

# Developmental Education:

Recommendations to Improve Postsecondary Student Success



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## Background

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Developmental education has been a critical mission of Iowa's 15 community colleges since the formation of these open-door, two-year institutions in the mid-1960s. Developmental education provides the opportunity for students entering postsecondary institutions to enhance their skills in math, reading, writing, and English speaking to succeed in college-level coursework. The process for placing students into college preparatory courses and the delivery of such coursework varies by college. While some use placement exams and semester-long courses, others use multiple placement measures and individualized learning modules. Regardless of the different policies and practices, developmental education is a necessary component of the community college mission. Therefore, colleges continuously strive to improve the delivery of developmental coursework and related student support services, with a focus on efficiency and effectiveness.

Recently, the Future Ready Iowa Alliance provided recommendations for how to achieve its goal of 70 percent of Iowa's workforce having education or training beyond high school by the year 2025. Of their recommendations, the following specifically relates to developmental education:

*Better align and expand the ecosystem of support for Iowans beginning college or career training or returning to complete, with a focus on Iowans who are low income and/or underrepresented minorities. This should include career counseling, addressing the cliff effect (low-income Iowans losing benefits, such as child care assistance, disproportionately due to a small wage increase) and other wrap-around services, such as:*

- c. Improving remediation, including (1) remedial coursework in high schools, rather than at community colleges. Let students improve their skills in condensed periods rather than re-taking entire courses; and (2) improve remediation at the postsecondary level with a co-requisite approach."*

## The Developmental Education Working Group

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In response to the Future Ready Iowa Alliance's recommendation, and in acknowledgement of ongoing research and initiatives underway nationally and within Iowa's community colleges, a work group was formed and charged with reviewing the diversity of developmental education offerings across the state; addressing inequities and opportunities for improvement; identifying best practices that result in improved postsecondary retention and completion rates; and making recommendations for providing consistent, high-quality programs and services statewide.

To accomplish this ambitious task, the Iowa Department of Education (Department) convened a panel of college representatives from administration, student and learning services, and faculty—all with experience in developmental education, curriculum development, student affairs, adult education and literacy, or affiliation with the Iowa Developmental Education Association (IDEA). This Developmental Education Working Group (DEWG) consists of one representative from each of Iowa's 15 community colleges and the Board of Regents, supported by six facilitators from the Department's Division of Community Colleges and Workforce Preparation.

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The Developmental Education Working Group operated at two levels for a period of six months. Firstly, the full group met face-to-face on three occasions for a minimum of four hours each. The meetings consisted of in-depth discussions regarding various developmental education policies, practices, and research projects being conducted at Iowa's community colleges and nationwide. The group engaged in a presentation by researchers from the Community College Research Center at Columbia University, and conducted small- and large-group discussions to develop recommendations for statewide efforts to ensure that all students are provided high-quality opportunities to prepare themselves for success in college-level coursework.

Secondly, the group formed four subcommittees to focus on the following themes that arose from a survey regarding policies, practices, and initiatives related to developmental education:

- ▶ Intake and Advising
- ▶ Assessment and Placement
- ▶ Success and Retention
- ▶ Teaching and Delivery

Members of these four subcommittees met numerous times to review research and discuss current practices underway in Iowa related to their specific themes. They also had presentations from state and national experts, vendors, and community college practitioners who have successfully implemented best practices such as:

- Holistic approaches to placement
- Intrusive advising and academic supports
- Research-based, predictive modeling
- Multiple measures (both cognitive and non-cognitive assessments)
- Diagnostic skills assessment tools
- Non-cognitive assessment tools
- High school transition courses
- Importance of 12<sup>th</sup> grade mathematics
- Preparatory Academic Labs
- Co-requisite strategies such as supplemental instruction (course or lab support) and the Accelerated Learning Program (ALP)
- Integrated Basic Education and Skills Training (I-BEST) model
- Math Pathways' alignment of developmental course content with students' majors
- Reading Apprenticeships
- Professional development opportunities
- Developmental Education versus College Readiness

The four subcommittees explored research and discussed how these best practice models are working in Iowa's community colleges and how implementation could be expanded. They then submitted 18 recommendations to the full work group, which contained many common themes that resulted in group consensus on the five (5) recommendations presented in this report.

As one reads through this report, it is important to note that the recommendations made by the Developmental Education Working Group, and future statewide implementation activities, intersect with multiple statewide efforts underway at this time. Therefore, any actions that proceed from these recommendations should do so in conjunction with the efforts of other statewide groups, such as the Postsecondary Readiness Index Committee and the statewide Liaison Advisory Committee on Transfer Students (LACTS), to name a few.

## Recommendations

It is the intent of the Developmental Education Working Group (DEWG) to encourage and support statewide collaboration among community colleges, state universities, school districts, and other education stakeholders in efforts to increase success and completion rates of students who enter postsecondary education underprepared for college-level coursework. Aligned with Iowa's goal of increasing postsecondary credentials, the DEWG's recommendations are intended to increase the likelihood that students will cross the proverbial finish line.

To this end, the implementation of these recommendations is predicated on a statewide investment to transform the current view of developmental education. It will require that Iowa's 15 community colleges move from a traditional deficit model to an integration model. This model employs new pedagogical approaches and the use of multiple diagnostic assessment tools to identify and address both the cognitive and non-cognitive needs of underprepared students, while maintaining postsecondary expectations and career-ready aspirations.

Furthermore, to implement these recommendations in a manner that adequately serves Iowa's increasingly diverse student population, the DEWG encourages further investigation of the intersection of developmental education with the special needs of students, particularly English Language Learners. While the recommendations presented herein apply to all developmental courses, including those specifically designed for English Language Learners, the group acknowledges that further study is needed to determine how best to ensure the successful, timely matriculation out of language-development courses and into transfer-level coursework.

***NOTE: The ordering of the following recommendations does not indicate prioritization.***

### Recommendation 1: Statewide Commitment

***Demonstrate a statewide commitment to strategically reform developmental education in order to increase student completion and reduce the financial burden for students who are underprepared for postsecondary coursework.***

#### **Adopt in Iowa Administrative Rule - Chapter 21:**

21.4(4) *Developmental Education.* Students who enter community colleges underprepared for postsecondary coursework are provided opportunities to improve their cognitive and non-cognitive skills via developmental education academic and student support services. In an effort to enhance these opportunities, while respecting the local authority of Iowa's community colleges, each college shall adopt proven developmental education strategies to identify and address the needs of students, shorten the time to completion, prepare students for academic success, and reduce the financial burden for students underprepared for postsecondary coursework. Such proven strategies include, but are not limited to, multiple measures of placement; accelerated and integrated strategies, such as co-requisite models; and support services that address students' cognitive and non-cognitive needs. These reform efforts require collaboration among community colleges, school corporations, and education stakeholders to systemically expand proven strategies to prepare students for postsecondary success.

To implement this reform effort, as well as the other recommendations presented in this report, the Iowa Association of Community College Presidents (IACCP) will charge the academic and student service statewide work-alike groups with leading efforts to develop coordinated, systemic strategies to improve and accelerate development education in Iowa. In doing so, the IACCP will seek consensus on emerging strategies and policies through ongoing consultation with the work-alike groups and the Department staff assigned to help guide statewide reform efforts. This collaborative approach will ensure statewide consistency and allow colleges to remain current with changes in policies and proven strategies regarding student intake, assessment, instructional delivery, and holistic support services.

#### Related Sub-Recommendation – State Student Success Center:

The IACCP will collaborate with the Department to explore new external funding sources for the establishment of a statewide Student Success Center dedicated to the support, integration, expansion, and assessment of community college efforts to provide learner-centered opportunities designed to increase student success and postsecondary completion.

Currently, Iowa's community colleges are engaged in initiatives associated with college readiness assessment, the delivery of intrusive (i.e., personalized and proactive) advising, and the development of accelerated instructional strategies in the developmental education arena. While these efforts are helping many students at various institutions, they are not expansive enough to substantially increase student success and completion rates statewide. Significantly improving postsecondary preparation and completion throughout Iowa requires large-scale collaboration and resources that a statewide Student Success Center can provide.

