

# Implementation Strategies

**James Buchanan High School, Tuscarora School District**  
Mercersburg, PA

**Grade(s):** 9 – 12

**Scenario:** Computer Lab

**Purpose:** Intervention, Improve State Test Scores

**Time Spent in ALEKS:** 2–3 hours per week, 40–50 hours per term

**ALEKS Course:** Pre-Algebra, High School Preparation for Algebra 1, Algebra 1

**Patti Bethel, Teacher**

After four years of looking for a program that fit our school's needs, we chose ALEKS and have been pleased with the implementation ever since. Our school uses a math teacher as a remediation specialist for eleventh grade students who need help preparing for the math portion of the Pennsylvania System of School Assessment (PSSA) given each Spring. We had previously used various programs, but the efficacy of those programs was limited.

Our group of juniors uses ALEKS in a semester-long course as a supplement to the PSSA prep offered in their regular math classes. The students work with a tutor one period a day to identify areas of need based on Pennsylvania state math standards. Once these areas are identified using the ALEKS Initial Assessments, the instructional plan for each student is designed and implemented. Student goals are established and progress is monitored closely using the data provided within the ALEKS program. This method saves a tremendous amount of time that can be better utilized in the classroom with one-on-one interventions and reteaching.

In addition, ALEKS was chosen as a tool to be used with seniors to show alternate proficiency on the math portion of the PSSA tests due to the positive feedback surrounding the program. The seniors work on ALEKS at school and at home on their own time until reaching proficiency levels. They are able to learn independently thanks to the Explain function available in the Learning Mode. We also ran two trial courses of ALEKS with a select group of ninth grade students to follow over the next few years to look for any correlated improvement by the eleventh grade. Finally we have two students who are unable to conform to a traditional classroom environment or are on home-bound instruction that were entered into the ALEKS program as an alternative educational placement and have shown significant progress.

## Scenario

**What challenges did the class or school face in math prior to using ALEKS?**

Our school did not show adequate yearly progress (AYP) on the PSSA tests in math for the two years prior to using ALEKS. As a response to our less than acceptable rates of proficiency, our district hired a math tutor who requested and acquired ALEKS to provide differentiated instruction to students of varying abilities. Budgetary issues were confronted and solved, providing computers for ten students per class and purchasing ALEKS subscriptions for remediation and intervention.

**How many days per week is class time dedicated to ALEKS?**

5 days per week.

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

40 minutes.

## Implementation

**How do you implement ALEKS?**

ALEKS is used as an intervention program to help meet individual student needs. Previous software programs we used took more of a "one size fits all" approach, which doesn't differentiate instruction like ALEKS does.

**Do you cover ALEKS concepts in a particular order?**

ALEKS is designed to supply topics to students based on their performance and preparation for the next area of study. In this way, we do move from less involved topics to more advanced topics; however, as I see many of the students working on the same problems within a short period of time and showing difficulties, I can take time from ALEKS and present a lesson to the whole class to

address these areas needing support. Then, all students go back on the program to continue.

#### **How do you structure your class period with ALEKS?**

There are two options: students work independently on any topic with supervision and assistance as needed; or students arrive to a PSSA problem on the interactive whiteboard or overhead projector, we discuss the type of problem, the associated standard, the approach to the problem, and the correct solution. After each student shows a partial understanding of the problem, they move to the computers and begin work on ALEKS on that particular type of problem, asking questions or checking in as they progress. Before the end of the class period, we review their daily progress on the Reports section in ALEKS, where the bar graph supplies mastery (blue bar) or progress in learning mode (green bar).

#### **How did you modify your regular teaching approach as a result of ALEKS?**

Tutoring implicitly involves one-on-one attention and involvement with each student. This is time-consuming and in order to do this effectively, the tutor must find out what each student knows in order to decide where each student needs to go next. ALEKS supplies this essential data so I can dive right in and get moving. At a glance, I can see exactly what each student has been working on with ALEKS and determine what other types of interventions I can supply to aid my students in the best way possible.

