

CPLA

Centre for Promoting Learner Autonomy

A Centre for Excellence in Teaching and Learning

Case Studies : Volume 2

Edited By:

Mike Bramhall, Christine O'Leary and Chris Corker



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Sheffield Hallam University

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Preface

Improving the student experience, together with developing students, both at graduate and postgraduate level, which are better equipped for work (and life) in the 21st century have been the focus of recent educational developments in Higher Education. Current educational thinking, particularly social constructivist theories, advocates giving learners greater control of their learning within formal curricula, in order to foster more effective learning and the acquisition of lifelong skills for future development. The Centre for Promoting Learner Autonomy (CPLA), a recognised Centre for Excellence in Teaching and Learning (CETL) in Higher Education in the UK, has been concerned with the promotion of learning and teaching practices which encourage learners to take responsibility for their own learning, and enable the co-construction of knowledge in partnership with tutors and other students. To this aim, the Centre funded a number of small scale and large scale practitioner/ educational developer projects, covering a wide range of disciplines such as Engineering, Nursing and Management, as well as aspects of personal and professional development, within its home institution, Sheffield Hallam University, between 2005 and 2010.

This is the second volume of case studies, based on the CPLA funded projects, published by the Centre.

The case studies, although varied in their scope and approach to curriculum development, show how learner engagement and involvement in the curriculum might be developed in practice in a range of disciplines. Some also highlight the possible benefits of a cross-disciplinary approach to curriculum development and student support (e.g. Nursing and IT). The importance of the collaborative aspect of 'autonomy', one of the key characteristics of the definition of 'learner autonomy' used by CPLA, is evident in all the case studies.

We hope that the case studies, included in this volume, will provide you with new ideas to develop your teaching practice, and to share with your students and colleagues.

Christine O'Leary

About the editors

Mike Bramhall

Mike is one of the Associate Directors of the Centre for Promoting Learner Autonomy at Sheffield Hallam University. He is a Professor of Engineering Education and is the Head of Learning, Teaching and Assessment for the Faculty of Arts, Computing, Engineering and Sciences within Sheffield Hallam. He is also the Associate Director of the UK Centre for Materials Education, a Subject Centre of the Higher Education Academy (HEA), based at the University of Liverpool. As well as being a National Teaching Fellow he is also one of the few Senior Fellows of the HEA. Mike has interests in not only learner autonomy, but also in enquiry based learning, the use of media and technology in teaching and learning, and the personal and professional development of engineers. He has published widely in all these areas.

Christine O'Leary

Christine O'Leary is a Principal Lecturer in Sheffield Business School (SBS), at Sheffield Hallam University, where she teaches Languages and Business. Since her appointment at Sheffield Hallam University in 1993, she has held a number of leadership and management roles including programme leadership, Learning, Teaching and Assessment Co-ordinator, and more recently Associate Director for the Centre for Excellence in Promoting Learner Autonomy (CPLA), Teaching Fellow and Director of the SBS Centre for Pedagogic Research and Innovation. Outside the University, she is a member of a number of professional associations, including the Higher Education Academy (HEA), the British Educational Research Association and the Association for Language Learning whose French Committee she chaired between 2006 and 2009. She is currently vice-president and treasurer of the Western Commission of the International Federation of French Teachers (CEO-FIPF). She is an active researcher and participant in local, national and international research networks in her area of interest, the development of learner autonomy. She has presented papers at both national and international conferences, and published articles in refereed publications in this area since the mid 1990s.

Chris Corker

Chris is the CPLA student intern. He is a Sheffield Hallam University graduate, having completed his BA in History in 2008, and his MA in History in 2009. He is currently a PhD research student with an interest in business history, exploring the British armaments industry from 1900 to 1939. Chris began working with the Centre for Promoting Learner Autonomy in 2008, and has been involved in providing project support, events planning and conference administration for CPLA. One of his interests in teaching and learning is the development of students as collaborators. He is also an Ambassador for the Student Learning and Teaching Network.

The editors would also like to thank everyone involved in the writing, reviewing and editing of case studies across both this volume and the previous Volume 1 of Case Studies.

Contents

Principles and practice of Learner Autonomy	7
The CPLA small scale project scheme - an introduction	11
Case Studies:	
Developing a student placement preparation framework	15
Rachel Bower, Cristina Lopez-Moreno and Maria Scheule (Languages, Sheffield Business School)	
An examination of the Venture Matrix™ as a mechanism to develop autonomous, enterprising students	27
Simon Clark and Charmaine Myers (Venture Matrix)	
Collaborative architectural technology / virtual reality project to support the design of new buildings for Shirebrook Academy	37
Penny Collier, Geoff Birkett and Richard Mather (Architecture, Faculty of Development and Society; Computing, Faculty of Arts, Computing, Engineering and Sciences, and Learning and Teaching Institute)	
"Writing it myself, that's the hardest part." Engaging Radiotherapists in graduate level writing	49
Jo Doughty and Cathy Malone (Radiotherapy, Faculty of Health and Wellbeing, and Learner Support Team, Student and Learning Services)	
To support student learning by embedding writing skills	77
Sue Forder, Cathy Malone and Karen Vernon-Parry (Engineering and Mathematics, Faculty of Arts, Computing, Engineering and Sciences, and Learner Support Team, Student and Learning Services)	
My Real Estate: a case study of staff and student collaborative research	89
Jill Fortune, Frances Hyde, Cathy Malone and Sarah Ward (Real Estate, Faculty of Development and Society, Learning and Information Services, and Student and Learning Services)	
Enhancing writing and digital fluency skills in Bioscience students as a route to autonomy	95
Jane Gurman (Biosciences, Faculty of Health and Wellbeing)	
Developing autonomous learning in part time 'return to learn' students	127
Mary Haynes (Education, Childhood and Inclusion, Faculty of Development and Society)	

Developing as a teacher project	141
Colin Jackson (Teacher Training, Faculty of Development and Society)	
A buddy scheme - supporting transition and progression for students with Aspergers Syndrome	149
Victoria Jackson (Student and Learning Services)	
Work based projects in the humanities: autonomous learners and satisfied students?	159
Alison McHale (Humanities, Faculty of Development and Society)	
Enquiry-Based Learning for Science of imaging technology	169
Sarah Naylor (Radiography, Faculty of Health and Wellbeing)	
Nursing IT: a peer assisted learning project for Nursing and IT students	177
Anne Nortcliffe, Peter Cogill, Elaine Stringer and Bridget Winwood (Computing, Faculty of Arts, Computing, Engineering, and Nursing, Faculty of Health and Wellbeing)	
"If you build it, they won't necessarily come!" Engaging student representatives beyond the course level	185
Mark O'Hara and Abbi Flint (Faculty of Development and Society, and Learning and Teaching Institute)	
A faculty-wide approach to embedding assessment for learning to enhance student learning experience	193
Christine O'Leary and Kiefer Lee (Sheffield Business School)	
Interdisciplinary and cross year course mentoring and integration	205
Chris Short, David Legge and Nicholas Pickett (Engineering, Faculty of Arts, Computing, Engineering and Sciences)	
The Alchemy Exchange	215
Lucy Skowron (Centre for Individual and Organisational Development, Sheffield Business School)	
"Putting students in the lecturer's shoes"	229
Rob Wilson, Elaine Stringer and Anne Nortcliffe (Sports Management and Nursing, Faculty of Health and Wellbeing, and Computing, Faculty of Arts, Computing, Engineering and Sciences)	

Principles and practice of Learner Autonomy

Learner autonomy is recognised as an important, but often misunderstood concept, and for this reason this booklet aims to clarify the term in relation to how it is interpreted and promoted at the individual and institutional level. The Centre for Promoting Learner Autonomy (CPLA) conceives an autonomous learner to be one who has developed the capacity to take at least some control over their learning. They can identify their own learning goals (what they need to learn), their learning processes (how they will learn it), and how they will evaluate and use their learning. The concept of learner autonomy involves addressing a student's stance towards their learning, reflecting a move away from the idea of simply memorising or learning to apply knowledge to being able to synthesise and contextualise the learning in a way that creates positive learning transfer (Knowles 1990). Key to developing learner autonomy is enhancing the learner's metacognitive and reflective skills and processes.

In other words, the aim is to enable students to graduate with a holistic set of skills, aptitude and motivation to learn in a rapidly changing world: they will have the ability to recognise what they need to learn, and how to learn fast (Baume, 1994). Holec (1981:3) defines learner autonomy as 'the ability take charge of one's own learning'. The emphasis here is on the learner and developing their capacity for self-directed learning (Lee, 1998), with an emphasis on having control over their learning process.

Fazey and Fazey (2001:345) describe autonomous learners as people who are:

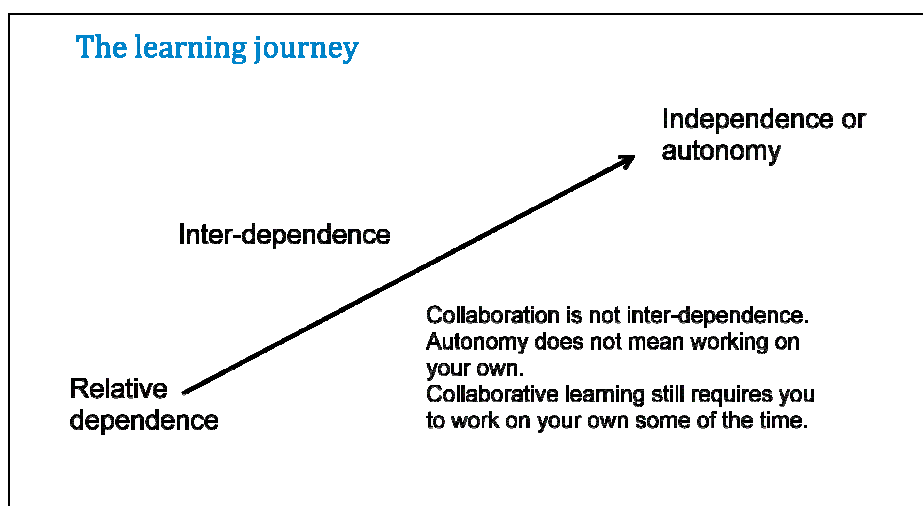
- intrinsically-motivated, perceive themselves to be in control of their decision-making,
- take responsibility for the outcomes of their actions, and
- have confidence in themselves.

