CASE STUDY

Narrowing the Learning Gap for High School and Adult Learners

Dr. Michael Turley

a secondary and post-secondary mathematics teacher for 35 years

Location:
Pulaski County and
Jefferson County, AR

Grades:
9-12 and adult learners

Number of students:
112

School characteristics:
Traditional and alternative-environment

Subjects:
Math

Narrowing the Learning Gap for High School and Adult Learners

In the wake of disrupted learning during the COVID-19 pandemic, a math instructor teaching at an alternative school and a university in Arkansas was inspired to address the gaps in math for his adolescent and adult students in a non-traditional way and track their progress over each semester. IXL presented a motivating, adaptive, and personalized way to meet each student where they were and help them make confident strides in their learning progress, even when the gaps seemed insurmountable.

The Challenges

Over his 35 years of teaching, Dr. Turley had seen his share of student learning challenges. But coming out of the COVID-19 pandemic, he saw that students weren't motivated to complete assignments as homework. In addition, many students' learning gaps had widened to the point that they couldn't be addressed using traditional classroom scaffolding techniques (for example, most of his students in alternative education and behavioral intervention programs couldn't read an analog clock to tell time in class).

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The Solution

After he witnessed astounding learning growth by local high school students in his summer program that included IXL, Dr. Turley was inspired to use IXL Math practice exclusively for all course credit for both adolescent and adult learners going forward.

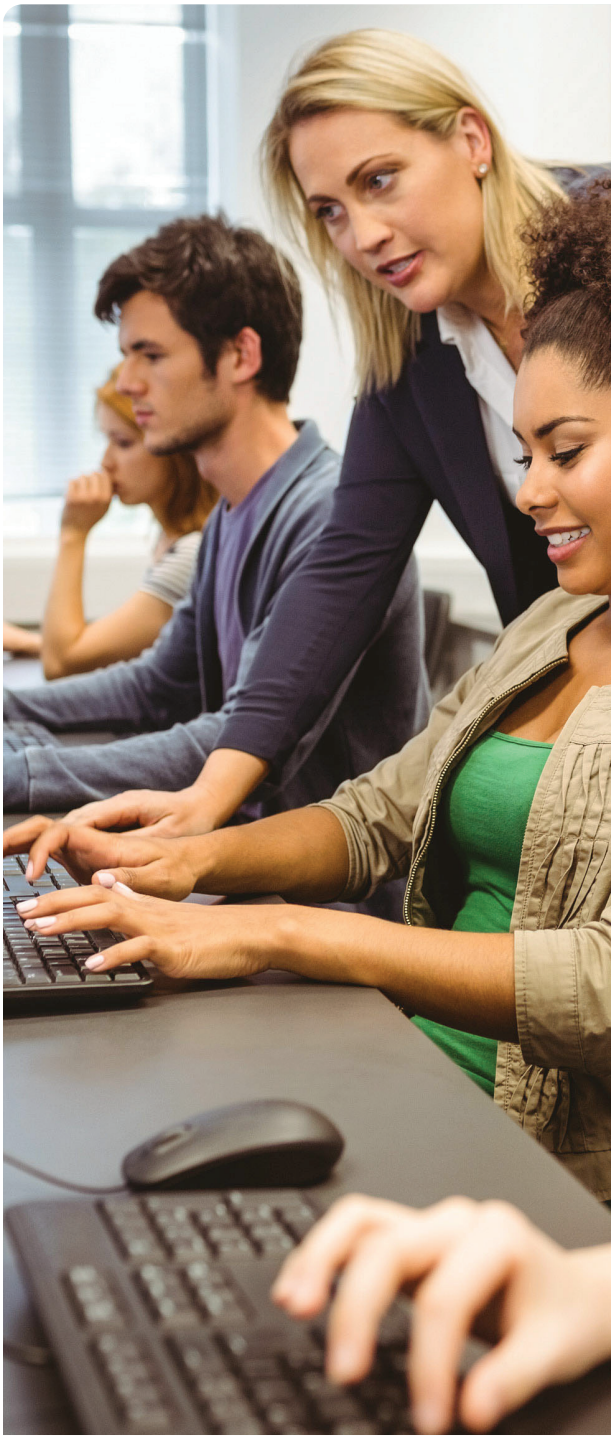
Here's how Dr. Turley is using IXL with all his students:

Dr. Turley is a longtime advocate of IXL because he feels its outcomes match a predictable construct, unlike standardized math testing programs that reflect only "windows" of proficient, on track, or behind. He holds a firm belief that multi-year IXL practice helps students build confidence, close learning gaps, and reach grade-level proficiency.

This is supported by large-scale research, which has consistently found that students using IXL make significant learning gains—gains that are seen across a wide range of student groups and school environments. Because IXL Math is adaptive, it helps teachers to differentiate instruction and students to learn independently by presenting them with just the right amount of challenge, support, and autonomy at the right time. It meets students where they are, emphasizing their progress and motivating engagement in a personalized way. The IXL Real-Time Diagnostic pinpoints student knowledge levels and generates personalized action plans with specific skill recommendations that target growth.

