

An aerial photograph of a vast sand dune landscape. The dunes are characterized by numerous parallel ridges and valleys, creating a rhythmic, wavy pattern across the terrain. The sand is a light, pale yellow color. In the lower right foreground, a single starfish is visible, its five arms extending outwards. The sky above is a clear, pale blue, suggesting a bright, sunny day. The overall scene is serene and natural.

The STAR Project

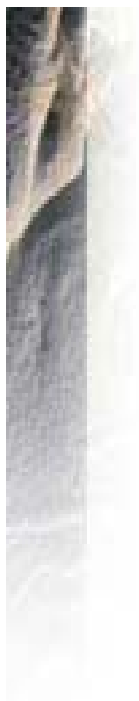
(Student Transition and Retention)

A Module in “Study in Higher Education”

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SUMMARY

The School of Earth Ocean and Environmental Sciences in Plymouth runs a skills module (*Study in Higher Education*) in the first term of a foundation course in extended science (level 0). It consists of 12 two-hour sessions, which include how to write a scientific report, how to use electronic information sources, how to take lecture notes and also matters of learning and the problem of misconceptions in science. The last half hour of each session is for student liaison. The aim of the module is to ease the transition for all of the students into the Higher Education environment. Feedback about the module is collected at the end of the autumn term via a questionnaire and this is followed up in the Summer Term by a further, more reflective questionnaire and focus groups. The assessment of the module is via a portfolio of work carried out during the course, demonstrating the students' achievement in a number of key areas.

Key Words: retention, induction, study skills, transition to Higher Education

INTRODUCTION

Students entering the higher education environment now come from a wide variety of educational and social backgrounds. The change into the higher education environment from the controlled environment of school, college or FE can be a challenging for a number of students, particularly if they are mature and/or have prior poor experiences in learning environments. The class sizes can differ dramatically (frequently much larger in higher education) and the teaching and assessment styles are based on more independent learning styles rather than being developed around a particular set of study skills and learning strategies, as in many secondary schools (Lowe & Cook, 2003). Not all students are well equipped for this change and can have difficulties in making the transition to their new learning environment. This case study relates to a module which directly addresses the need for students to rapidly change their study habits and adapt positively to their changed circumstances.

RELEVANCE TO THE STAR GUIDELINES

At its outset the STAR project researched, produced and published a set of guidelines based on the causes of student attrition and which pointed the way towards possible good practice. The STAR guidelines relevant to this case study are 2.3, 2.4 and 2.5.

- 2.3 Induction activities should support the development of those independent study habits suitable for Higher Education.
- 2.4 Induction events should provide the foundations for social interactions between students and the development of communities of practice.
- 2.5 Induction activities should promote the development of good communication between staff and students.
- 3.2 The course and its delivery should assist students' transition from their previous educational experience to studying at tertiary level as well as addressing the different needs arising from the subject backgrounds of the student cohort.
- 3.3 Students should receive regular, formative evaluations of their work early in their course or course component.
- 3.4 Attendance at all teaching sessions is a key requirement for success.

Cook, *et al.* 2005

THE PRACTICE

A *Study in Higher Education* module was begun in 1990 as part of the Extended Science foundation course at Plymouth. This course aims to enable non-traditional applicants to progress to a degree course in science at the university. The module has developed naturally over the last 15 years from an overtly skills oriented module to one with a wider remit to support transition.

This *Study in Higher Education* module was developed to introduce the students to the Higher Education environment and to develop scientific, learning and study skills early in their undergraduate career.

The short module description is as follows:

“This module is designed to enable learners to adapt to the Higher Education learning environment by the development of a more independent, reflective and self-managed approach to study, learning and time management.”