In order to learn effectively and independently, it is necessary for students to have good information processing skills. They need to be able to develop strategies for finding, evaluating and using relevant information. Finally, they need to be able to manage their learning. These four concepts (a conceptual stance towards higher learning; a willingness to learn; information skills; and ability to manage their learning) are summarised in the table below and form the acronym SWIM. This is a useful metaphor as it implies that students must learn to swim for themselves, but that we will not let the students drown. The amount of support we provide will depend on how effective they have become at taking responsibility for themselves and how well they have developed relevant learning skills.

STANCE TOWARDS LEARNING Orientation to learning (what and why, reflective) A range of appropriate learning strategies Know how they learn and how to improve how they learn	WILLINGNESS TO LEARN Balance of vocational, academic, personal and social motivations to learn Intrinsic motivation Extrinsic motivation Goals Short - Medium - Long Confidence
INFORMATION Can identify what they know Can identify what information they need Develop a strategy for finding it (different resources) Can get the information Evaluate different sources of information for relevance and credibility Can use the information and add it to their knowledge base	MANAGEMENT Study Skills Planning and problem solving Evaluation & Metacognition Self-assessment Focus & 'stickability' Time and project management Balancing social, work and learning needs Assessment

In short, the learner possesses ownership of their own learning process, which in turn is manifested in changes in their knowledge, ways of conceptualising the world around them, skills and even emotional development. At an institutional level, the Centre strives to encourage effective orientation and a deeper approach to learning. Additionally, it promotes a culture of reflection and engagement that support students in developing an appropriate conceptual stance towards their learning in a Higher Education environment.

The process of developing autonomy is not quick. We can conceptualise the student experience as a journey from relative dependence to independence or autonomy as a learner. An interim stage may well be one of inter-dependence. Students will clearly need some form of support from tutors, but they may well rely on other students. Indeed, it is often desirable for students to work and learn collaboratively so as to encourage the development of teamwork and other professional skills. However, collaborative work still requires students to accept individual responsibility for their contribution to group work and for their own learning.



Engaging with principles of learner autonomy allows academic staff to rethink their role in supporting the learning process. Learner autonomy is in part about partnerships between learners and tutors, and as students make more decisions about their own learning processes, the more lecturers will become facilitators for that learning rather than directors of it and the source of relevant information.

The focus thus shifts the very balance of power and responsibility from the institution and the teacher to the learner, and ideally the learner should have full responsibility for their own learning. What this means in practice is that:

The teacher acts as a facilitator and a resource-person. Students are responsible for choosing and planning the curriculum, or at least they participate in the choosing. Learning is self-initiated, and often involves the process of enquiry and discovery; the learner is also responsible for evaluating the results. A difficult concept to grasp, at first, is that each individual is 100% responsible for his [or her] own behaviour, participation and learning. (Brandes and Ginnis, 1986: 12)

Baume (1994:3) argues the idea of learner autonomy encompasses two main elements:

As a goal of education, the goal being to help students become effective self-directed learners, and as an education method, introduced for a variety of education, philosophical and economic reasons, perhaps operated alongside other teaching and learning methods, within more or less conventional types of course structure and organisation.

There are various active learning and teaching approaches which certainly foster the development of skills and aptitudes that characterise an autonomous learner - such as enquiry based learning (EBL), problem based learning (PBL) or work-based learning (WBL). While 'learner autonomy' has occasionally been equated with the idea of 'independent learning', the concept itself is also very much related to the concept of collaborative learning

(Kohonen, 1992). Hence, group work or peer assisted learning can therefore be an effective way of fostering learner autonomy. This publication will give you some ideas of teaching and learning practices that allow students to learn more autonomously. It will also provide some concrete examples of teaching methods that staff at Sheffield Hallam University have engaged with in view of enhancing learner autonomy, and how this has affected staff's teaching experience, not to mention the effects it has had on the students' learning experience.

Incorporating elements of learner autonomy in a higher education teaching and learning environment has been recognised as good practice by HEFCE, and far from being a completely new development many lecturers are already engaging with some of these principles in their teaching practice. Paul Ramsden's report on the future of teaching and the student experience in HE to the Secretary of State John Denham highlighted the *need to maintain and enhance student engagement* (2008), and to counter the view that students should be treated as customers who have a sense of entitlement. Rather, he argues that they should be perceived as partners who are provided with opportunities to learn. This all highlights the need focus on the student as an active participant in the learning processes.

On a positive note, students who become autonomous learners are much more fun to work with: they ask interesting and often unexpected questions; they are motivated and often imaginative in their approach to tackle questions put to them (or ones that they have set themselves); they grow in confidence to express their views - and you might even find that your own students will put extremely interesting questions to you that you might want to research further. The case studies included in this book will demonstrate the positive enhancements to learning *and* teaching experiences for both students and staff engaging with concepts around learner autonomy.

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The CPLA small scale project scheme - an introduction

This is the second volume of the Centre for Promoting Learner Autonomy (CPLA) case studies, which presents a wide range of small scale innovations in learning and teaching at Sheffield Hallam University. The CPLA small scale project scheme has provided funding to, and supported, proposals that promote a gradual change in learner attitudes. This is attributed to our education philosophy which values the development of learner autonomy, envisaged through the development of a more appropriate conceptual stance towards learning in Higher Education, the enhancement of learning skills and the support of lifelong learning.

The overall purpose of CPLA is to promote learning and teaching practices which empower students to acquire responsibility for their own learning through promoting and innovating ways of enabling students to construct their own knowledge in partnership with tutors and other students. CPLA thus operates as a hub to foster innovative developments in actual teaching practices, and to promote a cultural change that aims to put the student at the heart of teaching and learning practices in profound and effective ways.

CPLA has encouraged and supported staff to think of different ways of actively involving students in their own learning processes, building excellent teaching and learning practices that foster a sense of autonomy in our learners. Our innovation projects produce a range of resources that aim to achieve effective orientation to higher education, encourage deeper approaches to learning, and develop a culture of reflection and engagement that supports students through their university studies. The expectation is that our resources for 'learner autonomy' will enhance the students' experience by encouraging student transition, progression and achievement in higher education.

A priority for 'higher learning' at university is the development of consistent and effective support that adequately prepares students to make the transition into higher education. A key objective has been to embed supportive mechanisms for students at key points of transition throughout the student lifecycle. Our innovation projects have trialled peer tutoring schemes that integrate course content and study skills through collaborative working and a 'buddy scheme' based on mentoring and coaching techniques that support pre-entry students during their transition to university from schools and colleges. In addition a number of 'student-owned' resources that focuses on the academic, career and social aspects of the student experience have been developed to aid social integration and enhance student retention and success in higher education.

Engaging students in an authentic learning experience that focus on real-world situations and outcomes, with problem-based learning, experimentation, case studies and group activities as key features, defines the approach to learning at Sheffield Hallam. Our innovation projects have established initiatives that develop the workforce skills of students. Some of these include: the creation of a virtual trading enterprise that equips students with entrepreneurial and enterprise skills; work-based project modules that enhance students' employability skills; short-term consultancy and student-led projects that exposes

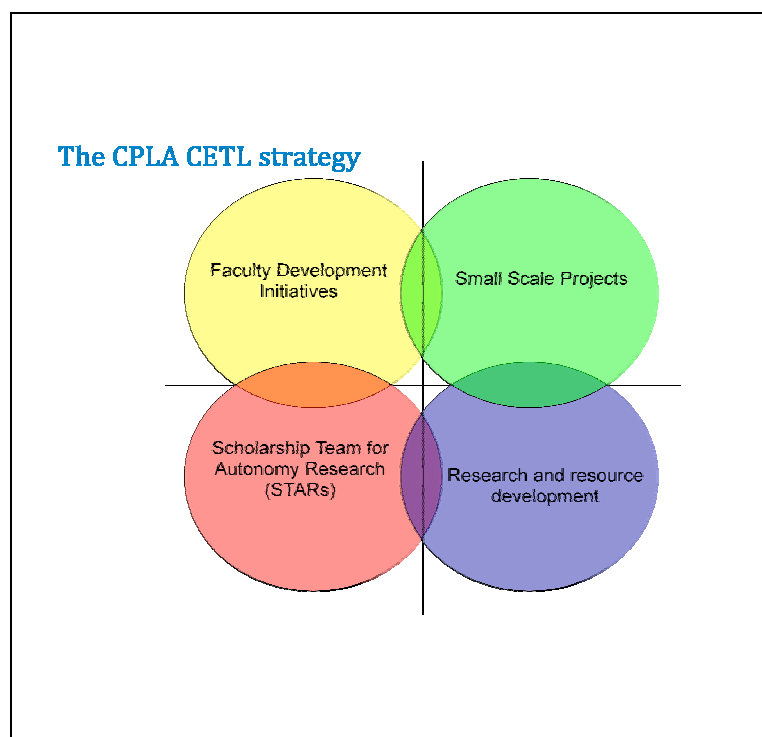
students to 'real-world' work as part of a more holistic academic learning experience; and enquiry based interdisciplinary learning techniques that enhances transferable skills and promotes learner autonomy.

This publication serves to support the work of CPLA in disseminating its work across the Higher Education sector. The case studies are a useful resource to support academic staff interested in developing autonomous learners. They cover a range of practices such as enquiry based learning; feedback on assessment; mentoring and peer assisted learning; developing resources; interdisciplinary learning; project and problem based learning; and negotiated and collaborative learning. There are also case studies around developing effective learning environments; educational development; managing change; and supporting communities of practice.

We hope these case studies provide ideas, all of which are evidence-based, for academic staff, support staff, educational developers, and senior managers. We also believe it will be an inspiration for those throughout HE who believe in the value of active learning, enquiry based learning, and collaborative learning as a means of developing learner autonomy.

An overview of the CPLA small scale project scheme

Many of the case studies in this publication arose as a result of our strategy, which involved four interlinked areas of development as shown in the diagram below:



Through these activities:

- we facilitate the implementation of strategic initiatives in each of our four faculties;
- we stimulate, direct and support the development of a range of innovative teaching practices through our small scale project scheme;
- we enable a scholarly approach to the learner autonomy agenda;
- we develop and provide resources, supported by thorough research, evaluation and capturing the outcomes of supported development projects.

The small scale projects were initiated through a competitive bidding process. In February 2009, staff were invited to submit bids for project support and funding of up to £3,000 from CPLA. These were one-year projects that started in September 2009, and required staff to pursue approaches that promoted Learner Autonomy. The submissions followed a bid format, which included the headings in the table in the Appendix. Applicants were required to seek the approval of their subject group leader or head of department and were asked to consult with their respective Faculty Associate Director of the CPLA. These requirements assured that, in addition to meeting the bid criteria, proposals met with University, Faculty and Departmental strategies.

