Abstract

PhD in educational technology – or e-learning – might not be very different from other PhD’s; as such, it can benefit from good advising and a fair amount of good luck. In this brief paper, I will reflect the process of my PhD in educational technology with the general guidelines laid out in my graduate school, in the literature and by my advisors. In addition, some tips are added on the way now that I have “learnt my lesson”.

1: Starting a PhD

PhD in educational technology is particularly nice because you can do anything from data structures and artificial intelligence to evaluating the effect on learning. However, this is also the main pitfall: since there is no strong tradition in the field, it is tempting to try to clarify everything in your work. If you belong to a strong multidisciplinary research group, maybe you can together cover the whole spectrum. If you are alone with your supervisor, it might be too much.

What kind of a topic should be picked for a PhD in educational technology? In general conferences about education, a rough approximate is that 90% of the presentations deal with collaborative learning [11]. Still, many researchers in the field of educational technology with technical background favor research on individual e-learning. Now, when the Internet has made it possible to open up the learning environment in ways never experienced before, there is a huge potential in information and communication technology to assist in bringing learners and resources together. In my opinion, on-line learning communities offer interesting viewpoints to e-learning.

What did I do: Needless to say, I did my PhD on individual e-learning, worked without any research group, and tried to cover everything in my work.

2: PhD Process

There are many books on surviving the graduate school and ultimately getting the PhD completed (e.g. [1, 2, 4, 13]). These books are complemented by more specific guidelines, e.g. tips for computer science students [5, 6].

When I started my graduate school, there was a summer workshop for all the doctoral students in the field of computer science and engineering. During a vivid discussion, a panel of professors laid out some general guidelines for a PhD:

- “Critically and carefully read 3 to 5 PhD theses in your own field.”
- “Be clear: What is the problem to be solved?”
- “Idea – Formalization – Implementation – Analysis ~ prototype feasibility study.”
- “Think big, implement small.”
- “High quality, limited scope, and the shorter the better.”
- “PhD consists of 3-5 (internationally) published articles.”
- “Contribution is not as important as scientific communication – others have to be able to verify your work.”
- “Networking (people-to-people) is the most important thing.”

What did I do: I was fortunate to have received such a set of clear guidelines. Unfortunately, I forgot about my notes from the workshop and found them only when it was too late to consider them explicitly. However, when reflecting these guidelines against my completed dissertation [9], I did not strike too many misses: although I did not read that many PhD theses in my field (because I was not able to locate that many), the work relies on few main publications, the dissertation is a prototype feasibility study, it is short, and at least tries to be clear and simple. In addition, the implementation is very small (but to be honest, the thoughts are not so big, either).
I did go through various PhD theses in educational technology, but they were either approaching the topic from a very different viewpoint (e.g. [8]) or completely outside the CS domain (e.g. [10]). Now the situation is better; there are plenty of examples available (e.g. [12, 7, 3]).

What would I do differently? I would read more, especially trying to find good survey articles. All the articles do not need be in the same field: examples of useful methodology and presentation structure can be found from other disciplines as well.

3: Lessons Learnt

Looking back into the process, it is clear that the odds were against me: I did not belong to a research group, I tried to do multi-disciplinary research alone, with my background of computer science, and my plan was to provide a “one-stop research” to cover all the aspects involved in educational technology. In addition, I lost both of my advisors during the process: the first one fled to another university far, far away, and the other to early retirement (but not because of me, as I later learnt).

I am quite certain that a fair amount of luck was needed to ever complete such a task. First of all, I had excellent advisors. Even though my primary advisor was away, I had a chance to spend uninterrupted time with him, dwelling on the thesis work when it was needed.

Of course, more than good advisors are needed. Whenever the road seemed to be closed, something (or rather someone) came up and offered a viable direction to follow. I worked with several undergraduate and graduate students who had the ideas, enthusiasm, and eagerness to implement, and whose general help was invaluable. In Finland, the trend is to incorporate students into research very early on; and I was the one who benefited the most.

In addition to CS students, few good people in other disciplines such as elementary education, special education and psychology, were willing to invest their time and efforts to my project. Without these people, the work would have been very different – or non-existent!

What did I do: To be honest, it might well be that it is not all luck. Often-mentioned asset for PhD work is the need for networking and interacting with other people. I was pushed by my supervisor to be active and participate. It was hard but it was the thing needed to encounter resourceful people. Especially in a field such as educational technology, one has to have an open mind towards other disciplines and readiness to learn new things. Finding a common language for multi-disciplinary dialogue and joining research was easy after intense interaction, and extending the possibilities of individuals was a natural result.

References