#### **How often are students required or encouraged to work on ALEKS at home?**

Due to the rural nature of our community, many students may not have Internet accessibility at home; therefore, they are not required to work on ALEKS at home. However, if they have a computer and Internet, they are encouraged to work while parents/guardians watch their progress. We also have computer labs at school where they may continue to work during study halls or free periods.

#### **How do you cultivate parental involvement and support for ALEKS?**

If students are able to access the program from home, I encourage parents to observe their child's work on ALEKS and the students are to show and explain their progress on the report bar graph. A letter is sent home at the beginning of each semester detailing the class, the objectives and methods for improving the students' math abilities, and preparing them for PSSA testing using ALEKS. At back-to-school night, ALEKS is up and running on the computers in the classroom for exploring by parents, using the free trial option on the ALEKS homepage.

### **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?**

No homework is assigned through ALEKS at this point in time because the semester-long course is a second math class for all of the students. However, when students are out of school for an extended time due to health or behavioral issues, ALEKS is the perfect solution.

#### **How do you incorporate ALEKS into your grading system?**

The remediation class is not graded other than to assign a pass/fail at the end of the marking period based on student cooperation and compliance with directives to attain some level of improvement. There is half credit given to the student upon completion of the semester if the student has worked as requested. Therefore, no pressure is applied to worry about a grade other than to work diligently each day in school.

#### **Do you require students to make regular amounts of progress in ALEKS?**

Since this is the first year using ALEKS in remediation, the decision was made to keep pressure at a minimum by just looking for any forward progress as an indicator that the student is making an improvement. Their eventual reward is proficiency on the PSSA tests. We print score reports regularly to watch progress steadily increase over time.

### **Learning Outcomes**

#### **Since using ALEKS, please describe the learning outcomes or progress you have seen.**

Since our implementation of ALEKS, every student enrolled has shown positive growth over time. Our eleventh grade students have shown an average improvement of 50 percent from their Initial Assessment to their current progress. Additionally, a majority of the tutored students have improved their grades in their regular math class by anywhere from 20–40 percentage points. One alternative placement student entered the class with 19 percent mastery and has now attained his goal of 70 percent mastery and is proud of his achievement. Our eleventh grade students are proud of themselves and satisfied with their progress in ALEKS as shown by their enthusiasm for certificates printed at the completion of the course. The interpersonal dynamics and healthy competition between students has driven almost all students to push themselves beyond their assumed capabilities. Many students ask for voluntary assessments when they feel "ready" to add some more blue proficiency points to their bar graph. This built-in monitor aids in self-assessment for the students, and is not regularly available in a classroom. Although the work may be difficult, when a goal is set in small pieces, the students can envision themselves moving forward with each assessment. They don't dread the assessments, but instead look forward to them as a way to improve their levels of proficiency in a visual way. They are anxious to check their bars at

the end of each assessment. Occasionally we experience no forward movement but in every case, the student has admitted to not paying full attention to the explanations or getting help with the problems in the Learning Mode, which does not necessarily equate to progress toward mastery. General positive comments from students regarding ALEKS fall into three main categories: the first is the ability to work on any available topics at will; the second is their progress is self-regulated; and the third is the students receive results immediately, both in the Learning Mode and after each assessment. Their most serious complaint about regular math class is how they do not know how they did after any type of assessment until days later. ALEKS builds student confidence in a slow and steady manner, offering assistance every step of the way. All students are working on things relevant to them, not wasting time while other students monopolize the teacher's time and energy.

## **Best Practices**

### **Are there any best practices you would like to share with other teachers implementing ALEKS?**

A lesson learned this year is to allow students a few class periods to explore and investigate all aspects of ALEKS. There are many additional features that get overlooked by just starting right in on the problems, such as the class forum, dictionary, and email features that are useful in addition to the pie charts and bar graphs. As great a tool as ALEKS may be, it does not replace the "human touch." Students need to know that teachers care about them and will help explain or reteach as necessary, in addition to using ALEKS. Patience and perseverance are required.