



**Mc
Graw
Hill
Education**

ALEKS[®] PPL Case Study

PLACEMENT, PREPARATION AND LEARNING

Iowa Central Community College

Introduction

About Iowa Central Community College

Iowa Central Community College was founded in 1966 and has just over 5,000 students enrolled. The main campus is in Fort Dodge, Iowa, along with four additional satellite campuses serving nine counties. Its mission is to provide quality educational opportunities in and outside the classroom. In October of 2017, Iowa Central created a STEMM division (science, technology, engineering, math, and medical) to meet the needs of the 21st century STEM initiative initiated by the state of Iowa's Governor Reynolds. It is committed to helping students excel in the areas of STEMM and serve its community. Professor John Hansen serves as the dean of this division.

Meet Professor John Hansen, Dean of STEMM Division

From a young age, I always enjoyed mathematics. But it wasn't until high school where my math teacher's enthusiasm towards the subject made me want to pursue the field as a college degree. Although I enjoyed the research aspect of mathematics, my goal was to pass the same enthusiasm for the subject I got from my high school math teacher to others. When I first started at Iowa Central, we had no placement requirements. We then adopted mandatory placement, but still had many students fail for a variety of reasons.

Whatever the case, we lacked the tools to determine what was happening until we adopted ALEKS PPL in the summer of 2014. Not only did we see an immediate increase in success, but we also gained a tool that helps us understand each student's knowledge state. Since our adoption, we have used ALEKS to redesign our developmental math sequence with a simple set of goals: increase student success, increase student retention, and decrease the amount of time students spend in developmental math.

"ALEKS PPL is the only assessment I know that measures a student's actual mathematical skill set. Not only does it measure their skill set, it also tells me exactly what they know and what they don't know, which is a game changer!"

– John Hansen, Dean of STEMM Division

Introduction (Cont.)

Before ALEKS PPL, Iowa Central Community College (ICCC) was not getting the results it wanted for students with its placement tools. Prior to 2000, advisors would suggest math courses appropriate to the skill set of the student, but students could enroll in any course for which they met the prerequisite. The high school GPA and/or the scores of the ACT, SAT, and Compass test were used as placement. This led to high failure rates and students repeating courses. Seeing the need for change, Iowa Central implemented mandatory placement in the fall of 2000, with Compass and ACT scores being the most commonly used placement tools.

Even though Iowa Central began to see some immediate improvement in student success and retention, it was not enough. College-level math course success rates was 8% for students who started in Fundamentals of Math, and 27% for those who started in Elementary Algebra. After 14 years of not getting the results it wanted, the school was ready to try something new. It began a pilot project with McGraw-Hill in the summer of 2014 to implement ALEKS PPL for placement. The pilot was part of a state-wide initiative to gather data concerning placement and success rates in math courses. Much of the decision to move to ALEKS PPL was due to retention concerns. Iowa Central were losing, on average, about 900 students from fall to spring, in part from them failing their math course.

Placement at Iowa Central from 2000–2014

Compass	ACT	AccuPlacer	Course Placement
P 0-33	0-15	20-48	MAT – O45 Fundamentals of Math (Developmental)*
P 34-63; A 0-50	16-19	49-90	MAT – O63 Elementary Algebra (Developmental)
P 64-100 or A 51-100 or C 0-50	20-23	91-103	MAT – 102 Intermediate Algebra (Developmental) MAT – 111 Math for Liberal Arts MAT – 117 Math for Elementary Teachers MAT – 140 Finite Math MAT – 156 Statistics (3 credit hr)
C 51-100 or T0-45**	24-27**	104-119**	MAT – 120 College Algebra MAT – 127 College Algebra with Trigonometry MAT – 130 Trigonometry MAT – 165 Business Calculus
T 46-100	28-36	104-119	MAT – 210 Calculus I

*Non-credit bearing course

**Plus a "C" or above in Intermediate Algebra

Implementation

Initial Setup

A single sign-on for ALEKS PPL was setup through the school's student portal TritonPass. Once a student applied to Iowa Central, they received a TritonPass username and password to access their grades, courses, financial aid info, and ALEKS PPL. It was simple to implement, with the help of ALEKS tech support. Additionally, Iowa Central worked with local high schools for them to help proctor the ALEKS PPL placement assessments. Because student scores are automatically uploaded to the administrative software, Datatel, it is no longer necessary to run separate weekly reports to update student records. To inform incoming students of ALEKS PPL, the school sends out a brochure containing the information they need.

