches these courses, 52.1 percent of Dev. Ed. courses were taught by adjunct instructors in AY2016-17, compared to 40.9 percent of all courses taught by adjuncts.

Postsecondary Readiness Efforts

Local school districts strive to meet the goal of preparing all Iowa high school students for postsecondary success. Consistent measures of college and career readiness (CCR) are being defined to help school districts identify potential areas to address in order to increase students' access to college opportunities. Based on the 2017 Postsecondary Readiness Report, 70.8 percent of students who started high school between 2012 and 2014 enrolled in college or training programs within one year of high school graduation. Furthermore, 47.3 percent of students who started high school in 2009 earned some type of postsecondary award within six years of high school graduation. More information regarding CCR can be found at the Department's website at: http://reports.educateiowa.gov/postsecondaryreadiness

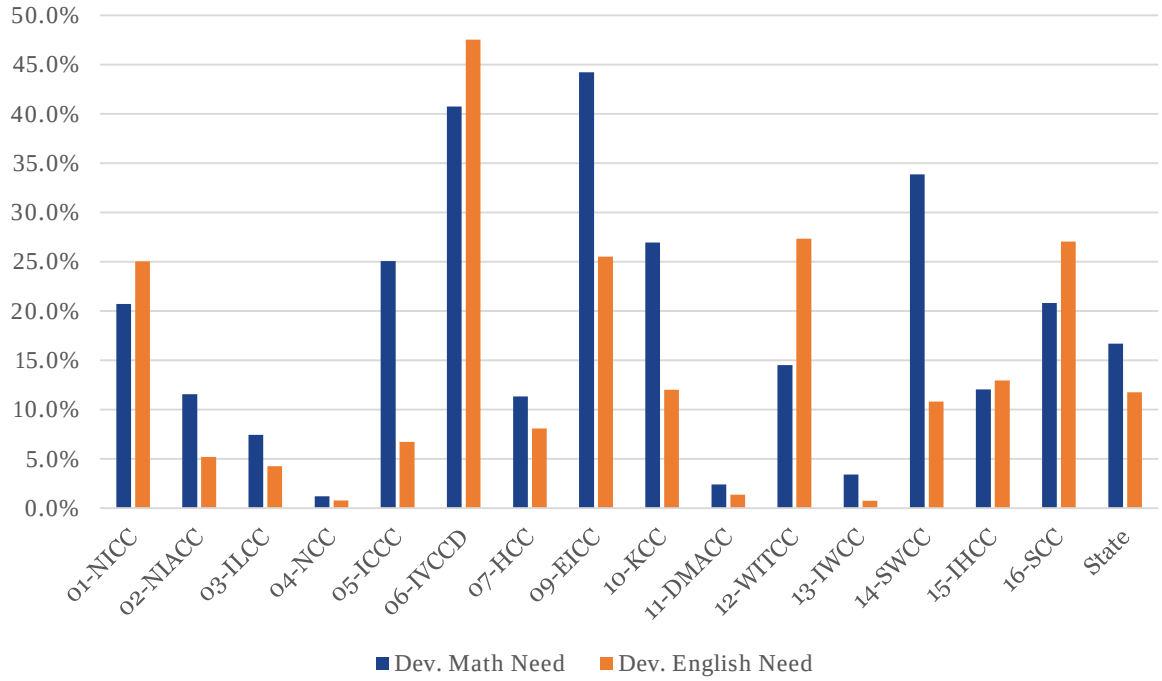
Developmental Math Need

For many years, the Department has identified Dev. Ed. students as those who enrolled in Dev. Ed. courses, signified by a course number below 100 (e.g., MAT 060). This is not a completely reliable method of identifying and tracking students, because not all students who entered college academically underprepared (i.e., in need of Dev. Ed.) actually enrolled in Dev. Ed. courses. Therefore, a better method of identifying those students who need some level of college preparatory skills development is needed in order to conduct accurate, meaningful research on Dev. Ed.

In the fall of 2016, the Department's MIS system actually started collecting data on students who demonstrate developmental need, based on the Voluntary Framework of Accountability (VFA) metric definitions (see Section 5, on page 24). Through the MIS system, colleges now report students who need developmental math and English based on their own internal metric. Unfortunately, as this is a newly collected measure, not all colleges are reporting or documenting this "need" metric in the same manner. For example, some colleges continued reporting the enrollment of students in Dev. Ed. as an indication of need, while other colleges more accurately reported need based on subject matter assessments, but only for full-time students.

Discussions with the community colleges about the purpose and importance of this need metric are helping to gain consistency in the reporting of Dev. Ed. data. If a student is assessed below college level in math (or English), the college will report that student "in need" of developmental math (or English). They will also report the

FIGURE 2.4: DEVELOPMENTAL COURSE STUDENT NEED BY COLLEGE



number of levels the Dev. Ed. course is below college-level. Although this type of "need" data has only been reported for VFA recently, the preliminary data from AY2016-17 provides a baseline for this metric.

In fall 2017 (part of AY2017-18, not otherwise reported herein), out of 90,531 unduplicated students statewide, 15,109 students (16.7 percent) were reported as needing developmental mathematics and 10,628 students (11.7 percent) were reporting as needing developmental writing (i.e. English). This number of students in need of Dev. Ed. is larger than those reported as enrolled in Dev. Ed. courses in AY2016-17 (11,967) and establishes a more reliable baseline.

Figure 2.4 shows a comparison of student enrollment, based on these needs, for each college. This figure shows that developmental need ranges from one to 40 percent of students at the various colleges, thus affirming the inconsistency of reporting this metric, which results in a challenge to conduct meaningful statewide research on Dev. Ed.

The outcomes success data for each student cohort presented in Section 5 also depends upon a consistent and reliable baseline of the students developmental subgroup. Therefore, until the developmental "need" becomes a more consistent and reliable metric, the cohort data provided in this report are based on developmental course-taking (enrollment) rather than on developmental need. It is expected that for AY2017-18 and future MIS data, the developmental need variable will be a more reliable metric for researching these cohort outcomes.

RESEARCH HIGHLIGHT

Do these success rates correlate with other factors, such as high school GPA, age, gender, or ethnicity?

Over the six years, many students who had developmental need, as identified by placement test scores, did not follow the advice to take Dev. Ed. courses. How do their success rates (retention, completion, transfer) compare to those who took Dev. Ed. courses?

3. Developmental Education Cohort Research

Cohort Methodology

Enrollment in developmental courses in Iowa community colleges has shown a sharp decline over the past several years. These developmental courses can be sorted into five types of courses: mathematics; English or writing courses; reading courses; English as a Second language (ESL/ELL) courses; and other discipline courses. The other discipline courses are not tracked in this report due to the low numbers of these courses and the great variability and purposes for which the colleges use them.

For the purposes of this report, the Department has aligned non-high-school, First-Time-In-(the reporting) College (FTIC) students into cohorts for each of the past four years, based on their fall semester year of entry. For example, non-high-school students entering a community college for the first time in the fall of 2013 were placed into the 2013-14 cohort (to be referred to as the "2013 Cohort"). Students in each cohort were then divided into two categories: students who did not take any Dev. Ed. courses and students who took at least one Dev. Ed. course in the areas of mathematics, English, reading, or English as a Second Language/ English Language Learner (ESL/ELL). Demographic information is available to describe all four cohorts.

At the time of this report, four full years of data was available for the 2013 Cohort of students, and the 2014 Cohort has established three years of data. These timeframes have allowed the students to complete a program of study within 150 percent of the normal time for completion and/or transfer to a four-year institution. Therefore, data regarding these first two cohorts, which provide a more complete picture of student success and educational outcomes, is provided in this section. Although the 2016 Cohort only has one year of established data, because this cohort may be the most relevant regarding Dev. Ed. initiatives, first-year data on student course success, persistence to second semester, and retention to the subsequent fall semester is also provided.

COHORT DESCRIPTION

Non-high school students who enrolled for the first time at their current (i.e., the reporting) community college starting in the fall of 2013, 2014, 2015, or 2016. For example, those who entered for the first time in the fall of 2013 are in the "2013 Cohort."

COHORT SUBGROUPS

Each of the four cohort data sets was separated into subgroups for comparison purposes:

Developmental Status Subgroups -

- Students who did not take any developmental courses.
- Students who took at least one developmental course in math, English, reading, or ESL/ELL.

Age Subgroups -

- Immediate enrollees who enrolled in the fall following high school graduation.
- Under the age of 25, but not immediate enrollees.
- Over the age of 25.

Course Type Subgroups -

- Mathematics
- Writing
- Reading
- ESL/ESL

Students in each cohort (FTIC) were separated into one of the following three age categories: immediate enrollees (enrolled in the reporting community college the fall term immediately following high school graduation); under age 25, but not immediate enrollees; and 25 and older. Both Dev. Ed. and non-Dev. Ed. student information is provided for these age subgroups.

Course-taking data, for the students in each cohort that took Dev. Ed. courses, were separated into categories: mathematic, writing or English, reading, and ESL/ELL courses. The three age groups defined above were analyzed under the lens of these course types; however, since only Dev. Ed. courses were reviewed, the non-Dev. Ed. students were not included in this analysis.

Finally, Dev. Ed. students in each cohort were analyzed by the instructional modality of their courses: face-to-face, online (completely), and mixed course types (i.e., hybrid/blended).

Dev. Ed. Student Demographics: 2016 Cohort (FTIC) vs. All Dev. Ed.

Dev. Ed. students in Iowa's community colleges are diverse in terms of age, gender, and ethnicity (Figure 3.1). The average age of Dev. Ed. students in the 2016 Cohort was 20.7 years old compared to 23.2 years for all students enrolled in a Dev. Ed. course during the 2016-17 academic year (AY). While it may not be surprising that these FTIC Dev. Ed. students were younger than Dev. Ed. students as a whole, there was also a gender difference of 3.4 percentage points. The 2016 Cohort consisted of 53.6 percent females compared to 57.0 percent of all Dev. Ed. students during AY2016-17. Regarding ethnicity, 38.7 percent of Dev. Ed. students in the 2016 Cohort reported a minority racial or ethnic background compared to 39.6 percent of all Dev. Ed. students. Of the minority students in the 2016 Cohort, a disproportionate number, 19.1 percent were black (Table 3.1).

2016 COHORT OVERVIEW

4,761
Students enrolled in the Dev. Ed. Cohort

35.3%
From 7,364 students in the 2013 Cohort

Dev. Ed. students comprised
21.9%
Of the total cohort

36.0%
From 34.2% of the total 2013 Cohort

RESEARCH HIGHLIGHT

Why are black students disproportionately represented?

Not only is the percentage of minorities enrolled in Dev. Ed. significantly higher than that of total enrollment and non-Dev. Ed, a disproportionate number of Dev. Ed. students are black.

While this data indicates demographic differences between FTIC and the whole group of Dev. Ed. students, perhaps more significant is how Dev. Ed. demographics compare to non-Dev. Ed. student data. Figure 3.1 shows comparisons for all AY2016-17 students, all AY2016-17 Dev. Ed. students, and all fall 2016 FTIC Dev. Ed. students. Of greatest significance is the disparity in minority status of all versus Dev. Ed. students.

