ANNUAL REPORT OF
DEVELOPMENTAL EDUCATION IN IOWA COMMUNITY COLLEGES

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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 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

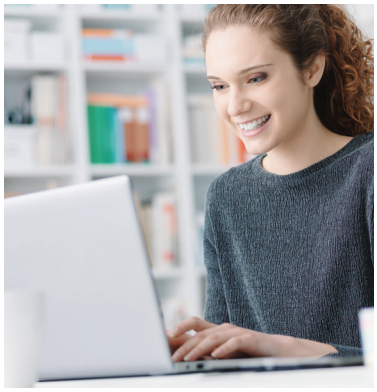
The Iowa Department of Education (Department) collects information on developmental education (Dev. Ed.) from Iowa's 15 community colleges on an annual basis. Dev. Ed. courses are offered in mathematics, reading, writing, English as a Second Language (ESL), and in other subject areas, such as financial 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.

Dev. Ed. 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 academic 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 2014-15, 2015-16, 2016-17 and 2017-18 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, 2014, and 2015 cohorts. Future reports will include these outcome metrics for additional cohorts once they have been tracked for three full years.

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 Condition of Community Colleges 2018 report, 8.4 percent of students enrolled in Dev. Ed. courses in AY17-18, as compared to 9.0 percent of students in AY16-17.
- The total number of unduplicated students enrolled in at least one Dev. Ed. course in AY17-18 (11,060) decreased 7.6 percent from AY16-17 (11,967).
- Students enrolled in 56,127 Dev. Ed. credit hours in AY17-18, which is a decrease of 11.4 percent from AY16-17. There have been significant decreases in Dev. Ed. credit hours since FY12-13.
- There were 17,575 Dev. Ed. offered courses (with prefixes in MAT, ENG, RDG, ELL, and ESL) in AY17-18, which has decreased 9.4 percent from the 19,401 Dev. Ed. courses offered in FY16-17.
- Students took an average of 5.1 credits in Dev. Ed. courses during AY17-18.
- Dev. Ed. credit hours accounted for 3.2 percent of total AY17-18 community college credit hours.
- The most popular Dev. Ed. mathematics course during AY17-18 was elementary algebra. For writing courses, the most popular course was College Prep Writing II.

Student Demographics

- The average age of a first-time enrolled in college (FTIC) Dev. Ed. student in the 2017 cohort was 20.4 years. For all students taking Dev. Ed. (not just FTIC students), the average age was 23.3 years old.
- Among FTIC participants in the 2017 cohort, 55.3 percent were female. The percent increased to 58.3 percent female when all students who took Dev. Ed. in AY17-18 were considered.
- Among FTIC participants in the 2017 cohort, 38.9 percent reported a minority racial or ethnic background compared to 25.4 percent for those not taking Dev. Ed. courses. The percent who reported a minority racial or ethnic background increased to 41.0 percent when all students who took Dev. Ed. were considered.
- Black students made up 18.6 percent of FTIC Dev. Ed. students, representing nearly half of all minority FTIC Dev. Ed. students. This was much higher than the proportion of black students in the 2017 non-Dev. Ed. cohort (9.5 percent) and in total AY17-18 enrollment (7.7 percent).
- Low-income students made up 47.5 percent of FTIC Dev. Ed. students in AY17-18.
- Students who self-identified as ESL/ELL made up 7.9 percent of FTIC Dev. Ed. students.
- Students who self-identified as being disabled made up 7.4 percent of FTIC Dev. Ed. students.
- The majority of FTIC Dev. Ed. students, 78.5 percent, were enrolled full time.
- Of all FTIC Dev. Ed. students, 21.7 percent were enrolled in career and technical education (CTE) programs.
- The majority of FTIC Dev. Ed. students, 94.1 percent, took a face-to-face class.

Student Outcomes and Cohort Comparisons/Trends

Outcomes (2014-15 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 32.8 percent, compared to 54.9 percent for non-Dev. Ed. students.
- Students had a 54.8 percent success rate in developmental courses, as defined by C- or higher.
- Dev. Ed. students had a 57.5 percent success in all courses in the first term, compared to 71.3 percent success in all courses by non-Dev. Ed. students.
- Dev. Ed. students had a 74.3 percent fall to spring persistence rate, compared to 71.5 percent for non-Dev. Ed. students.
- Dev. Ed. students had a 49.6 percent fall to fall retention rate, compared to 50.1 percent rate for non-Dev. Ed. students.
- Within the 2015 VFA cohort, the colleges determined that over one-third of students had a developmental course need, and of those students, about 43 percent passed their respective Dev. Ed. course.
- Colleges used multiple methods and course modes to teach developmental content to the cohorts in AY17-18.

Statistical Comparisons (within 2017-18 FTIC Cohort)

When compared to non-Dev. Ed. students in the latest cohort, characteristics of Dev. Ed. students were:

- More likely to be female (by 6.7 percent).
- More likely to be low-income (by 9.9 percent).
- More likely to be identified as ESL/ELL (by 5.7 percent).
- More likely to be full-time students (by 14.0 percent).
- Less likely to be CTE students (by 20.4 percent).
- Younger on average (by 1.1 years).

Trends (between 2013-17 FTIC Cohorts)

Review of the FTIC cohorts from 2013 to 2017 show the following trends:

- FTIC Dev. Ed. students were increasingly female (55.3 percent), minority (38.9 percent), and immediate enrollees (49.9 percent).
- FTIC Dev. Ed. students were decreasingly low-income (47.5 percent), increasingly enrolled full time (78.5 percent), and decreasingly enrolled in a CTE program of study (21.7 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 their own judgments. In fact, national research suggests that about 40 percent of community college students take at least one Dev. Ed. course (U.S. Department of Education, 2017, p. 1).

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 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 (U.S. Department of Education. Institute of Education Sciences, National Center for Education Statistics, 2018). However, Iowa's college attainment statistics are not as impressive, ranking 19 in educational attainment among those 25-64 years of age (Lumina Foundation for Education, 2019). 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 Dev. Ed. students based on income and ethnicity. Closing these equity gaps is a crucial 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. Focusing on successful pathways from high school to community college and accelerating Dev. Ed. are a couple of successful 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 by having 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 students who have been identified as needing Dev. Ed., in addition to students who actually enrolled in those 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 4 on page 21.)

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, computers, and skill-building, but since these specific courses are not as prevalent across multiple colleges (accounting for 1,038 enrollments in AY17-18), 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.

2 Developmental Education Synopsis

This section provides a synopsis of Dev. Ed. in Iowa community colleges through various statistics of AY17-18 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 AY17-18, math courses accounted for the vast majority of Dev. Ed. enrollment, (49.7 percent or 9,264 out of the total 18,624 Dev. Ed. duplicated 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 next highest enrollment with 3,764 enrollees. Developmental writing courses followed with 3,589 enrollees, and developmental reading courses had 857 enrollees (Figure 2.1). The math course with the highest enrollment was Elementary Algebra with 2,028 enrollees. The highest writing course enrollment was College Preparatory Writing II with 1,056 enrollees.