How do I access ALEKS?

1. Triton Pass: Log onto your Triton Pass and click on the profile icon. You will find a link for the ALEKS Assessment. Click on the link and follow the on-screen instructions.
2. If you are not a current student or you are not within Iowa Central's region, contact Amy Moffitt, Coordinator of Testing Services, moffitt_aj@iowacentral.edu, (562) 574-1044.
3. Proctored/Unproctored: The first assessment may be taken either proctored or unproctored. A proctored assessment means you are taking the assessment at an Iowa Central testing center or with an Iowa Central approved proctor. An unproctored assessment score will not count for placement.

1st Placement Score Date:

You must wait at least 24 hours before you can take the next assessment.

Prep 6 Learning Module Opened on:

2nd Placement Score Date:

You must work at least 6 hours in your Prep 6 Learning Module before you can take the next assessment.

3rd Placement Score Date:

You must work at least 6 hours in your Prep 6 Learning Module before you can take the next assessment.

4th Placement Score Date:

You must work at least 6 hours in your Prep 6 Learning Module before you can take the next assessment.

Still have questions?

ALEKS:
<https://www.aleks.com/support>
(740) 693-7090

Iowa Central Community College:
Amy Moffitt
Coordinator of Testing Services
moffitt_aj@iowacentral.edu
(562) 574-1044

John Hansen
Math Department Coordinator
hansen_j@iowacentral.edu
(562) 574-6445

Laura Walters
Developmental Math Coordinator
walters@iowacentral.edu
(562) 574-6288

SAVE

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Mandatory Placement Assessment for Math

**IOWA CENTRAL
COMMUNITY COLLEGE**

Implementation (Cont.)

Cut Scores

Iowa Central worked with experts at ALEKS to define the cut off scores based on the topics covered in its course curriculums. As part of the pilot, the school was required to submit data (scrubbed of personal information) to McGraw-Hill, which included the ALEKS scores used for placement, the courses in which students were placed, and students' final grades in those courses.

ALEKS PPL Placement Cut Scores

Score Percent Range	Course Placement
0% – 13%	MAT – O45 Fundamentals of Math (Developmental)
14% – 29%	MAT – 063 Elementary Algebra (Developmental)
30% – 45%	MAT – 102 Intermediate Algebra (Developmental) MAT – 111 Math for Liberal Arts MAT – 117 Math for Elementary Teachers MAT – 140 Finite Math MAT – 156/157 Statistics (3 credit hr), Statistics (4 credit hr) MAT – 165 Business Calculus
46% – 75%	MAT – 120 College Algebra MAT – 127 College Algebra with Trigonometry MAT – 130 Trigonometry
76% – 100%	MAT – 210 Calculus I

Current Setup

ALEKS PPL offers each student five attempts at the placement assessment and six months of access to the Prep and Learning Modules. ALEKS PPL assessments are setup to be proctored. However, the first attempt can either be proctored or un-proctored, the latter of which does not count toward placement results. The average assessment attempt is 61 minutes, compared to only 13 minutes for Compass and Accuplacer.

The students must complete five or more hours in the ALEKS PPL Prep and Learning Modules before the third attempt at the placement assessment, and again before the fourth and fifth attempts. Once a student takes their first ALEKS PPL assessment, the Prep and Learning Module is then created based upon the student's individual skill level. Since initial implementation, approximately 10-15% of the students use the Prep and Learning Modules. In contrast, Compass and Accuplacer have study modules that can be purchased extra by the students. They are designed to help students prepare for the placement exam, but are not individualized to the student's skill set.



