Pre-Arrival Support for Improvement of Programming Skills

Students arriving in Informatics come with a very broad range of previous practical programming experience, both at undergraduate and Masters level. This makes the teaching of programming courses difficult, and gives some students a significant advantage in their practical and project work. This is a proposal to provide students with the opportunity to gain additional programming experience before arrival. The proposal is aimed initially at MSc students, but would also serve as a pilot for possible undergraduate use, and for use as part of an online course.

The MSc "Introduction to Java Programming" (*) course is intended to give students the basic skills to write real, practical programs for use in other courses, their projects, and after they graduate. This is only achievable in ten weeks by assuming previous familiarity with some programming language, and moving fairly quickly - the course is based on a textbook (BlueJ) which would normally support courses of twice this length. Students are expected to take this course if they cannot already demonstrate an appropriate level of programming ability.

It is normal for one or two students to take this course with no significant previous programming experience. This is difficult and usually involves a good deal of extra time. But most of these students obtain at least a pass mark. Last year, there were a larger number of students (with CogSci background) who had no previous programming experience, and were rather unhappy about the effort required for the course.

IJP is already running largely as a "flipped" classroom with video and materials online, and the contact time used for supported lab sessions, and assessed demonstrations. Students have a wide range of different backgrounds, and they are encouraged to move at their own pace, moving quickly through topics which may already be familiar to them, and spending more time on those which are not (or on developing the practical assignments). In response to student feedback, we also provide an active forum which is monitored by demonstrators, so that students can get help at the times they are actually "stuck". This means that it should be possible to open the course to students pre-arrival, so that those with no previous programming experience would be able to start earlier, and develop their skills at a more comfortable pace.

In order to support this, we would need:

1) To have the course materials available early (by July, to allow for holidays)
2) To have good technology in place to provide remote support. This would include a replacement for the current discussion forum which is being deprecated by IS. And possibly other technologies, such as Skype.
3) A TA/demonstrator to support the students during this period.
4) Some mechanism for making sure that the incoming students were aware that this was available, and that it was highly desirable for those with no previous programming experience to take advantage of it.

Paul Anderson

(*) http://course.inf.ed.ac.uk/ijp