

## Transcript – Using LPs for Improved Instruction

Now that you have a basic understanding of LPs and what distinguishes them from standards and a scope & sequence, how can you use the LPs to inform and improve your instruction in order to prepare your students for algebra? To implement mathematics instruction that supports students' understanding of mathematics and prepares them for algebra and beyond, teachers must not only understand the learning progressions but also be able to use that knowledge in instruction.

A learning progression provides teachers with a pathway that communicates the connections between what comes before and after a specific learning goal, both in the short and long term. For example, when teaching students to generate multiple values from a specific set of numbers in an expression, teachers must know that students have an understanding of the order of operations and know how to evaluate an expression with a single number. They must also know that this concept is a prerequisite for learning to solve multi-step equations. In other words, learning progressions enable teachers to build explicit connections between types and levels of mathematical content. Learning progressions thread the development of increasingly complex forms of a concept or skill together.

First, learning progressions can help teachers plan the sequence of instruction with the end in mind.

Next, learning progressions help teachers make connections between the current content and previous content.

Last, learning progressions can help to correct the misconceptions and errors that arise as you are teaching.

We are going to go into detail about each one of these.

## Transcript – Using LPs for Improved Instruction (continued)

Your job, as a teacher, is to know your students' destination and use that to decide how to best order and present content. If a teacher has a clear road map that designates pivotal stops along the way, it is far easier to incorporate those stops during instruction. Curriculum materials can be very broad and general in content. Additionally, little guidance is provided on how students best learn the material. The ESTAR/MSTAR Learning Progressions are rooted in evidence and provide descriptions of how students progress through mathematical ideas. Teachers should connect the progression of content across grade levels to support deep conceptual understanding that prepares students for later courses. Consider the destination and map backwards from the content needed to meet the goal.

Next, teachers can use the learning progressions to track students current location. Learning progressions provide a timeline for learning over a long period of time—beyond just a particular grade level. Teachers should monitor student progress by investigating students’ mathematical thinking and locating their position on the path for learning that concept. Teachers can then intervene effectively if a student fails to perform at expected levels. Many scope and sequence charts or curricula do not allow for this while learning progressions, such as the ESTAR/MSTAR Learning Progressions, does. Teachers can understand students’ learning and appropriately adjust instruction and make connections to previously learned topics to help students understand the content.

Remember back to when you played Chutes and Ladders® as a child. There are multiple paths, or ladders, that can lead to understanding a concept and times when there may be setbacks, or slides. Different pathways are influenced by the experiences, instruction, and individual differences that a student holds.

First, we have efficient learners who may understand the final concept but may have a limited understanding of the concepts leading up to it. This may be because they have essentially skipped over topics. This could potentially hurt them in the future when they move to other levels of the learning progression.

Even with struggling learners, instruction will look different. Here, we also represent two different struggling students. The student who takes the first path may be a slower paced learner, but he or she still takes an efficient path. The student struggles to grasp concepts, but after time and remediation, eventually reaches the goal. Another struggling student may learn a strategy and leap ahead but begin to over-generalize rules and eventually may fall back at certain points.

In summary, you can monitor students’ progress along the learning progression, and once you have found their locations, you can adjust instruction or interventions and make connections to previously learned concepts.

Morris, B. (2011, March 07).