Inquiry-based Learning Design Overview

Extending IBL in the Foundation Level in the Institute for Lifelong Learning

1. The students and the curriculum

Inquiry based learning elements were developed in the delivery and assessment of three key 20-credit modules which form part of TILL’s Foundation Programme in Combined Studies:

- ACE0310 Foundation 1 Return to Study (core module, semester one);
- ACE0316 Foundation 1 General Science (optional module, semester two);
- ACE0326 Foundation Arts & Social Sciences (optional module, semester two).

Numbers

Students directly engaged via Foundation Year One modules – 12
Students indirectly engaged via Foundation Year Two modules – 40
Students indirectly engaged via Level One NHE module (ACE1229) – 21
Students indirectly engaged via Level Two NHE module (ACE2170) – 15

2. The teaching and learning aims

Prior to this project, assessment and delivery within the foundation programme had been largely designed to prepare learners for a series of more or less traditional forms of learning experiences which they were anticipated to encounter throughout their studies in Higher Education. Typically, individual modules were assessed by a series of essays and a final exam, although some modules also included project work, individual presentations, portfolios or short answer (problem based learning) assessments. Delivery was generally via a variety of lecture and seminar based techniques, always in the context of small groups of students (maximum class sizes of 25; average class sizes of 12).

The IBL initiative was particularly desirable at foundation level in order to help adult part-time learners returning to study to draw upon their existing strengths in practical problem-solving and inquiry, and to provide a meaningful context in which they could develop the ICT and independent learning skills necessary to succeed in an HE environment.

The immediate teaching and learning aims for students were as follows:

- Enhanced research skills (both independent and groupwork);
- Increased ICT skills for a group of students who will require these skills in future study, but may not have had previous opportunities to develop them;
- Increased confidence with the nature of any given research/inquiry process;
- Improve learner awareness of the use of virtual learning environments as learning media.

In the longer term, it was hoped that the following impacts would occur:
Learners are better able to engage with the virtual learning environment and IBL techniques and forms of assessment in second year of the Foundation Programme;

There is greater retention of Foundation Programme students;

Students are better prepared for degree work across a wide range of disciplinary areas.

3. The inquiry/ inquiries

Whilst elements of the independent reading and learning which TILL sought to encourage in its learners might be loosely characterised as “inquiry based”, at the outset of the project it was acknowledged that there was enormous potential to increase and embed a much wider variety of elements of IBL tasks and assessments within the programme as a whole. There was a particular emphasis upon the enhancement and embedding of effective groupwork practices across the board in Foundation Programme modules.

ACE0310 (Foundation 1 Return to Study) includes a series of IT exercises which were developed in a way which introduces learners to the potential of the virtual learning environment and on-line reflective discussion/blogs to assist in the development of key thinking and research skills. In future instances of this module, students have also been introduced to group research projects looking at authors linked to the history of Sheffield.

ACE0316 (Foundation 1 General Science) includes three separate portfolios in Biology, Chemistry and Physics which were developed further through the introduction of a variety of problem and inquiry based tasks. The key task here was the conduct of an experiment at home looking at the growth of spores on soup. Individual students each set their own experiment running and then shared data and findings via an online blog.

ACE0326 (Foundation Arts & Social Sciences) was already assessed entirely by essays and a presentation. Delivery was framed in terms of encouraging learners to develop individual learning plans which can assist in the process of researching and answering specific questions – this module was therefore ready for the introduction of further IBL elements (both in and out of class). For the IBL project we developed a theme for the module around the study of the history and evolution of the city of Sheffield, viewed from the perspective of a range of different social science and humanities perspectives. One way in which we were able to pool research was through the use of a Flickr photo-sharing site.

4. The assessment

ACE0310 (Foundation 1 Return to Study): 48% Coursework; 20% Exam; 32% Other assessment

ACE0316 (Foundation 1 General Science): 81% Coursework; 19% Project

ACE0326 (Foundation Arts & Social Sciences): 90% Coursework; 10% Other assessment

Each IBL task was framed as a formative exercise to support existing assessment tasks including essays and presentations. The soup mould experiment in General Science was written up as a poster presentation by each student, making use of pooled data.
5. The 'process support'

As a result of the greater emphasis upon IBL tasks, a good deal of class time was given over to discussion of students’ developing enquiries, so that there was a much greater emphasis this year upon skills development rather than on individual subject content.

6. The information resources and strategies

No special resources were provided – rather, the emphasis was upon encouraging students to make use of pre-existing materials available in the University’s libraries and online; making sense of the standard stocks in trade of University life is an essential challenge for Foundation learners to meet.