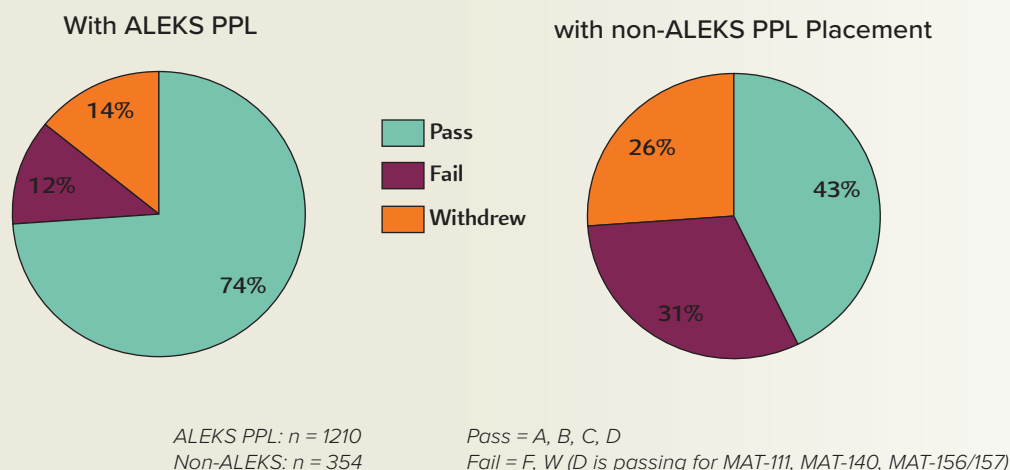
Results

Since enrollment for the fall of 2014 started in late February, approximately 50% of incoming students had already placed into courses using other placement tools, namely Compass and Accuplacer. This provided Iowa Central with a comparison group. The data shows that Accuplacer was no better than Compass at predicting student success, though the data for Accuplacer was small ($n < 100$). For the 2015-16 academic school year, students placed by their ACT scores had a failure rate of 75% across the board. Those placed by their ACT scores who were successful had an ACT score of 25 or greater.

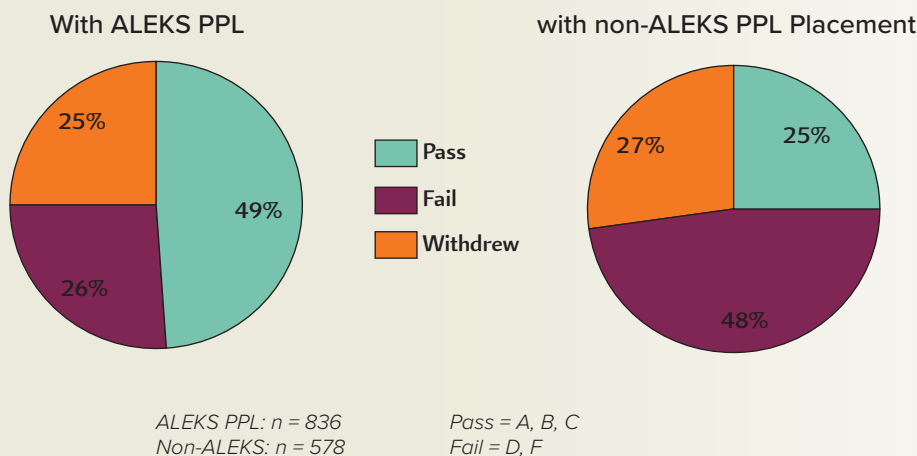
31% of the students who were placed with ALEKS PPL and withdrew from a developmental math course took ALEKS PPL again and placed in a higher-level course. The number of students enrolled in developmental math decreased from 945 (fall 2014) to 720 (fall 2016), a 24% decrease; yet math department credit hours have stayed at the same level. This also resulted in a shift of faculty teaching developmental math to teaching college-level math courses. Iowa Central has also noted an approximately 21% increase in STEM course enrollment. In the fall of 2014, 92 students spent five or more hours in their Prep and Learning Module and placed in the next level math course. Of those 92 students, 53 (58%) were successful in that course. This resulted in a savings of over \$33,000 in tuition for those students.