The module aims to:

- assist the development of an independent, reflective and self-managed approach to study
- enable learners to plan their time more effectively
- build confidence in learning, study and approaches to finding information
- familiarise learners with the Higher Education learning culture

At the end of the module the student will be expected to be able to demonstrate the following learning outcomes:

- write a laboratory report using an accepted model;
- present a piece of work using a word-processing package;
- closely reference work using one of the accepted protocols in science;
- reflect intelligently on their approach to information finding; and
- critically review sources cited as references

The module runs throughout the first term and is a 10-credit point module (100 hours of student effort). Each weekly session lasts for about 2 hours and some of the topics covered are listed below:

- writing a science report;
- approaches to information finding and referencing;
- how to take lecture notes and what to do with them;
- revision, test and examination techniques; and
- skills audits.

For the formal module description see Appendix 1. The module is taught by one member of staff, the programme manager (DJH), who is a scientist and also teaches a large part of the chemistry modules. Other academic staff who are teaching on the foundation year are aware of the content and ethos of this module and reinforce the approach in their teaching. The skills developed in the module are applied in other concurrent modules so that the skills acquired are contextualised more widely. For example, the use of electronic information sources is encouraged and rewarded in laboratory report writing in Chemistry, Physics and Biology. Students are also expected to critically review their sources of information in order to discern the scientific credibility of their source(s).

The last half hour of the two-hour session each week is for student liaison where the lecturer remains after the more formal proceedings and any student has the chance to speak to them about anything that they think could be improved on the course as a whole, administrative aspects of the course, academic subject matter or areas that are giving students cause for concern. This is a good opportunity for interaction: the students are empowered by being able to voice their opinion and the lecturer has a chance to get high quality feedback from the students as to how they are progressing and what elements of a module or the course they are having difficulty with. These sessions also help to identify those students who are not adjusting quickly enough or appear “weaker”. These students can then be directed to appropriate support, or example the Mathematics drop-in centre, on-line tutorials or a specific tutor or learning counsellor, as appropriate. It also allows students to receive timely feedback on how they are progressing and helps them to focus on areas where they might need to improve. This aids self-development.

The policy of this foundation course is to provide frequent and high quality feedback on assessments. For example in the Chemistry and Physics modules during the autumn term, laboratory reports are produced weekly, marked by lecturers and returned within seven days. This represents a considerable workload for staff and a cohort of 150 students but it has been found to be of immense value in improving students’ learning and understanding, as well as boosting their confidence. Assessments in the spring and summer terms are less frequent, as the students have developed considerably during the rather more intense opening term and the subsequent assessment regime closely mirrors that of stage one of a science degree course.

The *Study in Higher Education* module is assessed by a portfolio in which students accumulate evidence of their developing skills. It also provides a reference work to assist in the assessments associated with other modules. It has been found that in

addressing the requirements of the portfolio, students' written assessments improve and hence the module has a direct and measurable effect on their performance on the course. For example, the portfolio criteria address best practice in laboratory report writing and referencing. In order to produce work for the portfolio students are motivated to improve their practice in science modules in this respect and hence score higher marks in the science modules. There is also clear evidence of development of report and essay writing and presentational skills as well as greater sophistication in information finding, constructing arguments and the emergence of reflective writing.

RESOURCE IMPLICATIONS

The main resource implications of running the module are in terms of lecturer's time and the administrative aspects of running the module. There are 12 two-hour sessions run by one member of staff and with preparation time this represents a considerable workload. The assessment of up to 150 students by portfolio takes around 3 days for one lecturer to mark. The other modules in the course have evolved to support learner development, particularly during the crucial first term. A typical first year undergraduate module would have two or three assessments per term but Chemistry has nine and Physics ten, with each module reverting to four in the spring term. Hence, the marking load in concurrent modules is considerable, even when divided between the four members of staff taking the laboratory classes. The course, however, is so successful in facilitating the entry of non-traditional students into degree courses and with pass rates around 85% that staff are convinced of the efficacy of the assessment strategy and committed to its continuation.