DEVELOPMENTAL EDUCATION HIGHLIGHTS AY17-18

17,575 Dev. Ed. courses (duplicated)

Down **9.4%** from FY16-17

11,060 unique students enrolled

Down **7.6%** from FY16-17

Of the students enrolled in developmental education:

52.7% of classes taken were in math

58.3% were female

41.0% were racial or ethnic minorities

The total of 17,575 courses offered at Iowa's 15 community colleges in AY17-18 represents a decrease of 9.4 percent from the 19,401 courses offered in AY16-17. This, in turn, was a 16.4 percent decrease from the number of courses offered in FY15-16 (23,203).

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.

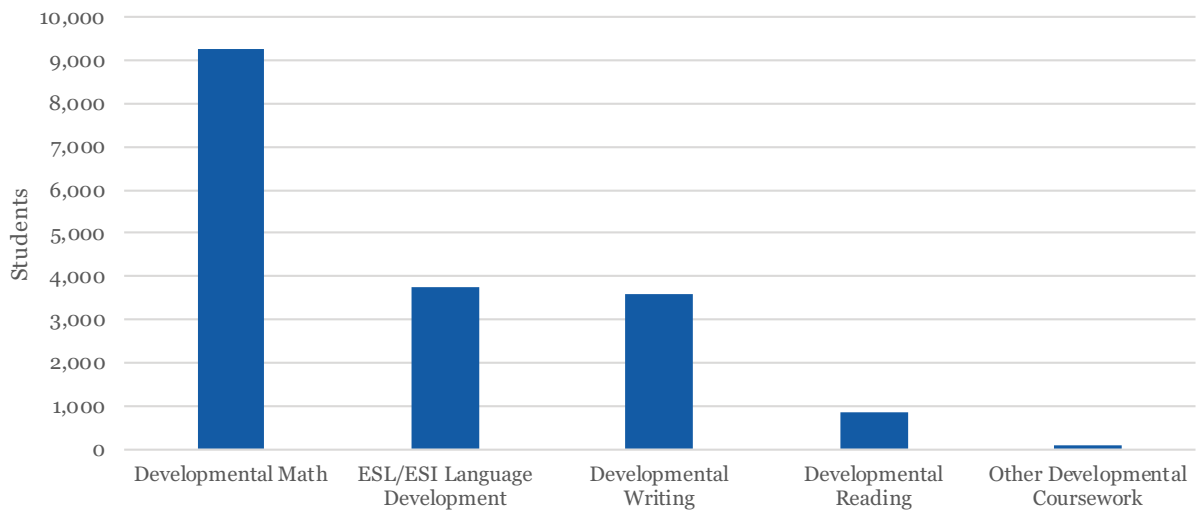
ESL AND ESI COURSES

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 college awards. The intent of these courses is to raise the student's reading and writing skills to college level. Developmental reading courses emphasize communication, vocabulary, and comprehension.

FIGURE 2.1: ENROLLEES IN DEVELOPMENTAL COURSES GROUPED BY TYPE (AY17-18)



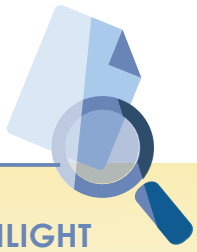
Enrollment

During AY17-18, 11,060 students (8.4 percent of total headcount) enrolled in at least one Dev. Ed. course. This represents a 7.6 percent decrease from AY16-17, and is down 49.4 percent since FY12-13 (21,877). These students enrolled in a total of 56,127 credit hours of Dev. Ed. during AY17-18, which is an 11.4 percent decrease from the previous year. As mentioned on the previous page, these students accounted for 17,575 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 a decline over at least six years in the number of credits taken and students enrolled in Dev. Ed. statewide. AY17-18 saw a 41.9 percent decrease in Dev. Ed. credits taken since FY13-14 (96,691). As stated in the overview, the reason for this decrease is not necessarily that students are entering college better prepared, but rather due to colleges' efforts to improve and accelerate Dev. Ed.

Student Demographics

Similar to the general population of community college students, females represented the majority of Dev. Ed. students in AY17-18, at 58.3 percent compared to 54.3 percent for the general population. While this represents a slight gender disparity, it is minor when compared to the disparity of Dev. Ed. students belonging to racial or ethnic minority groups as compared to the total student body in AY17-18 (41.0 percent vs. 22.4 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 AY17-18, students from ages 13 to 75 took Dev. Ed. courses. These students had an average age of 23.3 years, which was slightly higher than the average of the general population (21.6 years).

Credit Hours per College

Figure 2.2 shows the percentage of developmental credits taken in the fall 2017 semester by community college. These credits were taken by the 2017 cohort of FTIC (excluding high school students) enrolled in Iowa's community colleges.

Note that Northeast Iowa (Region 01), 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 because 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 2017 Cohort.

FIGURE 2.2: DEVELOPMENTAL EDUCATION BY COMMUNITY COLLEGE REGION AS A PERCENT OF TOTAL FALL CREDITS (2017 COHORT)

