

## ***Mobile Learning Initiative:***

*Employing our first year students Chemistry and Pharmaceutical Sciences with iPads.*

In the past couple of months we have received a number questions on how our project exactly works and how we have approached it. Because of this, I thought it might be a good idea to give, in one long story, a full overview of the steps we took in the course of the project. This will therefore be a somewhat long post, and will focus mostly on the practical side, i.e. the implementation process. The [‘eindrapportage Devices in het Onderwijs’](#) in the previous post (in Dutch) deals with the reaction of the students and de positive and negative sides of employing the iPads in our education. In the [first post](#) of this blog, we have also outlined our intentions and motivations for the mobile learning initiative; the story below can be considered as an update.

### **The Beginning**

A couple of months after the launch of the iPad, we looked into employing this new device in our curriculum. To promote the use of digital learning resources, we decided equip all of our first-year students with an iPad, initiating a broad basis for mobile learning. The idea was that it then becomes easy for students to consult their (increasingly digital) course material, and the iPad can serve as a means to facilitate this. The iPad is, given the extremely portable form factor and long battery life, also ideal for use during experimental courses in the laboratories.

This idea gave birth to the ‘Mobile Learning Initiative’ where the introduction of the iPads would be combined with a focus on introducing more digital educational content. A project leader was appointed (yours truly) and we started to think on how best approach this idea; we made a first outline of things that could be considered (see also the [first post](#) on this blog). We applied for a number of grants, which could help us out both in the financial and educational part of this project. As a result, among others, we received support via an internal ‘Educatieve Middelen Pool’ grant, providing technical and educational support, and the external ‘Devices in het Onderwijs’ project.

### **Setting the conditions**

There are of course a number of ways in which one can deploy iPads, varying from restricted to more open. After some consideration, we opted for an open approach because of two main reasons. Firstly, it is simply quite difficult to manage dozens of iPads centrally (see for example this quite thorough [post](#) by Fraser Speirs), and an open approach simply takes away a lot of trouble from the IT department. Secondly, we did not want to force our students to use certain kind of applications, making it possible for them to use the device as freely as the desired. So, in effect, the iPad is treated as a personal device, without any direct interference from the university.

There are of course some legalities and practicalities when ‘giving away’ iPads to students. Upon deployment to the students, they signed a contract (checked by our legal department) in which a number of points were made clear:

- 1) The iPad remains property of the Faculty of Exact Sciences, up until the moment the student receives his/her Bachelor’s degree.
- 2) If the student drops out of the curriculum he/she is obliged to return the iPad. Alternatively the student can buy the iPad for the present value.
- 3) The student is obliged to directly contact the educational counsellor when the student drops out, or when the iPad is damaged, lost, or stolen.
- 4) The student bears full responsibility for the iPad and he/she is expected to treat it carefully and keep it in good condition.

Summarizing, the iPads remain property of the faculty and the students are free to use it as they want, but they do have to take care of it properly.

### **Deployment**

After making an initial estimation of the number of students starting in September, we put out an order for 100 iPads (16GB/Wi-Fi Only) at our IT department. As this was quite close after the initial launch of the iPad in the Netherlands, we were happy that a mere two days before the

deadline all the iPads had arrived. The IT department subsequently registered and labelled the iPads, and each iPad now has an individual, numbered asset-tag stuck to its back.

Importantly, the iPads were prepared by loading the university's configuration profile for our secured Wi-Fi network. This has to be done because of the strict security imposed by the wireless network, and the profile is a necessary part in gaining access to it. For iPhones this is easy, as one can retrieve the profile via the cellular network. However, for the iPad there is a sort of chicken-and-egg problem here, as you need Wi-Fi in order to retrieve the profile needed to access Wi-Fi. This can be circumvented, however, by pre-installing the profiles with the [iPhone Configuration Utility](#), so that the students can directly log in with their account. It is still not an optimal system, since the profile has to be activated immediately. So, if the student accidentally cancels the setup, the process has to be started over (and this happened more than I would have liked!).

The plan was to distribute the iPads at the first book sale on the first Monday in September, traditionally on the first day the students come to the university. The book sale is organized by our Society for Chemistry Students and they helped out in the distribution and registration. Here we also checked whether the students had actually enrolled, including an ID-check. On the same day, there was also time for a short introduction to the mobile learning initiative, during which we also managed to get most of the people online. For this it was quite necessary to have a laptop (MacBook in this case) handy with the aforementioned configuration profile. Not all people had received their wireless account info, but there were a number of temporary guest logins available.

After the initial hand-out of iPads to the students, we were left with a number of iPads, which were distributed to teachers who would encounter the first year students in the near future.

### **Involved parties**

Who played a role in all this? In no particular order, the list below shows some of the key players in the project. Although not specifically mentioned here, the students and teachers play an obvious role in all this.