FIGURE 3.1: DEMOGRAPHIC COMPARISON OF 2016-17 STUDENT GROUPS

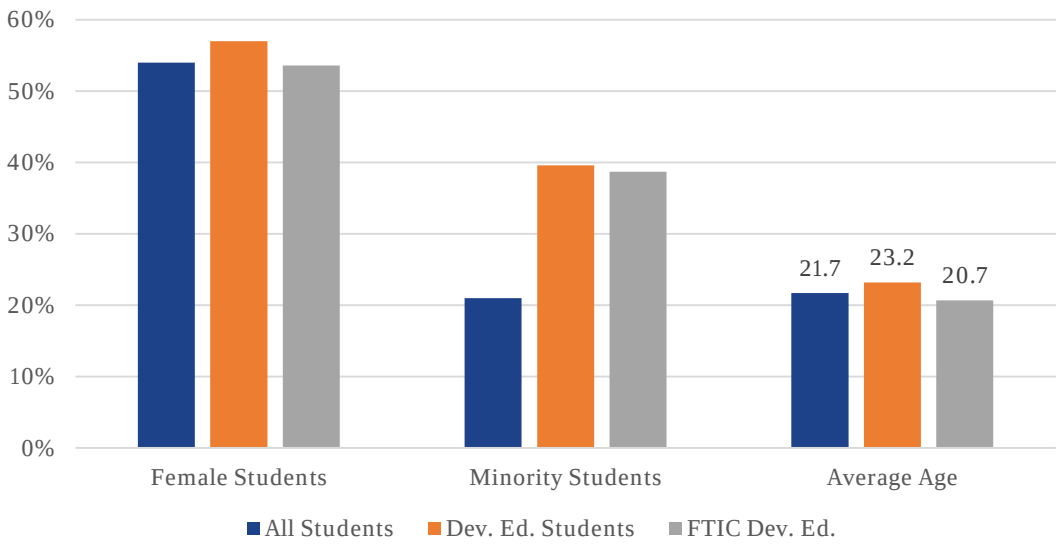


TABLE 3.1: DEV. ED. COMPARISON OF 2016-17 MINORITY STUDENT ENROLLMENT BY TOTAL ENROLLMENT, NON-DEV. ED. ENROLLMENT, AND 2016 COHORT REPRESENTATION

AY2016-17	Total Enrollment	2016 Cohort (FTIC Non-Dev. Ed.)	2016 Cohort (FTIC Dev. Ed.)
Minority	21.0%	23.0%	38.7%
Hispanic (of total/minority)	7.6%/35.9%	8.4%/36.3%	11.3%/29.3%
Black (of total/minority)	7.2%/34.3%	8.4%/36.6%	19.1%/49.5%
Two or more (of total/minority)	2.2%/10.5%	2.4%/10.4%	3.3%/8.4%

2016 Cohort: Dev. Ed. Students vs. Non-Dev. Ed. Students

Table 3.2 illustrates differences between Dev. Ed. (21.9 percent) and non-Dev. Ed. (78.1 percent) student demographics within the 2016 Cohort. In addition to differences in age, gender, and race/ethnicity, a higher percentage of Dev. Ed. students were disabled, low-income, or ESL/ELL. They were also more likely to be immediate enrollees and enrolled full-time, but less likely to be in career and technical education (CTE) programs. (For similar comparisons for cohorts prior to 2016, refer to the appendix.)

Each of the Cohort's three age subgroups were further analyzed regarding demographic data, as shown in Table 3.3. For the Dev. Ed. students in the 2016 Cohort, immediate enrollees were more likely to be female, significantly less likely to have identified as a racial/ethnic minority (27.3 compared to 48.4 and 52.0 percent of the other age groups), and enrolled in fewer ESL/ELL courses. Not surprisingly, a higher percent of these immediate enrollees were enrolled full-time, with less enrolled in CTE programs, unlike their older peers. More of these older students (25 and older) were enrolled in CTE programs (37.7 percent), but

TABLE 3.2: NON-DEV. ED. VERSUS DEV. ED. STUDENT DEMOGRAPHICS (2016 COHORT)

Category	Non-Developmental	Developmental	Comparison Observation
2016 Cohort Overall	16,932 (78.1%)	4,761 (21.9%)	About four times as many did not take Dev. Ed. courses.
Gender	48.9% Female	53.6% Female	A higher percentage of Dev. Ed. students are female.
Race	23.0% Minority	38.7% Minority	Almost double the percent of Dev. Ed. students are minorities.
Disabled	3.2%	7.0%	More than double the percent of Dev. Ed. students are disabled.
Low Income	39.8%	51.4%	A higher percentage of Dev. Ed. students are low income.
ESL and ELL Identified	2.5%	7.2%	More than double the percent Dev. Ed. students are ESL/ELL identified.
Immediate Enrollees	38.5%	47.0%	A higher percentage of students taking Dev. Ed. are immediate enrollees.
Average Age	21.8	20.7	Dev. Ed. students are a year younger, on average.
Full-Time Status	65.0%	77.7%	A higher percentage of students taking Dev. Ed. courses are full-time status.
CTE Status	39.9%	23.7%	About one-fourth of Dev. Ed. students are in CTE programs.

TABLE 3.3: DEV. ED. COMPARISON BY AGE SUBGROUPS (2016 COHORT)

Category	Developmental	Immediate	<25 Not Immediate	>=25
2016 Cohort 21.9%	4,761	2,238 (47.0%)	1,872 (39.3%)	650 (13.7%)
Gender	53.6% Female	57.4% Female	48.6% Female	54.9% Female
Race	38.7% Minority	27.3% Minority	48.4% Minority	52.0% Minority
Disabled	7.0%	8.2%	5.9%	5.5%
Low Income	51.4%	49.3%	51.7%	57.8%
ESL and ELL Identified	7.2%	3.2%	6.4%	23.4%
Average Age	20.7	18.2	19.6	33.5
Full-Time Status	77.7%	84.5%	76.7%	57.2%
CTE Status	23.7%	20.4%	22.8%	37.7%
Percent taking Dev. Ed. Math	76.4%	81.1%	76.8%	59.4%
Percent taking Dev. Ed. Eng.	32.2%	33.2%	33.9%	23.8%
Percent taking Dev. Ed. Read.	12.7%	13.8%	11.9%	11.5%
Percent taking Dev. Ed. ESL	2.3%	0.7%	2.9%	5.5%
Dev.Ed. Instructional Mode	90.7% Face-to-Face	94.5% Face-to-Face	90.1% Face-to-Face	79.8% Face-to-Face

less took face-to-face courses, perhaps because their family and work life was more conducive to online coursework.

A similar analysis of the non-Dev. Ed. students in the 2016 Cohort (not provided in tables) showed similar demographics to their Dev. Ed. peers, except that the students under 25 years of age were more likely to be male and identified as minority at a higher percentage than the other age groups. Similar to their Dev. Ed. peers, these students who were 25 or older were more likely to be female, minority, low-income, and enrolled in a CTE program; but less likely to be full-time. (For similar age group comparisons for cohorts prior to 2016, refer to the appendix.)

RESEARCH HIGHLIGHT

Does age influence enrollment?
Those students 25 and older were identified as ESL/ELL at a much higher rate than the other age groups and showed a higher rate of enrollment in a CTE program of study.

Developmental Education Cohort Comparisons and Trends

When comparing 2013 through 2016 cohort data, it is clear that Dev. Ed. course-taking (i.e., headcount and enrollee counts and percentages) have steadily decreased each year. Data shows that 21.9 percent of the 2016 Cohort took at least one Dev. Ed. course compared to 34.2 percent of the 2013 Cohort, decreasing from 7,364 students in the 2013 Cohort to 4,761 students in the 2016 Cohort. Across all cohorts, overall Dev. Ed. course enrollees are trending to be more female in composition and have higher rates of self-identification as minority (highest in 2015 Cohort with 39.6 percent), disabled (highest in 2015 Cohort with 7.3 percent), low-income (highest in 2014 Cohort with 52.4 percent), and ESL/ELL (highest in 2015 Cohort with 7.4 percent). Table 3.4 shows a comparison of Dev. Ed. students' demographics by cohort year. This table also shows that the average age of Dev. Ed. students has decreased slightly over the years and that the need for Dev. Ed. among immediate enrollees has increased (40.8 percent in 2013 to 47.0 percent for the 2016 Cohort).

In terms of Dev. Ed. course-taking, across all cohorts, about 80 percent of enrollees were full-time students, although this percentage has decreased slightly each year. The majority of these students (about 90 percent) take their courses face-to-face and the percentage enrolled in CTE programs has declined from 27.2 percent (2013) to 23.7 percent (2016).

RESEARCH HIGHLIGHT

Why is CTE enrollment down?
The percentage of students taking Dev. Ed. courses who are enrolled in CTE programs has decreased from 27.2 percent in the 2013 Cohort to 23.7 percent in the 2016 Cohort.

Regarding course type, Figure 3.2 illustrates that math courses command the highest percentage of Dev. Ed. course enrollment at 76.4 percent of the courses taken by the 2016 Cohort. Not illustrated is that this percentage has increased from 72.0 percent in the 2013 Cohort. Course analysis also indicated that ESL/ELL course takers are increasing proportionally, while the proportion of English and reading enrollees has decreased over the year. Also, among minority students, the highest proportion of Dev. Ed. courses taken are ESL/ELL (over 90 percent in the 2016 Cohort). (For additional Dev. Ed. course-taking subgroup comparisons across cohorts, refer to the appendix.)

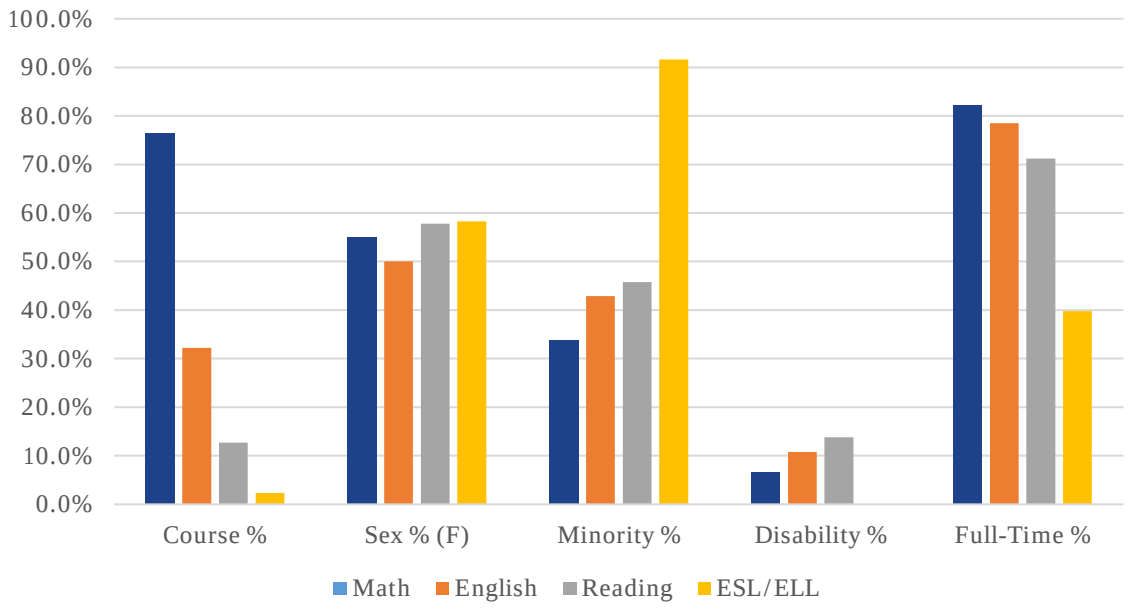
Figure 3.2 shows selective comparisons of demographic data for the 2016 Cohort of students by developmental course subject (math, English, reading, and ESL). While developmental mathematics makes up the largest percentage of developmental course taking for these students at 76.4 percent, developmental math shows lower percentages of reporting as females, minorities, and with disabilities, but shows the highest percentage for full-time students as compared to the other course subgroups.

In reviewing the course-taking data for the 2016 Cohort's Dev. Ed. students as mentioned and illustrated in Figure 3.2, about 76.4 percent took developmental mathematics courses. Compared to the full cohort, these math students were more likely to be female and low-income, and less likely to be self-identified as a minority or in need of ESL/ELL courses. While 82.2 percent were full-time students, only 20.8 percent of these students were involved in CTE programs. Regarding Dev. Ed. writing/English, about 32.2 percent of the 2016 Cohort's Dev. Ed. students

TABLE 3.4: DEV. ED. ANNUAL COHORT COMPARISON

Cohort Year	2013	2014	2015	2016	Trend
Dev. Ed. Cohort Students	7,364	7,045	5,801	4,761	↓
Percent of all in Cohort	34.2%	28.9%	24.7%	21.9%	↓
Gender	51.5% Female	52.6% Female	53.6% Female	53.6% Female	←↑
Race	32.8% Minority	35.3% Minority	39.6% Minority	38.7% Minority	←
Disabled	3.2%	7.2%	7.3%	7.0%	←↑
Low Income	40.2%	52.4%	52.1%	51.4%	←
ESL and ELL Identified	4.5%	6.0%	7.4%	7.2%	←
Immediate Enrollees	40.8%	44.4%	44.0%	47.0%	←↑
Average Age	21.1	21.1	20.8	20.7	↓
Full-Time Status	81.3%	79.5%	78.9%	77.7%	↓
CTE Status	27.2%	27.8%	23.4%	23.7%	
Course Type	89.5% Face-to-Face	88.0% Face-to-Face	88.7% Face-to-Face	90.7% Face-to-Face	←

FIGURE 3.2: SELECTED DEMOGRAPHICS BY COURSE TYPE TAKEN (2016 COHORT)



took these courses. Compared to the full cohort, these students were more likely to be male, low-income, and self-identified as a minority, but are less likely to be identified as ESL/ELL.