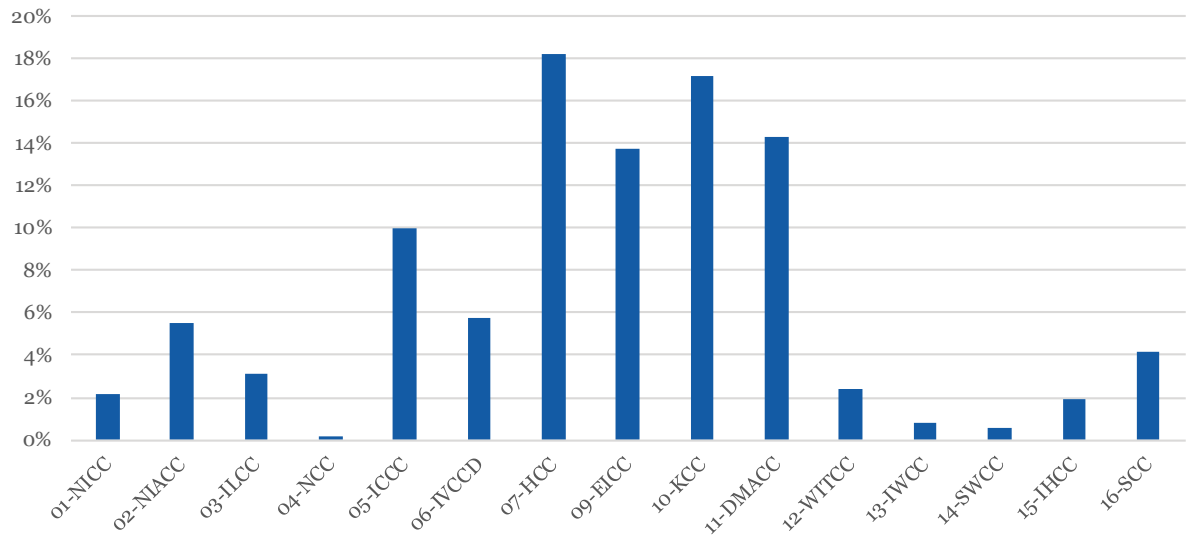
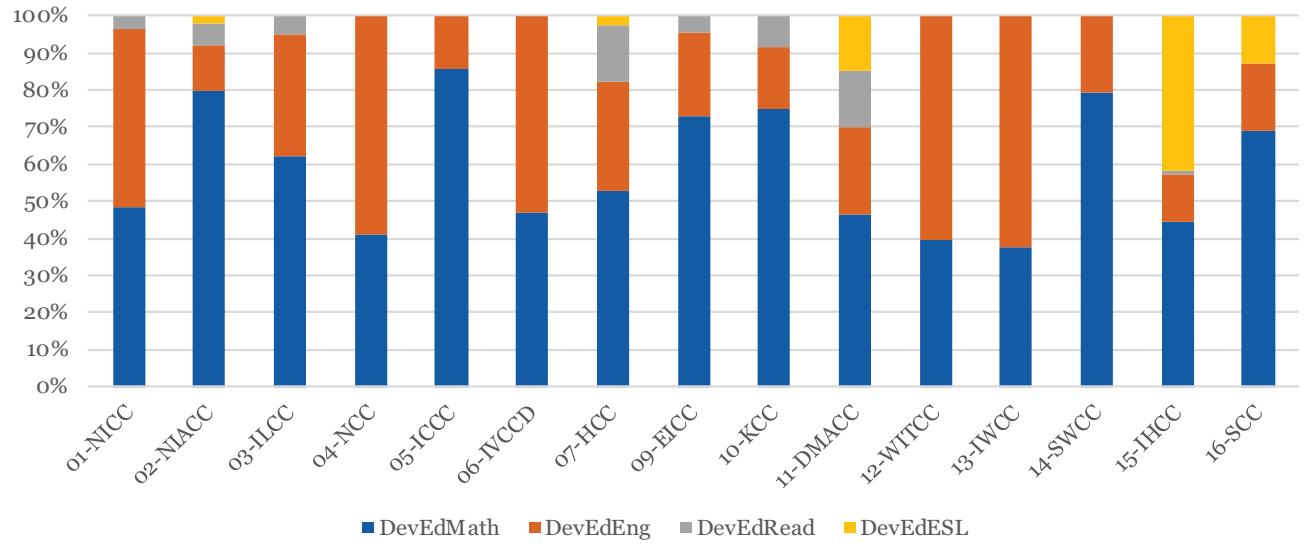


FIGURE 2.3: DEV. ED. COURSE CREDIT TYPE BY COMMUNITY COLLEGE (2017 COHORT)



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 on page 24.)

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 student access to college opportunities. Based on the *2019 Postsecondary Readiness Report*, 67.6 percent of students who graduated high school between 2015 and 2017 enrolled in college or training programs within one year of high school graduation. Furthermore, 46.6 percent of students who graduated high school in the 2011-12 academic year earned some type of postsecondary award within six years of graduation (Iowa Department of Education, 2019).

More information regarding CCR can be found at the Department's website at: https://reports.educateiowa.gov/PostSecondaryReadiness/home/stateDashboard#.

Developmental Math Need

Historically, the Department has identified Dev. Ed. students by tracking which students enroll in Dev. Ed. courses, signified by a course number below 100 (e.g., MAT 060). However, this measure has its limitations since not all academically underprepared students (i.e., in need of Dev. Ed.) actually enroll in Dev. Ed. courses. Therefore, a better method of identifying students who need some level of college preparatory skills development was needed in order to conduct accurate, meaningful research on Dev. Ed.

In the fall of 2016, the Department's MIS system started collecting data on students who demonstrated developmental need, based on the Voluntary Framework of Accountability (VFA) metric definitions (see Section 4 on page 21). Through the MIS system, colleges began reporting students who need developmental math and English based on their own internal metric. Unfortunately, since this is a recently collected measure, not all colleges reported or documented 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 have helped to gain consistency in the reporting of Dev. Ed. data. If a student is assessed below college level in math (or English), colleges will now report that student "in need" of developmental math (or English). They will also report the 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 AY17-18 generates a baseline for this metric.

In fall 2017 (part of AY17-18, not otherwise reported herein), out of 89,894 unduplicated students statewide, 22,218 students (24.8 percent) were reported as needing developmental mathematics and 21,507 students (23.9 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 AY17-18 (11,060) and establishes a more reliable baseline.

Figure 2.4 shows a comparison of student percentages for each community college based on developmental need for math and English. The figure shows that developmental need ranges from one to 50 percent of students at the various colleges, thus affirming the inconsistency of reporting this metric.

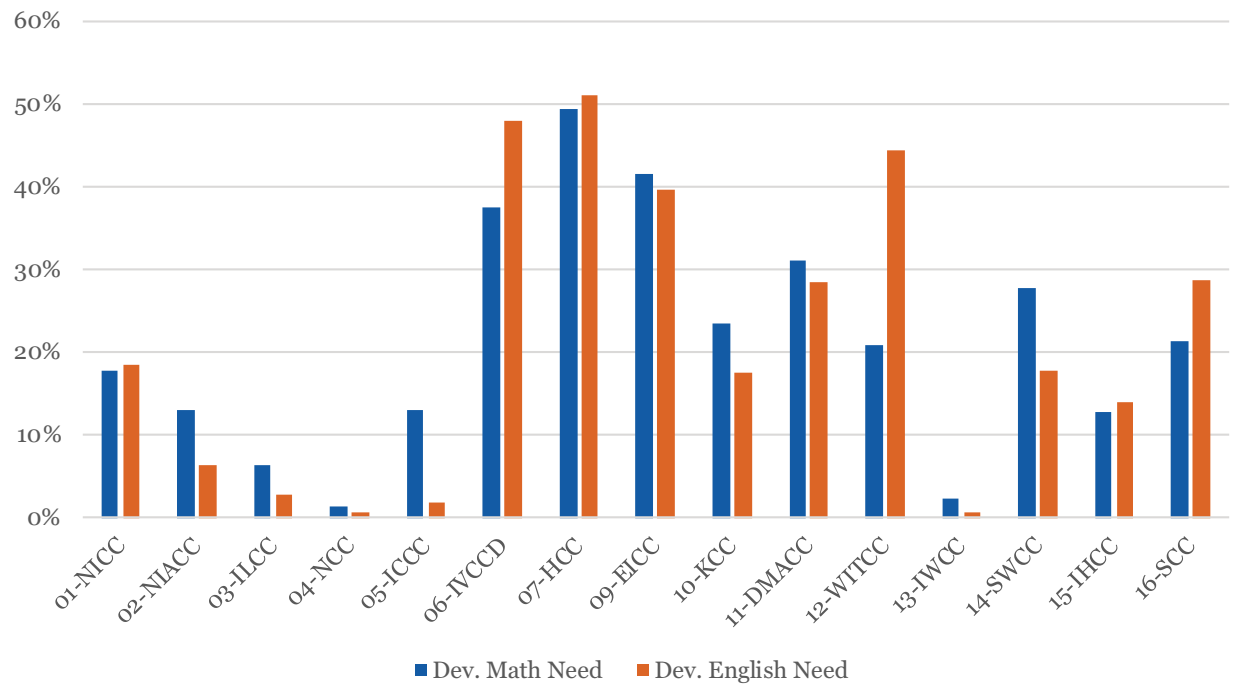
The outcomes success data for each student cohort presented in Section 5 also depends upon a consistent and reliable baseline of the student's developmental subgroup. Therefore, as the developmental "need" becomes a more consistent and reliable metric, the cohort data provided in this report are based on developmental course-taking (enrollment) rather than on developmental need. It is expected that for AY18-19 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?