Through CPLA, 21 small scale projects were supported in the academic year 2009/10, 7 of which were interdisciplinary projects. This involved over 70 members of staff and had an impact on approximately 6,500 students. CPLA project support was provided throughout the year. This included a series of workshops, action learning sets and 'at-elbow' support. The workshops addressed issues such as underpinning literature and scholarship of learning and teaching; the meaning of Learner Autonomy; project management; evaluating the student learning experience; and publishing your work. The action learning sets were developed to encourage a community of practice and to enhance a scholarly approach to the development work. At-elbow support ensured that CPLA was able to support the individual needs of project leaders. An interim poster seminar in January 2010 allowed all projects to share their progress and future plans, and a final conference in June 2010 facilitated dissemination of the outcomes from projects. These dissemination events also reinforced the need for scholarly approaches to development and reinforced the community of practice. Guidelines and a framework were provided for the posters and final conference, and these served as a first stage towards producing a final case study of the development project. Project leaders were supported in evaluating their innovations and in preparing their case studies. A number of project leaders also presented their work and findings at national and international conferences and in relevant journals.

This publication comprises eighteen case studies which have arisen from the work of CPLA. Most have come from the small scale project scheme in 2009/10 although several of the case studies arise out of development work carried out between 2005 and 2008.

Kenisha Garnett (CPLA Researcher)

Ivan Moore (CPLA Director)

Appendix: The criteria and framework for the bidding process

Summary of proposal. (Include aims, objectives and anticipated outcomes.) How will partners be identified, trained and involved in the scheme? How will the new cohort be prepared for this engagement?
(max. 100 words)

Background/rationale for the innovation (include potential breadth of applicability/transferability of project) How will the partnership scheme benefit both groups of students?
(max. 100 words)

Project action plan (Give stages in implementation, *who* will do *what* and by *when*? Indicate extent of collaboration with colleagues and students)
(max. 250 words)

Benefits (identify the benefits in terms of student learning and promoting learner autonomy across the institution) (max. 150 words)

Corporate plan (identify how this project will address the goals established in section 2 of the corporate plan (improving the student experience). Particular reference should be made to recruitment, transition and retention) (max 100 words)

Evaluation (Specify how the aims, objectives and outcomes are to be evaluated.)
(max. 150 words)

Funding requested (Indicate purpose of funding: staff time, equipment, external expertise, travel and subsistence, materials, stationery etc.)

Supporting statement from your Subject Group Leader. (Please indicate in what ways the proposal is integrated with the faculty/divisional strategy for learning and teaching. Include any other forms of support which you will receive if this application is successful.) (max. 100 words)

Developing a student-centred placement preparation framework

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From fresher to employee - developing learner autonomy skills for the journey

How do we provide progressive and varied opportunities to develop learner autonomy during this journey?

How do our students develop learner autonomy skills to equip them for the graduate market?

Abstract

Through this case study, we will demonstrate how our student-centred placement preparation framework takes students (from any discipline) from fresher to graduate employee, developing the qualities and skills of an autonomous learner on each step of their journey.

This case study would be of interest to colleagues wishing to harness collaboration and technology to deliver practical, achievable measures to develop learner autonomy across a graduate programme with a placement element.

The objectives of this project are to place the learner at the centre of their own autonomous development, to enhance the student experience, to improve students' employability skills, and to help students take greater responsibility for their learning prior to, during and post placement in terms of preparation, engagement and outcomes.

The project has undertaken qualitative research based on focus groups and questionnaires with current students and face-to-face interviews, audio question and answer sessions, and questionnaires with current placement companies.

This paper invites you to put yourself in the shoes of a young adult student aiming to translate the skills and competencies gained on placement into graduate employment.

Background

The project relates to languages (French, German, and/or Spanish) and international business, marketing or tourism undergraduates on a four year degree programme with a one year compulsory industrial placement.

The project is transferable to sandwich courses of any discipline. Indeed, elements of the project have already been incorporated into the Sheffield Business School faculty-wide placement programme in terms of students (rather than placement officers) taking more responsibility for analysing whether they have the skills and attributes required for a particular placement role.

Fazey and Fazey (2001) define learner autonomy in terms of motivation, perceived control, taking responsibility, and perceived competence, which is reflected in research of other experts in the field of learner autonomy. "Autonomous people are intrinsically-motivated, perceive themselves to be in control of their decision-making, take responsibility for the outcomes of their actions and have confidence in themselves" (Fazey & Fazey, 2001: 346-7).

Students on this programme require a high level of motivation as the 18 months studying and working abroad is compulsory and this requires courage and intrinsic motivation - a desire 'to know', 'to achieve', and 'to be stimulated' (Vallerand et al, 1992).

Motivation is encouraged and harnessed within this framework by demonstrating the value of placements, through peer-mentoring and by developing graduate opportunities with placement companies.

In terms of perceived control, people "who generally feel that their success or failure is under their own control, are described as having an internal locus of control." "The development of positive aspects of these psychological characteristics is affected both by individual factors and those in the environment" (Fazey & Fazey, 2001: 348).

The framework enhances perceived control through multimedia resources to learn more about the company, the role and the experience of previous students, peer-mentoring with final year students, placement positions open to all applicants and preparation for graduate job-seeking in a safe environment.

Fazey & Fazey, (2001: 347) determine perceived competence as follows: "For learners to be self-determined or autonomous, they must have a sufficiently high self-perception of competence to be prepared to risk a short-term failure at a task which they feel is important."

This framework provides a step-by-step framework which offers support and guidance at every point in the journey, as students develop from relative dependence to independence and autonomy.

"Speaking to students who have had the experience of going abroad. They offered a lot of advice and reassurance" (Student feedback from networking and information event).

Fazey & Fazey, (2001: 359) describe the aspect of taking responsibility as "High quality teaching, that focuses on developing student autonomy in learning, will offer opportunities for the development of all individuals, including those who might be at risk". Radford (1991), states that taking responsibility should "allow for personal choice and control."

Within the framework, students engage and take responsibility through exploring personal strengths, weaknesses, skills and attributes, receiving and acting upon step by step guidance and feedback on producing a CV and application letter which presents them at their very best. They also receive guidance and feedback for mock interviews, and through the fact that a successful interview requires you to take responsibility and is real preparation for graduate job-seeking.

The project aims to provide differing levels and types of support for students on each step of their journey from fresher to employee and as such incorporates a reflective approach to learning. Students are provided with the tools to reflect on each stage of the journey and to apply this knowledge to their next steps.

Anticipated outcomes and benefits

Anticipated outcomes and benefits of the project were as follows. Firstly, students will take greater responsibility for their learning in preparation for, during and following their placement period. Secondly, students will gain a better understanding of the activities of the placement companies with whom we work, and their potential role as a placement student in that company. Thirdly, students will have enhanced potential for success on placement through taking responsibility, reflection and taking appropriate action. Fourthly, students will develop reflective, collaborative and mentoring skills for their own and others' benefit. Fifthly, enhanced enjoyment and understanding of the value of the placement experience will have positive effects on current and future students' perceptions of the programme of study. Finally, and most importantly, enhanced employability skills for students.

Rationale

The initial rationale for this project was a direct result of meetings with senior managers of placement companies who wish to welcome students who possess a greater ability to work autonomously and who have an understanding of the company's activities through experiential learning and research prior to commencing their role in the company.

"Sheffield students doing their internship at our company learn very quickly and are very good to cooperate with." (Monika Nagyova, Senior Community Manager, Toluna, May 2010).

"Excellent quality of applicants; Diversity of experiences, and of foreign experiences."
(Constance Rieztler, Voyage Unique May 2010).

The under-pining rationale behind the framework was to provide preparation for job-seeking (prior and post placement) in a supportive, and safe environment. This required an overhaul of the placement application process for my students, in relation to the strategies of my predecessor.

Firstly, all placement opportunities were opened up to all students, rather than at the discretion of the placement officer as had happened previously. This provides the 'perceived control' of learner autonomy as described by Fazey and Fazey (2001).

Secondly, all students were encouraged to take responsibility in choosing to apply for the placement positions which best match their skills, competencies and personal attributes. This incorporates the 'perceived competence' of learner autonomy as described by Fazey and Fazey (2001).

Thirdly, all students are supported until they have produced a CV and application letter which reflects them at their very best, which relates to the 'perceived competence' of Fazey and Fazey (2001)'s learner autonomy theory.

"The feedback on the CVs and covering letter was very useful for finding placements."
(Anonymous module feedback questionnaire, BSC2 French 2009/10).

" We are very happy with the standard of applications from Sheffield Hallam University."

"The quality of the phone interviews is good, the candidates are well prepared to present their skills and experience." (Monika Nagyova, Senior Community Manager, Toluna, placement company in Paris, May 2010)

Finally, in relation to the importance of motivation, as described by Fazey and Fazey (2001), the placement becomes not simply a compulsory element of a degree programme, but an integral part of a student's development towards graduate employee.

How do you feel about your placement period now?

"more prepared and excited rather than nervous." (Anonymous module feedback questionnaire, BSC2 French 2009/10).

Final year project event feedback.

"Very helpful at planning for future and highlighting weaker areas" (Current final year).

"ability to critically analyse placement year" (Current final year).

The Approach

The Framework

Step One - pre-placement preparation

Peer mentoring with final year students, including small group peer mentoring for specific placement companies

Through the regular point of contact of the Language Learning Resource Centre at SHU where final years are employed in the Open Access area, 1st and 2nd year students have the opportunity to discuss informally and formally any questions or issues prior to the placement period. These opportunities provide the 'perceived control' discussed by Fazey and Fazey (2001) in that students take the initiative to seek answers and can hear advice from fellow students who have experienced the placement period themselves, rather than from the placement tutor and academic tutors only. The student perspective is very important.

Some examples of the activities organised by final year students for the benefit of 2nd year students going on placement are listed below

"set up meetings for mentoring activities" (Nicola Palmer, final year Italian student).

"answered questions and advised prospective students on future projects" (Thomas Dunning, final year German student).

"offered advice to students on interview techniques" (Julie Billson, final year Spanish student).

Megan Poundall (final year French student), Julie Billson (final year Spanish student) and Nicola Palmer (final year Italian student) provided small group mentoring sessions with 1st and 2nd year students.

Student networking and information event

This was an event by students for students, with final year students agreeing the structure, content, organisation and preparation. Final year students were particularly involved in planning meetings, advertising the event, creating a brochure for attendees to take away, preparing and delivering tailored presentations, organising and providing hospitality, setting up question and answer sessions, and taking bookings for follow-up, tailored, small group mentoring sessions. Specific practical advice was provided by final year students on accommodation, finances, interview techniques, and living and working life in the target language countries. This event gave the students the opportunity to take responsibility and had the potential to increase student motivation, as described by Fazey and Fazey (2001).