Continuing this course-taking analysis, about 12.7 percent of the 2016 Cohort's Dev. Ed. students took developmental reading courses. Compared to the full 2016 Cohort, these students were slightly more likely to be female, low-income, disabled, and self-identified as a minority, but less likely to be identified as ESL/ELL. Unlike students taking the other course-types, these reading students are less likely to be full-time students and more likely to be enrolled in a CTE program of study. Lastly, about 2.3 percent of 2016 Dev. Ed. students took ESL/ELL courses. Compared to the full cohort, these students were overwhelmingly self-identified as a minority, were less likely to be low income, and were significantly less likely to be full-time students (39.8 percent) or enrolled in CTE programs (only 2.8 percent).

Credit-Hour Comparisons by Age

There are also differences in Dev. Ed. course credit-taking behavior across age groups, as indicated in Table 3.5 showing subject and age subgroup data for the 2016 Cohort.

Of the 20,602 developmental course credits that the 2016 Cohort Dev. Ed. students were enrolled in, immediate enrollees (47.0 percent of the students) took the highest proportion of the credits (47.9 percent), followed by those taken by students who were less than 25 (39.3 percent of the students took 40.8 percent of the credits) and 25 or older (13.7 percent of the students tool 11.2 percent of the credits). The immediate enrollees took the majority of their credits in Dev. Ed. mathematics (68.7 percent), while taking a very

small share of the ESL credits (1.6 compared to 4.5 and 8.8 percent taken by the other age groups). While students over the age of 25 age had the lowest rate of 61.3 percent. Students under 25 years old, but not immediate enrollees, took the highest proportion of writing/English credits (22.6 percent), while enrollees 25 years or older led in reading and ESL/ELL credits taken at 10.0 and 8.8 percent, respectively.

Developmental Education Measures of Success

To measure student success, community college researchers typically defined and identified student cohorts and then tracked the students' progress for a set number of years, depending on the metric of interest. For Dev. Ed. student cohorts, during the first year, success can be measured by the students' performance in their Dev. Ed. courses (i.e., earning a grade of C- or better), as well as by their persistence and retention at the reporting college. For this report, "persistence" is defined as a cohort student (FTIC in the fall of a certain year) returning in the subsequent semester (i.e., fall-to-spring). Student "retention" is defined as a cohort student returning the next fall semester (i.e., fall-to-fall). For these two tracked measures of success, students who completed an award or transferred during the metric's timeframe are removed from the calculation.

Table 3.6 shows these three success measures for each of the 2013 through 2016 Cohorts. While the course success rates hover a little over 50 percent, the persistence rates for Dev. Ed. students are higher than their non-Dev. Ed. peers. However, their retention rates are lower for three of the four cohorts.

RESEARCH HIGHLIGHT

What might be influencing success and persistence rates?

In general, Dev. Ed. course success is trending higher in the first year for each successive cohort. In addition, Dev. Ed. persistence is trending higher and is comparable, if not higher, to non-Dev. Ed. student persistence.

TABLE 3.5: DEV. ED. CREDITS BY SUBJECT AND AGE SUBGROUPS (2016 COHORT)

			Percent of Credits in Subject Area				
	Total Credits	Student %	Credit %	Math	English	Reading	ESL
All Dev. Ed. Students	20,602	100.0%	100.0%	66.6%	21.4%	8.4%	3.6%
Immediate	9,877	47.0%	47.9%	68.7%	20.7%	9.0%	1.6%
<25	8,410	39.3%	40.8%	65.6%	22.6%	7.2%	4.5%
>=25	2,315	13.7%	11.2%	61.3%	19.9%	10.0%	8.8%

TABLE 3.6: FIRST-YEAR STUDENT SUCCESS BY COHORT DEV. ED. VERSUS NON-DEV. ED.

	Dev. Ed. Course Success* (percent)		Fall-to-Spring Persistence** (percent)		Fall-to-Fall ** Retention (percent)	
Cohort	Dev. Ed.	Non Dev. Ed.	Dev. Ed.	Non Dev. Ed.	Dev. Ed.	Non Dev. Ed.
2013	53.4	N/A	72.6	72.8	48.5	50.2
2014	54.8		74.3	71.5	49.6	50.1
2015	53.6		73.6	71.5	49.7	48.9
2016	57.3		74.3	73.3	51.4	53.1

** Success is based on earning a grade of C- or better in a course.*

*** Persistence and retention represent the percent of cohort students who were enrolled in the same institution during the indicated subsequent terms.*

These measures of success were further analyzed for the 2016 Cohort by age and course-taking subgroups, as well as by course instructional modalities. Table 3.6 shows the three first-year measures of success for each of these subgroups and categories. Since the non-Dev. Ed. students did not take Dev. Ed. courses, the course success and any other metric related to course type or modality does not apply to them, so is indicated by "N/A" in Table 3.7.

TABLE 3.7: FIRST-YEAR DEV. ED. VERSUS NON-DEV. ED. STUDENT SUCCESS BY AGE, COURSE TYPE, AND MODALITY (2016 COHORT)

	Dev. Ed. Course Success* (percent)		Fall-to-Spring Persistence** (percent)		Fall-to-Fall Retention** (percent)	
Cohort Sub-type	Dev. Ed.	Non Dev. Ed.	Dev. Ed.	Non Dev. Ed.	Dev. Ed.	Non Dev. Ed.
All 2016 students	57.3	N/A	74.3	73.3	51.4	53.1
Immediate	59.6		78.6	81.9	58.4	63.8
<25	54.7		69.6	69.1	44.8	49.0
>=25	57.3		72.8	63.8	46.3	39.1
Math	51.8		74.5	N/A	51.5	N/A
English	64.1		72.5		47.8	
Reading	63.1		70.3		47.6	
ESL/ELL	86.0		69.2		45.3	
F2F	58.0		74.6		52.4	
Online	46.9		71.7		40.1	
Mixed	56.3		74.5		50.3	

** Success is based on earning a grade of C- or better in a course.*

*** Persistence and retention represent the percent of cohort students who were enrolled in the same institution during the indicated subsequent terms.*

These outcomes show that, in the 2016 Cohort, immediate enrollees had the most success in Dev. Ed. courses and the highest persistence and retention rates among the age subgroups for both Dev. Ed. and non-Dev. Ed. students. Interestingly, Dev. Ed. students that were not immediate enrollees had higher persistent rates than their non-Dev. Ed. peers. However, only the oldest subgroup maintained that lead over retention, with 46.3 percent of the Dev. Ed. students returning the next fall compared to 39.1 percent of the non-Dev. Ed. students.

Regarding course type, a much higher percent of students passed their ESL/ELL courses, but math students had higher persistence and retention rates. Students who took face-to-face Dev. Ed. courses had higher success on all three outcomes, while online Dev. Ed. students had a significantly lower retention rate than the other modalities. (To see similar success comparisons for other cohort years, refer to the appendix.)

Since long-term (at least three years) data exists for the 2013 and 2014 Cohorts, the following success measures were analyzed for Dev. Ed. cohorts: graduation rates, transfer rates, success rates (graduation or transfer), and the students' retention to their fourth year (if they had not graduated or transferred). The Dev. Ed. students' success rates in transfer/college level coursework within their first term was also analyzed, along with the time it took students to complete a certificate, diploma, or two-year degree (i.e., the average number of years to complete). Table 3.8 shows these long-term outcomes for Dev. Ed. and non-Dev. Ed. students in the 2013 and 2014 Cohorts.

Note that the rates for Dev. Ed. students on three main metrics (graduation, transfer, and success) were markedly below the rates for non-Dev. Ed. students, with their "success" (graduate or transfer) rate averaging about 20 percent lower for both cohorts. However, Dev. Ed. students who did not transfer or graduate (i.e., "if no success" column) were retained, on average, at about a 4.0 percent higher rate than their non-Dev. Ed. peers.

Regarding course and program performance metrics, Dev. Ed. students were not as successful completed transfer courses in their first term, with

TABLE 3.8: LONG-TERM* DEV. ED. VERSUS. NON-DEV. ED. STUDENT SUCCESS BY COHORTS

Cohort Group	Grad %	Transfer %	Success = Grad or Transfer %	If no Success, Retention Next Term %	Transfer Course Success Term 1 %	Cert. Earned %	Time to Cert. **	Dipl. Earned %	Time to Dipl. **	2Y Degree %	Time to 2Y **
2013 Dev. Ed.	23.6	22.6	34.9	14.2	58.3	2.4	1.37	4.2	1.92	20.4	2.07
2013 Non D.E.	39.2	28.7	52.9	11.1	69.7	4.3	1.39	10.0	1.35	33.4	1.82
2014 Dev. Ed.	21.9	16.0	30.5	15.6	61.3	1.9	1.72	3.5	1.79	19.6	2.05
2014 Non D.E.	41.4	23.5	52.2	10.2	72.5	4.6	1.30	10.1	1.28	35.2	1.76

** Long-term means within three years of initial cohort formation/term.*

** *Time is average time for students who complete award (in years).*

non-Dev. Ed. outperforming them by over 10 percentage points. In turn, non-Dev. Ed. students completed their diplomas and two-year awards faster than the Dev. Ed. students. The fact that lower percentages of Dev. Ed. students earned certificates or diplomas is not very significant because these are earned in CTE programs that do not typically require Dev. Ed.; however, the disparity in two-year degrees earn is concerning.

Within the 2013 Cohort, long-term success outcomes were compared by age group. Figure 3.3 and Table 3.9 illustrate that immediate enrollees had the highest graduation, transfer, and success rates for both Dev. Ed. students (38.8 percent success) and non-Dev. Ed. students (58.4 percent). They also have the highest transfer course success and percentage of completing a two-year degree for both Dev. Ed. and non-Dev. Ed. students. Interestingly, the Dev. Ed. students who are 25 years or older significantly led all age groups in the "if no success, retention next term" measure. This could be because students in this age group are more likely to attend on a part-time basis, and therefore, may not complete in the three years allotted for most research; however, a decent percent of them keep persisting.

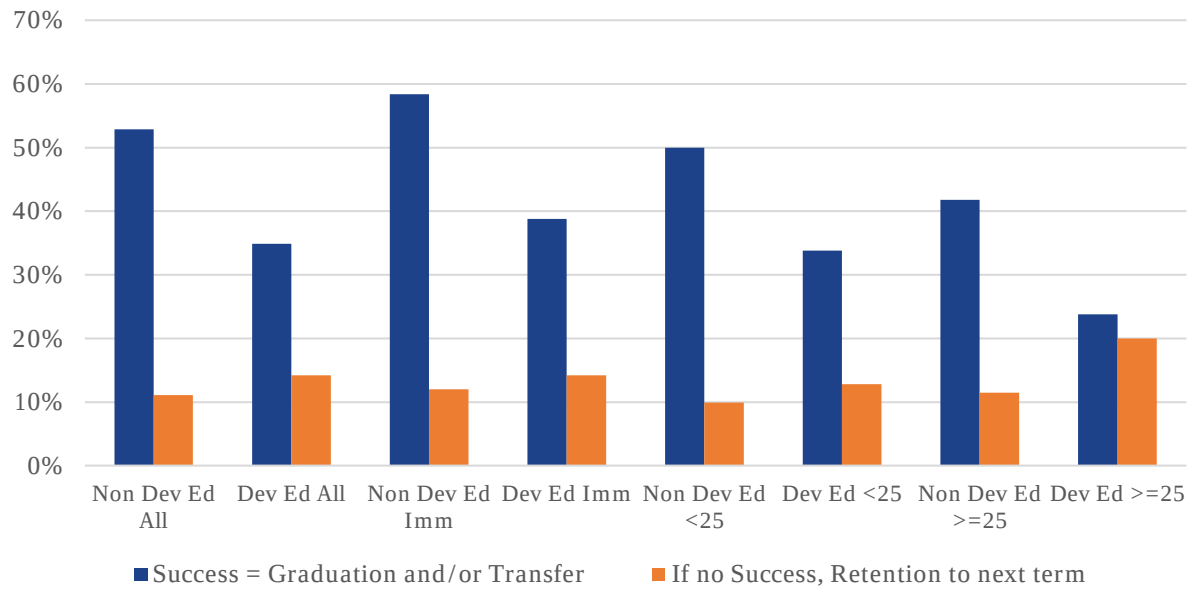
Time to degree completion was compared across the age subgroups for each award type – certificate, diploma, and two-year (2Y) degree. The rightmost column in Table 3.9 and bar in each set of three in Figure 3.4 illustrate that the

RESEARCH HIGHLIGHT

How does age impact retention?

