Teach employees how to learn better and faster.

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podcast

Self-Sufficient Learners Make Successful Workers

BY PATTI SHANK

It's easy to see that escalating technical, socioeconomic, geopolitical, and demographic changes are altering how we work and the nature of jobs. Many call these changes the Fourth Industrial Revolution. During previous industrial revolutions, it took decades for people to develop new skills to meet demand. But change at such a rapid rate forces industries, companies, and workers to either adapt (quickly) or fail. Many newspapers and bookstores are gone. New retail chains are going under each week. It isn't easy to succeed when change is this rapid.

Because of these changes, job skills are shifting. We're seeing jobs emerge that didn't exist 10 years ago (for example, SEO specialist, app developer, and information security analyst), and jobs that have existed are swapping skills to adapt to changes in their organizations and industry. Auto mechanics have been working with the computer parts in automobiles for a while now, but these parts are becoming increasingly complex. Warehouse staff work with automation and use computers to control the machines. Medical and legal staff use increasingly complex computerized systems.

How do people adapt to a rapidly changing workplace and quickly changing job skill needs? They learn to learn better and faster. Metacognitive strategies are among the methods used to help people understand and regulate their learning.

What is metacognition?

Metacognition, in a nutshell, helps people become better and more self-sufficient learners. That's because metacognition helps people become aware of and more in control of one's thought and learning processes.

For example, when I keep a list of things I don't understand while I'm learning, that's a metacognitive strategy to help me fill in the blanks. When I put two exclamation points before one of the questions, it's my personal metacognitive strategy to get the answer now. That's because without that answer, I cannot move forward. I'm stuck. So, I ask questions, find help, and use resources. What I usually don't do is wait for a class, because I want to get unstuck now.

People are engaged in metacognition when they want to know better ways to learn, think about the best ways to learn something, use lessons learned in previous experiences to make future learning experiences work better, or analyze why certain topics are easier or harder to learn.

Instructional professionals intentionally use metacognitive strategies to help participants become owners of their learning. As adult learners, we need to own our learning, especially when job skills are rapidly changing. We need to know we can determine what we need to know and find ways to learn without having to wait for a teacher. There is far too much to keep up with for the talent development function to own this alone.

There are four metacognitive steps that help people understand how they learn and regulate their learning:

- Understand learning.
- Plan learning goals.
- Monitor progress.
- Evaluate strategies and results.

Table 1 lists metacognitive questions that support the regulation parts of the metacognitive cycle (plan, monitor, and evaluate). We can use these questions in synchronous or classroom and conference sessions at strategic points. We also can adapt them for use in asynchronous activities.

Table 1. Metacognitive Questions

Plan	Monitor	Evaluate
• What are the learning objectives? • What do you want to be able to do as a result of instruction? • What parts of the instruction are most relevant for you? • What do you already know about this topic? • What questions do you have about this topic? • What time do you need to set aside to learn and practice?	• What do you not understand? • How would you paraphrase this section in your own words? • What are you struggling with? How will you resolve these struggles? • What additional help and resources can you use? • What do you need to remember? How will you remember? • Are you practicing enough to get the results you want?	• Did you achieve the learning objectives? • Did you accomplish your goals? • What worked well for you? Why? • What worked poorly for you? Why? • What advice would you give someone trying to learn this?

Adapted from "Promoting Student Metacognition," *CBE—Life Sciences Education*, 2012.

I regularly use "What doesn't make sense to you?" and "What additional help will you need after this?" in virtual classroom sessions. I almost always add "What specific parts of this instruction will you apply back on the job?" at the end of instruction.

We do people a disservice in making them think they will learn everything they need to know in a class. Adult learners typically learn far more informally (from peers and others, through practice) than in formal learning situations. One of our primary goals in using these questions is to have people internalize them and ask them of themselves.

Better learners, better workers

Despite wide research on the value of metacognitive strategies in instruction, they aren't widely used. Many people who design and deliver instruction aren't aware of how powerful they are for improving learning outcomes. This is a shame because these strategies tell us how to become better learners.

Metacognition not only helps us learn; it also helps us perform on the job because these are the same skills that help us think about and evaluate what we do. In the ATD Science of Learning Blog entry titled "What Do You Know: Do We Know When We Don't Know?" I describe the research that shows that poorer performers typically don't know they are poorer performers because they don't have the metacognitive skills to assess their abilities.