Such a Center would create a coherent, statewide framework for action through which Iowa's community colleges could align, integrate, and evaluate their work on various student success initiatives. A Center would provide a platform for colleges to share proven strategies, collaborate on research, pilot projects, offer cost-effective professional development, and maximize resources to scale effective practices statewide. It would also serve as a repository for educational resources and best practice models, a student success data research and analysis hub, an agent for sourcing additional/ongoing funding for self-sufficiency and the support of college initiatives, and a collective voice for practitioners in state-level policy discussions.

Additionally, Iowa's Center could join the national Student Success Center Network that currently consists of 14 state centers. This would allow Iowa's college practitioners to research educational innovations being implemented through the country. Furthermore, Iowa's participation in national forums could lead to extended or new funding for future initiatives related to developmental education or student success.

By supporting collaborative efforts among postsecondary education providers, a statewide Student Success Center would greatly enhance Iowa's ability to attain its postsecondary education and training goals.

## Recommendation 2: Multiple Measures for Student Placement

***Use multiple measures to assess college readiness so as to offer students more ways to demonstrate their potential to succeed in postsecondary coursework and reduce the chance of under-placing them in developmental courses.***

Students from all walks of life, from high school valedictorians to immigrants with limited English-speaking abilities, enter the open doors of Iowa's 15 community colleges each semester. While they commence their postsecondary journey with varying skills, they all aspire to leaving with the academic foundation to pursue further education or with the training and credentials to begin a productive, fulfilling career.

For those students who enter college without the necessary math, reading, writing, or language skills to succeed in postsecondary coursework, colleges have traditionally used cognitive assessment tools to identify basic skill deficiencies. Along this line, individual test scores have been used to place students into developmental education courses. Using a single score for placement has all-too-often *under-placed* students, steering them into long course sequences that may not address their individual learning gaps. Additionally, this single test approach to placement does not account for the power of motivational attributes and other non-cognitive factors in student success. Research shows there are better ways to assess college readiness and identify the developmental needs of students, but colleges must be willing to expand their assessment processes and placement practices.

The use of multiple measures to place beginning college students ensures that they have a variety of ways to demonstrate readiness for college-level work. Measures typically cited in the research on multiple measures include scores earned on standardized assessments such as SAT and ACT; scores on subject-specific assessments such as ALEKS (math) and Accuplacer (math, reading, and writing); high school GPA (cumulative or subject-specific); high school equivalency test scores; and non-cognitive assessment results. Some of these non-cognitive measures being considered for course placement are commitment to college, self-management skills, grit, and the students' support systems. This assessment method takes a holistic approach to academic success and retention by not only helping to predict a student's likelihood of success, but by providing the means to tailor and target supports that better ensure course and overall success (see Appendix A on page 28 for more information on multiple measures).

Armed with this knowledge, there is a slow-but-steady push to move from a single-test approach to placing college students to the use of multiple measures. Members of the DEWG studied nationwide research conducted on this method, engaged in a presentation with researchers from the Community College Research Center, and consulted with practitioners at community colleges throughout the country who are utilizing multiple measures. The group reached consensus that Iowa community colleges should adopt the use of multiple measures for initial course placement. To that end, they recommend that Iowa's community college administrators, faculty, and student service personnel should:

- ▶ collaborate through statewide work-alike groups\* to study the various measures in an effort to reach consensus on minimum statewide measures; and
- ▶ engage in pilot programs to evaluate the effectiveness of the various measures.

\* *Chief Academic Officers, Chief Student Service Officers, and Deans and Directors.*

The *Intake and Advising* and the *Assessment and Placement* subcommittees studied multiple measures currently employed by a few community colleges in Iowa, as well as models that have been established in other states (see Appendix B on page 29 and C on page 30). In their discussion on placement methods, one subcommittee used these models to draft a multiple measure policy for math that could be used as a starting point for the work-alike groups and pilot programs (see Appendix D on page 282). After discussing this subcommittee’s draft policy, the Developmental Education Working Group developed the following guidelines for implementing a multiple measure approach to the assessment of college-readiness and initial placement of students:

**Multiple Measures Guidelines:**

- ▶ All measures should have a designated shelf-life (For example, high school GPA may be considered for 10 years; English assessment for two years, while a mathematics assessment may only be reliable for 18 months).
- ▶ Research indicates that, for reliability, assessment testing should be proctored if the scores are to be used for course placement.
- ▶ Assessment tools that have proven diagnostic capabilities and provide aligned learning modules for personalized skill development are preferable.
- ▶ Non-cognitive skills assessment should be utilized. Because some community colleges are not familiar with this measure, data from colleges currently utilizing this measure for placement can be used for designing pilot studies.
- ▶ Colleges may use numerous methods to award college credit to students such as AP or CLEP scores, concurrent enrollment, etc. The awarding of such credit in math or English should alleviate the need for assessment for course placement.
- ▶ Colleges utilizing multiple measures should collect and analyze data uniformly so to accurately assess the effectiveness of the various placement measures. The data to be collected and analyzed in pilot programs should be determined by the participating colleges in consultation with the Department’s data team.

While the DEWG recommends that work-alike groups study multiple measures in an effort to reach consensus on minimum statewide measures, any such approach should respect the local decision-making authority of Iowa’s community colleges. This can be achieved by studying the results from colleges utilizing the measures and seeking consensus on proposed changes and emerging policies through ongoing consultation with the work-alike groups and the IACCP. This consensus would fortify statewide consistency, which is important to student success and transferability among institutions, and ensure colleges stay current with research on assessment.

**Related Sub-Recommendation – High School to College Transitions:**

The Developmental Education Working Group supports the findings and recommendations of the High School and Community College Developmental Education Partnerships Working Group, which promotes a high-school-to-college transitions model aligned with college and career readiness expectations.

In reviewing the best practices of multiple pilot programs across the state, this related work group proposes an Alignment Model which employs innovative partnerships between secondary and postsecondary institutions to develop interventions which identify and address students’ skill

gaps at the high school level. Their recommendations to scale this model to the regional and state levels include incorporating the use of an assessment and diagnostic tool during the junior year of high school; supporting the development of a statewide electronic high school transcripts system; encouraging the completion of a math course during the senior year of high school and promoting the importance of four years of math coursework; fostering collaboration between community colleges, school districts, area education agencies, and universities for program coordination and professional development of advisors and instructors; utilizing a regional approach to ensure equitable access; and increasing efforts on college and career readiness.

Addressing students' learning gaps while in high school provides opportunities to close the achievement gap, increases access to the vast array of concurrent enrollment opportunities offered through Iowa's high schools and community colleges, and ensures that all students graduate prepared for postsecondary success. Each of these, in turn, contributes to increasing the percent of Iowa's workforce having education or training beyond high school.

### **Recommendation 3: Student and Academic Support Services**

***Provide holistic and intrusive advising and academic supports that address the varying needs of the diverse student population that enters the open doors of Iowa's community colleges. The implementation and sustainability of such support systems represents a costly, but critical, component of any large-scale improvement to student retention and completion.***

The use of multiple measures to identify individualized diagnoses can create avenues for more streamlined approaches to addressing students' specific issues, while keeping them progressing along their desired career pathway. However, this individualization of advising and student services requires extensive staff time and training in order to serve students well from orientation to graduation.

All beginning college students, full- and part-time, need a comprehensive orientation to college life and academic advisement to establish and navigate a clear pathway to achieving their goals. Student success literature emphasizes that a one-size-fits-all framework of student support is insufficient for the diverse student body entering the nation's community colleges. While highly motivated and prepared students need less support, students who are underprepared for college coursework - emotionally, socially, or academically - need intrusive advisement and a support system that require considerable staff time and college resources. Providing this level of guidance is critical to the success of students and the economy, and therefore is an investment colleges are willing to make for Iowa's future.

Providing intrusive advisement and support also requires substantial staff training to properly utilize the multiple assessment tools and educational resources necessary for proper placement and skill development. It is therefore requested that the IACCP work with the Department to explore new funding sources to support community college efforts to research and enhance intake, assessment, and student support services in order to reach the Future Ready Iowa education and training goals by 2025.

