Implementation Strategies

San Diego Met High School, San Diego Unified School District
San Diego, CA

Grade(s): 9 − 12
Scenario: Computers in Classroom
Purpose: Supplement
ALEKS Portion of Curriculum: 40%
Time Spent in ALEKS: 6−8 hours per week
ALEKS Course: Algebra 1, High School Geometry, Algebra 2, PreCalculus

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ALEKS has contributed significantly to the gains in our students' California Standardized Test (CST) scores at San Diego Met High School. Also noteworthy and gratifying is that for the last two years approximately 93 percent of our students passed the California High School Exit Exam (CAHSEE) in the combined 2007 and 2008 school years, compared to the district's 72 percent for the same years.

The most remarkable feature of our school program is our internship program where students have the opportunity to work in established businesses around San Diego. Students participate in their internships on Tuesdays and Thursdays, leaving only Mondays, Wednesdays, and Fridays as instruction days for all of our students' academic classes. Clearly, we need an effective online math program so that students can work independently to make up for the two missing days of instruction. At first we wondered if an online math program could meet our high expectations.

Our data speaks for itself: Analysis of our 2006 CST data shows that our class of 2010 increased their percent proficient or higher by 15 percent. Between 2007 and 2008, the percentage of students scoring at or above proficient increased from 20 percent to 51 percent. Our math test scores have consistently improved year after year, and each successive year we have more students enrolled in higher math courses. As a result of our steady progress (attributed to our personalized attention to students, excellent instruction and leadership, and the ALEKS program), our school has been recognized as a California Distinguished School, a 2010 MetLife/NASSP Breakthrough School, and we received a six year review with our Western Association of Schools and Colleges (WASC) accreditation. Surprisingly, our school is only in its sixth year of existence.

While our school's test data is impressive in itself, working with ALEKS has helped students to learn to be more independent learners, more adept with their use of technology as a learning tool, and to be better at managing their time. ALEKS' assessment and diagnostic tools have helped me immensely in using the limited amount of time with students effectively. My principal and I have investigated many other online math programs and we both agree that the simplicity and structured approach of ALEKS is the perfect match for our students' busy academic lives.

Our experience with ALEKS becomes more effective each year as more of our graduates express their praise for its benefits. As the older students mentor our younger students, they share about their time management, how much they have learned, and how important it is to take notes as they work their way through their objectives. Several of our graduates have contacted me to say that they are also working on ALEKS in their college math classes. I find it gratifying that there is a connection between success in ALEKS and our students' successes in college. I tell my students all the time that the independent work that they complete in ALEKS reflects the kind of perseverance and accountability one needs to have to do well in college.

Thank you ALEKS Corporation for your wonderful product and the years of prompt customer service!

Scenario

What challenges did the class or school face in math prior to using ALEKS?
One of the challenges that our school had over five years ago was that there were no true math teachers. The school design was based on learning through internships and the mathematics that arise in each student's particular internship work. Students participate in their internships on Tuesdays and Thursdays, leaving only Mondays, Wednesdays and Fridays as instruction days for all of our students' academic classes. At that point in time, our model was not working to support our students' math performance. In 2006, only 12 percent of our students were scoring proficient or above on state performance tests. With the use of ALEKS, by 2008 our students were scoring 21 percent proficient or above. Since that time our scores have continued to improve. We have added

math teachers to the school design, but we still rely on ALEKS to support student learning in the two days a week that they do not have class instruction.

How many days per week is class time dedicated to ALEKS?
3−5 days per week.

What is the average length of a class period when ALEKS is used?
Varies.

Implementation

How do you implement ALEKS?
As we monitor ALEKS usage and progress, we occasionally have students work on the program during the class instruction times. In this way we can check for study habits with ALEKS: are students using notes as they work? Are they making the appropriate effort? Are they monitoring their progress in their ALEKS Pie? Are they taking advantage of the ALEKS help functions or working with their peers? Four times a year our students are also expected to present an hour−long exhibition of their learning. The exhibition includes the use of evidence of their learning. Many students choose to showcase their ALEKS learning by projecting their current ALEKS Pie and demonstrating how they complete problems in the program.

Our two math teachers also regularly analyze student performance data to guide our instruction. Performance data is shared with students to help them manage their math grades and to also teach them the value of using data. We love the fact that the ALEKS program regularly assesses students' understanding. With the limited amount of instruction time, we don't feel the need to administer tests and quizzes. Monitoring students' performance on ALEKS gives us the assessment data that we need to help them without the loss of instruction time and without the time−consuming task of grading tests and quizzes.

Do you cover ALEKS concepts in a particular order?
ALEKS usage is strictly a matter of student choice at our school. Our school philosophy is based on personalized instruction and we want students to learn by their choices, thereby grooming their academic independence. We will occasionally assign particular concept areas for students to focus on so that there is more connection to the learning from our texts.

