



Differentiating for Algebra Students with Learning Differences

Noble Academy, Greensboro, North Carolina



Teaching students with ADHD, dyslexia and other learning differences requires a highly individualized approach. Barbara Knight, a high school math teacher at Noble Academy, turned to IXL Math to differentiate instruction for her students with special learning needs. IXL has become the core component of her curriculum—and her Pre-algebra and Algebra students have seen their skills and confidence grow by leaps and bounds. She says, “With IXL, students who have never really had success in math are finally seeing what they can achieve.”

“IXL Math has been a game-changer for me. It has helped me differentiate successfully with the varied levels of instruction in my classroom.”

Barbara Knight, High School Math Teacher, Noble Academy

Creating a Classroom Where All Students Succeed

Noble Academy is a private school in Greensboro, North Carolina, serving students with attention deficit disorders, dyslexia, dysgraphia, auditory processing disorders, and other learning differences. They offer small class sizes with highly personalized instruction and plenty of support to help all students thrive academically.

Barbara Knight teaches Algebra I, Pre-algebra, and an intermediate course for 9th graders who are not yet ready for Algebra I. When she began teaching at Noble, she used worksheets, but quickly saw that this approach was not ideal for her students. “I was stressed out,” she says. “I didn’t know how to differentiate for so many levels in one classroom. In my Foundations of Algebra class, I had some students coming in with math skills at a 2nd- or 3rd-grade level, and others who were working on grade level or even accelerated. I needed a way to quickly determine where they were and what skills they were missing.”

Some of her colleagues were using IXL Math, so Barbara decided to try it as well. She quickly saw the power of the IXL Real-Time Diagnostic. “First, I just tried it as an experiment. I realized that the diagnostic gave me great information about students and really targeted, helpful recommendations for the skills they should work on next.” Soon, IXL became an essential component of her classroom.



Differentiating Instruction with the Real-Time Diagnostic

The Real-Time Diagnostic provides the information that drives instruction in Barbara's classes. The diagnostic assesses students across every concept in the K-12 curriculum, paints an accurate portrait of each learner's abilities, and then guides them to skills that will help them grow. Students dedicate one day per week to updating their diagnostic and working on their individual skill recommendations. On other days, Barbara assigns skill practice in IXL aligned to the standards they are covering in class. She monitors students' scores in IXL to adjust the pace of instruction and plan individual or small-group remediation.

"We don't really use textbooks," Barbara says. "My students need instruction that is hands-on and interactive, so we use a lot of manipulatives and visual aids for direct teaching. IXL gives me the flexibility to supplement my teaching with practice that is directly aligned with what we're doing. IXL is like my classroom assistant, providing each student with the individualized practice they need so I can focus on building my curriculum and working with students one-on-one."

IXL has completely replaced worksheets for in-class work and homework in Barbara's classroom. The instant feedback and step-by-step explanations keep students motivated and help them work more independently. "Instead of struggling and giving up with a worksheet, students are given problems at the right level where they can work independently and be successful. Now, I'm more of a coach, walking around the classroom and providing individual support where it is needed."

Motivating Students with the Real-Time Diagnostic

Barbara's students love IXL—especially the Real-Time Diagnostic. She says that the diagnostic encourages her students to take more ownership of their learning and keeps them motivated to improve their skills. "They love seeing their scores go up and seeing how much progress they have made. It's like a game," she says. Some of her students even do extra work at home on the weekends to "level up" in IXL.

IXL has accelerated learning for Barbara's students this year. She says, "Their level of mastery is much higher this year than for previous classes at this time in the school year." The accelerated growth she has seen in IXL Analytics has been corroborated by student performance on midterm projects.

Best of all, Barbara's students have demonstrated increased confidence in their ability to master higher-level math. "Seeing this kind of success is monumental for my students," she says. "It's opening new doors for them, in some cases putting them on a track towards four-year college that they weren't on before."

"In Special Education, you have to differentiate to build equity. IXL really allows for that."

Barbara Knight



Continuing Learning At Home with IXL Math

In the spring of 2020, the COVID-19 pandemic forced Noble Academy to shift from a traditional school model to distance learning. IXL made the transition much easier for Barbara and her students.

Barbara conducted live 15-minute classes for her students using virtual meeting software that allowed her to share her screen. She introduced the daily topic and pulled up five or six example problems on IXL that the class reviewed together. Then, students practiced the skill independently for 30 minutes. At the end of their practice time, they logged back into class to review what they learned and ask questions. Students attended each class on their schedule two or three times per week while learning remotely.

Outside of the scheduled class time, her students continued to work through the skills recommended by the Real-Time Diagnostic. Barbara used the Student Action Plans generated by the diagnostic to create individualized learning plans for students to follow over the summer. She says, "With IXL, the learning experience continued to be positive, even while they were working from home. My students continued to make progress, and some even jumped several levels!"

"IXL has made math so much less stressful for my students. Students who couldn't keep up before are now keeping up with the advanced pace group. They see that math doesn't have to be the class they dread anymore—it can actually be the fun class!"

Barbara Knight

A Model for Success at Noble Academy

Here's how Barbara Knight is using IXL Math in her 9th and 10th grade Pre-algebra, Intermediate, and Algebra I classrooms:

- Students spend one day each week updating the Real-Time Diagnostic and working on skills in their individual action plan.
- On other days, Barbara splits class time between direct instruction and practice in IXL Math aligned to the standards she is teaching. Students can continue practicing at home if they do not achieve their targeted SmartScore (IXL's proprietary scoring system that measures how well a student understands a skill) during class.
- The IXL Live Classroom report allows Barbara to monitor how her students are doing in real time, so she can offer targeted support if students are struggling.
- Barbara uses the information in IXL Analytics to plan her instruction, including individual and small-group remediation and whole-class reteaching.