The Developmental Education Working Group (DEWG) recommends that Iowa's community college work-alike groups and student service practitioners research ways to implement enhanced intrusive advising and academic supports for students, including, but not limited to:

- ▶ pre-assessment and re-assessment preparation assistance (cognitive and non-cognitive) through programs and services such as summer bootcamps, academic success and tutoring centers, and self-paced subject-specific learning modules;
- ▶ mandatory meetings with advisors to create academic plans and register for classes beyond the students' first semester, as research shows that continued and consistent contact is helpful to most students;
- ▶ academic support services such as embedded tutors in classrooms to assist both students and instructors;
- ▶ access to social support services such as child care, housing, and emergency financial assistance; and
- ▶ ongoing monitoring of students' classroom attendance and performance to identify opportunities for support before they fail or drop out.

The DEWG further recommends that colleges should seek ways to provide professional development opportunities (local, state, and national) for advisors, learning support staff, and faculty involved with academic advising. All advisors of underprepared students need to be aware of college initiatives so they can adequately help students understand and capitalize on the program and service options provided. Additionally, with adequate funding, colleges could create more pathway-navigator-type positions to work directly and exclusively with students who are underprepared for college-level coursework and in need of assistance creating realistic, attainable career pathways. Furthermore, in alignment with the national guided pathway initiative, Iowa community college faculty and student support staff should collaborate with four-year institutions, school districts, and local employers to create detailed pathways for success and seamless transfer between educational systems and into the workforce.

#### **Recommendation 4: Accelerated and Integrated Teaching Strategies**

***Heighten the focus on foundational skills development for underprepared students by implementing accelerated instructional strategies such as co-requisite, integrated and self-paced modules with supplemental support, and career-aligned course pathways.***

Research conducted at the Community College Research Center indicates that multiple levels of developmental education courses “weed out” 89 percent of math and 72 percent of writing students before they ever enter a transfer course. By reducing the number of these levels and mainstreaming students into college-level courses, research shows that underprepared students are 29 percent more likely to pass college “gateway” courses (i.e., initial transfer courses such as College Algebra and English Composition I).

The most popular method of mainstreaming students into gateway courses being implemented at numerous Iowa community colleges is the use of co-requisite courses to strengthen the students' foundational skills while allowing them to participate in aligned college-level courses. Currently, colleges are experiencing varying levels of success with this approach, primarily due to

the staffing and scheduling of such arrangements; however, there is a need to learn from those realizing exciting results.

The DEWG recommends that Iowa community college work-alike groups research how to scale proven accelerated and integrated strategies such as the following that are being implemented in Iowa and nationwide (see Appendix E on page 33 for a list of resources used by the Accelerated and Integrated Teaching Strategies Subcommittee):

- ▶ **Accelerated Learning Program (ALP):** A co-requisite instructional model developed by the Community College of Baltimore County (CCBC); ALP has a 10-year success record and has been implemented by more than 137 colleges. The model aligns developmental and college-level writing within a single semester by mainstreaming 12 basic writers with 12 college-ready students in English 101. The 12 basic writers also register in a “companion” developmental writing/reading course taught by the same instructor. The college-level English course is conducted with the same standards and materials as a standalone section. The goal of the companion course is to facilitate success in the college-level course and reduce the need for standalone developmental writing and reading courses.
- ▶ **I-BEST (Integrated Basic Education and Skills Training):** A proven teaching model developed by the Washington State Board for Community and Technical Colleges that allows underprepared students to successfully complete college technical coursework while learning required basic skills in math, reading, writing, and English speaking. WIOA legislation refers to this delivery type as Integrated Education and Training (IET). The model incorporates integrated curriculum through co-teaching or accelerated modalities.

Key components of the I-BEST model are:

- ***Integrated Content:*** Students earn college credits by completing coursework in a career pathway that is identified as an area of local employer demand. Basic instruction in math, reading, writing, and English Language Acquisition is integrated into technical course content, thereby increasing the students’ motivation and decreasing barriers to learning.
  - ***Co-teaching:*** One content area (technical) instructor and one basic skills instructor co-teach courses, so there are two instructors in each class with at least a 50 percent instructional overlap. Instructors are expected to jointly develop and deliver integrated outcomes, curriculum, and assessments.
  - ***Streamlined Pathway:*** Integrating workplace training with basic skills development reduces the time commitment traditionally required of adult education participants. Additional supports offered through I-BEST programs has produced enhanced outcomes with at-risk students.
- ▶ **Math Pathways:** A model that aligns math topics with program-specific content. While STEM careers require the traditional algebra-calculus sequence, there are many career paths for which that sequence is not necessary for success. For some CTE areas, a technical math course provides ideal preparation; while for other programs of study, students gain more career-aligned skills through statistics or a quantitative reasoning course. By aligning math requirements with careers and specific programs of study, including the developmental support some may need, students can apply what they learn in scenarios they recognize as relevant to their future work.

- ▶ **Co-requisite Instruction:** This model involves aligning developmental or introductory labs and courses to support the students’ learning of foundational concepts while co-enrolled in related college-level courses. One such model involves students registering for a supplemental math lab in which they use *NROC* math resources for individualized “just-in-time” remediation on upcoming topics to be taught in the college-level math course. Another format uses *EdReady* content for developmental math instruction during the first three weeks of a semester, followed by individualized student learning plans in the college-level math course they take during the remainder of the semester. A third option uses *ALEKS* diagnostic modules as the co-requisite (supplemental) instructional tool to build students’ fundamental skills while they are enrolled in college-level math courses.
- ▶ **Preparatory Academic Labs (PAL):** This model is designed to help entering students improve their basic skills to raise their placement scores. These academic learning labs do not replace traditional classes, but they offer students a chance to avoid the need for developmental courses or supplement their work in these courses. Some institutions utilizing this model recommend that colleges:
  - use online modular (self-paced) programs to provide diagnostic academic learning modules in math, reading, and writing; and
  - provide tutors or instructors in the PAL to assist students with modules.
- ▶ **Reading Apprenticeship:** This is a decentralized reading-across-the-curriculum approach that uses subject-specific faculty to apprentice students in the ways of reading, writing, thinking, talking, and reasoning in their fields (ex. WestEd, 2018). This method is designed to complement other reading and writing teaching strategies, with its focus on reinforcing reading strategies in specific courses. Professional development for subject-specific instructors on the Reading Apprenticeship framework is necessary.

The DEWG acknowledges that, since these strategies involve integrating developmental students into college-level classes, it is imperative that all instructors are equipped with the knowledge and resources to help them be successful. This will require providing professional development for faculty members with less experience working with students who are not college-ready.

#### Related Sub-Recommendation – Quality Programming and Instruction:

The design and delivery of effective developmental instruction requires qualified instructors who engage in continuous professional development regarding cognitive and non-cognitive methods of working with at-risk students. Furthermore, to successfully implement the proposed accelerated and integrating teaching strategies requires faculty to stay current with proven teaching and learning strategies, as well as research on student learning and development.

Institutions are responsible for employing qualified and prepared instructors for developmental education and co-requisite coursework. It is recommended that the minimum expectation for instructors who solely teach developmental-level credit courses be the possession of a bachelor degree containing adequate coursework in the field of instruction. Additionally, these instructors, both part- and full-time, should be included in each college’s Quality Faculty Plan and provided ample opportunities for appropriate and relevant professional development. Furthermore, as co-requisite and other innovative instructional strategies expand, developmental and college-level instructors will need training on integrating basic math, reading, writing, and English speaking into courses while maintaining academic standards and challenging all students.

## Innovative Strategies in Practice at Iowa's 15 Community Colleges

As stated throughout this report, Iowa's 15 community colleges are dedicated to the success of each and every student that enters their open doors, so staff are continually researching and refining the initial assessment and placement of students. They have also implemented various strategies to improve the relevance, efficiency, and effectiveness of their developmental education programs. In this section, each college has reported on the current state of their programs and the innovative strategies they have implemented to serve their under-prepared students better.