Of students who did not graduate or transfer, those who were 25 years or older had the highest retention to the fourth term at 20.0 percent. The retention rate of this subgroup was also higher than that of all the sub-cohorts for non-developmental students.

FIGURE 3.3: LONG-TERM* STUDENT SUCCESS/RETENTION BY AGE SUBGROUPS (2013 COHORT)



** Long-term means within three years of initial cohort formation/term.*

average time to complete a two-year degree was slightly higher for Dev. Ed. students in the 2013 Cohort than for non-Dev. Ed. students (2.07 years versus 1.82 years). The same was true for diplomas, but not for certificates, where Dev. Ed. students completed in slightly less time than non-Dev. Ed. students (1.37 vs. 1.39 year, respectively). In fact, Dev. Ed. students who were 25 or older had the lowest certificate completion time of all subgroups at 1.24 years. (For 2014 Cohort subgroup comparisons, refer to the appendix.)

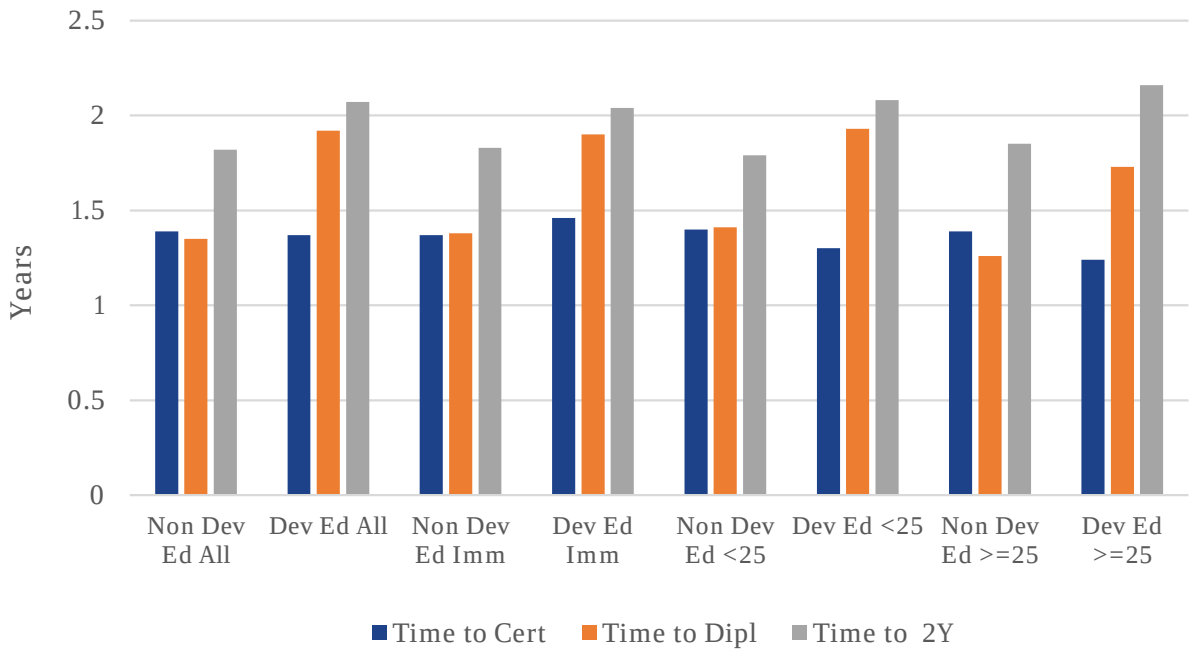
TABLE 3.9: LONG-TERM* STUDENT SUCCESS BY AGE SUBGROUPS (2013 COHORT)

Cohort Group	Grad %	Transfer %	Success = Grad or Transfer %	If no Success, Retention Next Term %	Transfer Course Success Term 1%	Cert. Earned %	Time to Cert. **	Dipl. Earned %	Time to Dipl. **	% 2Y	Time to 2Y **
Dev Ed All	23.6	22.6	34.9	14.2	58.3	2.4	1.37	4.2	1.92	20.4	2.07
Dev Ed Imm	28.9	24.6	38.8	14.2	59.4	2.6	1.46	3.6	1.90	26.3	2.04
Dev Ed <25	20.3	23.0	33.8	12.8	57.7	1.8	1.30	4.3	1.93	16.9	2.08
Dev Ed >=25	16.3	13.0	23.8	20.0	56.5	3.7	1.24	5.8	1.73	11.1	2.16
Non-Dev Ed All	39.2	28.7	52.9	11.1	69.7	4.3	1.39	10.0	1.35	33.4	1.82
Non-Dev Ed Imm	45.1	32.8	58.4	12.0	73.3	4.1	1.37	10.0	1.38	40.1	1.83
Non-Dev Ed <25	34.3	28.8	50.0	9.9	67.2	3.5	1.40	8.5	1.41	29.3	1.79
Non-Dev Ed >=25	34.3	11.8	41.8	11.5	64.9	8.5	1.39	15.6	1.26	22.4	1.85

** Long-term means within three years of initial cohort formation/term.*

*** Time is average time for students who complete award (in years).*

FIGURE 3.4: TIME TO AWARD COMPLETION BY AGE SUBGROUPS (2013 COHORT)



4 VFA's Developmental Education Metrics

Framework Methodology

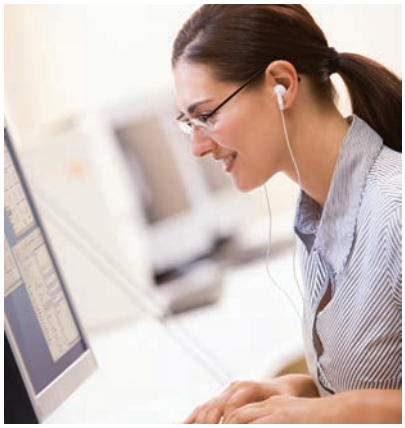
Iowa has recently adopted the Voluntary Framework of Accountability (VFA) as its principle tool for analyzing how well its 15 community colleges are serving students, based on VFA measures aligned with the full breadth of programs and services offered at these comprehensive institutions. Iowa's participation in VFA allows colleges to compare their effectiveness with similarly situated institutions throughout the country, as well as to evaluate their own progress by tracking the success of student cohorts. For example, using VFA measures to track developmental student cohorts provides data that colleges can use to improve their Dev. Ed. programs and practices.

One such practice that Iowa's community colleges are improving on is the way in which they identify students in need of Dev. Ed. in mathematics, reading, and writing. By studying student success data, such as course completion and retention, they have learned that relying too heavily on a single test score often leads to improper placement of students and has had negative effects on completion. To address this issue, a statewide task force recommended that colleges adopt the use of multiple measures for placing students into Dev. Ed. These holistic measures include high school grade point average and non-cognitive assessment of factors such as a student's grit or motivation. This broader assessment of postsecondary readiness will necessitate further evaluation and refinement regarding how Dev. Ed. "need" is reported to the Department.

The national VFA measures are based on first time in the reporting college student cohorts (indicated as the "Full" Cohort in Table 4.1). Iowa colleges assess these students' math, reading, and writing skills by a locally-determined method and then identify those students needing development math, reading, or writing. They also indicate how many levels (below college-level) of Dev. Ed. coursework each student in the cohort needs in each subject. Although the Dev. Ed. "need" data is not yet consistent in the state (discussed in Section 3), VFA "need" is defined in such a way that

VFA DESCRIPTION

VFA is the principle accountability framework for reporting data on two-year colleges' institutional effectiveness. Defined measures of success allow for college, state, and national comparisons.



VFA MEASURES

VFA measures are divided into three major categories:

- Credit Student Progress and Outcomes
- Credit and Non-Credit Career and Technical Education
- Adult Basic Education Outcomes.

COHORT DIFFERENCES

The cohorts studied in this report, and those defined by the VFA differ in the followings ways:

- The VFA does not include English as a Second Language (ESL) courses in its cohort, while the cohorts studied in section 3 do.
- The VFA does not include non-developmental students for comparison purposes.
- The VFA uses different subgroups for comparing students.
- VFA breaks Dev. Ed. courses into three different levels.

the data establishes a baseline for tracking and comparison purposes.

The Department has established two-year VFA cohort data on the students that enrolled in college for the first time (as a non-high-school student) in fall 2014 (AY2014-15). They are also establishing six-year cohort data that will provide more comprehensive analysis of VFA outcomes. Note that while the VFA cohort groupings are different from the cohort groupings described in section 3 (see side panel on the previous page), they are still similar in size and provide valuable information for analysis.

VFA data presents information about the full cohort, as well as data from a sub-cohort of those students who have indicated they are seeking a credential and a sub-cohort of students defined as FTIC at any college (not including high school joint enrollment). Table 4.1 shows the number of students in each of these cohorts along with the percentage of students in each cohort in need of Dev. Ed. courses, the percentage who attempted such courses, and the percentage who successfully completed such courses (as defined by a C- or higher). About one-third (33.9 percent) of all students in the AY2014-15 Cohort needed a Dev. Ed. course, and 74.0 percent of those students attempted such a course. The chart provides this data for each of the two sub-cohorts as well as for the students who specifically needed math, writing, or reading. Note that some students fall into more than one of these subject-specific groups.

As Table 4.1 illustrates, credential seeking students passed their developmental courses at a higher rate (48.9 percent) than the FTIC Cohort (35.5 percent) or the full cohort (34.5 percent). Regarding student need, mathematics led the way with 29.4 percent of the full cohort

VFA 2014-15 COHORT HIGHLIGHTS

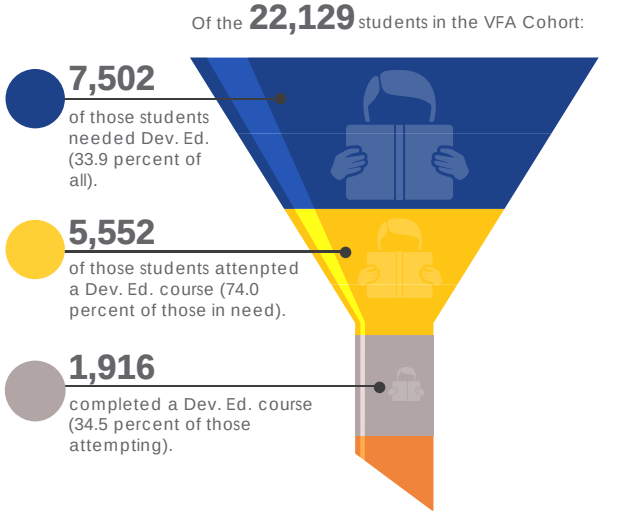


TABLE 4.1: VFA 2014-15 COHORT

2014-15 Cohort	Number of Students	Need Dev. Ed (%)	Attempted Course (%)	Completed Course* (%)	Completed* Next Transfer Course (%)
Full	22,129	33.9	74.0	34.5	This data is available, but only by subject.
Credential Seeking	14,755	33.7	73.4	48.9	
FTIC	13,484	37.8	78.2	35.5	
Need Math**	6,502	29.4 of Full	72.7	43.8	26.7
Need Writing**	3,341	15.1 of Full	66.9	54.6	41.5
Need Reading**	2,367	10.7 of Full	22.2	18.9	N/A

** Completion of course indicated by C- or higher grade.* *** Includes all students, not just credential seeking or FTIC.*

needing Dev. Ed. math versus only 15.1 percent needing writing and 10.7 percent needing reading. Interestingly, while a relatively low percentage of students needed Dev. Ed. reading, only 22.2 percent actually took Dev. Ed. coursework and only 18.9 percent of those successfully completed the course(s). This may be because some students took college-level coursework with co-requisite or supplemental reading instruction, but that would need further investigation.