"talking to past students was very useful. I found out a lot of new information and has made me more confident about going! (really excited!)" (Anonymous participant at networking and information event).

Access to company dossiers produced by students on placement

The company dossiers produced by current placement students provide details of an overview of the placement: information to note at the start of the placement, a step-by-step description of the role, the placement student's role within the team and the team's role within the company, the impact of the placement student's actions on colleagues, the team and the company, how to tackle a specific aspect of the placement role to meet company objectives, and a specific research point such as how to increase the target market, the impact of the use of English as the office language, and the impact of the internet as a marketing tool. These dossiers are for use for current and future students to assist with choosing an appropriate placement, preparing for placement interviews and making a success of the placement period. Students who have produced the dossiers have been given feedback which will assist in improving their production of placement assessed work. This strand of the framework provides for all four of Fazey and Fazey's (2001) requirements for learner autonomy, motivation, perceived control, taking responsibility and perceived competence.

Access to questionnaire completed by current placement students which gives advice on everything from successful study, socialising, mobile phone contracts, bank accounts, accommodation, applying for benefits and funding, utility contracts, broadband contracts, travelling, registering with a doctor, medical emergencies, personal insurance and students' top tip for a successful time abroad. This information can allay student fears and provide them with the 'perceived control' as outlined by Fazey and Fazey (2001).

Audio and photo resources from placement visits

On scheduled placement visits I have requested permission to take digital photos of the company premises and staff and have made digital audio recordings of interviews with placement line managers, relating to the benefits of SHU placement students for the company. This strand can increase student motivation in that they have a greater understanding of what to expect from the environment and colleagues when arriving on placement, and the value in which SHU students are already held by placement companies.

Placement activity scenarios for collaborative learning

From an increased knowledge of the company role through line manager questionnaires and student research dossiers, I am developing real-life scenarios which students are likely to encounter on placement and which can be explored and prepared for in the pre-placement module. The development of this strand in the teaching context provides for all four of Fazey and Fazey's (2001) requirements for learner autonomy, motivation, perceived control, taking responsibility and perceived competence.

Step two - whilst on placement

Completion of company dossiers

As described above.

Enhanced support

Students are given feedback on their company dossiers which assists in their assessed placement tasks as described above, providing 'perceived competence' as described by Fazey and Fazey (2001).

Negotiation of appraisals and opportunities for further progress and new opportunities on placement

Greater contact with the student encourages greater opportunities for appraisal and progression. Future students are likely to make greater progress as they are more prepared for the role they will undertake on placement, providing all four of Fazey and Fazey's (2001) requirements for learner autonomy, motivation, perceived control, taking responsibility and perceived competence.

Step three - post placement final year

Graduate employment workshop in conjunction with SHU careers and employment service

This workshop, entitled "translating your skills into graduate employment", was open to all final year languages students and provided: mapping of personal and language-specific skills using the STAR (situation, tasks, action, results) model, evidencing experience for future employers, understanding job specifications, improving interview techniques, drawing up a personal skills profile, accessing resources from the SHU careers and employment service and the Higher Education Academy and reflecting on next steps.

Anonymous feedback questionnaire from the workshop:

Student responses to positive aspects of the workshop:

"learn to demonstrate my skills"

"learn interview techniques"

"great way to show off your skills and see what firms are looking for"

"very helpful at planning for the future and highlighting weaker areas"

"relevant with very useful information"

"ability to critically analyse placement year"

Students comments on future plans after workshop:

"create a new CV"

"practice analysing job specs"

"apply skills to job applications"

The success of this workshop demonstrated all four of Fazey and Fazey (2001)'s requirements for learner autonomy, motivation, perceived control, taking responsibility and perceived competence.

Mentoring and collaborative working skills working with first and second years

Final years are able to add the above skills to their CV as a result of their collaboration in the project, a further opportunity for perceived competence, as described by Fazey and Fazey (2001).

Access to potential graduate employers

Closer cooperation with placement companies is ensuring that we are also being offered graduate internships, and temporary and permanent graduate posts which our open to our final year students.

Evaluation

The holistic and step-by-step approach of the placement preparation framework is leading to a more focussed and improved student experience where students can clearly benefit from each stage of the process and can perceive how one stage links to the next. This is borne out by the fact that all students have been placed in record time for 2010/11, demand outstrips supply (I have seven placements which I cannot fill as students have already been placed), and the comments from employers above testify to the quality of the applications. It can be seen in the quotations above that students are optimistic about their placement period.

Students have engaged positively with the framework as can be seen from the quotations above.

Improved selection of appropriate placement positions and focussed letters of application (as quoted above) are evidence of students' greater understanding of the company and the placement role, greater reflective skills, a clearer understanding of how to interpret job specifications and apply relevant transferable skills. The record recruitment rate demonstrates the motivation and responsibility of students to find the best placement for them, rather than what is suggested to them by the placement officer.

Evidence of improved performance on placement will be evaluated in 2010/11 as the first cohort participating in the pre-placement module and activities of the framework undertake their placement period.

Employer evaluation forms of this cohort will testify whether students arrive with a greater understanding of the company and their role and whether they are able to work autonomously in situ.

Positive comments from the 1st and 2nd years of the student networking and information event would suggest that final years are developing effective collaborative and mentoring skills.

Feedback questionnaire from 1st and 2nd years at the networking and information event. The most useful part of the event:

"group talk specifically in tables and discussing not only the study and work but live in general" (Craig Clarke, German student).

"being able to ask the final years questions" (Andrew Dover, 2nd year French and Spanish student).

"the fourth years were very informative and helpful" (Jennifer Pearson, 2nd year French and Spanish student).

"I found out a lot of new information and has made me more confident about going! really excited!)" (anonymous participant).

"speaking to students who have had the experience of going abroad. They offered a lot of advice and reassurance" (Amanda Chatburn, French and Spanish student).

"talking first hand to final year students" (anonymous participant).

"the leaflet" (produced by final year students) (anonymous participant).

"we could ask questions on a personal level" (anonymous participant).

Graduate destinations for 2012 and future graduates will testify as to whether the framework has improved students' employability skills. I am confident that this will be the case.

Weaknesses of the framework to address

1) Timing - final year students required the graduate employment workshop earlier

"timing of event - 1st semester as people apply for jobs from 1st semester" (anonymous participant at graduate employment workshop).

This will be remedied for 2010/11.

2) The networking and information event was perhaps a victim of its own success in that the sheer number of attendees was not always conducive to achieve all aims.

Responses to networking and information event, ways in which it could be done differently:

"maybe different rooms for the separate talks if possible because too loud to hear and not enough room" (Jessica Bailey, French and Italian student).

"smaller groups so all students are integrated" (anonymous participant).

Further development

Students at the network and information event have suggested the following improvements which will be put into place for 2010/11.

"one-to-one chats available for personal questions if feel shy etc" (Craig Clarke, German student).

This could be delivered through the follow-up small group mentoring sessions.

"information sheets to be taken away" (Elliott Casson, participant).

The tips and advice questionnaire can be incorporated into information sheets for 2010/11.

"giving more information instead of students asking the questions" (anonymous participant).

Presentations could be extended but the opportunity to ask questions is highly valuable as can be seen in the quotations above.

"perhaps more final years" (anonymous participant).

Final years' participation is not compulsory so we rely on their goodwill. Producing more written information could balance this.

"set times that are allocated for multiple languages" (anonymous participant)..

This is important to address for students studying more than one language so they have access to all information and discussion.

"Maybe just for 2nd years, so it can be more focussed. Some first years didn't seem that interested"

For 2010/11 there will be a specific progressive programme of events aimed at specific year groups in cooperation with SHU careers and employment service, as follows:

- 1) Pre-placement with 2nd years - 1 session on identifying personal skills and attributes in early October and 1 session on CV writing in early October for all language students.
- 2) Final years - a repeat of the graduate employment workshop, but this time in semester 1.

Conclusion

Participation in the project has been a very valuable experience for both students and academic staff. We hope to embed the framework in our degree programme and perhaps see its dissemination into the wider cross-discipline Sheffield Business placement programme.

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An examination of the Venture Matrix™ as a mechanism to develop autonomous, enterprising students

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VENTURE MATRIX

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Abstract

The aim of this project has been to develop autonomy; from the perspective encouraging entrepreneurial/enterprising behaviour and, in parallel developing autonomous learners via engagement in the Venture Matrix™ (VM), a virtual trading estate in which students can engage in entrepreneurial and enterprise activities. Undergraduate students with up to three years engagement in Venture Matrix™ projects have been surveyed and interviewed to examine their perceived development of key enterprise and employability skills. Our studies show that involvement in the project has significantly enhanced these key skills and that the level of enhancement builds from first to final year of study. Ultimately, this indicates that student engagement in real world experiences, with progressive autonomy through their undergraduate life enhances key skills related to learning, enterprise creation and employability.

Background

The project focused on undergraduate students at Sheffield Hallam University, across all academic years. Although the project itself was open to a wide variety of disciplines, the critical mass of students engaged were from cross -disciplinary courses such as BSc (Hons) Business and ICT and BSc (Hons) IT Management. Both are sandwich degrees which aim to develop entrepreneurial and technically literate, business managers. Employability underpins most of the learning within these predominantly vocational courses.

Rationale

A fundamental re-ordering of how economies function and of how organisations are structured and managed has created a new imperative for enterprise and entrepreneurship education, (Hytti and O’Gorman, 2004). As laid out in the CBI publication on higher education publication, Future Fit (2009), it is recognised that graduates with an entrepreneurial mind set can make a huge difference to any business. This is further supported by findings of Moreland (2007). Moreland cites that entrepreneurship within higher education has a significance in the importance of single person enterprises to the UK economy, that is those usually run by entrepreneurs, of which there were an estimated 3.8 million at the time of the publication. At the same time, an entrepreneurial experience within higher education develops intrapreneurship, so benefiting large organisations, in all sectors.