### Des Moines Area Community College (DMACC)

DMACC is working toward mandatory placement for writing courses, implementing the procedure for full-time, part-time, and dual enrollment students in the fall of 2019. The English Department offers College Prep Writing I (ENG 060) and College Prep Writing II (ENG 061) as developmental courses; however, in Fall 2017, DMACC added Strategies for Composition (ENG 145) as a co-requisite option for students who are in the upper-range of ENG 061 according to ACCUPLACER Sentences Skills scores. DMACC plans to integrate mandatory writing placement using multiple measures as soon as possible, with the measures including ACCUPLACER Reading Comprehension with either Sentences Skills or WritePlacer, HS/college GPA, ESL or HiSET scores, and a non-cognitive measure). The task force working on this integration is prioritizing mandatory placement first, while developing the infrastructure to implement multiple measures.

DMACC has been using the ALEKS math assessment for several years to determine the preparedness of all math students. The use of this assessment tool, combined with the use of a mandatory prerequisite course sequence, has greatly improved student placement and increased their success. Beyond these initial placement measures, the math department has adopted STEM and non-STEM pathways for developmental math students. The non-STEM developmental pathway includes an arithmetic course for students placing very low on the ALEKS assessment and a single course entitled College Prep Math (MAT 064) for all other students in this pathway. MAT 064 is designed to better prepare non-STEM students to be successful in Statistics or Math for Liberal Arts by utilizing a curriculum that is student-centered, relevant, and collaborative, with topics prioritized based on the specific needs of the subsequent quantitative reasoning courses. Student success curriculum is embedded throughout these math courses and students learn in a socially constructive environment where the teacher serves as more of a 'guide on the side' rather than a sage-on-the-stage. By properly identifying these students and requiring a single course for remediation, students have experienced improved success, as evident by data showing that non-STEM students in Math for Liberal Arts achieved a 90 percent pass rate, with 70 percent earning a C- or better, and Statistics students achieved a 70 percent pass rate, with 50 percent earning a C-or better.

Students desiring to jump to the non-STEM track after taking MAT064 can retake the ALEKS exam and are typically able to place directly into an Intermediate Algebra course (MAT073). Students who are on the borderline of getting into college-level courses, regardless of their track, can remediate using ALEKS's individualized learning modules and can retake the assessment up to five times to improve their placement score and avoid the need for developmental courses.

## Eastern Iowa Community Colleges (EICC)

Starting in 2015, EICC assembled a steering committee and three task forces to examine national research and best practices in addressing the assessment of college readiness in reading, writing, and mathematics; and implementing developmental education approaches. Following a year of research, the task forces recommended implementing multiple measures for assessing college readiness and major reforms in the college's developmental education practices.

Multiple measures for assessing college readiness in writing and reading were fully implemented in Fall 2017, and include ACT scores, high school cumulative GPA, HiSET scores, writing samples, and personal assessment. This approach involves a case management model whereby these multiple measures are reviewed by the student and his or her advisor prior to placement.

In mathematics, EICC adopted ALEKS as its primary assessment of college readiness, with use of its diagnostics and aligned learning modules to immediately address students' specific math deficiencies. In many cases, this individualized remediation allowed students to avoid spending time in developmental math courses. Additionally, the math curriculum was restructured into STEM and non-STEM pathways that align math preparation with a student's chosen major.

In Fall 2016, EICC teamed with the Mississippi Bend AEA, district high schools, and ALEKS representatives to jointly work on a pilot program to address math college readiness issues prior to high school graduation. In this program, students take ALEKS at the end of 11<sup>th</sup> grade and their individualized learning modules are embedded in a senior-year math course, which is equivalent to an EICC developmental math course. Research indicates that addressing math deficiencies in 12<sup>th</sup> grade has a positive impact on college readiness and subsequent success in college math.

In writing (English Composition), the Accelerated Learning Program (ALP), developed by the Community College of Baltimore County, was adopted as EICC's primary approach for teaching developmental writing. This co-requisite model integrates developmental writing students into a college-level English course, with a companion course to support their individual needs. Preliminary results indicate higher student success rates and the English faculty have reported high satisfaction using this co-requisite model. As a result, there are no longer any standalone developmental writing courses at EICC. Combining reading with writing in this co-requisite approach is scheduled for implementation in Fall 2018.

## Hawkeye Community College (HCC)

HCC's free Preparatory Academic Lab (PAL) is open to current and potential students who want to improve basic skills and raise their placement scores. Students who score just below a cut score for a college-level course or a program admission requirement can use the PAL to review and practice skills before retesting. This provides them with an opportunity to bypass the lower-level courses or enter their programs sooner. Students in the lab receive assistance from professional tutors in the use of Edmentum software, which provides a library of online modules designed to help them prepare for the Accuplacer and TEAS (Test of Essential Academic Skills) assessments in the areas of reading, writing, and math. Each module has a diagnostic assessment that helps students identify the components of the module for which they need to focus. Students start by working in the lab with a tutor in all three areas of reading, writing, and math, but they are then allowed to work on the modules at home. Once students have successfully

completed the modules, they may retest on the Accuplacer or TEAS test. PAL is not intended to replace traditional curriculum, but rather to serve as an alternative to developmental courses for borderline students or supplement developmental coursework for others, while providing a more individualized experience.

HCC initially offered the PAL program in 2013, and during the first two years saw about 10 students per semester working on Accuplacer and 10 working on TEAS test preparation. They currently assist from 20 to 30 students each semester with preparing for the Accuplacer and another 30-35 on TEAS preparation. Many HCC students have raised their placement scores by using the PAL, thereby placing directly into higher level courses or starting their programs earlier.

### Indian Hills Community College (IHCC)

IHCC provides full-time math and writing instructors to assist students in their Success Center. They employ adjunct instructors in the center to provide services in the evening, as well as on weekends through a collaborative arrangement with the library. They also hire peer tutors to help in specific courses. These are students with an overall GPA of at least 3.0 who earned an A-grade in the course they're tutoring. Additionally, IHCC has contracted with NetTutor, an online, professional tutoring service to assist students anywhere, at any time.

If a student is struggling in a course, but cannot drop because of his or her status as a dorm resident, student athlete, or financial aid recipient, IHCC offers a unique program called Credit Exchange in which a student exchanges the course he/she is struggling with for a developmental class in the same topic, at no additional cost. Additionally, students whose placement scores indicate they are underprepared for college-level work may take free classes through the college's Adult Education and Literacy program. This is especially helpful for English language learners. For these students, there is also an English Language Learning Center that provides both tutoring and cultural training.

In the spring of 2017, IHCC piloted an Accelerated Learning Program (ALP) that paired English Composition with a three-credit developmental Writing Skills course for students whose high school GPAs were 2.6 or below and showed signs of being underprepared for college-level writing. The initial ALP enrollment was capped at 10 students to allow for more one-on-one instruction and relationship building. Both Composition 1 and Writing Skills were taught by the same instructor on opposite days of the week, during the same time period. This allowed the instructor to breakdown topics and review concepts and skills with the 10 Writing Skills students, prior to exposing the full Composition I class to the material. As the chart below indicates, the 10 students that participated in this co-requisite model achieved greater success than similarly situated students in prior semesters.

*Composition 1 Grades of Students with HS GPA of 2.6 or Below*

<b>Without ALP Co-requisite Writing</b>	<b>With ALP Co-requisite Writing</b>
GPA 1.5	GPA 2.3

## Iowa Central Community College (ICCC)

Developmental education learning communities started in fall 2014, based on an Education Advisory Board presentation regarding best practices. The audience for learning communities are students who placed in developmental reading, writing, and math. Their first-semester schedules 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. Some students take a program-specific course such as Introduction to Criminal Justice, Introduction to Human Services, or Introduction to Business instead of, or in addition to, the general education course. The faculty of the learning community courses, especially SDV-112, are assigned based on passion for student success, experience at ICCC, and observed work with students inside and outside of the classroom. Sometimes, the faculty have learned more about teaching than they expected as they help the students learn about learning and develop success skills they carry into future coursework.

In the second semester of ICCC’s learning communities, students take College Experience (SDV-108) to continue their cohort connections. During their intrusive advising sessions, some students have even requested to take their next math or English courses together, or they’ve asked to take their math or English class with their Success Seminar instructor. After the second semester, participation in the cohort’s learning community is optional.