7. The tutoring/facilitation approach

All sessions, being very much small group in nature due to the small size of the cohort during the year of the project, essentially took the form of seminars and tutorials.

8. The learning technology

Extensive use was made of blogs, discussion groups in the virtual learning environment, and the photo sharing website Flickr.com in order to facilitate communication, organization and collaborative research between group members.

9. The learning spaces

None during the project, but in future instances we have always taught the Return to Study and Arts and Social Sciences modules in CILASS collaboratory 2 in the Information Commons. This is an excellent space for facilitating IT enriched group working and, crucially, takes our students to the heart of the IC, helping build their confidence in using an essential resource which is, at first, often unfamiliar and intimidating.

10. What really worked

Informal feedback from students and tutors’ reflective comments suggest that the modules were successful in terms of developing students’ ICT skills and awareness of the virtual learning environment and other learning media. One student professed to have had no ICT skills whatsoever at the beginning of the Foundation Programme; by the end of the module he was the main contributor to the virtual learning environment site, Foundation Programme blog, and Flickr photo site. His ICT skills and awareness of the virtual learning environment increased markedly. Tutors are confident that this was true of all of the students, especially when compared to the intakes of previous years. There were some preliminary indications of positive impact between submission of the first and second assignments on ACE0326 in terms of students enhancing their research and inquiry skills. Development and refinement of elements of the approach, notably the use of online reflective journals, group presentations, and group projects in science modules have all further enhanced the quality of students’ independent study and research in future years.

**Advantages of the IBL approach at Level 0:**

- Time rich – time poor. This approach makes inevitable demands upon students’ independent learning hours, but can also impinge markedly on more “traditional” classroom contact hours too;
- At this level, online elements can only ever be an extension of, rather than a substitute for, classroom contact;
The IBL approach requires a clear introduction, and continuous and carefully structured support ("scaffolding"); It also facilitates the “de-centring” of classroom engagements, creating a less didactic and more collaborative classroom environment and atmosphere; It can be liberating and self-affirming, although there may be a tendency toward relativism too if the students are left to their own devices; The inexorable rise of web-based resources means that it is important that we maintain a clear focus upon information (and digital) literacy skills.

Student feedback:

“It was very interesting. The online support was very helpful. It seemed easier to operate within a smaller group. We were given all the support we needed with assessed work.”

“I liked the flexibility of the classes. Class discussion was encouraged as was personal research. Generally a good environment for communicating and sharing ideas.”

“I found the module really enjoyable if not a little confusing. I realise that the whole module was an experiment in teaching and learning techniques; keep tinkering!”

“Happy with feedback. I sometimes found the module a bit “soft” on facts, but it was possibly due to the nature of the subjects and my lack of understanding, rather than the module content.”

For more specific evaluation on the positive and negative aspects of using virtual learning environments and Web2.0 technologies to support inquiry-based learning see the presentations which are linked to from the right hand panel on the front page of this case study on the CILASS website.

11. Things to build on and/or do differently next time around

Student feedback was not wholly positive. For example:

“I didn't really understand the content of the course. This may have been because there never seemed to be enough time to look at any one subject area in detail. This was explained to us from the beginning but that didn't make it any easier to follow. There seemed to me to be more questions than answers and I found it difficult to follow the quick pace in which it was delivered.”

(Student feedback on the Arts and Social Sciences module)

“Sometimes it felt a little rushed, particularly through at the beginning of the course. I would have liked to do a little more work on each science, to give a more comfortable base to begin essay writing. It might be easier with one tutor, giving a clearer direction, sometimes it was a little difficult to follow the track of discussion.”

(Student feedback on the Arts and Social Sciences module)

12. Advice to others doing a similar project

Limited numbers on all Foundation year one modules in the year of implementation limited the extent to which new forms of group working were possible. Each module (with learner numbers of between 3 and 6 in each case) was comprised of “small groups” from the outset. We were, however, able to experiment with a number of new techniques and technologies, from which we are learning valuable lessons. It is apparent, for example, that the nexus between group working, the use of online and distance learning technologies, and the modes of formal assessment employed in modules needs to be carefully considered and planned for. It is essential that we avoid a situation in which students feel IBL delivery techniques and processes are in fact
“getting in the way of” the important business of getting the best grades possible for those components of the module which are specifically assessed. We need to ensure that the transformative and transferable benefits of IBL approaches are spelled out for students in tangible ways.

13. Further comments

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