FIGURE 2.4: DEVELOPMENTAL COURSE STUDENT NEED BY COLLEGE



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 five 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 2014 were placed into the 2014-15 cohort (to be referred to as the "2014 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, the 2014 Cohort had established four years of data and the 2015 Cohort had 3 years of data. The 2013 Cohort was finalized in last year's report. 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 three cohorts, which provide a more complete picture of student success and educational outcomes, is provided in this section. Although the 2017 Cohort only had one year of established data, first-year data on student course success, persistence to second semester, and retention to the subsequent fall semester was also provided. This data was included because the 2017 Cohort may be the most relevant regarding Dev. Ed. initiatives.

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 2014, 2015, 2016, or 2017. For example, those who entered for the first time in the fall of 2014 are in the "2014 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 who took Dev. Ed. courses, were separated into categories: mathematics, 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).

2017 COHORT OVERVIEW

4,283
Students enrolled in the Dev. Ed. Cohort

41.8%
From 7,364 students in the 2013 Cohort

Dev. Ed. students comprised
19.9%
Of the total cohort

41.8%
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.

Dev. Ed. Student Demographics: 2017 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 2017 Cohort was 20.4 years old compared to 23.3 years for all students enrolled in a Dev. Ed. course during the AY17-18. 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 3.0 percentage points. The 2017 Cohort consisted of 55.3 percent females compared to 58.3 percent of all Dev. Ed. students during AY17-18. Regarding ethnicity, 38.9 percent of Dev. Ed. students in the 2017 Cohort reported a minority racial or ethnic background compared to 41.0 percent of all Dev. Ed. students. Of the minority students in the 2017 Cohort, a disproportionate number, representing 18.6 percent, were black (Table 3.1).

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 AY17-18 students, all AY17-18 Dev. Ed. students, and all fall 2017 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 2017-18 STUDENT GROUPS

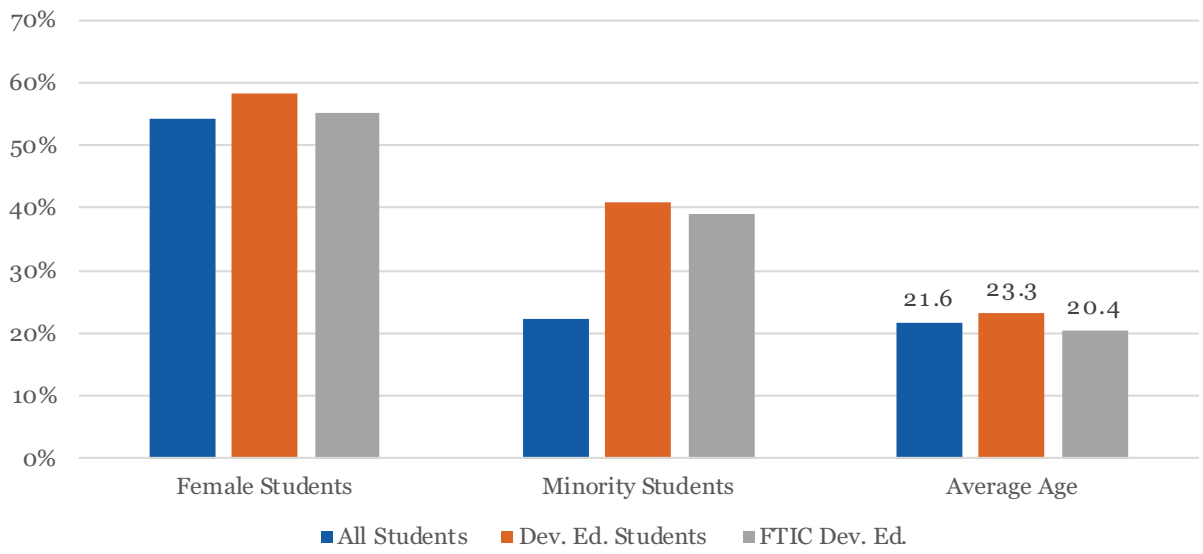


TABLE 3.1: DEV. ED. COMPARISON OF 2017-18 MINORITY STUDENT ENROLLMENT BY TOTAL ENROLLMENT, NON-DEV. ED. ENROLLMENT, AND 2017 COHORT REPRESENTATION

AY2017-18	Total Enrollment	2017 Cohort (FTIC Non-Dev. Ed.)	2017 Cohort (FTIC Dev. Ed.)
Minority	22.4%	25.4%	38.9%
Hispanic (of total/minority)	8.0%/35.7%	9.6%/37.6%	12.3%/31.6%
Black (of total/minority)	7.7%/34.4%	9.5%/37.4%	18.6%/47.9%
Two or more (of total/minority)	2.5%/11.2%	2.7%/10.6%	3.6%/9.4%

2017 Cohort: Dev. Ed. Students vs. Non-Dev. Ed. Students

Table 3.2 illustrates differences between Dev. Ed. (19.9 percent) and non-Dev. Ed. (80.1 percent) student demographics within the 2017 Cohort. In addition to differences in age, gender, and race/ethnicity, students who were disabled, low-income, or ESL/ELL constituted a higher percentage of Dev. Ed. students within the 2017 Cohort. 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 2017, 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 2017 Cohort, immediate enrollees were more likely to be female, significantly less likely to have identified as a racial/ethnic minority (29.1 compared to 47.4 and 53.4 percent of the other age groups) and they enrolled in fewer ESL/ELL courses. Unlike their

TABLE 3.2: NON-DEV. ED. VERSUS DEV. ED. STUDENT DEMOGRAPHICS (2017 COHORT)

Category	Non-Developmental	Developmental	Comparison Observation
2017 Cohort Overall	17,192	4,283	About four times as many did not take Dev. Ed. courses.
Gender	48.6% Female	55.3% Female	A higher percentage of Dev. Ed. students are female.
Race	25.4% Minority	38.9% Minority	Significantly higher percent of Dev. Ed. students are minorities.
Disabled	3.6%	7.4%	More than double the percent of Dev. Ed. students are disabled.
Low Income	37.6%	47.5%	A higher percentage of Dev. Ed. students are low income.
ESL and ELL Identified	2.2%	7.9%	More than triple the percent Dev. Ed. students are ESL/ELL identified.
Immediate Enrollees	38.6%	49.9%	A higher percentage of students taking Dev. Ed. are immediate enrollees.
Average Age	21.5	20.4	Dev. Ed. students are a year younger, on average.
Full-Time Status	64.5%	78.5%	A higher percentage of students taking Dev. Ed. courses are full-time status.
CTE Status	42.1%	21.7%	About one-fifth of Dev. Ed. students are in CTE programs.