As expected, students often struggle in the general education class; but, with the support system established by the learning community, many rise to the challenge and learn what it takes to succeed in a college transfer course. This support is across the curriculum; for example, sometimes the writing instructor works with students on their psychology papers, or the Success Seminar instructor meets in the Center for Math Advancement to spend some extra time on math. On occasion, there are extracurricular bonding activities such as a picnic at a local park or attendance at a sporting event. The bottom line is that all students need a support system and learning communities are a way that ICCC provides that support to its developmental students.

**Learning Community Cohorts Enrollment**

Learning Community Cohorts ( <i>degree completers as of Fall 2017</i> )	Term							
	2014 Fall	2015 Spring	2015 Fall	2016 Spring	2016 Fall	2017 Spring	2017 Fall	2018 Spring
2014 Fall ( <b>20</b> )	138	106	59	49	33	26	8	9
2015 Spring		12	9	7	2	2	1	0
2015 Fall ( <b>20</b> )			160	125	68	59	30	11
2016 Spring ( <b>1</b> )				25	11	11	5	3
2016 Fall					123	92	45	37
2017 Spring						21	10	7
2017 Fall							90	62
2018 Spring								8

### Iowa Lakes Community College (ILCC)

Efforts to improve success in developmental math at ILCC have been underway for multiple years. Recent efforts have included two specific initiatives: (1) providing additional support to students taking the Career and Technical (CTE) Technical Math course, which included the introduction of a co-requisite model of instruction; and (2) providing additional support to students outside of the classroom.

During the first year of the Technical Math, initiative, students were placed in a developmental math class aligned with the Technical Math course, but taught by two different instructors. This initiative had limited success. For Fall 2017, a co-requisite model was piloted with developmental students placed into an additional hour of lab support for the Technical Math course, rather than a full developmental education class. This lab was taught by the Technical Math Instructor, so only required one instructor. Early results of this model are very promising with students' course grade average increasing from 2.48 to 3.05.

Part of the impetus for these efforts is to better prepare students for Technical Physics, so the students' performance in that spring semester course will also be monitored. The co-requisite model for Technical Math is slated for continuation in Fall 2018.

Secondly, a system to provide additional support to students outside of class was identified as a need by both students and staff. The faculty adopted XYZ Homework, which is delivered electronically as a textbook purchase. The homework is customizable and provides multiple opportunities for students to learn from their mistakes until they get each problem right, with links provided to video and e-book support when an answer is incorrect. The technological support for the course has been popular with both students and faculty. It appears that course success rates are trending up, but a more detailed study is planned as part of a larger review during academic year 2018-19.

### Iowa Valley Community College District (IVCCD)

In recognizing the challenges many college students face as it relates to mathematics, IVCCD has employed different strategies over the years to increase success in this area. Beginning in the fall of 2011, the number of developmental math courses was reduced from three (MAT-040, 052, and 062) to two (MAT-074 and 077) in an attempt to reduce the time to completion for students who needed the most skill development. In addition, these new courses were module-based and designed to give students the opportunity to move through the course(s) at a faster pace. This was particularly helpful to those students who needed less "remediation" than others. The ability to move through course material faster allowed many student to exit the developmental math sequence in less than two semesters, and some in only a single term.

While reducing the overall time to completion within developmental math was a significant initiative for IVCCD, recent work within the math departments has focused on more direct alignment of students' mathematics instruction with their desired career paths. Knowing that different programs of study require varying math skills, IVCCD established two developmental education math pathways - one for College Prep Statistics and another for College Prep Math for

Liberal Arts. Since Statistics (MAT 156) and Math for Liberal Arts (MAT 110) fulfill the college-level math requirement for many programs of study, the creation of related pathways for these two courses allows students to gain a greater understanding of the knowledge base and skill-set needed in their chosen fields.

These math pathways have delivered using a co-requisite model, whereby the student enrolls in the related developmental section for the particular course while concurrently enrolling in the college-level course. This gives the student the opportunity to receive course-specific help while taking the college-level course, thereby fulfilling their math requirement in one instead of two semesters.

In addition to the math pathways, Supplemental Instruction (SI) has also been utilized not only for developmental math, but for other disciplines as well. In this proven strategy, a student who was successful in a course and recommended by a faculty member, sits through the course again and holds study sections for the students in the class. This peer tutor focuses on helping the students develop good study habits rather than just helping them with homework problems.

While IVCCD is implementing special initiatives to help developmental students succeed, there are additional learner supports embedded in the overall campus systems. Module-based courses provide online support and tutorials in addition to the faculty members teaching of the course. Additionally, both peer and professional tutors are available in each college's academic support centers - the Hub at Ellsworth Community College (ECC) and the Student Success Center at Marshalltown Community College (MCC).

### **Iowa Western Community College (IWCC)**

Through the integration of holistic assessment, placement, and support, as well as curricular reform, IWCC provides a systemic approach to addressing developmental education challenges. First, by considering an array of factors (i.e., multiple measures), decisions about students' college readiness are not reliant on a single measure. Second, this model seeks to place students in courses where they are most likely to succeed, avoiding long developmental sequences whenever possible. Third, this model includes tailored and targeted academic and co-curricular supports, regardless of where a student is placed. Finally, through the development of clear and distinct math pathways and co-requisite courses, students are better positioned for success.

IWCC has moved to a true holistic placement model that includes both academic and non-cognitive indicators. Test scores are no longer required for admission or registration, but rather are just one measure used if students submit them. A student's high school GPA serves as the primary indicator, supplemented by non-cognitive data from a standardized tool (ETS's SuccessNavigator) specifically designed for accurate placement and support.

The adoption of this holistic approach to assessment was part of a strategic initiative to reform developmental education. College staff saw locally what the nation was seeing - too many students were being placed into developmental courses and too few were completing them. They then worked on curricular reform via the implementation of a computer-based, emporium model in math, and simplified the developmental sequence by offering fewer courses. However, it ultimately became clear that they not only needed to reconsider the way they placed students

into courses, but also the ways in which they supported them after placement. By developing student profiles across four quadrants (a 2x2 matrix of academic skills versus non-cognitive skills), IWCC was able to tailor and target supports based on varying sets of strengths and challenges, avoiding “one best way” for all students. Students in each quadrant receive the most impactful support possible based on their position on the matrix. These supports range from light-touch communication to an intrusive advisor, and from peer tutoring to supplemental instruction.

Holistic placement has provided new ways of understanding and supporting students at IWCC. Overall, they have seen significant improvements in college-level placement. For example, a Fall 2015 sample of student placement illustrated that a multiple measures approach improved college-level placement by 11 percent in math and 21 percent in writing. Additionally, students who were accelerated (i.e., placed into college-level rather than developmental) did as well or better than peers placed on test scores alone. Finally, they saw that SuccessNavigator is a significant predictor of who should be accelerated. In other words, targeted acceleration (advancing students with low test scores and strong non-cognitive skills) has proven to be far more effective than blanket acceleration (not considering their SuccessNavigator scores).

***NOTE:** SuccessNavigator can be used with any placement test. The design of the course acceleration recommendation is to be a composite measure of non-cognitive skills to be used in concert with academic placement measures. It simply gives an “accelerate” or “caution” recommendation to be used when other measures are inconclusive. IWCC initially used it with COMPASS scores when they required placement test scores.*

## Kirkwood Community College (KCC)

During the fall of 2016, in an effort to improve student engagement inside the classroom, the Dean of Students’ staff and faculty from the Math and Science department collaborated to embed Student Retention Specialists in the on-campus Math Emporium. Retention Specialists are assigned specific hours inside the emporium to work with developmental math instructors and students. As a resource to faculty, Retention Specialists engage with students who faculty identify as being at-risk of not being successful in the course. This identification happens as early in the semester as possible so that the specialists can work closely with the faculty to monitor student progress through online course modules. The specialists make contact with students who are not on track to complete the course or have not logged into the system in a timely manner.

In addition to directly reaching out to students and interacting with them in the classroom, Retention Specialists provide both students and faculty with access to campus resources and important timely reminders. Specialists have dedicated space in the classrooms for resource information and they utilize whiteboards to share reminders of study sessions, test dates, etc.