RESEARCH HIGHLIGHT

Does course level impact outcome?
Future studies could follow course completion and graduation/transfer outcome differences among the students that place at each of the various course levels below transfer.

Additionally, Table 4.1 provides information about the first subject-related transfer level (also known as "gateway") course taken by students in need of Dev. Ed. math or writing (there are no transfer-level reading courses). Unfortunately, only 26.7 percent of the students in need of math Dev. Ed. instruction eventually passed a college-level math course with a C- or higher grade. Dev. Ed. writing students did somewhat better in college-level composition courses (41.5 percent passing), but these data illustrate the low success rates of students identified as not-college-ready. Concern over these results motivated the statewide Developmental Education Working Group and their recommendations regarding implementation of strategies discussed in the next section.

Lastly, VFA data measures the number of levels below transfer or college level into which a student places in mathematics, writing, and reading. Table 4.2 shows three levels of placement for the full cohort, the credential-seeking cohort, and the FTIC Cohort. A higher percentage of FTIC students placed one or two levels below transfer level for all three subjects, as compared to the full and credential-seeking cohorts. Mathematics was the only course type in which a significant percentage of students placed three levels below transfer level; however, some community colleges do not offer more than two levels of developmental writing and reading courses.

TABLE 4.2: VFA 2014-15 DEVELOPMENTAL COURSE NEED BY LEVEL BELOW TRANSFER

	Math N=6,502 (%)			Writing N=3,341 (%)*		Reading N=2,367 (%)*	
2014-15 Cohort	1 Level Below	2 Levels Below	3 Levels Below	1 Level Below	2 Levels Below	1 Level Below	2 Levels Below
Full	19.3	6.5	3.5	9.9	5.1	7.5	3.2
Credential Seeking	19.8	6.4	3.0	10.0	4.4	7.6	2.8
FTIC	22.6	7.1	3.0	10.9	6.3	9.1	3.3

** The percent of students 3 Levels below transfer level was 0.1% or less.*

5 Developmental Education Initiatives and Best Practices in Iowa

Developmental Education Practices

Community colleges have implemented various strategies and initiatives to enhance the success of students at their institutions, particularly in the area of Dev. Ed. This section highlights some of those initiatives and presents data received via a survey of Dev. Ed. providers.

Face-to-face classes are still the most prevalent delivery mode for Dev. Ed., with 91.1 percent of identified Dev. Ed. courses taught in the traditional lecture format in AY2016-17. During that year, only 6.5 percent of Dev. Ed. courses were taught fully online, with another 2.4 percent utilizing a mixed or blended method (partially online and partially face-to-face). In addition to delivering courses through the various modes (lecture/face-to-face, online, and blended), many of Iowa's 15 community colleges have combined or replaced these modes with modular (competency-based), self-guided (self-paced), or web-based applications. The Department's MIS database does not recognize these delivery mode variations by course, but Table 5.1 on the next page presents the results of a fall 2017 survey regarding how each of the colleges delivered Dev. Ed. coursework and academic supports to students in AY2016-17.

These various models of course delivery and support are further described in the following pages.

DEVELOPMENTAL EDUCATION COURSE DELIVERY & SUPPORT

Community colleges across the state have implemented different course delivery and support strategies, such as those described below, to improve student success.

Corequisite Models - Developmental education students are enrolled into college-level courses and through aligned preparatory courses/labs, receive additional support to be successful.

Math Pathways - Strategies, processes, and supports are aligned with particular programs of study to help students progress through math coursework preparing them for their chosen programs of study.

Summer Bridge Programs - Help transition students into college coursework to reduce the number of developmental courses taken in the fall semester.

Tutoring - Provides support learning strategies and content-specific assistance to help students perform better in class.

Learning Communities - Students with common interests and goals meet regularly to collaborate on coursework.

Academic Lab Support - Provides students with additional tutoring, computer-assisted instruction, workshops, and/or self-paced courses.

Supplemental Instruction - Uses peer-assisted study sessions to improve success in historically difficult courses.

Early Alert - Identifies struggling students and intervenes with support strategies to improve student performance.

Mandatory Advising - Requires students to meet with an academic advisor prior to course registration to ensure they are in the appropriate courses and stay on track.

Non-Cognitive Supports - Strategies that help develop skills shown to impact academic success, such as grit, perseverance, academic mindsets, engagement, effort, motivation, problem-solving, resiliency, social skills, and learning strategies.

TABLE 5.1: IOWA COMMUNITY COLLEGE DEV. ED. STRATEGIES (2017 SURVEY)

	Community College Developmental Education Strategies											
College	Traditional Lecture	Online Mode	Blended	Modular	Self-Guided	Web-Based Application*	Accelerated Course	Cohort Model Learning Community	Paired Corequisite Course	Supplemental Instruction	Lab Component (Credit or Non-Credit)	Retention Strategies**
NICC	x	x				1			x	x		x
NIACC			x			1,2	x		x	x		x
ILCC	x	x	x		x		x	x				x
NCC	x	Soon	x						x			x
ICCC	x	x	x	x	x	1,2,3	x	x	2018			x
IVCCD	x	x	x	x		2	x		x	x		x
HCC	x	x	x	PAL	PAL	4,5		x			x	x
EICC	x	x	x	x	x	1	x		x	x	x	x
KCC	x	x	x	x		1		x	x			x
DMACC	x	x	x	x	x	1,6	x		x		x	x
WITCC	x		x	x	x	1	x		x		x	x
IWCC	x		x						x	x		x
SWCC	x	x	x			7	x		2018	x		x
IHCC	x	x	x	x	x	1,5	x	x	x	x		x
SCC	x	x				1					x	x

** Web-based application references: 1) ALEKS, 2) Hawkes, 3) Connect, 4) Edmentum, 5) Plato, 6) MyMathLab, and 7) NROC.*

*** Retention strategies include: summer bridge, tutoring, mandatory advising, early alert, and non-cognitive supports.*

MODELS OF COURSE DELIVERY

Various models of developmental education course delivery and support are discussed in more detail below.

Co-Requisite Models.

Ten (10) of the 15 community colleges have paired at least one Dev. Ed. course with a transfer-level course to accelerate student progress through their coursework. Survey results indicated that the most common math co-requisite is Math for Liberal Arts, the most common reading co-requisite aligns with Psychology or Sociology, and the most common writing co-requisite is English Composition I. In this model, students take between one to four credits of developmental coursework simultaneously with the transfer-level course, typically paying tuition for both levels of coursework. The developmental portion of the model is usually taught in a classroom setting, but some colleges are experimenting with either a lab or blended setting. Colleges try to employ the same instructor for both course levels and provide preparatory instruction before content is covered in the transfer-level course.

CO-REQUISITE EXAMPLE: North Iowa Area Community College (NIACC)

NIACC uses a co-requisite model to provide additional support for students enrolled in math and English composition courses. Components to the model include:

- Dedicated instructors
- Personalized instruction
- Low student-teacher ratios
- Strong partnerships with the math and English departments

The college is seeing successful results from students in the program. For example, for students enrolled in Mastery Math with homework support:

- 93% passed math courses in fall 2016
- 86% passed math courses in spring 2017
- 91% passed math courses in fall 2017

See page 34 for more information on NIACC's Mastery Math and Writing programs.

Math Remediation Pathways

Several of Iowa's community colleges have implemented a math remediation pathway to help students prepare for and complete required math courses. The pathways involve both placement into an initial math course and a strategy, process, and academic supports to review and master math competencies need for the student to progress

through the required coursework that prepares them for their chosen program of study. For example, remediation (i.e., foundational preparation) often occurs via ALEKS® modules, particularly when the student needs extra work to prepare for either a STEM-related math field, business-related field, or a technical math content area such as the construction trades. This preparation could also occur through a paired or co-requisite model, as described above, or through supplemental supports in a developmental math class or lab.

Eight (8) of Iowa's community colleges have implemented a math assessment known as ALEKS®. Six (6) of the eight utilize this web-based resource for placement and all eight utilize it for math skill development. Most of the colleges enforce similar cut scores as utilized by Iowa's three public universities, and most have a shelf-life for the assessment results of about one year. More information on ALEKS® can be found at https://www.aleks.com/.

Summer Bridge Programs

Six (6) of Iowa's community colleges reported employing bridge programs designed to improve students' preparation for the rigors of college and ease their transition into college coursework. Those who attend have typically been identified as not being college-ready in at least one subject and are invited by a college advisor who believes they will find success from attending this head start program. These programs often consist of between three to seven weeks of tutoring and intensive coursework in math, writing, or reading, along with general college orientation, personal development with time management or study skills, computer literacy, and career and academic counseling. Through participation, students may reduce the number of Dev. Ed. courses they'll need to take in their first fall semester, so the benefits are typically worth the work.

Tutoring

Colleges employ tutors to help students focus on particular concepts, connect prior knowledge to new concepts, demonstrate applications of content material, develop alternative methods of learning, increase responsibility for their own learning, and evaluate progress. Tutors work one-on-one with a student or with groups of

MATH PATHWAY EXAMPLE: Des Moines Area Community College (DMACC)

DMACC has adopted a STEM and non-STEM pathway for developmental math students. The non-STEM pathway includes a math course for students who assess very low, and a college-prep math course for all other students. The college prep math course:

- uses a student-centered curriculum;
- prioritizes topics based on specific needs; and
- incorporates a collaborative learning environment

Non-STEM students have experienced improved success

- Achieved 90% pass rate in Math for Liberal Arts (70% with a C- or better)
- Achieved 70% pass rate in Statistics (50% with a C- or better)

See page 38 for more information on DMACC's STEM and non-STEM pathways.

students who are working to master similar material. Some tutoring is provided by faculty and staff, while some is provided by fellow students (peers) who have excelled in the content being taught. Still, other tutoring is accomplished electronic providers and learning modules, particularly for online students and after school hours.

Academic Counseling/Success Coaches

Success coaches are typically academic counselors who help students focus on course performance, outcomes, and completion. These counselors help students connect their personal and professional goals to academic programs, processes, and supports that will help them improve skills and achieve goals through action plans.

SUCCESS COACH EXAMPLE: Kirkwood Community College (KCC)

KCC embeds student retention specialists in its on-campus Math Emporium to work with developmental math instructors and students. The retention specialists:

- Engage students identified by instructors as being at-risk of not completing the course.
- Monitor student progress and follow up with students.
- Provide access to campus resources and timely reminders.

In 2016-17, for students who worked with these success coaches at least once:

- 56% received a final grade of A in a math course
- 22% received a final grade of B in a math course

See page 38 for more information on KCC's student retention specialists.

LEARNING COMMUNITY EXAMPLE: Iowa Central Community College (ICCC)

ICCC identifies students who place in developmental reading, writing, and math, and places them into learning communities where they take courses together and receive additional support. In the learning community, students:

- Take a success seminar, writing, math, and one general education course the first semester.
- Are taught learning and success skills and provided with a support system.

This support system has helped more than 830 students since fall 2014.

See page 36 for more information on ICCC's learning communities.

Learning Communities

A learning community is a group of students who share something in common such as academic goals or career interests, and who meet formally and informally to collaborate on classwork. Some communities have grown to become the template for a cohort-based, interdisciplinary approach to higher education. Four (4) of the community colleges have indicated that they have learning communities in place for Dev. Ed. students.

