

PDP in Level 1 Computing Science

Extended Induction

FIMS ran a new form of induction this year. Attendance was mandatory for all FIMS students.

Prior to the main induction sessions, a large group of existing students, mostly Level 2s but also students right up to PG, met to discuss concerns they could remember having on entry to Level 1 as well as concerns they still had. This was both a form of PDP for the Level 2s, because it let them see how far they'd come in a year as well as focussing on issues still relevant, in the company of more experienced students who could comment on those ongoing concerns. At the end of the session, students were invited to assist with the session the following day with new Level 1 students, acting as mentors.

The main session used voting technology to anonymously draw forward information from the new students, working together in small groups, about their concerns on entering the University. These concerns were then ranked and addressed in order, using an open discussion format with new students, old students and staff all contributing.

Feedback on this session has been extremely positive. Students particularly approved of the opportunity to meet and chat with students around them; of the way in which the agenda was determined by their concerns; and of the way the technology made a very large group discussion actually seem quite intimate and involving – everyone had contributed and hence everyone felt involved.

Computing Science has since run a follow up session, in week 7, with its own students only. Over 100 students attended (over two-thirds of the class), and a similar format was followed, enabling another wide-ranging discussion on issues currently relevant to the students – money, exams, studying time were the particular highlights.

In all of this, we are attempting to encourage a reflective approach in the students, letting them see that concerns are usually widespread across the class, and that benefit can be gained by talking about them with others – including their peers, students in later years, and the staff.

Use of Mahara Blogs

Students in Level 1 are being encouraged to use Mahara blogs to record their learning experiences in the Level 1 programming class. It is easy to think that learning to program is all about getting programs to run. But research shows that learners learn little actually during problem solving processes, the majority of the activity in getting a program to run. Instead, students need to reflect on what happened during the problem solving process, writing down their successes and aspects that they know need more practice. Programming *can* be learned through problem solving alone – but the process can be accelerated by keeping a record of the learning milestones / realisations / breakthroughs, and looking back at it periodically. The Mahara blogs enable students to keep this record. Additionally, because the students set the course lecturer as a Mahara friend, he can read the blog entries too. Every week, the lecturer presents particularly interesting insights and learnings to the whole class. The valuable experiences of individual students are spread across the class in this way, and students get to see the value generally in sharing their learning experiences with other students. This is all part of the training in effective study techniques that are so lacking in many of our students.

Course structuring as a way to model good study habits

Students in Level 1 CS require to study regularly and often if the necessary skills for programming are to be effectively developed. This is not a situation peculiar to CS – it would apply to any subject area where skill development is crucial – for example Mathematics.

Traditionally, this regular application to their studies has been a problem for us, with students frequently appearing for laboratory sessions without having done the necessary preparation work.

This year, the course is structured with two items of preparatory work to be completed each week, prior to one of the lecture sessions and the student's laboratory session, respectively. The lecture and lab have been structured such that the student is obviously unable to make the most of the sessions if they haven't done the necessary prior work. This model seems to have been adopted successfully by the majority of students, with students appearing prepared for labs far more often than in previous years.

Our aim is to gradually reduce this level of spoon-feeding of the material, encouraging the students to adopt the necessary time-management skills to take a larger single body of work and spread it out across the week. We are being explicit about this removal of scaffolding so that the students are aware of the educational framework within which their learning is taking place, and know that they will have an increasing responsibility in setting their own work timetable.

Summary

These schemes recognise some important aspects of PDP:

- We can't always set the agenda. We often don't know what the students need, or about their learning breakthroughs. Letting them set the agenda and providing mechanisms for easy exchange of information between students is a step in the direction of the students see that they can take responsibility for their learning
- PDP in the early years, for many less-experienced students, is about improving study habits and learning processes. We aim to make these habits and processes more explicit for the students, so that they can see their progress more clearly.

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