CASE STUDY: ELISABETH

Elisabeth has been studying for an MSc within the Medical Sciences Division. She is in her early 20s and had come straight from an undergraduate degree in Biological Sciences at a UK university.

Elisabeth's motivation for choosing her course lay in her fascination with the subject, the thrill of studying under the leaders in the field and proximity to "where the exciting science happens." The course structure appealed to her and the facilities provided by the university were additional factors. She planned to go on to doctoral research, which she has now started.

Elisabeth adopts a mature approach to her studies. She recognised the challenges of adjusting to new forms of learning and rose to those challenges through devising practical strategies to cope with the workload and through her ability to perceive the bigger picture. The interest of her case study lies in her perspective on the transition from directed to independent study, and the insights which her experience offers into how a Master's course can be structured to support that transition.

Transition from directed to independent learning

The MSc consists of two terms of taught classes and a dissertation. Students are assessed at the end of the first two terms by exams, an extended essay (first term) and four clinical commentaries (second term). The taught component of the course was more interactive than Elisabeth's undergraduate course, which had been strongly directed:

> "I felt like your hand was held the entire way through the undergraduate degree [...] we had such a structured timetable and such structured work to hand in, […] there was no real independent investigating you needed to do because they basically told you how you had to answer the question in a way."

This contrasted strongly with her Master's degree, where the interactive approach proved particularly beneficial in helping the students to make their own connections between different topics that were taught separately:

> "For example in one lecture we learned about lymphocyte homing and in another lecture about molecules displayed on immune cells and only in a class on auto-immune deficiencies I realized the link between the two topics. Such classes are also a good way to tie together facts with experimental approaches and methods. [...] Overall I think such sessions, if properly planned, can really aid the learning process as you aren't necessarily just bogged down with facts but are given some freedom to explore other scenarios and come up with your own ideas."

Learning to manage one's time

Elisabeth's undergraduate course had been focused around weekly essays which gave structure to her reading and revision: "I was used to an essay a week and that was all I did for all three years, you had an essay a week and then maybe some statistical data to analyse. […] So you kind of revised as you went along."

However, without weekly essays to research and write Elisabeth found herself having organise her postgraduate studies more carefully and do more independent reading. She wrote early in the year: "…we are expected to do much more on our own in terms of sourcing lecture material and compiling notes which has meant planning our time more efficiently, something I still struggle with at times." She clearly won this struggle, noting towards the end of the year:

> "I have taken to making a detailed calendar and work plan which I hung above my desk; however, it was hard sticking to it until the deadlines were looming close. I also tried to read around subject areas as we were having lectures on them and

tried to work in chunks as opposed to trying to finish all assignments in one go whenever possible."

The payback? "I've got everything out of the course really I wanted to at the beginning."

Reading for interest versus reading for required knowledge

The course was unusual in that students did not have a comprehensive reading list at the start of the course; rather, they received guidance on recommended reading at each lecture – a mixture of research papers (for interest) and textbooks (for revision):

> "what we did a lot of the time was just like PubMed search review articles, which kind of focused on the whole topic they were covering, because individual experimental papers, I mean they're really interesting but then if you have to write an exam they're not the most useful. So you kind of had to mix and match everything and then occasionally use textbooks."

Reading was one way in which the tension underlying the course was revealed: between reading for interest and reading to gain the knowledge and understanding necessary to pass the assignments:

> "you try to do the broad background reading on all the subjects to try and get, you know, the basic details on what you need to know. I mean, to be honest, at the end of the day you do want to pass your exams, so […] you have to read up what's necessary. But then obviously you do also if something really interests you, you will go a bit further and read up. [...] And you know, you do pick a few subjects which you're really interested in and then do further reading. So it's also personal choice in a way [...] where you do really in-depth reading and where you do more shallow basic ground-covering reading."

Elisabeth felt that this balance is particularly hard to achieve for those, like her, who don't have a background in immunology already and find themselves having to do more reading to grasp the "basics."

Collaborative learning activities

The course extensively featured collaborative learning activities – another big change from Elisabeth's undergraduate experience.

The problem-based learning exercises were useful in that "It was really helpful to have to work our way through a set of problems to reach our own conclusions by drawing together information from several different areas. Especially as this is something I will have to do in future research." However, they need to be well planned.

Class-directed learning appeared, in part, to be a response to the varied backgrounds from which the students come. Elisabeth explains how they worked:

> "before your tutorial we were split into groups and then we had the opportunity to go through the material from the previous week and ask just each other questions, which was good because you could draw on everyone's knowledge. Because we had such a diverse background on our course, we had doctors and scientists, then we had some people who didn't have that much of a background in science. So, like, you could just draw on everyone's knowledge because there was some stuff the medics knew that the scientists didn't, and stuff the scientists knew that the medics didn't."

These classes also had the benefit that students felt more comfortable asking a question of a peer than of the teacher. Classes were led by each student in turn. The teaching staff themselves would come in for the tutorial session an hour later to answer any questions that the students had been unable to resolve themselves, or to facilitate a more in-depth discussion that took the students beyond their current collective knowledge.