Academic Lab Support & Supplemental Instruction (SI)

Academic lab support involves providing instruction and additional support in reading, writing, and math. Most of the assistance is through tutoring or computer-assisted instruction, but it is also provided via specialized learning workshops or self-paced developmental courses. Supplemental Instruction (SI) is an academic support model developed at the University of Missouri–Kansas City (UMKC), that uses peer-assisted study sessions to improve student success in historically difficult courses. Based on this design, SI is not usually used with a Dev. Ed. course, but some community colleges have used it with paired or co-requisite courses. Many colleges in Iowa have experimented with these models to enhance student learning.

Mandatory Advising

Eight (8) of Iowa's community colleges utilize mandatory advising to ensure students stay on track with required coursework in their programs of study. They require students to meet with an academic counselor prior to registering for courses – some require this prior to the first registration, while others require this prior to every term. Good advising can help students feel more connected to the college, choose better courses, and provide an action plan for success that can be monitored by faculty and advisors.

Non-Cognitive Supports

Seven (7) community colleges utilize non-cognitive measures to place students and supports to help student succeed in Dev. Ed. and college-level coursework. These colleges help students develop academic mindsets, social skills, perseverance, learning strategies, and academic behaviors to improve academic performance in the classroom.

Early Alert

Twelve (12) of Iowa's community colleges employ early alert processes to proactively recognize and intervene with students who exhibit "red flags" for poor academic performance or withdrawal from a course. Usually early alert processes occur prior to midterm grading in order to have time for faculty and staff to implement strategies to aid a student's success. Some indicators that trigger early alert processes include student absences

MANDATORY ADVISING EXAMPLE: Southwestern Community College (SWICC)

All new students at SWCC are required to take a first-term college experience course to help them develop academic success skills. In addition, students:

- must meet with their academic advisor at least twice during the eight-week course;
- develop an educational plan for career goal attainment; and
- are advised to enroll in a co-requite reading course if they score low on the college's assessment.

Results from the college's recent survey showed that 83.8%, accessed academic planning services compared to 77.1% of the college's comparison cohort.

See page 40 for more information on SWCC's college experience course and mandatory advising.

and tardiness; failure to turn in class assignments, failed assignments or tests, or documented lack of preparation for class activities. Additional predictors of academic trouble include lateness of course registration or FAFSA completion, the number of credits for which a student is registered, and academic placement assessment scores.

High School Transitional Coursework

Designing a high school program to offer transitional coursework to prepare students for college raises several issues. Of utmost importance is the agreement between institutional partners regarding the standards to be met. This can be difficult if conversations have not been ongoing between secondary and postsecondary educators.

Research has found a disconnect between secondary and postsecondary expectations of transitional programs and, in particular, with the definition of "college ready" in reading, writing, and math. Ideally, high school graduation requirements would align with the entrance requirements for postsecondary enrollment, thereby establishing clear metrics of college readiness. For this to exist, the developers of a successful college transition program must find consensus as to the definition of Dev. Ed., placement, and structure. Additionally, the timing of skills assessment and the identification of students' skill deficiencies should align with the appropriate point at which to provide support and skills development.

Iowa provides multiple opportunities for students to earn college credits while in high school, most of which fall under the Senior Year Plus umbrella. Included in these options are contracted and concurrent enrollment courses offered through community colleges. Districts are provided supplemental weighted funding for concurrent enrollment coursework offered beyond the standard high school offerings. Since Dev. Ed. is at the pre-college level, it is not within the authorized curriculum a college may contract to deliver to high school students. To address the need to better prepare high school students for college work without the advent of concurrent enrollment, several community colleges have developed pilot programs in partnership with individual school districts with no additional (supplemental) funding.

Based on a review of four successful pilots, a High School and Community College Developmental Education Partnerships Working Group was formed in late 2017 to create a college transitions model and recommendations for expansion of such programs. The group identified several key components as best practices for a statewide model. These components include:

- Strong Partnerships
- Assessment and Diagnostic
- Intervention through Meaningful Course Taking
- Reassessment
- Advising Tools

The full report, including group membership and information on each of the four pilot programs, can be found at https://www.educateiowa.gov/high-school-and-community-college-developmental-education-partnerships-working-group. Additionally, information about the pilot programs can be found in the appendix of this report on page 44.

Survey Results (Fall 2017)

A survey of Dev. Ed. practitioners at Iowa's community colleges was completed in fall 2017. Some of the key survey questions and answers are shared below to clarify policies and practices. The questions were broadly categorized into the following sections: student intake and advising; assessment and placement; success and retention strategies; and teaching/delivery methods. A link to the full survey can be found in the appendix.

Intake/Advising (Student Services)

- Are there categories of students exempted from placement assessment? Answers:
  - Yes (13)
  - No (3)
- How does your college help students prepare for placement assessments? Answers:
  - Web-based applications (13)
  - Study guides (12)
  - Sample questions (11)
  - Tutorials (7)
  - Other—ALEKS learning modules (4)
  - Accuplacer Webapp (4)
  - Tutoring in Learning Center
  - Learning Express Library
  - Referral to other online resources, such as Kahn Academy
  - Free Preparatory Academic tutoring lab (PAL) where students can work with instructional tutors with study guides, sample questions, and with an online program (Edmentum-PLATO) for reading, writing, and math.
  - Provide free self-enroll classes using Plato courseware
  - NROC for improving math skills
- Does your college provide resources or interventions for remediation beyond placement tools? Answers:
  - No (4)
  - Yes (5)
  - What resources?
    - Developmental Education classes (4)
    - Mastery Math Summer program
    - Work in the PAL lab with an instructional tutor utilizing the online program, Edmentum--PLATO in reading, writing, and math
    - We provide students with information on EdReady and ACCUPLACER study app information (if planning to retake assessment)
- What other factors does your college consider when deciding on course placement? Answers:
  - None (7)
  - Highest Course passed (7)
  - Course grades (6)
  - Time since most recent course (6)
  - Advisor discussion (2)
  - Faculty/dean signature (1)
  - GED/HISET score (1)
  - Experience (1)

Assessment/Placement (Faculty/ Administrators)

- Which placement assessments utilized by each college for math, reading, and writing? Answers:
  - Math: ALEKS (9)
  - Accuplacer (9)
  - Reading/Writing: Accuplacer (14)
- What is the shelf-life of each placement assessment result? Answers:
  - 2 years (6)
  - 3 years (4)
  - 18 months (2)
  - 5 years (2)
  - No expiration (2)
- What is the criteria to retest on placement assessment? Answers:
  - No restrictions (5)
  - Various hours of ALEKS module work (6)
  - 48 hour waiting period for one retest, then 5 hours ALEKS module work
  - One retest, then either course completion or 10 hours in lab setting
  - 5 hours of module work to retest up to 5 times.
  - May retake up to 3 times in a 6-month period and then must wait 6 months (or one semester) before testing again.
- Is there a minimum wait-time between retest? Answers:
  - 48 hours (5)
  - No wait-time required (4)
  - One day (3)
  - Only the time it takes to complete module work
- Is there a maximum number of retests? Answers:
  - Four (5)
  - No Maximum (3)
  - Three (2)
  - Five
  - Two
  - One Accuplacer and 5 ALEKS
  - They can only do one retest initially, then one more after completing a course, and no limit working in PAL—they just need to complete the minimum required 10 hours in-between each retest (tutor will advise them to work more hours if needed).
- May a student challenge results? Answers:
  - Yes (2 to 4)
  - No (9 to 11) (The variation depends on test subject — math or writing).
- After review of results, is placement mandatory or optional? Answers:
  - Mandatory (11)
  - Optional (3)
  - Results vary by math, reading, and writing.

- Does your math/reading/writing tool provide resources for remediation? Answers:
  - Math—No (3) (Mostly ALEKS and Collegeboard)
  - Reading—No (8) (Mostly Accuplacer and Collegeboard)
  - Writing--No (8) (Mostly Accuplacer and Collegeboard)

Success/Retention Strategies (Student Services/Faculty)

- Has your college examined the association between placement assessment and gateway course level outcomes? Answers:
  - Yes (10)
  - No (6)
  - More detail is available from 7 colleges

Teaching/Delivery Modes (Faculty/ Administrators)

- For corequisites, are students charged for the developmental portion? Answers:
  - Yes (10)
  - No (0)
- For corequisites, is the developmental portion delivered in a class setting or lab setting? Answers:
  - Class (9)
  - Lab (1)

6. Innovative Strategies in Developmental Education

Iowa's 15 community colleges have implemented several Dev. Ed. initiatives in unique ways to fit their local students' needs. This section provides examples of the successes they have each achieved through varying combinations of intake/advising; assessment/placement; and teaching/delivery mode strategies. See the Developmental Education Working Group report for more detailed information of each initiative (https://educateiowa.gov/developmental-education-work-group).

Northeast Iowa Community College (NICC)

In fall 2016, NICC moved to a "3+1" model for Composition 1 and 2 (ENG 105 and 106), which entails incorporating one credit of Dev. Ed. into these three-credit courses. This model was developed to mainstream students into college-level coursework by simultaneously providing coordinated supports to students with "developmental" ACT or Accuplacer "Writeplacer" scores.

To measure the success of this model, NICC analyzed the grade distribution of 1,072 non-high-school students in ENG 105 from summer 2015 through fall 2017, as compared to 63 students who completed the ENG 105 Plus model in 2016-17. Of these 63 students, 45 (71.4 percent) received a C- or higher grade, as comparted to 77.8 percent of the traditional course's students. Further analysis found that during fall 2017, ENG 105 Plus students had a higher completion rate than traditional ENG 105 students, supporting new thinking that a placement test score is not as predictive of success as persistence and engagement in the classroom. As of spring 2018, the "3+1" English courses are the preferred model for students not meeting college-level cut scores and advisors utilize multiple measures to place students with borderline cut scores.

North Iowa Area Community College (NIACC)

NIACC has incorporated the co-requisite model into their Mastery Math and Mastery Writing programs, which has worked well in supporting students enrolled in college-level courses and who attend class regularly. In this corequisite model, students in need of foundational skill development register for a college-level course along with an hour or two of developmental credit. During these additional hours, students work with faculty to address gaps in their understanding of the subject matter. NIACC has found that students are more likely to pass college-level courses when enrolled in an additional developmental credit. Moreover, they have found that the co-requisite writing students are more likely to be successful in subsequent writing courses.

The Mastery Math program began in fall 2007. Funded by a Title III grant, the program was intended to replace developmental math courses and it also serves as homework support for college-level courses utilizing the co-requisite model. Utilizing computer-assisted instruction and a low student-teacher ratio, this program has achieved consistent success rates over the past five years, helping students improve their math skills in order to advance to college-level math courses and complete their degree.

Iowa Lakes Community College (ILCC)

Efforts to improve success in developmental math at ILCC have taken two forms in recent years: the first motivated by a need to provide career and technical education (CTE) students with additional support in their Technical Math course, and the second motivated by the need to provide all math students with support outside of the traditional class. To help the CTE students, they initially placed them in a developmental math class aligned with the Technical Math course material, but taught by two different instructors. In fall of 2017, they piloted a co-requisite model with students placed into an additional hour of lab support for the Technical Math course, all taught by the same math Instructor. Preliminary results are promising, as the course grade point average increased from 2.48 to 3.05. Continuation of this initiative into 2018 is planned.

Regarding the second initiative, math faculty adopted "XYZ Homework" delivered electronically as a textbook purchase. The homework is customizable and provides students with multiple opportunities to get each exercise right, with links provided to video and eBook support when the answer incorrectly. This technological support has been popular with both students and faculty, and it appears that course success rates are trending up; however, a more detailed study is planned for the 2018-19 school year.

Northwest Community College (NCC)

During academic year 2012-13, the NCC Remediation Team worked with the Education Advisory Board (EAB) to select a best-practice remediation model. The team decided on co-requisite remediation courses that were implemented in fall 2013. Since then, there have been adjustments to the co-requisite offerings, resulting in one- and two-credit courses, renamed to remove the stigmatized word "remediation" from all student advising discussions. As a result, "Mastery Math" was offered as a one-credit co-requisite course and "English Brush-Up" was offered as a two-credit communication co-requisite course. These co-requisite courses include individualized tutorial support and instruction that align with their companion college-level course schedules. In fall 2015, NCC ramped up all collegewide retention efforts and made improvements to its co-requisite remediation plan by bringing individualized instruction into the Learning Center where tutors and faculty can meet with students. The college also modified its advising structure by providing intensive weekly interventions, assigning dedicated advisors to each academic program of study, utilizing block scheduling, and extending its learning communities. Additionally, NCC will augment its "Mastery Math" course in 2018 with NROC's digital content that is tied to specific learning outcomes and includes normed cognitive placement assessments and tutorials.