TABLE 3.3: DEV. ED. COMPARISON BY AGE SUBGROUP (2017 COHORT)

Category	Developmental	Immediate	<25 Not Immediate	>=25
2016 Cohort 21.9%	4,283	2139 (49.9%)	1621 (37.8%)	523 (12.2%)
Gender	55.3% Female	59.1% Female	50.3% Female	55.3% Female
Race	38.9% Minority	29.1% Minority	47.4% Minority	53.4% Minority
Disabled	7.4%	8.0%	7.5%	4.8%
Low Income	47.5%	46.2%	46.3%	57.0%
ESL and ELL Identified	7.9%	2.9%	8.2%	27.3%
Average Age	20.4	18.2	19.5	33.3
Full-Time Status	78.5%	83.9%	77.8%	51.6%
CTE Status	21.7%	19.0%	21.7%	33.1%
Percent taking Dev. Ed. Math	73.6%	79.3%	72.4%	54.1%
Percent taking Dev. Ed. Eng.	35.3%	35.6%	37.4%	27.3%
Percent taking Dev. Ed. Read.	10.9%	12.5%	9.4%	8.6%
Percent taking Dev. Ed. ESL	2.9%	0.8%	4.7%	5.9%
Dev.Ed. Instructional Mode	94.1% Face-to-Face	95.6% Face-to-Face	94.3% Face-to-Face	87.4% Face-to-Face

older peers, a higher percentage of these immediate enrollees were enrolled full time and fewer were enrolled in CTE programs. More of the older students (25 and older) were enrolled in CTE programs (33.1 percent) but fewer took face-to-face courses, perhaps because family and work life responsibilities were more conducive to online coursework.

A similar analysis of the non-Dev. Ed. students in the 2017 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 2017, 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 2017 cohort data, Dev. Ed. course-taking (i.e., headcount and enrollee counts and percentages) have steadily decreased each year. Data show that 19.9 percent of the 2017 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 4,283 students in the 2017 Cohort. Across all cohorts, overall, Dev. Ed. course enrollees were more likely to be female and to self-identify as a minority (highest in 2015 Cohort with 39.6 percent), having a disability (highest in 2017 Cohort with 7.4 percent), being low-income (highest in 2014 Cohort with 52.4 percent), and as ESL/ELL (highest in 2017 Cohort with 7.9 percent). Table 3.4 shows a comparison of Dev. Ed. student 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 49.9 percent for the 2017 Cohort).

In terms of Dev. Ed. course-taking, across all cohorts, almost 80 percent of enrollees were full-time students, although this percentage has decreased slightly each year. The majority of these students (about 94 percent) take their courses face-to-face and the percentage enrolled in CTE

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 21.7 percent in the 2017 Cohort.

programs has declined from 27.2 percent (2013) to 21.7 percent (2017).

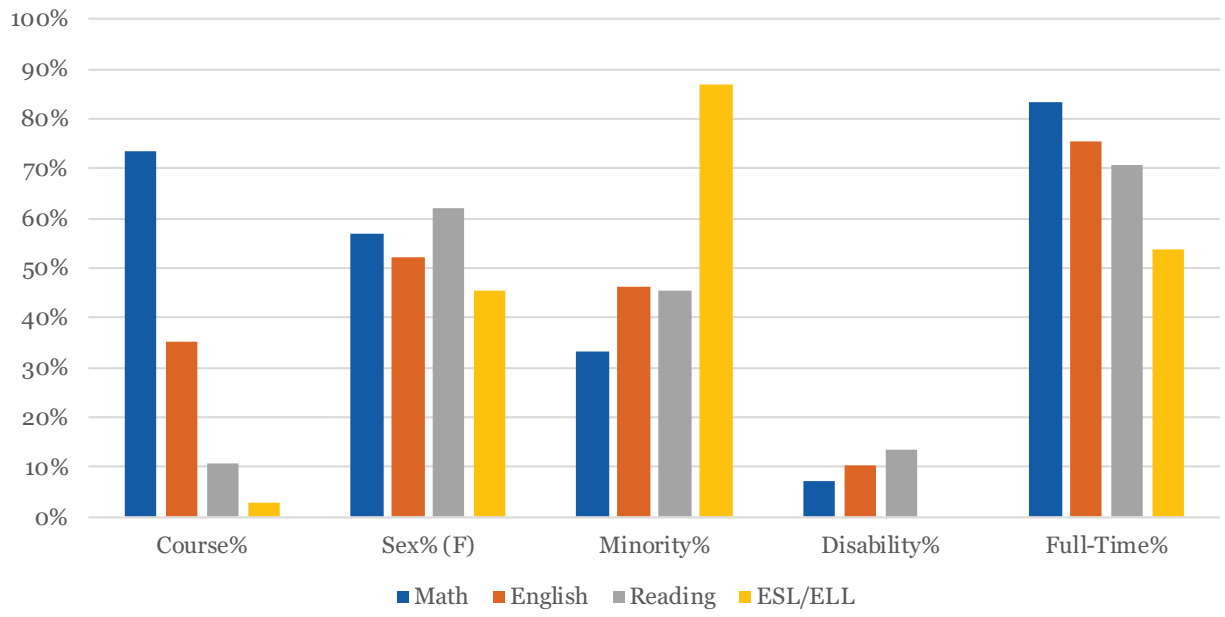
Regarding course type, Figure 3.2 illustrates that math courses command the highest percentage of Dev. Ed. courses taken by the 2017 Cohort, at 73.6 percent. Not illustrated is that this percentage has increased slightly from 72.0 percent in the 2013 Cohort. Course analysis also indicated that ESL/ELL and English course takers have increased proportionally, while the proportion of mathematics and reading enrollees decreased over the year. Also, among minority students, the highest proportion of Dev. Ed. courses taken were ESL/ELL (86.8 percent in the 2017 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 2017 Cohort of students by developmental course subject (math, English, reading, and ESL). While developmental mathematics made up the largest percentage (73.6 percent) of developmental course taking for all students in the 2017 Cohort, those students taking developmental math had lower percentages of minorities and students with disabilities compared to the other development course disciplines. Developmental math showed the highest percentage of full-time students at 83.5 percent.