EFFECTIVENESS

The effectiveness of the *Study in Higher Education* module is monitored in a number of ways:

- 1) by formal questionnaire at the end of the autumn term
- 2) by a more reflective formal questionnaire in the summer term
- 3) continuously and informally throughout the course: during the module sessions in the autumn term.

Students are encouraged to reflect upon their performance in the various modules on the course, as well as changes and developments in their interests in science as they progress. Liaison with admissions tutors, students and other academic staff during the year is encouraged. This helps students to make an informed choice of science degree course and encourages them to adopt a reflective attitude to their undergraduate experience and learning habits. Feedback, particularly from the questionnaire completed at the end of the summer term shows that the students find *Study in Higher Education* to have been practically useful in terms both of helping them to take notes and of improving their performance in assessment but also as an aid to their development as independent learners. A recurring theme from many students is their enhanced confidence; mature students, in particular, often lack

confidence in their ability to study at university level since their school or college experience may have been some years ago. Many do not have a family or cultural history of university. Many non-traditional entrants too may have had problems with negative experiences of their past academic history and hence they too need to develop the skills and self-confidence required to succeed at university.

The formal, university administered summer questionnaire shows agreement with all the positive statements about the module. There was strong agreement with statements related to the quality of the teaching (93% positive), the structure and organisation of the module (83% positive), and nearly 60% agreeing that the module was interesting and informative. 42 students completed the free response section. This asked students about the best aspects of the module and things that could be improved. Some critical comments were elicited such as requests for earlier information on e.g. writing lab reports and essays, or for shorter sessions. The majority of comments however, related to the need for more information. These were however balanced by other positive comments praising the course for general support in the development of study skills (10 students) helping them write lab reports (8 students) and the relaxed atmosphere. Although cited by only 6 students the timetabling of the session (early in the week and not at 9:00am) may have done much to contribute to the relaxed atmosphere. Thus two students referred to the best aspects as:

“Good time slot as it starts the week not too early.”

“Brill! Really useful to get us off to a good start each week!”

Although it is difficult to please everyone:

“The worst aspect? – getting up at 9.30 am.”

One student commented on the best aspects of the course:

“Introduces you to University life and facilities (especially the Library). Puts a voice and a face between formal requirements of University admissions and departments, and new students with questions and concerns. Gives an informal space for students to ask questions, and express concerns. Prepares you for tasks/demands of the laboratory and lecture theatre. Essential for the module to continue, as it builds your abilities for the oncoming challenge- A University degree.”

And cited as the things which could be improved:

“No critical comments really, only that it continues. University is daunting in the first few weeks. This module is vital for this pre-degree course.”

CONCLUSION

The investment in this type of foundation course in terms of staff time and teaching expertise is considerable. Over the past 15 years, however, over 1500 students

have become graduates of the University of Plymouth after attending this course. These are students who would not normally have been able to enter university directly into stage one to study for a science degree. Once a student has developed sufficiently as a learner they tend to require less support than average and it has been found that former Extended Science students are more likely to obtain a first class or upper second degree than a standard 'A' level entrant. The extra year's experience of university is clearly a critical factor here.

CONTEXT

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|-------------------------------------|--|
| <p>Institutional context</p> | <ul style="list-style-type: none"> • The origins of the University of Plymouth go back to the teaching of navigation to the navy from the reign of Henry VIII. • In 2003/4 it had 28,000 FTEs • 936 academic staff |
| <p>Departmental context</p> | <ul style="list-style-type: none"> • SEOES has 74 academic staff approximately • 1500 undergraduate students |
| <p>Course context</p> | <ul style="list-style-type: none"> • Students who are admitted onto the Extended Science Course are largely mature and often lacking in traditional qualifications. Completion of the foundation year permits automatic entry to any one of a range of Honours degrees at Plymouth. • Students study two sciences from biology, chemistry and physics – each with five hours of teaching contact time per week. There is an emphasis on practical work. • In addition there are two hours of maths per week which is complemented by a drop-in centre to provide further support and help. The centre is open each day of the teaching term. • In the first term there are also two hours per week of Study in Higher Education, the module discussed here. This module is replaced by statistics in the second semester. • In 2001/2 there were 150 new undergraduates on the foundation year. 100 were mature students and 46% were male. • Of these 150 students, 127 proceeded to year 2 (Stage 1 of an honours degree), 11 leaving early (6%), and 7 failing academically (3%) . • In 2003/4 there were more students from within 200 miles of Plymouth than from outside. |