For many, the concept of entrepreneurship remains nebulous, though the launch of a new organization is generally viewed as being at the core (Gartner, 1985; Low & Abramson, 1997; Katz & Gartner, 1988; Delmar & Shane, 2004). Whilst the definition of, and issues raised by entrepreneurship education also remain matters of some debate, Fayolle and Klandt (2006) have identified three areas of learning, related to mindsets (or culture) behaviours and situations. Within the European Union, a consensus based approach has led to a common definition of entrepreneurship education consisting of two distinct elements (European Commission, 2002):

- the development of entrepreneurial attitudes, skills and as personal qualities, (which need not necessarily be directly focused on the creation of new ventures; and,
- a more specific concept of new venture creation-oriented training

From a behavioural perspective, Fayolle and Gailly, (2008) have identified attitudes including autonomy, creativity, innovation and risk-taking as entrepreneurial traits. In this paper, a strategy to develop these attitudes in our undergraduate students is described. Autonomous people are intrinsically-motivated, perceive themselves to be in control of their decision making, take responsibility for the outcomes of their actions and have confidence in themselves (Fazey and Fazey, 2001). A central theme has been to develop autonomy; from the perspective encouraging entrepreneurial behaviour and, in parallel developing autonomous learners. This has led to the development of the Venture Matrix™ as a work related/based learning tool devised and designed to provide students with a safe environment in which they can explore these entrepreneurial attributes.

The VM offers a range of learning opportunities for students with the aim of developing their enterprise skills. Although this paper focuses on the learning experiences of students studying combined Business and IT degrees, the VM is open to students from all disciplines. Currently students are involved from a variety of disciplines, ranging from Mathematics, through to Events Management. Student group projects focus on entrepreneurial activities to identify value adding activities with market potential.

In essence, the VM is a virtual (on-line) trading estate, consisting of "Opportunities" and "Ventures" (see <http://venturematrix.shu.ac.uk>). "Opportunities" for work and business generation are posted on a dedicated website: these Opportunities can originate from public, private and social enterprises, along with projects with Sheffield Hallam University staff. The Opportunities are socially and commercially diverse; examples include: market research, product development, media production, event organisation, web-design, financial training and management, publishing and engagement in mentoring of students from the secondary and further education. Through a combined process of reflection, skills auditing and market analysis, small groups of students (typically four) form Ventures offering goods or services for which a market exists. These Ventures are then promoted via the VM website, newsletters and "Trade Shows" to develop networking skills. Ventures bid for business from the Opportunities. If successful, the Ventures are funded: a virtual currency/financial framework exists for measuring the value added by group activities. Funded Ventures then

have the fiscal potential to outsource selected activities to other Ventures, as appropriate - typically to Ventures in lower years.

All Ventures are able to obtain additional funding from the central VM bank; loans are repayable with interest. The result is a vibrant market place in which students can engage in diverse creative entrepreneurial activities and develop supporting skills including project management, negotiation and communication.

The ethos is to provide as near to real commercial experiences as possible, whilst embedding key enterprise and employability skills. The activities engaged in by the students form the basis of an assessment - typically in case study form: for example a web-design case study project may thus fulfil a real need for a commercial organisation; a project management module case study could involve the organisation of real a charity event. The outcome is real experiential learning.

The approach

For the students engaged on combined business and IT degrees, involvement in the VM is embedded in core modules through all semesters, in all three years of study. The aim is to develop both entrepreneurial attitude and learning autonomy incrementally, from first through to final year of study. First year Ventures typically act as "Freelancers", with a task based focus, seeking employment from other Ventures requiring services. Second year students work at the interface between first and final year groups as "Project Managers", with an operational focus, buying services from Freelancers and typically delivering services to final year Ventures. Students in the final year of study form "Company Directors", with a strategic focus who typically interface with internal and external Opportunities. Whilst the structure is intended to build complexity and autonomy year on year, it is not entirely rigid - "glass ceilings" do not limit motivated students from engaging in projects at a stage beyond their academic level, however the typical interactional structure is outlined in table 1.

Academic Year	VM role	Interactions
One	Freelancer (task-based focus)	Student-student (outsourcing)
Two	Project Manager (operational focus)	Student-student (outsourcing) Student-Internal Opportunity
Final	Director (strategic focus)	Student-student (outsourcing) Student-Internal Opportunity Student - External Opportunity

Table 1: Typical student roles and interactions within the Venture Matrix, by year of study

As the extent of student autonomy is built year on year, the emphasis of the supporting in-module learning is adapted accordingly. First year students experience a near typical model of didactic base-line learning around subject specific knowledge and understanding via lectures, seminars, business simulation activities and networking events. In the following years the emphasis moves sequentially from the predominantly traditional class-based activities into a more consultative support, via group drop-ins and networking events. In short, the academic role evolves from a traditional pedagogical model in year 1, through to what could effectively be viewed as a small business advisor, in the final year. Assessment is carried out via a combination of continuous progress, student reflection, case study report and group presentation.

The overall success of any one project is subject to multiple external factors, some of which lie outside of the control of the students. As a key attitude for an entrepreneur is the ability and preparedness to take risks, any direct linkage between project success determined by outcome (or the absolute financial profit made) would discourage this attitude and therefore does not form part of the assessment. As an alternative, assessment criteria are based on the achievement of learning outcomes primarily related to the demonstration of enterprise skills and related processes (Knight P and Yorke, M, 2004).

The VM as a tool for learning was successfully piloted three academic years ago and has remained a central aspect of student learning since then. As such, the approach has now matured, in that current final year students have experienced three years VM involvement, second year students, two years and first years, one year. It is therefore timely to investigate the impact the intended progressive development learner and entrepreneurial autonomy within the VM.

The approach taken to evaluate the student learning experiences was to focus on the students perceptions of their own competences in 13 key skills directly related enterprise and entrepreneurship on a scale from 1 (low rated) – 10 (high rated) at the end of the academic year. These skills were derived initially from the generic skills identified by the Dearing report (NCIHE 1997), those skills that can be used across all professions and occupational groups. Furthermore, these 13 skill areas were chosen as those that were categorised by the CBI's September 2009 report "Stronger together – Businesses and universities in turbulent times" as the skills most highly prized by employers, when recruiting graduates. The same approach was taken for all students, in all three years of study, thereby facilitating a measure of their perceived change in individual skill level, through engagement in the project. The total student sample size was a 15% representation of the total student participation figure of 608.

Student reflection on their own learning was also examined through a series of interviews held across all three levels, again at the end of the academic year. Discussions focused on the fundamental aims and objectives of the VM, which are to,

- i. embed skills through experiential learning;
- ii. develop learner autonomy by enhancing the student's self-efficacy;

- iii. develop and enhance undergraduate employability skills; and,
- iv. offer real world opportunities with local business.

Discussion and evaluation

The results obtained in the questionnaire are presented in Figure 1. The students perceived that their 13 skill areas had been enhanced by 55 – 70% for first year students, by 65 – 81% for second year students and by 75 – 93% for final year students. Arguably the most striking feature is a monotonic enhancement of competences, from one year to the next in almost all the skills investigated. It is evident that competences are highest in the final year students. i.e., those for who have experienced all three stages of progressive learner and entrepreneurial autonomy through three years of engagement in the VM. One interpretation could be that year 1 responses approximate to a baseline, with enhanced skills developed in the successive years.

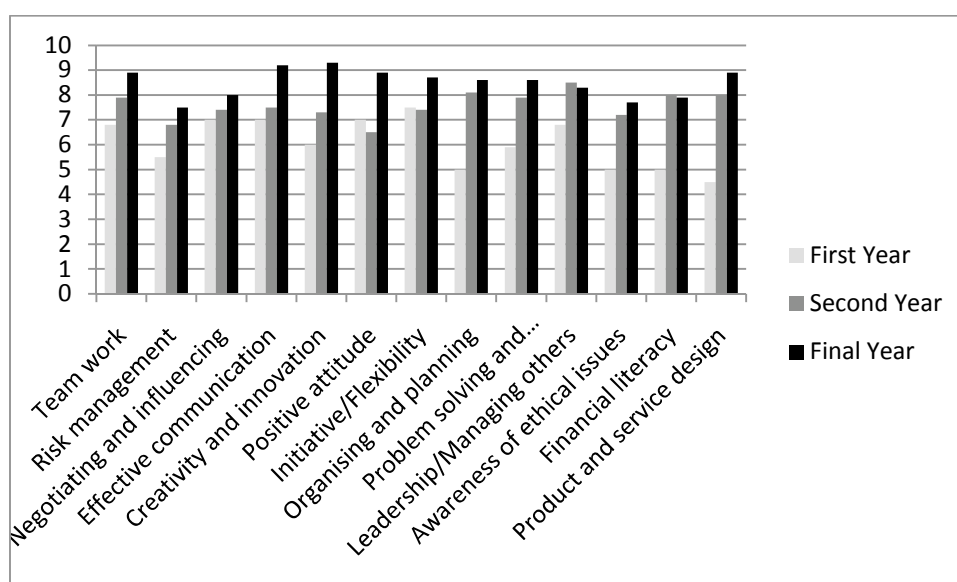


Figure 1: Change in student perceived skill level as a result of VM engagement, by academic year.

Closer investigation of figure 1 indicates some quite striking trends. For example, financial management, product and service design and project management comprise skills sets. All three are embedded to the greatest extent in the second year of VM engagement - the time period over which the perceived increase in these competences is the greatest. Overall, the most profound improvements are related to communication, organisation innovation and product design - all of which lie at the core of entrepreneurship and entrepreneurship education.

The outcomes of the interviews held with students tended to support the views developed in the questionnaire. Breaking down sampled responses in terms of the aims of the VM project, feedback was as follows:

(i) Embedding skills through experiential learning:

"The Venture Matrix has given us the practical experience that you just cannot learn from a textbook or by sitting in lectures. It is actually getting out there and doing something taking and managing risks, which is a refreshing change from our other modules", (VM Group - Research Solutions, final year).

The use of experiential learning has long been recognised as a benefit to students, enabling them to put theory into practice; for example Hewton (1987) points out that "subject domination may not promote the skills necessary to tackle problem most likely to be met in performing an operational role. These are skills in problem-solving which can only be learnt by actually doing a job and reflecting on its outcomes".

(ii) Developing learner autonomy by enhancing the students self-efficacy through authentic learning experiences:

"Through the project with TraffickStop, (Second year Humanities students) we had a great deal of leadership responsibility, as sometimes communication wasn't forthcoming with the group, so we had taken it on ourselves to lead on the project and make the decisions for ourselves. Although we couldn't give them exactly what they wanted, due to the lack of regular communication, we managed to produce something that met all of their criteria, and that they were pleased with", (VM Group - AIM Venture, final year)

(iii) Developing and enhancing undergraduate employability skills:

"When I was being interviewed for my placement job, my experiences within the Venture Matrix were really valuable, as the interviewer was really interested in the Venture Matrix and the skills we had developed through our venture, especially the team work elements. I think the Venture Matrix played a big part in me getting the job", (Final year Business and ICT student).

The sentiments of this student were echoed by several others that took part in the VM, not only in gaining them placement position, but also jobs upon graduation. In addition, the skills developed were recognised by a number of the students, not only good preparation for their placement year, but also to assist them in getting more out of their placement experience itself.