*Project leader / coordinator:* Is the one that, obviously, coordinates the entire project. Was involved in setting up most of the practical issues; works and communicates with all the other parties.

*Management team:* Obviously important, as they make the important decisions and approve the budget.

*Students' Society:* Were important in the initial distribution of the iPads, which was carried simultaneously with the first book sale that the [Chemistry Students' Society](#) traditionally organizes.

*Educational Counsellor:* Is the first contact for students who have questions or trouble with education in general, and should be approached by students if something goes wrong with the iPad or if they decide to drop out.

*Communication officer:* In charge of providing prospective students with the information they need in order to decide to study at our faculty. Obviously mobile learning should be mentioned in this regard, but we have also employed the iPad as a tool in some promotional activities for Chemistry and Pharmaceutical Sciences.

*IT Department:* Were mainly involved in the setup process; ordering and registering the iPads, plus preparing them for the first distribution. Of course they are occasionally bothered with questions regarding, for example, the installation of iTunes on the student PC's.

*Audio-visual Centre:* We bothered them quite a bit about questions and solutions on the creation and distribution of media content on the iPad.

*Educational Centre:* Gives both technological and educational support throughout the project.

*Practicum Coordinator:* The person who is in charge of setting up the laboratory environments for the students' practical courses. He will play an increasingly important role in the project; he will also take a number of courses in order to enable him to create some (relatively simple) educational videos in the laboratory environment.

## Content

As stated earlier, the Mobile Learning Initiative was of course not only about the iPads, but also about improving the use of digital learning material in general. One of the major incentives for the introduction of the iPad was the ability to access audio-visual learning material on the lab with the iPads. Besides this, there are of course a number of existing and future possibilities of learning material on the iPads. I'll list a number of them here:

*Blackboard:* Most readers will be familiar with the Blackboard Learning management system. Used to distribute all documents for practically every course in the curriculum, the website is used regularly. It can of course simply be accessed from the iPad (although there are some small annoyances and incompatibilities with the iPad Safari browser). Although the content itself does not fundamentally change, it is now possible for the teachers to change the content 5 minutes before the lecture starts, and know that the students can immediately access the new material.

*Instructional videos:* We employed the help of laboratory student assistant (who had been helping out with the practical courses), who also had some experience with video production. During the summer, he produced a number of videos with practical instructions on laboratory equipment (on [youtube](#)), but also a small set of videos with safety instructions (on [youtube](#)). These videos are both useful in preparing for a practical course, but can also be used as reference material. We are now planning to give our new practicum coordinator some courses on video production, so that we can easily make some new, simple video material in the future.

*Weblectures:* Although it is possible to record weblectures on a high level through our audio-visual centre, this was for most cases a to elaborate (and thus to expensive) option. We've been striving towards a low-cost form of weblectures in the form of so-called [slidecasts](#). The latest setup involves a program called Camtasia, which has a very handy and easy to use plugin for PowerPoint, and works on both Windows and Mac. Together with a [Zoom H2 Handy Recorder](#), which captures the lecturer's area of the room, a lecture can be recorded which consists of the PowerPoint slides and the lecturer's voice.

The distribution of video material has happened via a number of ways, such as YouTube, the Dutch '[SurfMedia](#)', or directly on Blackboard. Ideal would be to use the, soon to be launched, iTunes U environment that works seamlessly on the iPad.

*Electronic textbooks:* So far it has not been easy to find electronic textbooks compatible with the iPad. On the one hand publishers are reluctant to distribute books and tend to lock them up in a web-based version (sometimes using the dreaded Flash-technology). On the other hand, teachers are usually quite attached to their textbook, and an electronic version that works on the iPad is not enough reason to switch.

*Applications:* As stated earlier, the students are free to install whatever they want on their iPads, and we have not obliged them to use particular programs (although we made some suggestions, of course). Though there are a lot of useful (and less useful) apps out there, the main thing that's still missing, the 'killer app', is the iPad laboratory journal. We are also working on a simple application that will give people easy access to the schedules and Blackboard announcements.

## Outlook

As the project is now continuing, some of the tasks will be distributed to a number of participants and the 'project leader' will have disappeared by the end of February. The main change is that the 'practicum coordinator' will take over a number of the more practical tasks such as the instructional videos and the iPad deployment and setup coming September. This position is ideal as he is in close contact with a lot of the lecturers, especially in the laboratory environment. Our educational counsellor will be, even more than now, the first point of contact for the students when there are troubles with the iPad, and especially if they decide to drop out. Things like electronic textbooks will be increasingly addressed by either the Chemistry Students' Society or the lecturers themselves. Also, we plan to have a set of comprehensive guidelines ready for teachers who, for example, want to record weblectures.