Figures 1-2 depict the success rates of students in college-level math courses and developmental math courses. Each figure compares students who placed into the courses with ALEKS PPL and those who placed with a non-ALEKS PPL placement tool. What's notable is the difference between the passing rate and failure rate of both groups.

(Figure 1) College-Level Math Success Rates (2014–2016)



(Figure 2) Developmental Math Success Rates (2014–2016)



Results (Cont.)

A course-by-course analysis also shows students who placed into certain courses with ALEKS PPL had higher passing rates and lower failure rates, versus students who placed into the same courses with a non-ALEKS PPL placement tool.

Course-by-Course Analysis

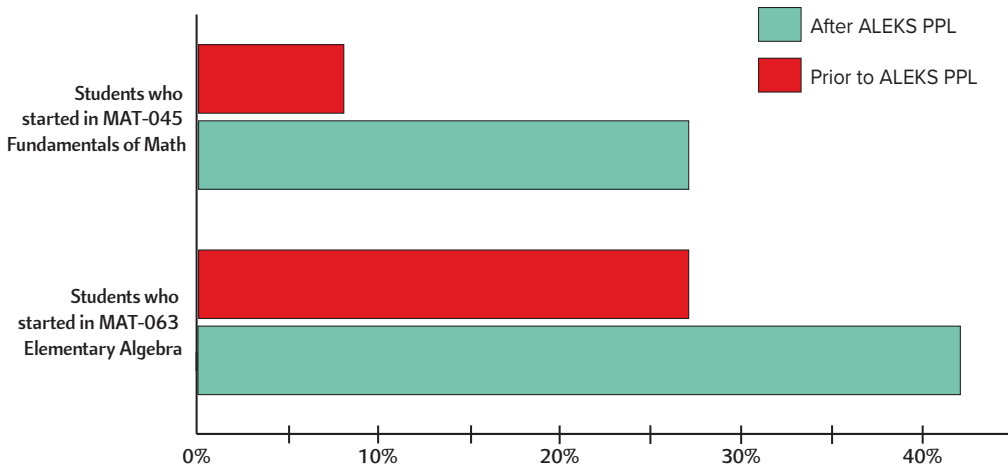
Course	ALEKS PPL Placement		non-ALEKS PPL Placement	
	PASS	FAIL	PASS	FAIL
MAT-111 Math for Liberal Arts <i>ALEKS PPL: n = 163</i> <i>Non-ALEKS: n = 79</i>	76%	24%	54%	46%
*MAT 120/127 College Alg / College Alg with Trig <i>ALEKS PPL: n = 205</i> <i>Non-ALEKS: n = 97</i>	69%	31%	29%	71%
MAT-156/157 Statistics (3 hr) / Statistics (4 hr) <i>ALEKS PPL: n = 453</i> <i>Non-ALEKS: n = 178</i>	72%	28%	46%	54%

Pass = A, B, C, D; Fail = F, W

*MAT 120/127 Pass = A, B, C; Fail = D, F, W

In the fall of 2012, Iowa Central introduced the emporium model with ALEKS PPL for the developmental math sequence, which includes MAT-045 Fundamentals of Math, MAT-063 Elementary Algebra, and MAT-102 Intermediate Algebra. Prior to this implementation, the college-level math success rate of students was 8% for those who began in MAT-045 and 27% for those who began in MAT-063. After ALEKS PPL, that success rate increased to 27% and 42% respectively (**Figure 3**).