In academic year 2016-17, 56 percent of students who interacted with a Retention Specialist at least once during the term received a final grade of “A” and 22 percent received a final grade of “B.” Staff, students, and faculty have shared positive feedback about the collaboration and success of embedding a Retention Specialist inside the classroom who is dedicated to helping students be successful.

## North Iowa Area Community College (NIACC)

The Mastery Math and the Mastery Writing programs are the co-requisite models currently being utilized at NIACC. The co-requisite model is a strategy that has worked well to support students who are enrolled in college-level courses and attend class regularly. In this model, students who might otherwise be placed in a developmental education course register for a college-level course and a one- or two-hour developmental credit. During these additional hours, students work with dedicated math or writing faculty to address their identified subject-matter skill deficiencies. These sessions feature personalized instruction and a low student-teacher ratio to help students improve and refine their math or writing skills.

NIACC's Mastery Math program began in the fall of 2007 as an individualized program for developmental mathematics instruction through the Student Learning Center. This program, funded by a Title III grant, focuses on replacing developmental math courses with co-requisite (supplementary) courses. The Mastery Math program has grown to support students taking a wide array of math, including Math for Liberal Arts, Math for Elementary Teachers, College Algebra, Trigonometry, and Intro to Statistics. The Mastery Writing program supports students who are enrolled in Composition I and Composition II courses.

Since its inception, the program has added a Homework Support (HS) program to its co-requisite course model. This program uses computer-assisted instruction and a low student-teacher ratio to help math students improve their skills so that they can advance to college-level math courses. The HS program helps students with all levels of math and boost high success rates as indicated in the charts below. Both this and the co-requisite model have proven to be quite successful at NIACC, with students in both math and writing co-requisite courses passing college-level courses at the same or higher rate than their peers who were not identified as underprepared.

Term/Category	Fall 2012	Spring 2013	Summer 2013	Fall 2013	Spring 2014	Summer 2014
<b>Total Enroll</b>	109	105	40	131	127	35
<b>HS Enroll</b>	51	33	6	48	34	4
<b>HS Pass</b>	<b>37 (73%)</b>	<b>24 (73%)</b>	<b>6 (100%)</b>	<b>35 (73%)</b>	<b>24 (71%)</b>	<b>3 (75%)</b>

Term/Category	Fall 2014	Spring 2015	Summer 2015	Fall 2015	Spring 2016	Summer 2016
<b>Total Enroll</b>	149	116	36	134	79	29
<b>HS Enroll</b>	42	36	5	71	32	2
<b>HS Pass</b>	<b>35 (83%)</b>	<b>23 (64%)</b>	<b>5 (100%)</b>	<b>62 (87%)</b>	<b>26 (81%)</b>	<b>2 (100%)</b>

Term/Category	Fall 2016	Spring 2017	Summer 2017	Fall 2017	Spring 2018
<b>Total Enroll</b>	114	98	26	129	107
<b>HS Enroll</b>	44	28	5	53	33
<b>HS Pass</b>	<b>41 (93%)</b>	<b>24 (86%)</b>	<b>5 (100%)</b>	<b>48 (91%)</b>	

### Northeast Iowa Community College (NICC)

In Fall 2016, NICC instituted to a “3+1” co-requisite model for their three- credit (“3”) ENG-105: Composition 1 and ENG-106: Composition 2 courses, which incorporates one (“1”) credit of developmental education into the college-level coursework. This model, also referred to as “ENG-105 Plus” below, was developed to mainstream students into college-level coursework with additional supports designed to meet course requirements. Students not receiving ACT scores of 19 or Accuplacer Writeplacer scores of 6 upon admission to NICC were strongly encouraged to take this co-requisite model rather than being placed into a traditional developmental course.

So far, this co-requisite model has proven to be quite successful for NICC students. From Summer 2015 through Fall 2017, of the total 2,960 students enrolled in ENG-105 (not just the co-requisite course), 90.7 percent received a C- or higher grade. Of these students, 1,072 were non-high school students (not in concurrent enrollment), of which 77.8 percent received a C- or higher grade. In comparison to these non-high school students, an analysis of the 63 students who completed the ENG-105 Plus course during 2016 and 2017 showed that they passed at close to the same rate, with 71.4 percent receiving a C- or higher grade. This is an impressive statistic considering that, without this co-requisite model, these students would have to complete two semesters of writing or English to get passed ENG-105. This statistic certainly challenges the need for mandatory developmental coursework prior to entering ENG 105 course. Furthermore, ENG-105 Plus students during the fall of 2017 boosted a higher completion rate than other NICC ENG-105 non-high school students, as well as the national average.

Based on Spring 2018 registration, the co-requisite ENG-105 and ENG-106 “Plus” courses are the preferred model for students, even those not meeting the cut scores stated above. Advisors have the ability to utilize multiple measures such as high school GPA, past course proficiency, and results on a guided placement survey of non-cognitive attributes to determine placement of students on the border of this program’s “entrance” requirements.

To aid students with reading deficiencies, in 2016, NICC faculty added Strategic Reading as a one-credit co-requisite option for students not meeting the college-level reading score. This one credit course applies strategies to assist the student in reading and comprehension of the material in specific textbooks. Additionally, in Summer 2017, NICC offered a Bridge to Success Program, which incorporated proven reading and writing strategies into a College Experience course for students to “bridge” into their fall semester coursework.

### Northwest Community College (NCC)

During academic year 2012-13, the NCC Remediation Team worked with the Education Advisory Board (EAB) to determine a remediation model for the college. The Remediation Team read EAB white papers, participated in several EAB webinars, and held multiple meetings to develop a remediation education plan that centered on co-requisite remediation as a best-practice model that was implemented in the fall of 2013. Additionally, in late Fall 2013, NCC began working with Dr. David Trites of Ruffalo Noel Levitz (RNL enrollment management consultants) to ramp up all college-wide retention efforts. As a result, four key components to student success were delineated: intervention strategies, academic advising, communities of learning, and academic support. In late spring of 2014, NCC re-formed its eight-member Retention Committee who named the college’s retention program Retention Initiatives for Student Educational Success.

Through their “R.I.S.E.S.” program, college staff have implemented numerous retention strategies, such as, they have modified their advising structure to provide intensive weekly interventions, designated a dedicated advisor for each academic program of study, utilized block scheduling, and updated and extended its learning communities.

Regarding NCC’s co-requisite model, as expected, initial implementation came with challenges, one of which was that the initial co-requisite courses were assigned too many credits, making the instruction cost-prohibitive for many students. The NCC Remediation Team re-adjusted its co-requisite offerings and learning outcomes to make them one- and two-credit courses beginning in the fall of 2014. The Team also renamed the courses, making sure to remove the stigmatized word “remediation” from all student advising discussions. As a result, “Mastery Math” is now offered as a one-credit co-requisite course and “English Brush-Up” as a two-credit co-requisite course. In this model, students who have not achieved an adequate score on a placement exam are permitted to enroll in their program’s required college-level math or communications course, but must concurrently enroll in the aligned one- or two-credit developmental courses. These courses include instructional and individualized tutorial support that coincide with the schedules and learning outcomes of the college-level math and communication courses.

In Fall 2015, NCC made improvements to its co-requisite model by incorporating developmental instruction into their Learning Center where tutors and faculty raise expectations and develop relationships with students in need of support. Furthermore, NCC is preparing to augment its “Mastery Math” course with NROC’s digital content that is tied to specific learning outcomes and includes normed cognitive placement assessments and tutorials. Also, EdReady, Hippo Campus, NROC curricula, and performance testing materials are available to NCC students at no cost because NCC partners with the Iowa Community College Online Consortium which subscribes to NROC.