Interestingly, although Elisabeth commented that the 2007-8 cohort didn't gel particularly well socially, they were committed to working collaboratively, with each person taking their turn as group leader in the class-directed sessions. They also shared resources with each

other: "close to exams we would just send each other like journal articles or tell everyone where they can find particular useful books and stuff." She also valued the support she received from her peers during the dissertation phase of the course:

> "I see other students from my course during bi-monthly cake-tea afternoons we organize and I see two other of my class-mates daily in the lab as they are in the same lab as me. We support each other as our projects are quite similar and we are all new to the lab and have to adjust."

The problem of assessment and feedback

For Elisabeth, a less satisfactory aspect of the course was the lack of regular formative feedback:

> "you weren't given any real indication of how you were progressing during the term, because you didn't have to hand any work in that was marked […] It all depended on an extended essay you handed in and an exam."

She recognised that the root of this problem lay in the pedagogical approach of the course:

> "I think the way that the course heads kind of want us to learn [is] really helpful to your personal development, but in terms of regular marking […] you can't really assess your progression really well. […] I guess the only way you could get a better indication of how you're doing is just by regular assessment. But then I think that wouldn't really go in, you know, to the vision they have for the course, which is to do things more interactively and more integrated, so you develop your other skills like speaking and group leading rather than writing."

This tension is not easily resolved without compromising what is otherwise a positive approach. One alternative which she did mention is for the teaching staff to base their feedback on students' contributions to class discussions - but as she pointed out, for quieter students such feedback might be unrepresentative of the actual state of their progress and understanding.

The role of digital technologies

Elisabeth's personal learning environment

Elisabeth's digital life is conducted almost entirely on her laptop:

> "Oh I use my laptop for everything, literally for everything. I mean I do all my work on my laptop, and then, yeah, I do surf the Net, you know, I watch movies, I listen to music. [...] my laptop is more of a desktop really that has the option of being a laptop."

Elisabeth did not take her laptop to the department with her, in part because she had little time to work in between classes, and in part because she prefers to do her private studying at home in the evenings when there are fewer distractions.

Generally, Elisabeth likes to get to grips with a new program either by herself or together with a friend. For example, after a failed attempt to use RefWorks with her first extended essay (caused, as she admitted ruefully, by trying to learn to use it when the submission date was looming and she was under maximum pressure), she gave more time to it in the vacation and also got a friend to help her out.

In terms of tools for managing her learning, Elisabeth became a big fan of RefWorks later in her course. Its principal advantage was that it was free (unlike EndNote), but she was a little concerned that it is hosted outside the University – "so you know the server can crash any time, so could crash right while you're like inputting your stuff." Ideally, she would use EndNote (which in any case has more features) – but only if working in an organisation which had a site licence so she could use it free of charge.

Elisabeth didn't have a lot of Websites to keep track of during the MSc course, and so didn't feel the need to have a "favourites" list in her browser or an account on a social bookmarking site such as Delicious. Instead, she searches for the site in Google or types the

first few characters of the URL directly into the browser – which brings the full address automatically on computers where these sites are used regularly:

> "I Google it […], or I just know the links, so I just go to www. […] a lot of the generic sites that I use on the computers I use [...] people will have already used, like, used the links or… Like you put the P U [i.e. for PubMed] and it will come up."

For light relief, Elisabeth keeps a blog with a friend in which they comment, inter alia, on celebrity culture; however, the blog is primarily a form of private asynchronous communication rather than an online journal for public consumption. She also has a Facebook profile, but during the MSc used it purely for social purposes.

The learning environment provided by the University

The students have their classes in the University's teaching hospital, which is located about two miles from the city centre and the rest of the University. The students have their own dedicated work room there, with computers and a traditional whiteboard which, in addition to email, Facebook and timetables on the VLE, served as a medium of communication among the students and between them and the course administrator. Elisabeth used the computers in this room to check her emails and so forth in the short gap between classes (see previous section).

The course requires the use of specialised technologies, both software (e.g. FlowJo,[1] for analysing cytometry data) and hardware for experimental work. Students were expected to teach themselves to use the software applications (using online tutorial materials provided by the manufacturer), but received tuition from the lab staff in the use of expensive, fragile apparatus.

Despite its forward-thinking approach to learning, the course makes fairly conventional use of digital technologies, with timetables and resources (including lecturers' PowerPoint presentations) being made available on the VLE, WebLearn. Elisabeth was, however, appreciative of the more creative uses which some lecturers made of PowerPoint in order to illustrate concepts and processes, particularly where these would be difficult to draw by hand on a conventional board: "they had movies on it and stuff, but then they also used it to create their own diagrams to show us how cells interact and some even had funny things in the so we'd wake up".

Elisabeth could see the potential value of podcasts of lectures: namely, the possibility to go back and check something that one hadn't heard properly in the lecture (such as the name of a molecule or a set of figures). However, she thought that an audio podcast would need to be supplemented by the actual PowerPoint presentation (i.e. voice alone would not be enough). She also implied that something would be lost by just listening to a recording: one needs to be in the actual lecture so that one can ask the lecturer questions.

[1] http://www.flowjo.com/