You might think the reason metacognition isn't taught is that it's one of those complex learning science topics. Understanding the *whys* behind some learning science topics can be complex, but understanding how to apply them is rarely so. Metacognition is applied easily through questions and activities that help people think about how they think and connect their thoughts and actions to outcomes. By teaching and using metacognitive strategies, we can:

- understand learning to learn more easily
- analyze understanding (If material is not understood, repair understanding because it's difficult to add accurate knowledge onto misunderstood information.)
- understand and use best methods for remembering and recall (the reason for remembering) to make recall easier
- apply what is learned in the way it needs to be applied on the job.

Metacognition is the secret sauce of self-sufficiency in learning and teaching. So, it makes talent development practitioners more successful, too. Everyone wins.

Metacognitive learning strategies

As I mentioned in the last section, one of the most critical strategies to use and embed in instruction is helping people determine what they do and do not understand so that problems in understanding can be corrected. We can do this by asking questions,

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Strategies to Work and Learn

We use strategies on the job every day. For example, most people have strategies for meeting deadlines, such as putting due dates on a calendar or using project management tools. People use metacognitive strategies the same way they use deadline strategies. And just like deadline strategies, once people see how well metacognitive strategies work for learning and skill building, people tend to keep using them. But metacognitive strategies may need to be taught.

Metacognition is a large topic. In this article, I'm talking about metacognition as it helps adults learn and develop workplace skills. In "Scaffolding and Metacognition," Derek Holton and David Clarke tell us that metacognitive skills are especially helpful when it is harder to learn. I often hear L&D practitioners discussing why and how we need to make learning fun, but all learning cannot be fun. It's often quite difficult to get to higher levels of expertise because practice gets more difficult and roadblocks become common, according to K. Anders Ericsson and his colleagues in "The Role of Deliberate Practice in the Acquisition of Expert Performance." A participant in one of my recent webinars, a former Navy Seal, described how Seals are trained to deal with a great deal of pain today so they can stay alive tomorrow. It's an extreme example, but it represents the difficulties of developing higher levels of expertise.

asking participants to summarize key points in their own words, and using self-tests.

Research shows that asking people to summarize or paraphrase key points is a fantastic way to help participants deeply process the meaning of content and check whether they understand it. It also helps instructors find and fix misunderstandings. Self-tests ask people to find (rather than build) the right understanding so it doesn't require the same level of understanding.

Typically, however, an instructor or trainer doesn't ask or solicit enough questions, wait long enough for questions and answers, or build in time or tools to make sure that questions are answered and misunderstandings are repaired. This makes further learning much harder.

We can and should embed metacognitive learning strategies associated with each regulation part of the metacognitive cycle (see Table 2). You'll see that some of these are the questions in Table 1 adapted as activities.

Most of these activities are written for classroom or synchronous learning, but they can be adapted for asynchronous learning as well. Many people think that asynchronous learning has to remain in the online course, but do we have to design this way? Certainly, we can add real-life and blended elements to these courses as well, such as sharing summaries and help.

Metacognitive learning environments encourage deep, personal, and accurate learning. Building content is not enough to help people grow and change skills. We cannot help prepare people for the realities of changeable job skills without using what the learning sciences show us works. And metacognitive strategies are easy to build into all types of instruction.

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Table 2. Metacognitive Learning Activities

Plan	Monitor	Evaluate
• Identify what participants know, don't (yet) know, and need to know about the topic. • Provide a topic outline to participants so they can develop questions about the topics. • Use questions to uncover misconceptions about the topic.	• Use Thomas Angelo and K. Patricia Cross's Muddiest Point activity, which asks participants to answer: What was most confusing in this section of instruction? • Stop at key points and ask participants to summarize the key points in their own words. Have participants compare summaries. • Have participants develop quiz questions and answers. Use questions to quiz each other. • Have participant compare notes. Find any gaps and misunderstandings. • Discuss how to overcome roadblocks where application will be difficult.	• Participants share how they will apply what they learned. • Participants share plans for taking next steps. • Participants develop advice on learning this topic for the next group of participants. • Participants continue to support one another with resources and help after the instruction.

Adapted from "Promoting Student Metacognition," CBE—Life Sciences Education, 2012; and "50 CATS by Angelo and Cross."