(iv) Offering real world opportunities with local business:

"Having completed our research for Gripple..... (one of Sheffield's leading advanced manufacturers), we were invited to give a presentation to senior management to analyse the research we had done for them. This kind of situation was very beneficial, and it was a nerve-wrecking, but great experience. It especially gives us something to

write about on our CVs, It certainly provided an important link between the theories we had learnt on our course, to the practical side of applying it within the workplace”, (VM Group - SHUME, final year students).

CBI/EDI education and skills survey, 2010 strongly recommended that Universities developed their employer engagement agenda, in order to provide their undergraduates with experience of the world of work. Feedback Gripple was:

"We were delighted with the quality of the work which exceeded our expectations. The Venture Matrix group took a brief, undertook market research and then analysed and presented the findings back to Gripple. The group demonstrated the ability to meet deadlines, and to communicate in a very easy to understand manner. I would have no hesitation in recommending any member of the team to undertake a similar project", (Gordon Macrae, Special Projects Manager, Gripple Ltd).

Summary

The central theme has been to develop autonomy; from the perspective encouraging entrepreneurial behaviour and, in parallel developing autonomous learners via engagement in the Venture Matrix™, to deliver real experiential learning in safe environment. Our investigations indicate that students perceive that involvement in the project has significantly enhanced key skills related to employability and wealth creation. Furthermore, the progressive complexity and autonomy from first to final undergraduate year evokes a correspondingly progressive enhancement of these key skills. Whilst the ultimate impact in terms of graduate student employment and enterprise start-up statistics lies outside the frame of reference of this study and thus remains an open question, anecdotal evidence suggests that this approach of giving undergraduates the opportunity to explore their own creativity and entrepreneurial attitudes will have a significant impact.

The authors would like to acknowledge Dr Simon Brown, who instigated the Venture Matrix™.

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Collaborative architectural technology / virtual reality project to support the design of new buildings for Shirebrook Academy

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Abstract

This case study describes an interdisciplinary project that brought together staff and students from different subject areas, Architectural Technology and Interactive Media.

The aim of the project was to engage students in architectural visualisation projects similar to work they would carry out in a professional setting, and enhance their experience. The latter is evidenced by the inclusion of student feedback from various stages of the project.

Background

Stereoscopic 3-Dimensional visualisation technologies have an increasingly high profile. Recent years have seen an increasing number of stereo 3D films available to view in cinemas, including the record-breaking science-fiction film Avatar, and the more recent Toy Story 3D. Sporting events including football and rugby are also being broadcast in stereo 3D, which can be viewed on recently-available stereo 3D televisions. SKY TV will begin broadcasting their 3D channel in October 2010. Stereo 3D gaming systems and games are also becoming available, including the handheld Nintendo 3DS.

In 2007, Sheffield Hallam University opened the Adsetts Centre Visualisation Suite: a 3D real-time visualisation facility, to be used as a teaching and learning resource for staff and students. This facility consists of a stereoscopic large-screen projection system and 5 stereoscopic workstations, and allows students to create photographs, films and interactive, immersive environments and objects that can be viewed in stereoscopic 3D. Horne and Thompson (2008) state that "3D modelling and Virtual Reality technology can be useful in built environment education in order to... allow users to experience a sense of immersiveness in the buildings, designs and concepts". It is intended that viewing such environments in stereoscopic 3D will enhance the sense of immersion, and be of value in a teaching and learning context.

From November 2007 onwards, the capability of the hardware and software in the Visualisation Suite has been introduced to a number of staff and students from across the institution. Through these introductions, members of staff from the Computing and Architecture subject areas met and discovered that there was potential for mutually beneficial work that could be carried out using the technology in the Visualisation Suite. In the 2008-2009 academic year, a project was devised to bring together final year (level 6) Architectural Technology (AT) students and second year (level 5) Interactive Media with Animation students studying a module called Virtual Reality (VR). Ten groups of VR students created real-time interactive visualisations of ten AT students' building designs for a digital media centre. This project, which became known as the 'AT/VR Project', was sufficiently successful to convince the staff involved to apply for interdisciplinary project funding from the CPLA CETL in order to attempt a similar project in the following year. The application was successful, and in 2009-10 the project ran again.

Rationale

The aim of the project was to provide Architectural Technology students with experience of working with VR students who have similar visualisation skills to colleagues that they may work with in a professional setting. In an architectural practice, an architectural visualiser is someone who takes design of a building and turns it into a 3D interactive real-time environment. It is hoped that the AT/VR groups recognised the importance of the work they were doing in relation to professional practice, as it is now commonplace in industry to have architectural designers (in this case, the AT students) and architectural visualisers (the VR students) working together on the visualisation of buildings and spaces.

A benefit for the Architectural Technology students participating in the project is that they get an additional asset (the real-time 3D interactive environment) to add to their final year portfolio of work. The benefit to the VR students is that they have a realistic and challenging project to work on, which mirrors how they may be required to work in a professional setting. It was hoped that the VR students would gain experience of working with a client on a realistic project.

It was hoped that through participation in the project, the students would be highly motivated and their engagement would lead to higher marks than previous years.

The approach/methodology and method

In the 2009/2010 academic year, the Architectural Technology students were working to a real-world design brief, to design a new Special Educational Needs (SEN) school which would be part of the new Shirebrook Academy (<http://www.shirebrookacademy.org/>). The VR students' role was to visualise the designs of the AT students as a real-time, interactive, stereoscopic 3D environment.

The funding allocated to the project allowed a number of supporting activities to take place. These consisted of: the purchasing of refreshments for a project launch event, buying

additional software licences for the VR4Max visualisation software (<http://www.vr4max.com>), visits to the proposed site for Shirebrook Academy and the Stubbin Wood SEN School (which is to be incorporated into the new academy), a visit to the Adsetts Centre Visualisation Suite for a group of Stubbin Wood students, and incentives for the groups that developed the best interactive environments.

The project launch event took place on November 23rd 2009. An image of this event can be seen in Figure 1. The two cohorts of students were introduced to each other and to the project. Students were asked to respond to 2 questions about their thoughts on the project, which are covered in the evaluation section. This was a very informal, interactive session and all staff involved in the project thought it was an excellent start.



Figure 1: ATVR Project Launch

In December 2009, additional software licences for VR4Max were purchased, allowing the VR students to have better access to the software they required. VR4max is a plug-in to the 3D Studio Max 3D-modelling software that offers the ability to create stereoscopic, interactive virtual objects and environments. 3D Studio Max is used by various degree programmes in the Faculty of Arts, Computing, Engineering and Sciences (ACES) and the additional VR4max licences will be of use in the future. This purchase of these licences also updated the versions of the software in the Adsetts Centre Visualisation Suite.

In January 2010, 10 AT students were chosen (from a cohort of 45) to work with 10 groups of second-year VR students (a cohort of 30) to produce real-time interactive 3D environments of the AT students' designs for the SEN school of Shirebrook Academy. The AT students were chosen for the standard and completeness of their design work. All staff involved in the project met to make the selection. The VR groups were formed based on their performance in a previous assessment, with those scoring the highest marks being grouped together, down to the group who had scored the lowest marks. It was intended that this selection technique would help to motivate the VR students during their work on the AT/VR project.

On February 15th, the 'meet the Architectural Technologist' session took place. An image of this event is shown in Figure 2. The AT and VR students met in their groups to discuss the AT students' designs, which were in the form of A3-sized design folios, and digital files on CDs and DVDs. The students' enthusiasm for the project was clear in the session, which echoes the experience of the session from the previous run of the project. The majority of VR groups exchanged contact details with their respective AT students at the event, and the groups were informed that an Organisation site on the Institutional Blackboard Virtual Learning Environment would be used to allow them to communicate. Feedback from the students about the session can be found in the evaluation section of this case study.

Immediately after the session, Bond Bryan, the architects for the Shirebrook SEN School, presented their work and talked about 'architectural visualisers' as a role in their company.



Figure 2: Meet the Architectural Technologist session

An interim review took place on March 23rd, where the VR students were required to demonstrate their progress on the project, which consisted of 3D models and initial experimentation with the VR4Max software. 3 groups were selected at the interim review to present their projects to the Shirebrook SEN students in April.

A half-day session of VR4max training took place on April 13th. Sander Tolsma from Tree-C Technology (<http://www.tree-c.nl/>), Holland, visited to deliver VR4Max software training to the students and staff. This was an excellent and interactive session. Scheduling the session to begin at 9am meant that it was not as well attended as was hoped, however the skills gained and materials provided could be passed on to the rest of the cohort and to future cohorts. This session also benefitted another colleague making use of VR4Max for creating healthcare visualisations in the Faculty of Health and Wellbeing, who had sent questions for the trainer.

On April 21st, the three chosen groups made their presentations to the students from Stubbin Wood SEN School, which can be seen in Figure 3. An educational facilitator was invited to facilitate this session. The AT students presented their work alongside their respective VR groups, and the SEN students voted for their favourite design. The winning

group were each awarded a £50 Amazon voucher. This particular group had created an excellent visualisation of a swimming pool area, which captured the attention of the SEN students. An image of this environment can be seen in Figure 4.



Figures 3 and 4: Presentation to SEN School pupils, and the swimming pool

This was a very valuable session. The students got the opportunity to receive feedback from the actual users of the new environment. They also learnt about the importance of using appropriate language for the audience when making presentations, for example, when using architectural terms like 'atrium' and 'breakout space' to audiences who may not understand them.

Final presentations of the VR students' work took place on April 27th. One of the groups was selected as the winner by the tutors, a different group to that chosen by the SEN students. It was felt that this group in particular collaborated well, made good use of VR4max, and supported the ideas behind the AT/VR project with action and enthusiasm. The students in this group were each awarded a £50 Amazon voucher.

On May 5th a multi-disciplinary AT/VR group of 3 students presented their work at a Building Schools for the Future event in London, a national exhibition of Architectural Technology work.

Assessment

The Virtual Reality students were assessed in the project, but the Architectural Technology students were not. For the VR students, it was worth 50% of a second year module, with 80% of this being a group mark for the virtual environment, and 20% for an individual report. The students were also given the opportunity to indicate the contribution of the other members of their group.

The tutor to the VR module had also made amendments to the other assessments, so that they related to the main assessment. These were in the form of a writing a technical proposal for a prospective architecture client, and an assessment where students were asked to consider modelling a piece of SEN equipment that could be used in the AT/VR project.