TABLE 3.4: DEV. ED. ANNUAL COHORT COMPARISON

Cohort Year	2013	2014	2015	2016	2017	Trend
Dev. Ed. Cohort Students	7,364	7,045	5,801	4,761	4,283	↓
Percent of all in Cohort	34.2%	28.9%	24.7%	21.9%	19.9%	↓
Gender/All	51.5% Female	52.6% Female	53.6% Female	53.6% Female	55.3% Female	↑
Race/All	32.8% Minority	35.3% Minority	39.6% Minority	38.7% Minority	38.9% Minority	↑
Disabled/All	3.2%	7.2%	7.3%	7.0%	7.4%	↑
Low Income/All	40.2%	52.4%	52.1%	51.4%	47.5%	↑
ESL and ELL Identified/All	4.5%	6.0%	7.4%	7.2%	7.9%	↑
Immediate Enrollees/All	40.8%	44.4%	44.0%	47.0%	49.9%	↑
Average Age	21.1	21.1	20.8	20.7	20.4	↓
Full-Time Status	81.3%	79.5%	78.9%	77.7%	78.5%	↓
CTE Status	27.2%	27.8%	23.4%	23.7%	21.7%	↓
Course Type	89.5% Face-to-Face	88.0% Face-to-Face	88.7% Face-to-Face	90.7% Face-to-Face	94.1% Face-to-Face	↑

FIGURE 3.2: SELECTED DEMOGRAPHICS BY COURSE TYPE TAKEN (2017 COHORT)



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, which shows subject and age subgroup data for the 2017 Cohort.

Of the 17,240 developmental course credits that the 2017 Cohort Dev. Ed. students were enrolled in, immediate enrollees (49.9 percent of the students) took the highest proportion of the credits (51.7 percent), followed by those taken by students who were under the age of 25 (37.8 percent of the students took 38.4 percent of the credits) and 25 or older (12.2 percent of the students took 9.9 percent of the credits). The immediate enrollees took the majority of their credits in Dev. Ed. mathematics (66.1 percent), while taking a very small share of the ESL credits (1.5 compared to 6.4 and 8.3 percent taken by the other age groups). For mathematics Dev. Ed. course-taking, students over the age of 25 age had the lowest rate, at 58.8 percent. Students under 25 years old, but not immediate enrollees, took the highest proportion of writing/English credits (27.2 percent), while enrollees 25 years or older led in reading and ESL/ELL credits taken at 8.0 and 8.3 percent, respectively.

Developmental Education Measures of Success

To measure student success, community college researchers typically define and identify student cohorts and then track the student progress for a set number of years, depending on the metric of interest. During the first year, success of Dev. Ed. student cohorts 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 were removed from the calculation.

Table 3.6 shows these three success measures for each of the 2013 through 2017 Cohorts. Course success rates have increased from a little over 50 percent in 2013 to 61 percent in 2017. Persistence rates for Dev. Ed. students were higher than their non-Dev. Ed. peers in every cohort. However, their retention rates were lower for three of the five cohorts. Notably, Dev. Ed. Students retention has increased over that time period.

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 (2017 COHORT)

			Percent of Credits in Subject Area				
	Total Credits	Student %	Credit %	Math	English	Reading	ESL
All Dev. Ed. Students	17,240	100.0%	100.0%	63.2%	25.1%	7.6%	4.1%
Immediate	8,907	49.9%	51.7%	66.1%	23.7%	8.7%	1.5%
<25	6,625	37.8%	38.4%	60.4%	27.2%	6.0%	6.4%
>=25	1,708	12.2%	9.9%	58.8%	24.9%	8.0%	8.3%

These measures of success were further analyzed for the 2017 Cohort by age and course-taking subgroups, as well as by course instructional modalities. Table 3.7 shows the 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 3.6: 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%	72.1%	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%
2017	61.0%		74.0%	70.3%	51.0%	49.0%

** 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. Retention is out of those students who did not transfer or graduate prior to that term.*

TABLE 3.7: FIRST-YEAR DEV. ED. VERSUS NON-DEV. ED. STUDENT SUCCESS BY AGE, COURSE TYPE, AND MODALITY (2017 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 2017 students	61.0%	N/A	74.0%	70.3%	51.0%	49.0%
Immediate	61.6%		76.6%	82.1%	56.5%	62.0%
<25	60.1%		71.9%	66.1%	45.1%	42.8%
>=25	61.5%		70.1%	55.0%	47.0%	35.8%
Math	58.9%		74.8%	N/A	52.3%	N/A
English	61.6%		71.4%		48.0%	
Reading	62.7%		71.0%		47.8%	
ESL/ELL	87.8%		80.6%		45.9%	
F2F	61.6%		74.3%		51.6%	
Online	51.2%		71.7%		43.2%	
Mixed	57.6%		61.5%		37.3%	

** 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. Retention is out of those students who did not transfer or graduate prior to that term.*

These outcomes show that immediate enrollees in the 2017 Cohort 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 who were not immediate enrollees had higher persistence rates and retention rates than their non-Dev. Ed. peers. An interesting comparison shows that 51.0 percent of the Dev. Ed. students returned the next fall compared to 49.0 percent of the non-Dev. Ed. students.

Regarding course type, a much higher percent of ESL/ELL students passed their ESL/ELL courses, but math students had higher persistence and retention rates than other course types. Students who took face-to-face Dev. Ed. courses had higher rates of 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, 2014, and 2015 Cohorts, the following success measures were analyzed for these 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. student 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, 2014, and 2015 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 21 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 5.0 percent higher rate than their non-Dev. Ed. peers.