In recognition of the great strides made through the R.I.S.E.S. program, NCC was awarded a 2016 Retention Excellence Award from RNL. The award write-up acknowledged NCC’s overall retention rate of 66 percent for new full- and part-time freshmen who entered the college in Fall 2013, intending to obtain an associate degree. Members of this 2013 cohort who entered with a high school GPA of 2.3 or less demonstrated a 50 percent retention rate. Those who demonstrated financial need demonstrated a retention rate of 61 percent. Additionally, as evidence of the success of their Mastery Math program, in Fall 2015, 93 percent of math students successfully passed their program’s required math course while simultaneously registered in the one-credit co-requisite course. Term-by-term math success rates have varied from 50 to 93 percent in Spring 2017 - consistently above the national average success rate of around 35 percent.

### **Southeastern Community College (SCC)**

To address its students’ various levels of college preparedness, SCC offers developmental courses and resources beyond the classroom to prepare students for college-level writing. After mandatory placement testing using Accuplacer and WritePlacer, students' scores determine the appropriate writing course. If scores demonstrate the need for skill development, SCC currently offers a two-level developmental writing sequence: Preparatory Writing I and Preparatory Writing II; however, a one-semester writing course, Basic Writing, will be piloted in Fall 2018 to replace the two-semester series. One goal of this two- to one-semester course revision is to

decrease the time students must enroll in developmental writing courses, which SCC officials believe will result in increased retention and completion.

Based on a students' placement scores, they may also place into a co-requisite option. SCC offers a co-requisite writing lab for students taking the gateway writing course, Composition I. The one-credit, co-requisite lab is designed to assist students in overcoming potential roadblocks that could impede their progress in Composition I. Two important features of this lab are that it is taught by the same instructor as the aligned Composition I course and is limited to 15 students, which increases individualized attention.

Support services can also play a crucial role in helping developmental students succeed. To this end, SCC offers professional writing tutors in the Academic Achievement Center (AAC) to serve as resources for students enrolled in developmental writing courses. These professional tutors hold at least a bachelor's degree in a related discipline. Developmental students are strongly encouraged to meet with a professional tutor throughout the course. Ideally, students will find value in this resource while developing their academic skills and will return to the AAC throughout their studies at SCC.

### **Southwestern Community College (SWCC)**

The "College Experience" course has been implemented at SWCC to assist with the advising process and improve retention. This one-credit course, required of all incoming students, is designed to help students develop academic success skills by connecting them to resources and facilitating participation in college culture. Course activities include study and classroom performance strategies, personal exploration and development, academic and career planning, and exploration of the college experience.

Academic advising at SWCC is mandatory, requiring students to meet with their advisor at least twice during the eight-week College Experience course to develop an educational plan. This Individual Academic Plan clearly outlines the sequence of courses, including developmental, necessary for career goal attainment. Advising is done by both professional advisors and faculty. In Career and Technical Education programs, the lead faculty member acts as the program's advisor, while in Arts and Sciences, a faculty advisor is selected based on the student's program of study. Admissions representatives and Student Support Services staff are also trained as advisors. In order to ensure all advisors are current with advising practices, advisor training is offered on an annual basis.

The development of an Individual Academic Plan has proven to be effective as evidenced by the institution's 2014 SENSE results. Within the academic and support services section of the survey, 83.8 percent of respondents reported they accessed academic planning services, which is significantly higher than the SENSE (benchmark) cohort at 77.1 percent.

The college's general education reading assessment is also administered during the College Experience course and results are analyzed before developing the Individual Academic Plan. Students with low reading scores are identified and advised to enroll in a co-requisite course called Strategies for College Reading.

## Western Iowa Tech (WITCC)

WITCC is responding to the educational, cultural, and financial needs of its ever-evolving student population in numerous ways, including with curricular changes. A newly revised transitional developmental education course, ENG-090 Writing (and Reading) Enrichment, addresses the challenges of students in need of attaining specific program cut scores or college-level course entry scores. This course incorporates academic essays and classic literature, culminating in formal, five-paragraph essays. Course objectives and competencies are assessed and assignments are then customized to meet each student's needs and interests. The course is not considered remedial, but rather, individualized. As soon as students meet the College Placement Test (CPT) scores required for program entry, they immediately pass the course and can potentially enroll in the college-level English Composition course.

The Writing (and Reading) Enrichment course also addresses many of the challenges faced by English language learners as it provides them with instruction regarding verb tenses, vocabulary, and word derivations. Original texts, such as *The Scarlet Letter*, *Uncle Tom's Cabin*, *The Ransom of Red Chief*, and other short stories in the public domain are incorporated to study English language concepts within a context. Each unit culminates in an academic essay which utilizes the text to support the essay ideas.

With a small student to teacher ratio (10:1 or less), individualized instruction, and two 90-minute sessions per week, the success rates for students successfully completing the CPT, as well as for those enrolling in Composition I, have increased. The number of retakes of the CPT test have decreased and student completion rates have increase.

## Appendices

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Appendix A: Multiple Measures: The Use of Non-Cognitive Measures

Appendix B: Comparison of the Use of Multiple Measures in Illinois, Indiana, North Carolina, and Iowa

Appendix C: Example of a Statewide Multiple Measures Approach: Illinois Statewide Multiple Measures (*Draft*)

Appendix D: Multiple Measures for Mathematics as Proposed by the Assessment and Placement Subcommittee

Appendix E: Accelerated and Integrated Teaching Strategies Resources

## APPENDIX A

### Multiple Measures: The Use of Non-Cognitive Measures

The use of a non-cognitive skills assessment in multiple measure placement better positions students for success because it takes a more holistic approach to academic and retention success. A non-cognitive assessment not only helps predict a student's likelihood of success, but it also provides the means to tailor and target supports that better ensure course success, as well as overall success and retention. Instead of a content-based approach which uses placement tests to measure what students know and places them into courses that address content challenges, a holistic, success-based approach uses multiple measures to predict how likely a student is to succeed. If a student is not likely to succeed, interventions are targeted based on the student's needs to improve their likelihood of success. The addition of a non-cognitive assessment to multiple-measure placement standards that include test scores and high school GPA would ensure a more holistic approach to placement and support.

Here is how the two paradigms compare in practice:

#### **Content-Based Paradigm Assumptions**

Academic achievement (and thus test scores) matter most. So, academic deficiencies are best addressed by academic intervention (developmental courses). Thus, the goal is that each student attain a level of achievement.

#### **Success-Based Paradigm Assumptions**

Both academic and non-cognitive factors are relevant to success. So, each student requires a different mix of curricular and co-curricular interventions. Thus, the goal is that each student achieve a degree, certificate, or transfer goal.

The content-based paradigm does not address the unique experiences of under-represented minority students, many part-time, commuter, and adult students who make up a significant portion of the community college student population.

Summary of Four States with Multiple Measures in Mathematics and English/Reading

## APPENDIX B

### Comparison of the Use of Multiple Measures in Illinois, Indiana, North Carolina, and Iowa

Mathematics	Illinois	Indiana	N. Carolina	Iowa**
ACT	22+	18+	22+	19+
SAT	530+	500+	500+	NA
ALEKS	30+	NA	NA	NA
COMPASS Alg	35+	NA	NA	41+
Accuplacer	NA	34+	NA	NA
GPA	3.0+*	2.6+***	2.6+ ^	2.6+
Score Expiration	18 mths	4 yrs	??	Forever

\*Conditions apply

\*\*Success Navigator Success Indices also used.

^GPA used w/ transcript codes showing student has HS Alg I; Geometry, Alg II, and 4th math.

English/Reading	Illinois	Indiana	N. Carolina	Iowa**
ACT English	19+	17+	20	18+
ACT Reading	20+	18+	18	NA
SAT R&W	480+	460+	500	NA
COMPASS	77+	NA	NA	55+
Accuplacer	NA	80+	NA	NA
GPA	3.0+	2.6+	2.6+	2.6+
Score Expiration	18 mths	4 yrs	?	Forever

\*\*Success Navigator Success Indices also used.

## APPENDIX C

### Example of a Statewide Adopted Multiple Measure Approach: Illinois Statewide Multiple Measures *(Draft)*

#### Recommendations of the ICCCAO & ICCSSO on Placement Methods and Scores

This recommendation is made to the Presidents Council and the Illinois Community College Board (ICCB), concerning Illinois' approach to placement methods and scores.