Project Outcomes

The outcomes of the project are 10 virtual environments which can be used by the AT students and VR students to enhance their portfolios, and will be useful examples for the Visualisation Suite and for future cohorts studying similar modules. The environments also contain excellent examples of techniques that can be used in the VR4max software, e.g. texturing and lighting, realistic water effects (as shown in figure 4), the interactive opening and closing of doors, interactive movable hoist equipment etc. The VR4Max techniques are transferrable to a wide range of subject areas that make use of 3D modelling software. Both sets of students can talk about their experiences in this project at interviews and they can relate these experiences to what they have learnt about the industry. The students involved gained transferable skills with potential to enhance their career development.

The outcome for the staff involved is further validation that this is an appropriate and valuable project for asking students from different subject areas to work together.

The project has also contributed to the ongoing development of the working relationship with Tree-C, the company that produce the VR4Max software. It is hoped that this will develop further in the future.

Evaluation of the project

Evaluation of the project can be split into four areas, which will be dealt with below.

1. Attainment

Marks in the Virtual Reality module did not show any obvious improvement with an average of 57.4% for the cohort for this assignment.

In the view of the staff, students didn't place enough effort on the overall realism and interactivity of the virtual environments, and focussed too much on the 3D modelling of finer details. They could have chosen to focus on one area in particular - this was the approach taken by the group who developed the swimming pool environment shown in figure 4.

However, all of the groups engaged with the project and no students failed, which could be put down to their motivation, interest, and the relevance of the assignment. Some of what students learned in the assessment may not show up in the attainment of marks, e.g. the development of particular skills in communication, project management, and leadership.

2. Collaboration - how students worked together

The students met at the project launch event, and then the 10 selected AT students met with their respective VR groups at the 'meet the Architectural Technologist' session. Some groups

chose to exchange contact details at this event. The students were given access to a shared Organisation site on the institutional Blackboard Virtual Learning Environment, to allow them to discuss the project. One of the students said:

"Seems like a good way to swap info easily and arrange meet-ups to do work or make sure all is on track and looking good."

They also made use of this for sharing information and files. The sharing of files is something that could be addressed more carefully in future iterations of the project.

The students were required to work autonomously for the majority of the project, with support from staff in the form of sessions about 3D modelling techniques, the VR4Max training session, and the interim review. There were different levels of engagement between groups, with some having considerable interaction with their respective AT student, and others having very little. This had also been the case in the previous year.

3. Student perspectives of the AT/VR project

This section of the case study will outline the student perspectives of the project.

At the project launch event, the students were asked: "Where do you think the AT/VR project will lead?"; responses are listed below:

"To a better overall view of what has been designed. A visual in which nobody has yet been."

"A piece of work like this will help us develop an understanding of the actual presentation stuff which is produced in industry and what is expected from Architectural Technology / Architectural Design."

"Hopefully something new and interesting".

"Hopefully to a well developed 3D model and design. To help understand the building dynamics and function."

"To future relations between groups and better uses for VR."

They were also asked: "What is your reaction to the AT/VR project?", with responses consisting of:

"Seems very exciting to combine the two. Hopefully it will benefit both sides and help develop AT's 3D visions and designs."

"I think it is a good idea that should benefit both groups. Should be an enjoyable experience."

"Bring it on - I like a challenge."

"Very interesting. Sounds like it will work well. Will allow us to view our ideas from 3D perspective."

"Very good idea. Gives us an insight into how things would work in industry."

Feedback was also collected about the 'Meet the Architectural Technologist' session. As the session was closing, one of the VR students said:

"I don't know how we are going to model that dome but it will be fun finding out."

Also, students were asked to post comments about the session in a Blackboard organisation that was set up for the project; here is a selection of their comments:

"It felt good to be part of a project where someone asked for specific requirements and my team thought of countless methods for meeting the demands. I think this will be a great project and very beneficial for developing my skills for the placement year." **(Jordan Barrett - 2nd year VR student)**

"Having the meeting with the architect student made the assignment launch a lot more interesting. Being able to contact him throughout the assignment to help out/check what we have done so far should be good too." **(Joshua Wragg - 2nd year VR student)**

"I think everyone was interested to meet their architect for the project and discuss the plans with them. The assignment is different to anything we have done to anything before and I think this motivated people." **(Sean Mcshane - 2nd year VR student)**

"It makes a refreshing change to be taking someone else's designs and ideas and bringing them into an immersive 3D format. I find the most trouble deciding on a subject to create. I'm looking forward to getting it started!" **(Neal Walsh - 2nd year VR student)**

"The assignment is different to anything we have done before and I think this motivated people." **(Sean Mcshane - 2nd year VR student)**

"It was fun :)" **(Josie Salmon - 2nd year VR student)**

The main form of feedback received about the project is comments from the VR students, which were collected in a reflective report that they were asked to submit with their virtual environments. These were overwhelmingly positive with an example of comments below:

"When the project was first set I was excited about it because we had never done anything like it before, but also a little nervous about having to complete such a big project in a relatively short period of time. I felt the project was really interesting because it was almost like a real scenario that could happen in the outside world. I think it educated us, not just about the practical side of things, but also how to deal with and manage similar projects.

I specifically enjoyed the fact that the work was based on something that was real and actually happening. There were also lots of incentives to do well such as the presentation to the SEN students and the trip to London to present your final piece of work.

I would definitely like to take part in a similar project in the future and would like to see something like it in our final year of study." **(Sean McShane - 2nd year VR student)**

"I really did like creating someone else's actual design rather than some generic assignment brief. It really made it feel more professional." **(Joshua Wragg - 2nd year VR student)**

"I found the project interesting. It is completely different to any other group work I've ever done. I thoroughly enjoyed it even though it was very stressful at parts. I think this project would work really well covering a whole module and having two semesters to work on it. To conclude I think the project as a whole was successful. Not just for my group but for the class as a whole." **(Josie Salmon - 2nd year VR student)**

"I think the idea for the assignment was very good and when I first heard about it I was excited." **(Joshua Goodswen - 2nd year VR student)**

"It was good to have an assignment which had real world context and consequence, particularly as one of the groups who presented the plans to the SEN students. We wanted to do well and for our architect's design to win and to impress with what we had done. When a project is as time-consuming as this one, if it isn't given a good context you don't feel motivated to give it the attention it needs to produce anything of a good quality. But the cross over with the AT student really achieved this. It wasn't a made up scenario that seemed too obscure to be taken seriously.

Because of this I would say that this project was one of the most focussing, frustrating and enjoyable projects of the year." **(Neal Walsh - 2nd year VR student)**

"Doing this project taught us both a lot of things and I am very proud of the work produced. It also introduced me to the idea of collaborating with people from different areas to produce a combined outcome." **(Tom Hemsall - 2nd year VR student)**

The references to professionalism and the architecture industry are evidence that the Virtual Reality students identified with the real-world context of the project, evidenced by some of the students talking about the interaction with their respective AT students. Some talked about the stress and frustration experienced during the project, but also noted that this was a valuable experience. Some of the students also indicated excitement, were motivated, enjoyed the challenge of what they were being asked to do, and had feelings of pride in the work that they had produced. It is clear that the incentives available in the project provided a source of motivation for some of the students. It is important to note that some students have indicated how they would like to work on a project like this for the full duration of the module, and would like to see a project like this in their final year. Experiences of the AT students were not collected in the same way. The students were asked to give feedback at the end of project but none was received. It is assumed that this is due to workloads and deadlines, and this will need to be addressed in future iterations of the project. It is hoped that those that have participated this year have had a valuable experience, despite no marks being available for taking part.

4. Staff perspectives of the ATVR project

The staff involved in the project feel that it provides a valuable learning experience for both cohorts of students. The students clearly enjoy the project, gain value from working with a client from a different part of the university, and overall enjoy a valuable learning experience. Due to these findings, the staff are committed to developing and refining the AT/VR project in the future.

Further development

This ongoing inter-disciplinary project is very much a work-in-progress. In the next academic year (2010/2011) a greater number of students will be studying the Virtual Reality module, which will require a decision about whether to have more groups or larger groups to work with the Architectural Technology students. The additional VR4Max software licences will allow the project to be run again in the future with greater convenience for the students.

The design brief of the building for the project next year is on a new design for a Maggie's Centre (<http://www.maggiescentres.org/>). The focus of these centres is to provide support with any of the problems, small or large, associated with cancer. Funds have already been secured from the Faculty of Development and Society for members of staff from the project to visit existing Maggie's Centres in Scotland, to carry out a fact-finding mission.

In addition to the collaboration between the Architectural Technology and the Virtual Reality students, it is also intended to involve staff and students from the Interior Design subject area. It is hoped that this will significantly enhance the interiors of the resulting virtual environments, and bring a new dimension not only to the finished product but also to the experiences of the staff and students involved in this on-going inter-disciplinary project.

There is also the possibility of further work with a local school which could be completed as a final year project for a Computing student. This possibility came about through discussion with the educational facilitator who was invited to facilitate the presentation event for the SEN students.

Lessons have been learned from running the project this year. It is intended to introduce deadlines for the components of creating a Virtual Environment, such as a 3D modelling deadline so that more time to be spent on developing interaction within the environments, adding realism to the interiors, and making use of the stereoscopic capability of the VR4Max software. It is also planned to introduce some form of assessment for the participating AT students, as so far their involvement hasn't carried any assessment. This will have to be considered carefully due to currently not all of the AT students are taking part in the project.

Summary

The comments from the Virtual Reality students indicate that they found participation in this project to be an enjoyable and challenging experience. The students were required to work autonomously for the majority of the project, and the authenticity of the learning experience of the students enhances the enjoyment of and engagement with the assignment, and their employability skills are greatly improved.

It is hoped that this inter-disciplinary project has established a model of how staff and students from different faculties can work together, and shows an indication of how such collaborations could be successful in other subject areas. Overall it is considered that the project was a great success.

It is hoped that this project will also help to raise the profile of the Adsetts Centre Visualisation Suite, and that students from a wide range of courses will take the opportunity to develop skills in creating stereoscopic 3D content at a time when it has an increasingly higher profile.

Acknowledgments

We would like to thank the CPLA and CiPEL CETLs for enabling this project with the funding they provided, and the support they have offered throughout. We are delighted that we will be able to offer this project to the students again next year, and build further on the experience of completing the project this year.