How do you structure your class period with ALEKS?
Our students are expected to complete at least seven ALEKS objectives each week during the first semester of school. In the second semester, students are expected to complete at least five objectives each week. For the most part, students work on ALEKS during their independent learning time in their advisory classes. Additionally, students attend math class for direct instruction, textbook learning, and group work on Mondays, Wednesdays and Fridays. Each of these classes are approximately one hour. Students also work on ALEKS at home for homework.

How did you modify your regular teaching approach as a result of ALEKS?
Our teaching is much more focused. Instruction time is focused on building students' conceptual understanding of mathematical topics. We find that students respond well to our program with the hybrid of technology and human instruction. ALEKS has been a great source of concept practice for our students. Because ALEKS serves this purpose so well, we do not assign a lot of textbook homework. Our students have ample opportunities to come into our office hours for tutoring and help on ALEKS if they need extra assistance.

How often are students required or encouraged to work on ALEKS at home?
Because of the child−by−child design of our school, the use of the ALEKS program varies from student to student since we focus on individual student performance. If a student's progress is slow, we will require them to do additional ALEKS work at home.

How do you cultivate parental involvement and support for ALEKS?
Parents receive a basic presentation on ALEKS at the beginning of the year. We have also developed a handout that describes ALEKS' basic features. In conferences, parents are trained as needed on how to monitor their child's work on ALEKS by analyzing the ALEKS Pie. Additionally, our online grading program highlights the specific percentage of ALEKS work completed each week.

Grading

Is ALEKS assigned to your students as all or part of their homework responsibilities? If so, what part of the total homework load is it?
ALEKS is assigned by an expected amount of objectives to be completed. If students can complete their work during their independent learning time at school, this is totally acceptable.

How do you incorporate ALEKS into your grading system?
ALEKS is 40 percent of a student's grade and students are expected to complete seven hours or seven objectives per week. Rushing through the ALEKS lessons tends to lower the degree of understanding. ALEKS allocates objective points based on retention of understanding and incomplete objective points will hurt grades. Regular homework also accounts for 40 percent and is vital to the practice and mastery of the skills and concepts learned in this course. Students are alerted as to what assignments are expected to be completed, due dates, and pages in the text that they should refer to help them work through the practice problems. Additionally, I have organized a homework assignment sheet with the California learning standards and homework is generally collected each Monday. Students must manage their time well each week to ensure that they will meet deadlines. The assignment sheet is divided each week into parts A, B, and C to help students manage the completion of their work.

Participation and a binder account for 10 percent. Students are expected to contribute to the learning in the classroom and practice presentation skills to help them prepare for exhibition work and internships. Specific organizational points are given for regular binder checks, which includes course notetaking.

Quizzes and tests account for the remaining 10 percent, but are infrequent since so much assessment is already built into ALEKS. However, specific areas of mathematics will be introduced outside of ALEKS and these concepts will be assessed through additional quizzes or tests. Quizzes and tests help to assess specific learning and help me to provide additional instruction and support when necessary.

We also hold regular one−on−one student conferences that give me an additional opportunity to assess students, counsel and advise, and praise them on their progress. In these conferring sessions, we review students' evidence of learning: their work, binders, ALEKS, and performance data.

Do you require students to make regular amounts of progress in ALEKS?
During the first semester of school, students are required to complete seven objectives each week. During the second semester, students are required to complete five objectives each week.

Learning Outcomes

Since using ALEKS, please describe the learning outcomes or progress you have seen.
The data from our state standardized testing has shown remarkable gains in our math scores. Approximately 93 percent of our students passed the CAHSEE in the combined 2007 and 2008 school years, compared to the district's 72 percent for the same time period. One of the most striking improvements is reflected in our CST data: Between 2007 and 2008, the percentage of students scoring at or above proficient increased from 20 percent to 51 percent. Perhaps more importantly is the independent study habits that are addressed when students are expected to complete ALEKS work on their own. Student attitudes toward ALEKS have also changed throughout the five years that we have used the program. At first, students dreaded working on the program. However, as the teachers learned how to integrate the program better into our school culture, students began to see more clearly how ALEKS benefited their learning. We still have a few students who work on ALEKS reluctantly, but it is very gratifying to hear the older students encourage and praise the benefits of consistently working on the program. We try to push the idea that "you are only competing with yourself." I also like the fact that ALEKS gives students an initial assessment and periodic assessments that directly tap into what each individual student has learned.

Best Practices

Are there any best practices you would like to share with other teachers implementing ALEKS?
We have had much more success with ALEKS when we share program completion data across the school. We have designed several spreadsheets that help all of the teachers see how much or how little work was completed by the students. As a result, the whole school staff works together to encourage students to complete their work. We believe that the progress of each student is the responsibility of the whole school community. This includes the principal, teachers, advisors, parents, and other support staff.