With IXL's capabilities at his fingertips, Dr. Turley implemented the platform with all of his students, in four distinct cohorts, which he called: Online Volunteers, Alternative Education, Behavioral Intervention, and Online Non-traditional.

Online Volunteers consisted of adolescent learners from multiple K-12 traditional schools in Arkansas. They voluntarily enrolled in grade-level math courses where IXL Math served as an online-only supplement to their classroom-based instruction. Students could choose IXL skills based on the personalized recommendations from IXL's Real-Time Diagnostic results or based on the topics being covered that week in their respective classrooms. Students were expected to achieve proficiency (a SmartScore of 80) or mastery (a SmartScore of 100) of at least three IXL math skills per week in addition to their school-assigned homework. The instructor provided opportunities to meet online if anyone encountered challenges practicing their IXL skills.



The ***Behavioral Intervention*** group consisted of adolescent learners who were enrolled in K-12 traditional schools in Arkansas, but were assigned to the instructor as part of alternative environment (AE) learning due to conflicts with classroom-based instruction at their primary-enrollment schools. Students attended 75-minute "class" periods with the instructor as part of the AE daily school schedule, and met in person with Dr. Turley three days per week. They were expected to achieve proficiency in or master at least three IXL math skills per class period (for a total of nine skills per week). Although they were assigned to class periods based on the grade-level designations from their primary-enrollment schools, not a single student was on grade level in math, and the gaps were too great for the instructor to provide simple scaffolding of near-grade level topics. Therefore, each student followed the skill recommendations based on their IXL Real-Time Diagnostic math scores.

Alternative Education was made up of adolescent learners who were enrolled in K-12 traditional schools, but were assigned to the instructor as part of AE learning due to scheduling, medical, or family-based (non-behavioral) conflicts with traditional classroom-based instruction at their primary-enrollment schools. They attended "school" for six hours twice a week, but no class periods or classrooms were assigned—instead, they followed an internal schedule. Dr. Turley was on site, but he only helped facilitate if or when a student requested help with IXL. Each of his students was expected to achieve proficiency or mastery in at least six IXL math skills per week. In other words, they exclusively followed the IXL Diagnostic's results to drive their skill recommendations.

The ***Online Non-traditional*** cohort consisted of adult, non-traditional learners enrolled in a traditional, accredited US university via a hybrid remediation math course. Dr. Turley guided weekly lessons and met with students online for 1-3 hours. He assigned skills according to a 16-week schedule of instruction covering typical Algebra 1 and 2 topics in preparation for a standardized (non-IXL) competency exam to determine each student's college algebra entry score. The instructor initially assigned each student skills aligned with their pre-course IXL Diagnostic math scores, to boost their confidence and inspire growth. Later in the course, each week, the adult learners tackled 6 to 12 skills selected to align with college-level algebra difficulty.

While the four cohorts differed quite a bit in mode of instruction, IXL implementation, and levels of instructor support, the weekly IXL practice goal for all four exceeded IXL's recommended usage guideline for students to reach proficiency in two or more skills per week. Dr. Turley hoped he'd observe significant growth in all four groups over the course of the semester.

The Results

Students using IXL in all four cohorts averaged a 129-point improvement in their IXL Diagnostic math scores—over a year's worth of growth in a single semester. Plus, the more skills they achieved proficiency in, the greater their end-of-term achievement.

When Dr. Turley shared the results in a conversation with each individual student after the term ended, as compared to their pre-term benchmark, all learners expressed surprise and confidence that they had learned more this year or semester in math than at any time prior. This included even those learners who hadn't met IXL recommended usage amounts. Several commented, "I didn't know I could like math," "I never knew I actually knew that much math," or "I'm smarter than I thought I was." Most expressed how much they appreciated being able to work at their own pace and level and not be pressured to learn "grade-level math."

One 9th grader in the Behavioral Intervention cohort, who had been in special-ed classes for the previous 8 years, scored a 0 on her pre-course geometry at the start of the semester. Because she couldn't read kindergarten IXL math skills, she needed the IXL audio support throughout her first semester. At the end of the spring 2023 semester, she was elated to find she had earned an IXL Diagnostic math score of 280 in the geometry strand (and a 255-point growth overall in one semester). While for many "objective" educators this is still 7+ years behind the student's school-assigned 9th-grade standing, for her this is almost three years of learning growth in geometry in a single semester!

Dr. Turley has been using IXL Math since 2018, and it has become an indispensable tool in his teaching. Based on the results from this recent study, he plans to continue his integration of IXL in the classroom while adding on practical applications of mathematics using Civil Air Patrol STEM kits, micro-gardening "field Fridays" (for tactile reinforcement of skills such as measurement, statistics, and conversion rates), and mathematical modeling of life skills.