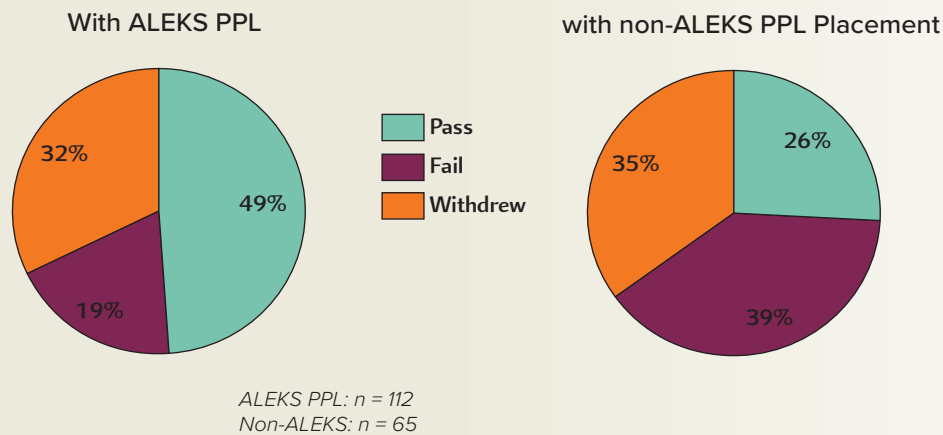
(Figure 3) College-Level Math Success Rates for Students who Started in Developmental Math Courses



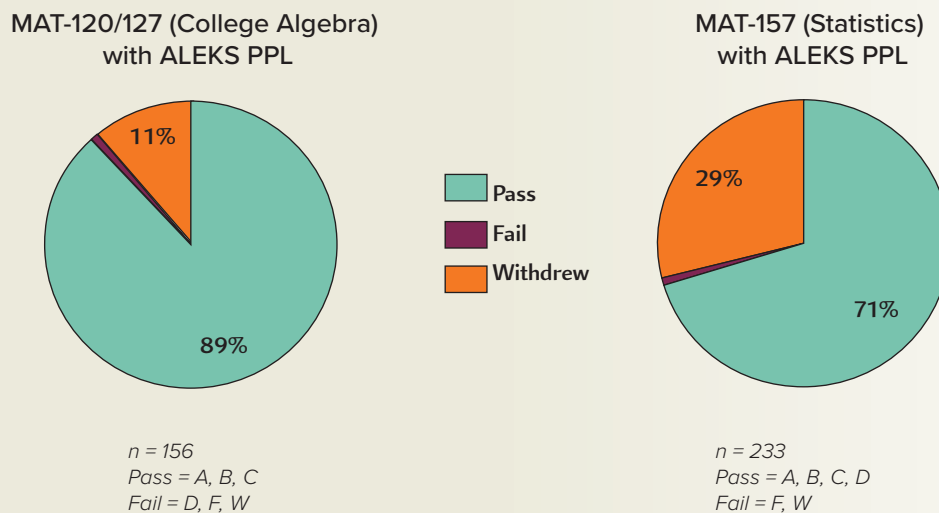
Results (Cont.)

Iowa Central also saw an increase in the success rates of non-traditional students (**Figure 4**) and concurrent enrollment students (**Figure 5**). Non-traditional students are defined as those over the age of 22 and enrolled in a developmental math course. Concurrent enrollment students are high schoolers who are enrolled in a math course at Iowa Central.

(Figure 4) Non-Traditional Student Success Rates (2014–2016)



(Figure 5) Concurrent Enrollment Student Success Rates (2014–2016)



Looking Forward

There is a state-wide initiative for using ALEKS PPL as the recommended/required placement tool for the state of Iowa. The initiative remains ongoing as of 2018. Data for this initiative comes from Iowa State University, University of Northern Iowa, University of Iowa, and Iowa Central. There is a state-wide working group trying to get ALEKS PPL used by all 15 community colleges. The Testing Coordinator from Iowa Central hosted a state-wide workshop to help other community colleges implement ALEKS PPL as we currently do in our service area. As of the 2016-17 academic year, eight out of the 15 community colleges are using ALEKS PPL. Most faculty at the area high schools who are working with the community colleges feel that placement with ALEKS PPL is a positive step forward. There were very few issues implementing ALEKS PPL at these schools.

Iowa Central is also redesigning the developmental math sequence to improve the college-level success rate and save students time and money. The ALEKS PPL outcomes are being used to design this new sequence, which will use ALEKS 360.