



Do your students suffer from Math Anxiety?

Now there's a powerful new remedy!

iLearn Math virtually eliminates math anxiety...while students learn math.

A review of the research on math anxiety leads to an inescapable truth – *the primary source of math anxiety is an **inability to do math***. The feelings of anxiety that develop over time are a **result of past failures in math**.

Most instructional support programs make matters worse for sufferers of math anxiety because they require them to learn through a “trial and error” process. This frequently results in **so many errors they stop trying**.

Most software programs that provide supplemental instruction promote the fact that they provide “corrective feedback” when students make errors. But, **after** the student has made an error, the damage is already done. The primary thing the student learns in this situation is that “they can’t do math,” which only adds to the student’s anxiety. This approach is nothing more than **waiting for students to fail** before help is provided.

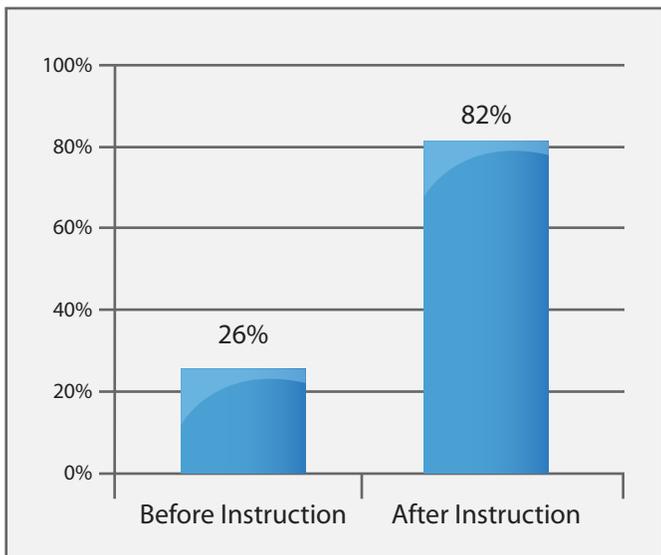
iLearn Math overcomes math anxiety with a unique new approach called Error Prevention™.

The source of failure that results in math anxiety, is an accumulation of too many errors at too high a rate. The iLearn Error Prevention™ approach attacks the problem at the source. Our instructional support is designed to **dramatically reduce the rate of errors**.

This makes it much easier for students to be successful in learning math. Students experience success immediately and continuously. This constant success is what changes math anxiety to confidence doing math, and the motivation to persist in learning math to unprecedented levels.

Error Prevention™ is designed to **prevent errors before they occur**. The impact is remarkable – both in improvements in the effectiveness of instruction as well as improvements in student morale and motivation. The graph below shows what happens when tens of thousands of students learn with Error Prevention™ Strategies in place.

“*Math anxiety develops when students are unsuccessful in learning math.*”



When students encounter a topic they have not yet mastered, their average score on the pretest for that topic is 26%. Immediately after the instruction is provided, the average score jumps dramatically – to an average of 82%. This precipitous, dramatic increase in success is a result of the instructional approach based on Error Prevention™.

That raises the question “How do we produce this dramatic reduction in errors?”

The process has many components, too many in fact, to cover all of them here. However, a few of the more general features can be summarized.

“ **With the Error Prevention™ approach, we do the things a good instructor would do if they had time to tutor each student individually.** ”

First of all, the instruction that is provided is *required*. Students are not allowed to attempt practice problems until they’ve completed the instruction. The real issue, however, is **not just requiring** instruction, but providing instruction students will actually **pay attention to**. This is not an easy task. Most programs don’t even attempt to provide instruction prior to practice. The few that do, do it by brute force – requiring that they watch a video of a lecture. But the students who are not “plugged in” to a live lecture are not likely to gain much by passively “watching” a video of a lecture. The only real requirement is that they “play” the video, which is not likely to result in the necessary mental engagement.

iLearn Math is different. Students are mentally engaged, because it enables them to be successful. This mental engagement is a result of many features of the design, but the first is the design of the multimedia presentations that deliver the instruction. They are animated and narrated presentations of concepts and procedures. They are very brief, and easy for students to “follow along” with the logic of the concepts being presented. The design comes from a very large body of rigorous research from multimedia instruction in cognitive Psychology.

Second, the way the content is organized and presented makes it much easier for students to understand. A key feature is that there are no “leaps in logic.” In other words, every step in mathematical reasoning is made explicit. The instruction is organized in small steps that progress through each of these steps, building on prior knowledge at every point.

By carefully organizing and sequencing the content the student encounters, we make sure that the student is never asked to do anything that they don’t understand. Once they understand, they are required to practice (and later,

review) what they've learned until they meet rigorous mastery requirements.

Another element of the design is that we require not only that students generate their own answers (instead of a multiple-choice format), but we also require that they show their work at every step along the way to a broader outcome. They do that by generating answers to *intermediate steps* in the mathematical process. These inputs by the student are evaluated immediately so that students can never go very far astray in their thought process. We never require students to exhibit "whole skills" before they're prepared to do so. They must master each intermediate step in the process before they do all the steps on their own.

The impact of the Error Prevention™ Approach.

The end result of the Error Prevention™ approach is that ***students consistently report that it's much easier to learn.*** More importantly, they experience success from the very beginning, and they never reach a point where they can't keep learning. This success is a powerful motivator, so students exhibit much greater willingness to invest the time and effort to learn the content required.

Because students can be this successful on a consistent basis, it produces a dramatic improvement in their morale and motivation. In addition, they exhibit a greatly improved attitude toward learning math.

In short, "math anxiety" is virtually eliminated.

It happens because students spend their time productively, without making large numbers of errors that are demoralizing. They succeed at every step, ***which replaces the anxiety with the satisfaction that comes with success.*** The result is that students develop a positive attitude about

math along with high levels of self confidence in doing math. This allows them to continue to learn and ***reach higher levels of math than they ever thought possible.***

For more information on iLearn and the Error Prevention™ approach, contact us today.