

# How to Succeed at Failing

Aside from being a learning technologist a big interest of mine is American football (Philadelphia Eagles fan). As you might imagine its very rare that these two aspects of my life coincide but something about the end of the Super Bowl stood out to me. In a speech just after the win Nick Foles, the Eagles quarterback, mentioned something that I believe to be very important both in life and in learning.

**"I think the big thing is don't be afraid to fail," Foles said. "When you look at it, you have a bad day, you think your life isn't as good, you're failing. Failure is a part of life. It's a part of building character and growing. Without failure, who would you be? I wouldn't be up here if I hadn't fallen thousands of times, made mistakes. We all are human. We all have weaknesses."**

Failure has traditionally had something of a bad reputation, something to be avoided at all costs, but there has been a growing idea that failure is a key part of the learning process (see list below). If you don't fail you won't grow, you won't learn what your current limits are and you aren't going to develop your skillset. Failing also builds resilience, which is something that employers are increasingly interested in, having employees that can deal with setbacks and carry on working creatively to solve a problem is a great asset.

Today, however, I want to talk specifically about how we can use Jupyter notebooks as a place to fail in a positive way. For those who haven't heard of these, I've done a brief introduction here. One of the most useful parts of notebooks is being able to immediately see the output from your code cells. This allows you to 'fail fast', quickly trying something and then adjusting based on the outcomes. By repeatedly trying something and adjusting every time you build

resilience and start to learn how to adapt your skills to a situation.

The next part we need to talk about is how we document failure. I don't mean making students wear dunce caps but I do think it's important to detail the steps you went through even if you ended up failing. Early on in school I was always told 'show your working' which I definitely didn't do but now I understand the importance of the concept. Getting a question wrong on a test doesn't necessarily show me what you don't know but understanding how or why you got it wrong certainly does. Showing that you have failed, tried again and then succeeded shows me even more.

I'm interested to hear your opinions on this, as an academic do you think it is helpful to have students include their failed attempts or would it make marking more difficult? Add your comments below.

## **List of Failures**

Failure Is Essential to Learning – Edutopia 2015

Stanford Resilience Project

The Importance of Failure in Learning – ironically a failed attempt to introduce failure

Is Failure Useful – a bit off piste about failure in museums but worth a read

Innovation: Learning from Failure – An interesting insight into the tech industry's embrace of failure