Regarding course and program performance metrics, Dev. Ed. students were not as successful completing transfer courses in their first term, with non-Dev. Ed. students outperforming them by over 10 percentage points. In turn, non-Dev. Ed. students completed

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

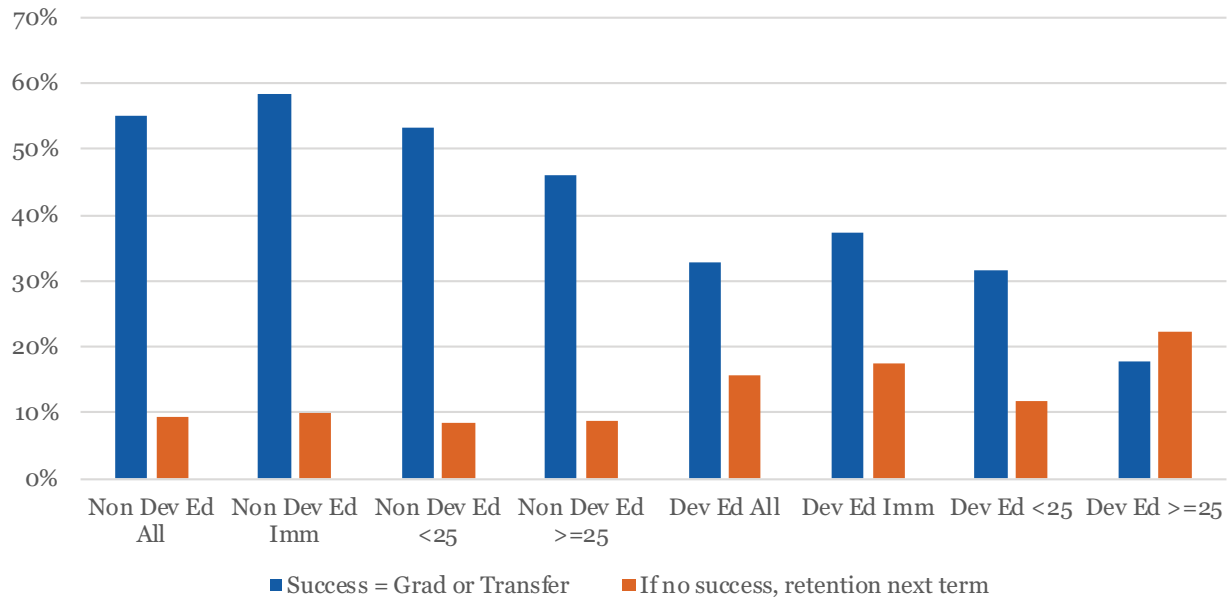
Cohort Group	Grad %	Transfer %	Success = Grad or Transfer %	If no Success, Retention Next Term %	Transfer Course Success Term 1 %	Cert. Earned %	Time to Cert. (years)	Dipl. Earned %	Time to Dipl. (years)	2Y Degree %	Time to 2Y (years)
2013 Dev. Ed.	23.6%	22.6%	34.9%	14.2%	58.3%	2.4%	1.37	4.2%	1.92	20.4%	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
2015 Dev. Ed.	21.0%	22.4%	32.8%	15.6%	57.5%	2.4%	1.50	3.3%	1.95	19.7%	2.04
2015 Non D.E.	42.4%	28.6%	54.9%	9.3%	71.3%	4.9%	1.24	10.4%	1.29	36.3%	1.74

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 earned is concerning.

Within the 2015 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 (37.2 percent success) and non-Dev. Ed. students (58.4 percent). They also have the highest transfer course success and completion of two-year degrees for both Dev. Ed. and non-Dev. Ed. students. Interestingly, the Dev. Ed. students who were 25 years or older significantly led all age groups in the "if no success, retention next term" measure (22.3 percent). This could be because students in this age group were 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 average time to complete a two-year degree was slightly higher for Dev. Ed. students in the 2015 Cohort than for non-Dev. Ed. students (2.04 years versus 1.74 years). For certificates, Dev. Ed. students completed in slightly more time than non-Dev. Ed. students (1.50 vs. 1.24 year, respectively). Of the Dev. Ed. Students, those who were 25 or older had the lowest certificate completion time of all subgroups at 1.34 years.

FIGURE 3.3: LONG-TERM* STUDENT SUCCESS/RETENTION BY AGE SUBGROUPS (2015 COHORT)



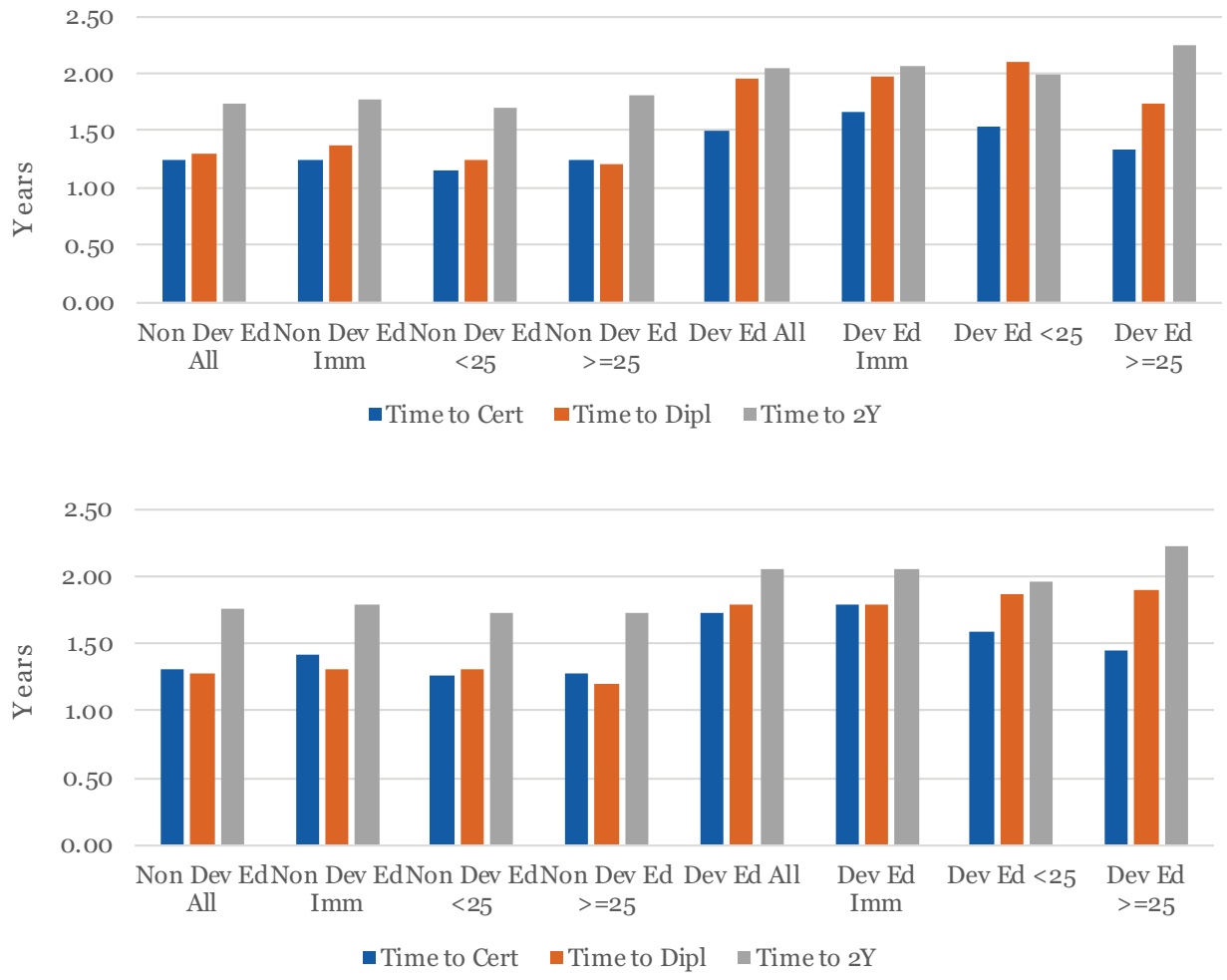
** Long-term means within three years of initial cohort formation/term.*

