53 Powerful Ideas All Teachers Should Know About

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Much learning is acquired by doing, but seldom only by doing

Early in my career I tried to teach Further Education teachers about teaching. Observation of their teaching once involved watching a welding instructor in his workshop. Much of the time students simply undertook welding. There was some sitting listening to the teacher, but the main learning activity was doing. We take it for granted that acquiring practical skills involves primarily practice – actually doing what it is that we want to learn to do.

In contrast, as a Social Science undergraduate I was taught about questionnaire design, without ever designing a questionnaire. I was taught about Marxist analysis, without ever undertaking a Marxist analysis. I was taught about experimental design without, until once in my final year, ever designing an experiment. I read a good deal about the things I was supposed to be learning and listened to teachers talk about them, and joined in discussion about them, and wrote essays about them, but very rarely actually did them.

I was once invited as a consultant, by History teachers, to help them to solve a problem in a third year, third term module that was not working at all well. The degree programme had been designed on the assumption that Historians can do things others cannot, and in particular when there are accounts of historical events (or even current events) Historians can recognise the implicit perspective on social change of the author, and spot why some forms of evidence have been selected rather than others and why they have been interpreted in the way they have, rather than in alternative ways. They can bring Historical theory to bear and so be more sophisticated as an interpreter and analyst than can others with different disciplinary backgrounds. But when it came to the end of their degree students could not actually do this, and the marks and failure rates on this final module were depressingly poor. Earlier in the degree programme, starting in Year 1, there had been several modules about theory. The teachers could not understand why students could not use this theory by the end of their studies. But it turned out that the first time students were ever asked to use alternative theoretical perspectives to interpret events, to actually do a theoretical analysis, was in the exam questions at the end of their final year. They had no practice doing this at all – so they were still complete novices despite three years' study.

I am convinced that there is far too little doing in higher education courses, even where the goals are narrowly academic and disciplinary. But inevitably this simple statement begs many questions.

Going back to the welding workshop, I remember the teacher telling students about a new type of weld they would spend time doing, including both a little theory about how the weld actually worked and some practical guidance on the use of equipment. Then students would spend hours doing welds, lots and lots of welds. And they did them fairly consistently badly. If the welds were subsequently subjected to sufficient force that they broke, you could see obvious flaws in the join that made them weak, flaws resulting from poor technique and poor understanding of how the weld worked. Then the class would be over, and the next week they would be shown about a new form of weld, do it badly for a couple of hours, and so on. I talked with the teacher about the 'experiential learning cycle' and he completely redesigned his classes. First he would give his demonstration and explanation about the weld, then ask everyone, in small groups, to list what they should be looking for in the finished weld, and why, and what could go wrong, and why. He pooled their conclusions and drew up an assessment schedule for that type of weld in a flip chart. Then, as each student finished a weld, they would bring it to the teacher, who broke it so the student could see what it looked like inside. He then asked the student to assess their own weld, using the assessment schedule: how good was it, what had they done right, what was wrong with the weld and how was that caused, and finally, what would they do differently next time to produce a better weld? Then they were told to redo the weld using what they could now notice and could now understand about potential problems. Their welds got much better, very quickly. The time saved by needing to do fewer welds was much greater than the time spent planning and self-assessing and reflecting.

Learning by doing requires all these elements:

- theory or principles, to drive decision-making, to direct attention and to structure reflection and self-assessment
- planning – using the principles to decide exactly how to go about doing something
- the actual doing, first-hand experience of what it is that is to be learnt, with some awareness of what was going on
- reflection, noticing what happened, what went well or badly, worked or didn't work.
- thinking about why and generating ideas to build better theory that leads to better planning, more skilful doing and noticing more about what happened, and so on, round and round.

While theorising without practice is pretty much useless, unreflective practice is also pretty much useless.

These elements are usually portrayed as a sequence and in a circle that you can go round and round – and usually learning from experience is a multi-cycle phenomenon (to my amazement nowadays often called 'The Gibbs Cycle').

One reason why so much of our 'one cycle' assessment does not work very well is that students write an assignment for a course then go on to another course and a completely different assignment – they may never have another go, using feedback and what they have learnt to do a much better job next time.

Readers may argue that in Nursing and other practical professions there is both academic learning and doing (such as experience on wards). However it is common for work places to support learning from experience rather poorly, being oriented to obedience to rules and reliable behaviour rather than to reflection and learning, and for classroom learning to be poorly linked to practical implications or experience. All the components may be there, but they may not be planned as a linked cyclical sequence. It is the deliberate joining up of the components that make learning by doing possible.

Suggested reading

Gibbs, G. (1988) Learning by Doing: a guide to teaching and learning methods http://www2.glos.ac.uk/gdn/gibbs/index.htm

Boud, D., Keogh, R. and Walker, D. (Eds.) Reflection: turning experience into learning. http://books.google.co.uk/books?hl=en&lr=&id=XuBEAQAAQBAJ&oi=fnd&pg=PP1&dq=David+Boud+reflection+turning&ots=TtYt7Trh-P&sig=3nBjgsYCFPQg0YkKiuzDUrjpgBw#v=onepage&q=David%20Boud%20reflection%20turning&f=false

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