How to Learn Using Technology

Stephen Downes, August 5, 2019

Learning with technology is different from learning with textbooks or learning with classroom instruction. In these, the focus is on understanding and remembering. It is *content based*. The learning objective is defined as mastery of this body of knowledge.

Learning with technology, by contrast, is *outcome based*. It is defined in terms of skills or competencies, as how to achieve a certain outcome using technology *as a tool*. There’s a distinctive way to learn using technology. Here are the steps.

*Identify what you are trying to do.* What problem are you trying to solve? What project are you trying to complete? This could be anything from fixing a flat tire to building a web site. It may be a very large project, or it might be one narrow objective. It may be self-defined, or it may be part of your education or work.

Define *what success looks like*. Professionals talk of ‘key performance indicators’ (KPIs) as evidence of a successful outcome. Can you inflate the tire to 600 kPa? Did ten people visit your web site today? How would you measure these?

*Look for examples of people doing what you want to do*. You might not know how to fix a flat tire or to build a web site. Look for examples of people who *do* know. Watch them in person. If you can’t, search for videos.

Look for *how it was done*. Note what tools they use, how they apply them, and how they test to see if they have been successful. If you are building a website, look at their website source code. Look for articles describing how they do it, and look for videos showing this work.

*Practice doing what they’re doing*. Go beyond passive learning. Theoretical knowledge is not enough. Take the tools in hand and attempt the same outcome. Repair that flat tire! Build a website people can visit!

*Get authentic practice*. Use real environments if you can, but if you can’t, use virtual environments. Solve real problems. Use real-world problems. What tools do experts use to practice? Watch for these tools when looking at examples and then practice using these tools yourself.

*Look for the theory behind the practice*. Sometimes people speak of ‘theorizing’ a discipline, or of ‘building a mental model’, and this is that they mean. Look at the *process*, not just the outcome.

*Look for patterns* that can be applied. Can you read signs or signals as clues? How are the tools used? Where do they do their work (and where do they avoid working?) How do people draw conclusions about their work, and what sort of evidence do they use? How do they plan for change?

It’s a lot like learning a language. When you are learning a technology, you are trying to become fluent in this language, so you can apply it in new circumstances.

*Reflect on your own performance*. What was the difference between success and failure? Think back to what you did, study the product you created, or perhaps make a video. Compare it with the models that were successful. Theory can guide you here to know where to look for differences.

*Work with others*. Share your products or your videos with others and get their feedback. They will be able to see things you can’t see for yourself. Over time, your videos will become the examples other people use as they begin their own learning. You are giving back to the community that helped you, and everyone learns more.

*Repeat*. We rarely learn how to do something in just one try. We rarely become proficient in something without repetition. And we often forget things we have learned if we do not apply them on a regular basis. Learning is never truly complete. Even if you are successful, you can find ways to achieve the same outcome more effectively, more efficiently, and more productively.