TABLE 3.9: LONG-TERM* STUDENT SUCCESS BY AGE SUBGROUPS (2015 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	21.0%	22.4%	32.8%	15.6%	57.5%	2.4%	1.50	3.3%	1.95	19.7%	2.04
Dev Ed Imm	25.3%	25.2%	37.2%	17.6%	58.7%	2.4%	1.66	4.2%	1.98	23.7%	2.07
Dev Ed <25	18.2%	22.9%	31.7%	11.7%	55.4%	1.9%	1.54	2.0%	2.10	17.3%	2.00
Dev Ed >=25	3.5%	8.6%	17.9%	22.3%	61.2%	4.0%	1.34	3.8%	1.74	11.4%	2.24
Non-Dev Ed All	42.4%	28.6%	54.9%	9.3%	71.3%	4.9%	1.24	10.4%	1.29	36.3%	1.74
Non-Dev Ed Imm	47.1%	31.6%	58.4%	10.0%	72.7%	4.7%	1.24	10.3%	1.38	41.5%	1.77
Non-Dev Ed <25	38.3%	29.0%	53.2%	8.6%	69.8%	4.3%	1.16	9.1%	1.25	32.6%	1.70
Non-Dev Ed >=25	37.3%	14.5%	45.9%	8.8%	70.9%	8.3%	1.24	16.2%	1.20	27.4%	1.81

** 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
2015 COHORT (TOP) AND 2014 COHORT (BOTTOM)



4 VFA's Developmental Education Metrics

Framework Methodology

Iowa recently adopted the Voluntary Framework of Accountability (VFA) as its principle tool for analyzing how well its 15 community colleges serve 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, which 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 FTIC student cohorts (indicated as the "Full" Cohort in Table 4.1). Iowa colleges assess these students' math, reading, and writing skills using a locally determined method and then identify which of those students need developmental 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 the data establishes a baseline for tracking and comparison purposes.

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.

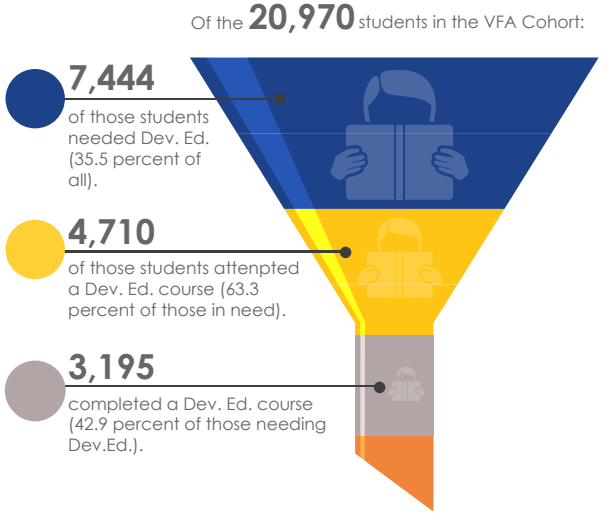
COHORT DIFFERENCES

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 Department established two-year VFA cohort data on the students who enrolled in college for the first time (as non-high-school students) in fall 2014 (AY2014-15). A six-year cohort (AY11-12) has also been established to provide more comprehensive analysis of VFA outcomes and most of the data that follows is from this cohort. 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 2015-16 COHORT HIGHLIGHTS



VFA data present information about the full 2011 Cohort, as well as data from a sub-cohort of those students who indicated they were 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 percent of students in each cohort in need of Dev. Ed. courses, the percent who attempted such courses, and the percent who successfully completed such courses (as defined by a C- or higher). About one-third (42.5 percent) of all students in the AY2011 Cohort needed a Dev. Ed. course, and 66.6 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 (60.6 percent) than the FTIC Cohort (41.7 percent) or the full cohort (41.1 percent). Regarding student need, mathematics led the way with 38.6 percent

TABLE 4.1: VFA 2011 COHORT

2011 Cohort	Number of Students	VFA Dev. Ed Need* (%)	Attempted Course (%)	Completed Course** (%)	Completed Next Transfer Course** (%)
Full	21,918	42.5	66.6	41.1	This data is available, but only by subject.
Credential Seeking	14,112	41.2	68.7	60.6	
FTIC	13,887	46.8	69.8	41.7	
Need Math**	8,451	38.6	65.3	44.1	26.4
Need Writing**	4,162	19.0	50.9	50.3	37.0
Need Reading**	2,808	12.8	37.0	49.7	N/A

** VFA Dev Need is based on some additional requirements such as program type and placement and differs from MIS definition*

*** Completion of course indicated by C- or higher grade.*

of the full cohort needing Dev. Ed. math versus only 19.0 percent needing writing and 12.8 percent needing reading. Interestingly, while a relatively low percentage of students needed Dev. Ed. reading, only 37.0 percent actually took Dev. Ed. coursework and only 49.7 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 26.4 percent of the students in need of Dev. Ed. math 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 (37.0 percent passing), but the 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 measure 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 2011 COHORT DEVELOPMENTAL COURSE NEED BY LEVEL BELOW TRANSFER

	Math N=6,502 (%)			Writing N=3,341 (%)*		Reading N=2,367 (%)*	
2011 Cohort	1 Level Below	2 Levels Below	3 Levels Below	1 Level Below	2 Levels Below	1 Level Below	2 Levels Below
Full	25.0	9.2	4.4	12.2	6.6	9.3	3.5
Credential Seeking	24.4	8.5	4.0	11.8	5.3	9.0	3.2
FTIC	28.0	9.9	4.7	13.0	7.7	10.7	3.8

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 AY16-17. 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 following 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 AY16-17.

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.*

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 students succeed and persist past Dev. Ed. courses so that they 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://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 document students who need Dev. Ed. upon enrollment in the colleges. In many of the cohorts, student developmental needs were not consistently reported by all colleges. Documentation will continue to improve with AY17-18 data. Nevertheless, a baseline is 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: 2018* document, accessible on the Department's website at https://educateiowa.gov/documents/developmental-education/2018/07/additional-data-annual-report-developmental-education-iowa, for additional data sets and information referenced in this report, including:

- 2013-2017 Developmental Cohort Demographics
- 2013-2017 Dev. Ed. In-Cohort Demos by Course Type Subgroups
- 2013-2017 Dev. Ed. Comparison to Non-Dev Ed Demos
- 2013-2017 Dev. Ed. In-Cohort Demos by Age Subgroups
- 2013-2017 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

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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.