Through these collegewide efforts, NCC achieved an overall retention rate of 66 percent for fall 2013 freshmen in associate degree programs. Additionally, students with high school GPAs of 2.3 or less demonstrated a 50 percent retention rate, and Pell-eligible students demonstrated a 61 percent rate. In fall 2015, 93 percent of math

students successfully passed their college-level math course while simultaneously enrolled in its one-credit "Mastery Math" co-requisite. More recently, the math success rate was 80 percent in the spring of 2017, which compares favorably with the national average success rate of approximately 35 percent.

Iowa Central Community College (ICCC)

In fall 2014, ICCC implemented developmental education learning communities, based on a best practices Education Advisory Board (EAB) presentation. The target audience for these learning communities were students placing into developmental reading, writing, and math. These students' first semester schedule included Success Seminar (SDV 112), writing (ENG 025 or ENG 101), math (MAT 045 or MAT 063), and one general education course such as Introduction to Psychology, Art Appreciation, Exploring Music, or Introduction to Biology. The faculty for SDV-112 are assigned based on their passion for student success, teaching experience at ICCC, and observed work with students inside and outside of the classroom.

The second semester, these students took College Experience (SDV-108) to continue their learning community connections. Interestingly, during advisors' intrusive advising and registration sessions, many students requested to take the next math or English class together, sometimes even requesting the math or English class that their former Success Seminar instructor taught, indicating the importance of that initial relationship they had established. As expected, many of these Dev. Ed. students struggle in the general education class, but most rise to the challenge and learn what a college transfer class is like with a support system.

Iowa Valley Community College District (IVCCD: Marshalltown and Ellsworth Community Colleges)

Recognizing the challenges many college students face with developmental mathematics courses, IVCCD has employed strategies designed to increase student success. Starting in fall 2011, the number of developmental math courses was reduced from three (MAT 040, MAT 052, MAT 062) to two (MAT 074 and 077), thereby reducing time to completion. These condensed courses were module-based, utilizing math software to help students move through their course(s) at a faster pace, which was particularly beneficial to students in need of less "remediation" than others.

The math department also focused on aligning math instruction with students' career paths. Out of this effort came two developmental math pathways in which courses are taken concurrently with one of two college-level math courses: College Prep Statistics with Statistics (MAT 156) or College Prep Math for Liberal Arts with Math for Liberal Arts (MAT 110). These are often the college-level transfer course for most programs of study, so the creation of related pathways has provided students with a greater understanding of the knowledge base and skill-set needed in their chosen fields. This also gives the student the opportunity to successfully complete their math sequence in a single term.

In addition to new courses, IVCCD has embedded supports in the overall campus systems. The module-based courses provide online support and tutorials to supplement the faculty's instruction. Additionally, both peer and professional tutors are available in the college's academic support centers and Supplemental Instruction (SI) has also been utilized for math and other courses that have proven to be challenging.

Hawkeye Community College (HCC)

HCC's Preparatory Academic Lab (PAL) is available, at no charge, to current and potential students seeking to improve basic skills in order to raise their placement test scores. Students who score just below a course or program required cut score can use the PAL to develop skills and practice before retesting. This provides them with an opportunity to bypass developmental courses and/or enter their programs sooner. PAL is not intended to replace traditional classes, but to serve as an alternative to developmental classes and/or as a supplement to their studies in those or subsequent courses.

In the PAL, students are assisted by professional tutors, utilizing Plato software and Edmentum, which offers a library of online modules designed to prepare students for Accuplacer and TEAS reading, writing, and math assessments. Each module provides a diagnostic assessment to identify students' content-specific deficiencies and focus on the skill development they need. When students completed their modules, they are permitted to retest on the Accuplacer or TEAS test. Hawkeye started offering the PAL program in 2013 and during the first two years saw about 20 students per semester work on placement test preparation. Currently, about 50-65 students each semester use the lab for test preparation, while others use it to supplement their studies.

Eastern Iowa Community Colleges (EICC)

Beginning in 2015, EICC assembled a steering committee and three task forces to study Dev. Ed. reform and how to improve practices. A year later, the committee made recommendations to implement reforms including, but not limited to, the use of multiple measures for assessing college readiness in writing and reading (ACT scores, high school cumulative grade point average, HiSET scores, personal assessment, and writing samples); the adoption of ALEKS as its primary assessment of math readiness; and the implementation of the Accelerated Learning Program (ALP) for teaching developmental writing.

The ALEKS math placement assessment is not multiple choice, thereby forcing the student to demonstrate their knowledge. It then adapts to their answers to identify skill gaps and provides individualized diagnostics and aligned learning modules to develop specific math skills. In fall 2016, EICC expanded its use of ALEKS by piloting a program with their district high schools to address math readiness issues prior to high school graduation. Students take the test at the end of the 11th grade and, for students with identified deficiencies, ALEKS diagnostics are embedded in a senior-year math course to improve math skills prior to graduation. Research indicates positive gains in math readiness using this senior-year model.

EICC also changed its writing curriculum by adopting the ALP, developed by the Community College of Baltimore County, as its co-requisite model. The ALP integrates developmental writing students into a college-level English course with a companion skills development course. Preliminary results indicate higher student success rates and English faculty report high satisfaction with teaching within this co-requisite model. Combining reading with writing in this co-requisite approach will be implemented in fall 2018.

Kirkwood Community College (KCC)

In an effort to engage with students inside the classroom, KCC began embedding Student Retention Specialists in its on-campus Math Emporium during fall term 2016. These Retention Specialists are assigned specific hours in the Emporium to work with developmental math instructors and students. As a resource to faculty, the specialists engage with students who have been identified as "at-risk" of not successfully completing their course. Specialists help monitor the students' progress and contact those not actively engaging in the coursework or not on track to passing. They also provide students and faculty with access to campus resources and important timely reminders via dedicated classroom space.

For AY2016-17, approximately 56 percent of students who interacted at least once with a Retention Specialist earned a course grade of "A" while 22 percent of these students earned a "B." In general, staff, students, and faculty have shared positive feedback about the college's engagement of Student Retention Specialists.

Des Moines Area Community College (DMACC)

DMACC has been using the ALEKS Placement assessment for several years. Utilizing this diagnostic assessment as its mandatory math placement tool, with its learning modules and the students' ability to retest up to five times in a year, has improved the accuracy of their placement and, subsequently, their students' success rates. Additionally, DMACC's math faculty have adopted STEM and non-STEM pathway for developmental math students. The non-STEM pathway includes an arithmetic course for students scoring very low on the ALEKS assessment and a single course (MAT 064: College Prep Math) for all students in this pathway. MAT 064 is designed to prepare students for Statistics or Math for Liberal Arts by utilizing a curriculum that is student-centered and relevant, and by prioritizing topics based on the skills needed in the subsequent quantitative reasoning courses. DMACC has found this approach to be successful for Math for Liberal Arts students, with about 70 percent earning a C- or better; and for Statistics students, with about 50 percent earning a C- or better.

DMACC is planning to enforce mandatory placement for writing courses in the fall of 2019. English faculty offer College Prep Writing I (ENG 060) and College Prep Writing II (ENG 061) as developmental courses; however, in fall 2017, they added Strategies for Composition (ENG 145) as a co-requisite option for students who scored in the upper-range on their writing assessment. DMACC plans to integrate multiple measures into their writing placement practices soon, but their internal task force prioritized enforcing mandatory placement first.

Western Iowa Tech Community College (WITCC)

WITCC is responding to the educational, cultural, and financial needs of the ever-evolving student population via their newly revised "transitional" course, ENG 090 Writing (and Reading) Enrichment. This course is designed for students in need of raising course or program entry cut scores by incorporating academic essays and classic literature culminating in formal, five-paragraph essays. Course objectives and competencies are assessed, and student assignments are individualized based on students' needs and interests. The course is considered to be individualized, not remedial, in that, when students meet their desired College Placement Test scores, they pass the course and have the possibility of enrolling in a college-level English composition course.

ENG 090 also addresses many of the challenges of English language learners with special attention to verb tenses, vocabulary, and word derivations. Original texts and short stories in the public domain are utilized to study English language concepts within a context. For both English language learners and native English speakers, with a small student to teacher ratio (10:1 or less), individualized instruction, and two sessions per week of 90 minutes, ENG 090 has helped increase the success rates of students completing the CPT and the enrollment in Comp I has increased. The number of retakes on the CPT test have decreased and student completion rates have increase.

Iowa Western Community College (IWCC)

Through the integration of holistic assessment, placement, academic support, and curricular reform, IWCC provides a systemic approach to addressing challenges in Dev. Ed.

By moving to a true holistic placement model, decisions about student readiness are no longer reliant on a single measure. Test scores, if submitted by the students, are only one of the multiple measures used to place students into courses; with high school GPA serving as the primary indicator. These quantitative indicators are supplemented by non-cognitive data from a standardized, externally developed tool designed specifically for placement and support (ETS's SuccessNavigator).

IWCC's adoption of holistic assessment was part of a large strategic initiative to reform Dev. Ed. in which academic and student support staff not only reconsidered the way they placed students, but the ways they supported them after placement. Now, by developing student profiles across four quadrants (a 2x2 matrix of academic vs. non-cognitive skills), they tailor and target supports based on varying sets of strengths and challenges. Students in each quadrant receive impactful support ranging from light-touch communication to an intrusive advisor (non-cognitive), and from peer tutoring to supplemental instruction (academic).

A fall 2015 analysis showed that a multiple measures approach improved college-level placement by 11 percentage points in math and 21 percentage points in writing. Additionally,

they found that students who were placed into higher-level courses did as well as, and often better than, their peers who were placed based on test scores alone. Finally, SuccessNavigator proved to be a significant predictor of students who could/should be accelerated. In other words, targeted acceleration – advancing students with low test scores, but strong non-cognitive skills – was more effective than blind acceleration (i.e., advancing students regardless of SuccessNavigator scores).

Southwestern Community College (SWCC)

At SWCC, all new students are required to take an eight-week (i.e., half semester) College Experience course during their first term of enrollment. This course is designed to help students develop academic success skills by connecting them to college resources and facilitating participation in the college culture. Activities include study and classroom performance strategies, personal exploration and development, academic and career planning, and exploring the college experience.

Course emphasis is placed on the college's mandatory advising practices. Students must meet with their academic advisor at least twice during the course to develop an educational plan. These individual educational plans outline the sequence of courses, including Dev. Ed. courses, necessary for career goal attainment. The college's general education reading assessment is also administered in the course, and results are analyzed so that students with low reading scores can be identified early and advised to enroll in a co-requisite course called Strategies for College Reading.

Indian Hills Community College (IHCC)

IHCC requires that their full-time instructors avail themselves to students for math and writing assistance in their Success Center. They also employ adjunct instructors and peer tutors (students with an overall GPA of at least 3.0 and an "A" in the class they are tutoring) to ensure assistance is available on evenings and weekends. In addition, they have contracted with NetTutor, an online, professional tutoring service to assist students outside of the Success Center.

College leadership has adapted some of their policies to promote student retention and success. One such policy change involves a unique program called Credit Exchange in which students at risk of failing a course, who cannot drop because of their status as a dorm student, student athlete, or on financial aid recipient, can exchange the course for a related developmental course at no cost. Another policy allows under-prepared students the option of taking free non-credit remedial classes through the college's Adult Education and Literacy Program.