The Illinois Community College Chief Academic Officers (ICCCAO) and the Illinois Community College Chief Student Service Officers (ICCCSSO) believe that an effective community college placement policy should provide students with as much information as can be reasonably gathered and then set parameters for their initial placement based on this information. This belief is consistent with the ICCB Task Force on Remediation, which as early as 2001, stated that students should be allowed to enroll in the highest class where they have the prerequisite skills to be successful.

1. We believe that institutions should provide multiple methods for students to qualify for college-level English and mathematics classes.
2. We believe that it is in the best interests of Illinois community college students that Illinois adopt a statewide approach to placement methods and scores.
3. College-level math placement refers to placement into courses that have been identified under the Illinois Articulation Initiative as:
  - a. M1901 Quantitative Literacy,
  - b. M1902 General Education Statistics,
  - c. M1903 Mathematics for Elementary Teaching I and II,
  - d. M1904 General Education Mathematics,
  - e. M1907 Elementary Mathematical Modeling, and
  - f. A College Algebra course.
4. College-level English placement refers to placement into courses that have been identified under the Illinois Articulation Initiative as:
  - a. C1900 Writing Course Sequence,
  - b. C1900R Writing Course Sequence,
  - c. C2900 Oral Communication.
5. The following measures and scores are recommended as valid measures for placement at the college level and may be a part of an institutions placement policy:
  - a. APARCC score of 4 or 5,
  - b. ACT score of 22 in mathematics,
  - c. ACT score of 19 in English,
  - d. SAT score of 530 in mathematics,
  - e. SAT score of 480 in English,

- f. Placement tests (ACCUPLACER<sup>i</sup>, ALEKS, writing assessment, etc.) with appropriate scores.
  - g. High school GPA of 3.0 or higher (seventh semester GPA may be used when students register prior to high school graduation),
  - h. An appropriate high school transition course in mathematics or English with a grade of C or higher,
  - i. A GED score of 165 or comparable score on other high school equivalency tests.
6. An institution may elect to accept a lower score on individual methods in combination with other methods or when the institution provides significant assistance and supports to students.
7. It is recommended that scores for placement into college-level English expire no less than three years from the date when the measure was achieved.
8. It is recommended that scores for placement into college-level mathematics expire no less than 18 months from the date when the measure was achieved.
9. It is recommended that all students be strongly encouraged to enroll in English and mathematics classes during their first semester of college.
10. There are numerous methods that colleges may use to award college credit to students, (AP, CLEB, IB, dual credit, etc.). Such credit in mathematics or English alleviates the need for assessment for purposes of placement.
11. The group urges ICCB to collect and analyze data with regard to the effectiveness of these recommendations for placement to ensure that methods and cut scores are fostering the greatest level of success while also providing for the greatest level of opportunity for students to quickly enter into college-level work.
12. It is recommended that the ICCB pursue a statewide strategy to implement the multiple measures approach. In so doing, the ICCB should respect the local decision making authority of community colleges by seeking periodic and continued consensus on the strategy and any emerging policies, through ongoing consultation with the Community College Chief Academic Officers, Chief Student Service Officers and Presidents. This approach will ensure consistency across the system, which is important to the success of students, and also ensures the system stays current with changes in methods and testing.

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<sup>i</sup> According to the College Board, ACCUPLACER tests are designed to assist institutions in placing students into appropriate courses. Given that institutions differ greatly with respect to composition of the student body, faculty and course content, it is not possible to stipulate specific test cut scores that should be used for placement decisions. Instead, each institution should establish their own cut scores to facilitate placement decisions based on factors and data unique to their institution.  
See: <https://accuplacer.collegeboard.org/pdf/accuplacer-method-setting-cut-scores.pdf>

## APPENDIX D

**Multiple Measures for Mathematics as Proposed by the  
Assessment and Placement Subcommittee**  
*(Starting Point for Future Statewide Discussion)*

The Placement and Assessment Subcommittee offered a starting point for such pilot programs and the work-alike groups' study by suggesting that the following measures be considered for mathematics placement:

**Multiple Measures:** Students who fulfill any one of the following criteria will not be required to take a developmental math course.

Note: All measures have a shelf-life of no more than 18 months.

- ▶ High School GPA: 3.0 cumulative GPA as long as the student took a 12<sup>th</sup> grade math class within the past 10 months. *(See related sub-recommendation)*
- ▶ ACT: Math 22 or higher
- ▶ SAT: Math 530 or higher
- ▶ Placement Assessment\*:
  - » ALEKS – 30 or higher
  - » Accuplacer – Arithmetic 109, Elementary Algebra 109,  
College Algebra 40\*\*
  - » Next Generation Accuplacer – Cut scores TBD

\* *All placement assessments must be proctored if they are to be used for placement.*

Students who do not satisfy any of the above criteria will take ALEKS or an alternative placement exam that has proven diagnostic capabilities and aligned learning modules.

\*\* *It is important to note that these scores were suggested by the subcommittee, but were not approved by the full group. They are simply presented as a starting point for the work-alike groups' consideration.*

## APPENDIX E

### Accelerated and Integrated Teaching Strategies: Resources

Center for Applied Research at Central Piedmont Community College - ALP Replication Study 2015 data:

<http://alp-deved.org/wp-content/uploads/2015/02/ALP-Replication-Study-2015-Final.pdf>

Community College of Baltimore County - Accelerated Learning Program (ALP):

<http://alp-deved.org/>

Community College Research Center at Columbia University - New Evidence of Success for Community College Remedial English Students: Tracking the Outcomes of Students in the Accelerated Learning Program (ALP):

<https://ccrc.tc.columbia.edu/publications/ccbc-alp-student-outcomes-follow-up.html>

California Acceleration Project: <http://accelerationproject.org/Corequisites>

Central Piedmont Community College - Multiple Measures and One-credit Hour NROC Co-requisite Math Option:

<http://nroc.org/resource/case-study-central-piedmont-community-college-flipped-classroom/>

Owensboro Community Technical College - NROC EdReady Math as Co-requisite Option:

<http://nroc.org/resource/case-study-owensboro-community-technical-college-co-requisite-course/>

Virginia Community College System - Math Pathways, Co-requisite and Multiple Measures:

[http://www.vccs.edu/vccsblog\\_post/initiative-update-math-pathways-project-a-key-to-student-success/](http://www.vccs.edu/vccsblog_post/initiative-update-math-pathways-project-a-key-to-student-success/)

Oklahoma State University - use of ALEKS as Co-requisite Supplemental Instruction Model:

<https://www.youtube.com/watch?v=eILjIU6J4zw>

Washington State Board for Community and Technical Colleges - I-BEST model:

<https://www.sbctc.edu/colleges-staff/programs-services/i-best/>

<https://www.youtube.com/watch?v=p84hd7SS6-g>

<https://www.sbctc.edu/colleges-staff/programs-services/i-best/team-teaching-models.aspx>

<https://ccrc.tc.columbia.edu/publications/i-best-program-final-phase-report.html>

WestEd- Reading Apprenticeship:

<https://readingapprenticeship.org/our-approach/professional-learning-approach/>

Personalized Accelerated Learning (PAL):

<http://www.canyons.edu/Offices/DistanceLearning/PAL/Pages/default.aspx>

<https://www.canyons.edu/Offices/DistanceLearning/PAL/Documents/FA%202015%20-%20PAL%20Cohorts.pdf>

NROC Model for Mathematics: <http://nroc.org/what-we-offer/nroc-math/>

Integrated Education and Training (IET):

<https://www.educateiowa.gov/sites/files/ed/documents/Four%20Models%20for%20IET.pdf>

<https://youtu.be/woxydpTVI9M>

Ivy Tech Community College Math Pathways:

<https://www.ivytech.edu/math-pathways/index.html>

<http://studylib.net/doc/5345113/presentation-by-dr.-saundra-kay-king--ivy-tech>

[http://nrocnetwork.org/resources/wp-content/uploads/sites/23/2016/08/Compiled-Final-Deck-Ivy-Prep-Webinar\\_March-2016.pdf](http://nrocnetwork.org/resources/wp-content/uploads/sites/23/2016/08/Compiled-Final-Deck-Ivy-Prep-Webinar_March-2016.pdf)