REFERENCES

Cook, A. B.S. Rushton, S.M. McCormick and D.W. Southall, (2005) Guidelines for the Management of Student Transition. University of Ulster. Coleraine. Also at http://www.ulster.ac.uk/star/resources/star_guidelines.pdf (Accessed 05-08-05).

Lowe H. & Cook A. (2003) Mind the Gap: Are students prepared for Higher Education? The Journal of Further and Higher Education. 27: 54-76

CORRESPONDENCE

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FURTHER INFORMATION

STAR Case Study: Professional Skills Tutoring System at the University of Wolverhampton

<http://www.flinders.edu.au/teach/teach/firstindex.htm> - Strategies to teach first year students.

<http://www.support4learning.com/education/study.htm> - Resources for education / revision, Study skills.

<http://www.studygs.net/> - Study Guides and Strategies.

<http://www.vark-learn.com> - A Guide to Learning Strategies.

APPENDIX 1

Study in Higher Education module description

| University of Plymouth Module Record | | |
|---|----------------------|-----------------|
| Module Code: CMN001 | Credits: 10 | Level: 0 |
| Module Title: Study in Higher Education | | |
| Pre-requisite(s): none | | |
| Co-requisite(s): none | | |
| Compensatable within this Programme: No | | |
| Short Module Descriptor (For module catalogue). This module is designed to enable learners to adapt to the Higher Education Learning Environment by the development of a more independent, reflective and self-managed approach to study, learning and time management. | | |
| Elements of Assessment: Coursework 100% | | |
| Subject Assessment Panel Group: Extended Science | | |
| Module Aims: To assist the development of an independent, reflective and self-managed approach to study; To enable learners to plan their time more effectively; To build confidence in learning, study and approaches to finding information; To familiarise learners with the Higher Education Learning Culture. | | |
| Assessed Learning Outcomes: At the end of the module the learner will be expected to be able to: write a laboratory report using an accepted model; present a piece of work using a word-processing package; closely reference their work using one of the accepted protocols in science; reflect intelligently on their approach to information finding; and critically review sources cited as references. | | |
| Approval: Date of Approval: 12 February 2004 Date of Implementation: September 2004 Date(s) of Approved Change: | | |
| Faculty: Science | School: SEOES | |
| Partner Institution: Cornwall College | | |
| Module Leader: Dr David Harwood | Term T1 | |

Indicative Syllabus Content:

Skills audits and self-development

Learning in different contexts (lectures, laboratories etc)

Time Management

Staff-student relationship and expectations – a learning contract

Pre- and Mis-conceptions in Science

Primary and Secondary notes

Writing Science

Approaches to Information finding and referencing

Revision, Test and Examination Techniques

Assessment Criteria: referencing: appropriate protocol; word processing skills; report writing skills; reflections on critical review and literature search

Assessment Mode:

Coursework: Portfolio

Schedule of Teaching and Learning:

Weekly 2 hour presentation, workshop and/or seminar

Recommended Texts and Sources:

Stella Cottrell, (2003,) *The Study Skills Handbook*, 2nd Edition. Palgrave

John Peck & Martin Cole, (1999) *The Student's guide to Writing*, Palgrave

Graham Gibbs (1988) *Learning by Doing*, OCSLD, and on-line at

<http://www2.glos.ac.uk/gdn/gibbs/>

Phil Race (1996, 2nd Edition), *The Open Learning Handbook*, Kogan Page