Academic resources and innovation abound at IHCC. For example, they have created a module-based math class, Customized Review of Math, designed to meet students where they are, skill-wise. For non-native English speakers, they offer an English Language Learning Center that not only provides tutoring, but also cultural and assimilation training. Furthermore, in the spring of 2017, they piloted the Accelerated Learning Program (ALP) co-requisite model that paired English Composition I with a three-credit hour developmental writing course. Ten (10)

students with a high school GPA of 2.6 or below were encouraged to take the three-credit hour co-requisite course along with Composition I. These 10 students finished Composition I with a GPA of 2.3, which is a significance improvement over the 1.5 GPA earned by similarly situated students in the two prior terms who took Composition I without a co-requisite class.

Southeastern Community College (SCC)

To address their students' diverse academic needs, SCC offers developmental courses, as well as resources beyond the classroom to prepare students for college-level writing. After mandatory placement testing, using Accuplacer and WritePlacer, students are placed according to their scores. If scores indicate deficiencies, SCC offers two levels of developmental writing – Preparatory Writing I (ENG 060) and Preparatory Writing II (ENG 061). However, a one-semester writing course, Basic Writing (ENG 013) will be piloted in fall 2018 to replace the two-semester series, with the goal being to reduce the time before students can enroll in college-level writing courses. The belief is that this will contribute to increased retention and completion rates.

Based on placement scores, students may also place into a co-requisite option that provides a co-requisite writing lab for students taking the gateway writing course, Composition I (ENG 105). The one-credit, co-requisite lab (ENG 067) is meant to assist students in overcoming potential roadblocks that could impede their progress in ENG 105 by building their foundation writing skills. Importantly, one instructor teaches both courses and the lab is limited to 15 students in order to increase individualized attention. SCC also offers professional writing tutors in its Academic Achievement Center, and developmental students are strongly encouraged to meet with a professional tutor throughout their coursework.

7 Summary

Dev. Ed. in Iowa's community colleges is undergoing many changes as evidenced by the statistics on course and enrollment decreases across the state. Colleges are also implementing several strategies to help student succeed and persist past Dev. Ed. courses so that students can achieve their goals and have successful outcomes. Recently, a developmental education working group of the 15 community colleges put together recommendations to move Dev. Ed. forward. The report can be found at https://www.educateiowa.gov/developmental-education-work-group .

This report shows not only the key statistics surrounding Dev. Ed. but more importantly a baseline of research into the outcomes of several cohorts of students taking such courses. There are limitations to this study due to how colleges are documenting students who need Dev. Ed. upon enrollment in the colleges. In many of the cohorts, not all colleges are recording student developmental need consistently, and documentation will continue to improve with AY2017-18 data. Nevertheless, a baseline is nonetheless started with this report's research. The report will be continued in future years to follow the success of these cohorts.

Appendix

Please refer to the *Community College Additional Developmental Education Data: 2017* document, accessible on the Department's website at https://educateiowa.gov/adult-career-and-community-college/publications#Developmental_Education, for additional data sets and information referenced in this report, including:

- 2013-2016 Developmental Cohort Demographics
- 2013-2016 Dev. Ed. In-Cohort Demos by Course Type Subgroups
- 2013-2016 Dev. Ed. Comparison to Non-Dev Ed Demos
- 2013-2016 Dev. Ed. In-Cohort Demos by Age Subgroups
- 2013-2016 Dev. Ed. In-Cohort Demos by Course Mode Subgroups
- Cohort Credit Hour Breakdowns by Age Subgroup and Course Type
- Student Course Taking Percentages by Cohort and Age Sub Cohort
- Cohort Student Success Outcomes and Time to Completion by Dev/Non Dev and Age Subgroups
- Cohort Dev. Ed. Course Success
- Cohort Persistence and Retention by Dev. Ed. and Non-Dev. Ed. and by Age Subgroup and by Course Type Subgroup and by Course Mode Subgroup
- Cohort Course Type Subgroups broken into Age Subgroups
- VFA Data Sets
- Fall 2017 Survey Questions and Survey Raw data

The following pages provide an overview of each of the four successful pilot programs developed by Iowa community colleges (Hawkeye Community College, Eastern Iowa Community Colleges, Des Moines Area Community College, and Kirkwood Community College) in partnership with individual school districts. More information about these pilot programs and the work of the High School and Community College Developmental Education Working Group can be found on the Department's website at: https://www.educateiowa.gov/high-school-and-community-college-developmental-education-partnerships-working-group.

Hawkeye Community College (HCC) – High School to College Transitions

Hawkeye Community College is piloting a model (similar to Tennessee's TN Sails program) with four area high schools to provide college readiness coursework in reading, writing, and math. This work was in response to the number of recent high school graduates not meeting college-readiness scores on various placement and entrance exams (COMPASS, ACCUPLACER, ACT, etc.), and the number of high school juniors unprepared for concurrent enrollment courses their senior year.

The High School to College Transitions model incorporates a shared curriculum and renewed emphasis on utilizing the senior year to prepare for college. High school teachers use Hawkeye's Dev. Ed. curriculum, books/materials, and learning outcomes, with guidance provided by the appropriate Hawkeye instructor, to develop a high school level college prep course in reading, writing, and/or math. Students are placed in these college prep courses based on the Accuplacer scores. Students can earn high school credit applicable to graduation and juniors can use it to meet concurrent enrollment prerequisites. Students needing further development continue in the spring and retake the assessment at the end of the semester.

Hawkeye has found that student placement and success among all four districts are similar to on-campus student performance – an indication that the model is successful in preparing students for college-level coursework.

Approximately 150 students have participated among the four districts since the first pilot began during the 2012-13 school year. Of those, approximately 72 percent improved their placement by at least one level, while approximately 58 percent became college ready in at least one area. Within math, roughly 60 percent of students raised their placement by at least one level, while roughly 45 percent became ready for college-level math. Approximately 65 percent of students with writing needs raised their placement by at least one level, and approximately 30 percent of writing students became ready for college level. The highest success was found in reading, with about 85 percent of students improving their need by at least one level, and about 65 percent becoming college ready.

The next steps include a longitudinal study to identify college matriculation, retention, and completion. Hawkeye hopes to expand the program to other area districts in the future. Hawkeye has identified that their model of transition fits well with career academy programming and in preparing students for concurrent enrollment opportunities.

Eastern Iowa Community Colleges (EICC) – Pathway to College Readiness

In an effort led by the Mississippi Bend Area Education Agency, the EICC partnered with four high schools to increase postsecondary readiness in math. The college found that incoming students who did not take a math course during their senior year of high school were more likely to place into a developmental level regardless of their high school math course performance. Operating on the belief that early intervention will impact students' postsecondary success, the Pathway to College Readiness pilot identifies high school students who demonstrate less than college ready math skills on the ALEKS assessment at the end of their junior year. Identified students take a new Math Literacy course during their senior year.

Key to the program is the standardized curriculum of the Math Literacy course, developed in partnership between Eastern Iowa Community Colleges and the high schools. The curriculum aligns with national trends to shorten the Dev. Ed. sequence, and provides an alternative math pathway for non-STEM majors. The course engages students through active learning and group work, provides study skills, utilizes realistic applications of math concepts, and centers on critical thinking. Built into the course throughout the year are assessment points, which allow the students to retake the ALEKS math assessment to demonstrate progress. Successful completion of Math Literacy allows for matriculation into college level Statistics or Math for Liberal Arts courses.

Offered only for high school credit, any interested high school math teacher can instruct the Math Literacy course. The community college provides training and guidance via a lead developmental math instructor. This model also requires commitment from the school or district in the manner of an assigned teacher and classroom space, administrative support for materials and resources, and counselors for identifying students.

Highlight: As of spring 2018, students in this program from districts around EICC have avoided 121 developmental classes, 484 developmental credits, resulting in over $103,000 in textbook and tuition savings. 600 students from 13 high schools will be in the project for AY2018-19.

After a successful pilot year, the program is expanding to include more school districts. EICC has negotiated an agreement with ALEKS to fund the assessments up to 600 students for pilot expansion in AY2017-18.

Des Moines Area Community College (DMACC) – Developmental Education Pilot Project

Identifying that a single assessment score may not accurately represent a student's ability, Des Moines Area Community College (DMACC) has partnered with two large metro school districts to provide students the opportunity to demonstrate college readiness via Dev. Ed. competencies. Observing a significant number of recent high school graduates being placed into developmental math and English, DMACC approached several school districts to partner on a review of the curriculum and for an alignment of expectations. After reviewing the high school coursework at two schools, the initial team found close alignment between DMACC's ENG060 and the high school senior English course (English IV), and between DMACC's MAT064 and the high school Algebra II course. Leveraging this alignment, DMACC offers enrolled students the opportunity to document their competency via transcription of the college developmental course.

The project relies on accurate advising of students into the high school Algebra II and English IV courses. Once enrolled in the high school course, students can elect to register for the corresponding DMACC Dev. Ed. credit. The DMACC registration generates a college transcript to include the final grade earned, demonstrating competency and college readiness. Earning a final grade of "C" or higher in MAT064 or ENG060 allows the student to matriculate into the corresponding gateway college course.

DMACC advisors monitor student progress through the high school teacher, to ensure lower performing students withdraw from the DMACC course before earning a low grade. As Algebra II is typically taken in the sophomore or junior year, successful completion of MAT064 allows for entry into a concurrent enrollment math course during the student's senior year.

Last year (2016-17), more than 300 students registered for and completed the DMACC course, with most of these being ENG060. Reviewing data of high school ENG060 completers from the first year (2015-16), DMACC found their success rate in the subsequent college level Composition I was similar to the general college population's success rate. Thus far, DMACC leadership has agreed to offer the Dev. Ed. credit for free through the pilot partnership project, providing the opportunity at no cost to the student and district. The pilot has expanded to include two more districts in the current year.

Kirkwood Community College (KCC) – Perkins Math Readiness Project

For several years, Kirkwood Community College and several area high schools have identified college readiness gaps as an issue to address in partnership. Initially they attempted to meet the need through traditional developmental education coursework – training high school math teachers to offer the developmental math curriculum to identified students. This proved too expensive to sustain since developmental education coursework is not eligible for supplemental weighting. Narrowing the focus to career and technical education (CTE) students likely to matriculate into the college's CTE programs, along with the college's adoption of the ALEKS assessment tool, provides a new alternative to addressing college readiness gaps. A pilot project is currently being designed with two districts to leverage high school math course offerings and provide supplemental materials for CTE students who demonstrate gaps.

Planning for the Perkins Math Readiness Project began in the spring of 2017 with the defined goals of: 1) increasing postsecondary math readiness for high school graduates in the region; and 2) enhancing comprehension and promotion of ALEKS online math study resources. The project will target high school CTE students and/or high school students with a CTE postsecondary education goal. The primary planning team consists of a Kirkwood math faculty member and the counselor from each of the two high schools. During the summer of 2017 thorough review of the ALEKS tutorials and online resources resulted in a mapping of each to the high school math courses and curriculum. This mapping tool will be utilized by the counselors to place students into the best fit level of high school math, based on their ALEKS assessment scores. Once in the math course, students will be assigned the appropriate ALEKS tutorials as supplemental materials in addition to the math course content. At the end of the semester, students will retake the ALEKS assessment to demonstrate progress.

The pilot began in fall 2017 with all current CTE students completing the ALEKS math assessment to identify the students in need of additional math tutorials. Assignment of the ALEKS supplemental materials for identified students will occur in the spring of 2018. Yet to be defined are the details of how each student will be tracked and held accountable for completing the supplemental materials. The college has provided release time for the math instructor to assist in program planning and coordination. Perkins funding will be used to cover the costs of the ALEKS assessment and materials. As this pilot has yet to begin, there is no success data to share.

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The Division of Community Colleges and Workforce Preparation within the Iowa Department of Education administers a variety of diverse programs that enhance Iowa's educational system and help to prepare a skilled and knowledgeable workforce. Divided between two bureaus — the Bureau of Community Colleges and the Bureau of Career and Technical Education — the Division is committed to providing and supporting opportunities for lifelong learning. In addition to working with Iowa's 15 public community colleges on state accreditation, program approval, equity review, and data reporting, guidance is also provided in the areas of career and technical education, workforce training and economic development, adult education and literacy, military education, the state mandated OWI education program, the GAP Tuition and PACE programs, Senior Year Plus, the National Crosswalk Service Center, and the Statewide Intermediary Network program.