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"Writing it myself, that's the hardest part." Engaging Radiotherapists in graduate level writing

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LEARNER SUPPORT TEAM, STUDENT AND LEARNING SERVICES

SHEFFIELD HALLAM UNIVERSITY

Module Title: Principles of Radiation Oncology (PRO1)

Level of module: Level 4 (First Year Undergraduate)

Abstract

This project aimed to engage students in academic writing through self-evaluation, early writing tasks and delivery of in-module support. The underlying concept of autonomy here needs to be viewed in the context of transition to higher education and within a course which begins student induction to a specific and specialised health professional discourse community. This project attempted to develop student autonomy by making concrete staff expectations and develop a shared forum and language for discussion of writing practices. While student feedback was broadly positive and revealing of student early conceptions of academic writing, some student anxiety focused in particular around use of referencing. This was perceived by students to be a key distinctive feature of writing at this level and it is suggested this may offer a future way in which to engage students and explore academic writing in more depth.

Background

The project ran in the first semester of year one with fifty Radiotherapy and Oncology students. Previous work with this group revealed a profound mismatch between student and staff understanding and expectations of student writing. Many students appear simply to underestimate the challenge of writing at this level and do not focus on their writing until they receive a poor or failing grade. This may imply a degree of underachievement across the group and situates writing support as a remedial rather than a developmental activity. Previous work with this group also led us to realise any work concerning academic writing needed to reflect the academic diversity of the group. The various activities of this project are designed to engage students earlier, more positively and challenge their understanding of writing at this level.

Rationale

This project brings together and applies two main theoretical and practical strands: use of an early diagnostic, subject specific, writing task and an academic skills self-evaluation quiz for the students to complete independently. The diagnostic writing task draws on the work Bonanno, H. & Jones, J. (2007) and their Measuring the Academic Skills of University Students (MASUS) project piloted at the University of Sydney. Essentially this project offers a template for a very practical cross-university collaboration between faculty and learning centre staff and begins with a linguistic analysis of a sample text. The text analysis and diagnostic procedure are underpinned by Halliday's systemic functional linguistics (Halliday 1985) although detailed knowledge of this isn't required to use the framework. The purpose of the collaboration is to establish a shared "consensus on valued characteristics of writing and assessment in a particular discipline", (Bonanno & Jones 2007) in this case Radiotherapy. The results of our discussions and text analysis are evident in both the initial assessment criteria (Appendix 3) and the initial self-evaluation tool (Appendix 2).

These tools attempt to unpack for the students the academic requirements of their course and while we broadly followed the MASUS approach, we attempted to use systems, processes and assessment criteria already in use for PRO1, although in a simplified format. This early formative writing task is designed to give students a quick broad evaluation of their competence and also identify students with poor literacy skills early on.

This project design is also clearly influenced by a major trend in modern language teaching, task based learning (Prabhu 1987, Ellis 2003). This approach seeks to engage students in challenging tasks rather than language rehearsal and here provides the impetus for designing authentic, challenging, subject specific, writing tasks for new students rather than asking them to rehearse or discuss form. Writing here is a skill developed through practice and reflection on practice (Schon 1987). This links with a second major thread of research underpinning in this project, which is the notion of reflecting on your own skill set. A recent polished application of these ideas is the Skills and Personal Reflective Activity (SaPRA) self study package developed at the University of Bradford to support induction and PDP across the whole university (University Bradford 2009). This project attempts to translate and adapt this generic tool to a particular subject specialism.

Project Aims

- Provide first year students with a range of tasks and activities to help them personally engage with the academic expectations of one module, particularly academic writing.
- Enhance student understanding of academic criteria.
- Involve students in mapping the gap between student and staff assessment of writing performance.
- Improve student confidence in their own writing & share writing practices.
- As a group share a range of writing practices.
- Inform student understanding of and ability to use formative feedback.

Approach

The following activities are listed as completed by the students. For staff the schedule was slightly different as there was a great deal of preparatory work and discussion analysing a sample text to develop a shared understanding of how clarity and critical analysis manifest themselves in the discourse of radiotherapy.

Task	Staff	Aim	Completion
Blog Entry Appendix 1 Students asked to describe the last lengthy piece of writing they had to do and how they went about it.	Completed on-line by students independently	To get students to reflect on previous experience of writing (product and process) and share these experiences by reading other student entries.	40/50 80%
Academic Writing Quiz Confidence Rating Tool Appendix 2 (Blackboard) confidence rating tool Students asked to rate how confident they feel in terms of understanding and being able to produce certain aspects of academic writing.	Completed on line by students independently.	Quiz was based on simplified broad assessment criteria (content, structure & organisation, critical analysis & referencing & literature) and presents students with a list of subskills/ practices they would typically employ to produce such a text. It was designed through analysing a high scoring first year assignment.	20/50 40%
Input : Introduction to Tumours 1 & 2 (lecture) Students asked to take notes to be used as a basis for short piece of writing 400-500 words	Lectures by faculty staff. Students work independently	Students have authentic and subject specific note taking task - writing will rely on input from lecture and their own reading	38/50 76%
Initial Diagnostic Task 500 word text submitted electronically. Title "Describe and explain the concept of metastatic spread and why this affects the way that we manage patients."	Completed by students independently. Graded by 3 members of staff (2 study support staff – 1 nurse	Formative writing task. Based on one of their early lectures provides students with opportunity for subject specific evidence based writing.	38/50 76%

Text had to include at least 1 in-text citation & bibliographic entry. Appendix 3	educator, 1 writing tutor) & faculty staff		
Feedback Workshop Students receive initial short piece of writing and feedback. Students asked to use this to plan their next steps, including attendance at workshops. Appendix 4	3 staff members (1 faculty staff and 2 study support) ran workshop with 51 students who completed initial diagnostic piece of writing.	Provides students with early feedback on their writing and a measure of their performance. Gives students a concrete means of engaging with assessment criteria. Opportunity to briefly discuss initial performance with staff who graded it.	38/50 76%
Optional Workshops Content Structure Referencing Editing Appendix 5-6	Delivered by Learning centre staff	Opportunity to explore aspects of writing (examining features of text and writing practices) in small groups facilitated by learning centre staff.	Content 15/50 30% Structure 4/50 8% Referencing 10/50 20% Editing 2/50 4%
Student focus groups	Run by CPLA staff		15/50 30%

Evaluation

One of the most obvious limitations and challenges is the degree of student engagement evident in the completion rate of various activities. While many activities were highly valued by individual students and small groups, the very low take up meant a number of activities clearly had little impact on the group's overall learning experiences.

There is also the very real conundrum of how to offer students any degree of choice or direction when a premise of this project is that many students overestimate their abilities, or assume that academic writing is an optional extra. It is difficult to avoid the conclusion that optional activities are perceived of simply as irrelevant or unnecessary.

This variable and at times very poor attendance rate influenced the project evaluation and meant we were much more reliant on qualitative feedback than originally planned. Forms of

evaluation included simple feedback sheets completed at the end of each workshop, evaluation of the confidence rating tool completed mid-module and student focus groups conducted at the end of the module. Examining the feedback some interesting patterns emerge which, while they don't offer clear evidence of impact on writing development, offer interesting insights into the student learning experience in semester 1.

Some students were 'hard to reach' throughout the module and didn't see the need to engage in any activities or address their own writing. Some students simply bypassed many of the activities explaining:

"I wanted to see how I got on with the real assignment"

or

"Not the greatest fan of academic writing style as I feel it's restrictive"

For many other students there was a development in the evaluation from extremely positive to much more ambiguous towards the end of the course.

As one student said,

" it's putting them into practice, once you've been [to a workshop] and you've listened it's like, it is, it's good information that you are getting and it's like well yeah I understand that, but then it's obviously going away and putting that into practice that's obviously the hardest part"

Some students found the input "extremely useful",

"I enjoyed doing my PRO1 essay. I found out a lot more information for myself rather than relying on lectures and powerpoints"

Most workshops were generally positively received, as most attendees would recommend them to other students. They were described on the day as "fantastic", "really good", and later elicited comments such as "I wish I went to them all".

The opportunities for discussion & sharing a range of writing practices as a group led to some changes in writing practices:

"I didn't provide a proper draft as I wasn't aware what a draft was until support session"

"I think as I develop my writing skills with additional support I will re-draft and check my work more".

Similarly there's evidence that engaging students in early writing & discussion raised their confidence and understanding of academic concepts. Looking at the feedback mid-course when the students received back their short essay; they were asked to summarise their initial confidence rating, their understanding of the descriptors and their understanding of the feedback from the formative task. Considering averages of these scores for most students (79%) there's a progression or increase in the raw scores suggesting that these activities were successful in raising student confidence and understanding of these terms. This is further supported by a number of comments which suggest the range of activities helped students understand the academic process and begin to understand the terms for describing different elements of text:

"It (the draft) really helped & I felt more confident that I was covering the right topics."

"I know what to improve on this time."

"I didn't base my draft on the marking criteria which is something I will do next time."

"I failed the first written assignment – got feedback verbal and written which was very useful."

This sense of students becoming more familiar and confident with university processes and procedures contrasts with the activity where students were asked to use this feedback to plan how to improve each aspect of their writing. 78% left this section blank suggesting most were unable to translate feedback into an action plan to improve their writing.

Overall then we can see that this approach provided a new approach to assignment support that requires greater student engagement and one that provided a supportive environment for students. However there's a sense the students were not ready to examine their writing in much more depth by the middle of semester 1.

While the students could rate the initial activities positively as they engaged in them, the real test and challenge to their own assumptions was the end of module essay scores. By the end of the module many students frankly admitted initially overestimating their own writing abilities. And there is a very different tone in the focus groups which took place at the end of the module. New features of text, referencing and critical analysis, become the focus of real concern and anxiety but tend to be perceived in fairly mechanistic and simplistic terms:

"Referencing (workshop) was useful although I still referenced wrong in places."

“I wasn’t told how much I was expected to reference.”

“Someone said every time you state a fact... you need to reference it” “but in my writing I reference every single line & I got told off for it.”

As well as indicating areas for concern, these comments demonstrate a fairly crude analysis of writing and interpretation of feedback. The locus of control is also firmly placed with staff here rather than with the students themselves, with the “I wasn’t told...”; “I got told off....”. It may be that timing is crucial here and at this point, on receiving semester 1 module scores, is when students are most open to input to support their writing development.

Further Development

The findings of this project were intriguing rather than conclusive and prompted us in module review to isolate the strengths and continue to adapt aspects where challenges remain. These plans include;

- Integrate short formative task into module.
- Identify writing as a key graduate skill for Radiotherapists early in semester 1, possibly using podcasts from module and course leaders and high achieving graduates. It is important to assert the importance of clear writing as a professional skill and distinguish between simpler mechanical aspects of writing (such as the mechanics of citations) & more nuanced sophisticated aspects which will take longer to develop (developing your voice while mastering economical, evidence-based, professional writing).
- Address particular areas of student concern such as referencing.
- Practical constraints: review timing & work more effectively within the academic timetable the students follow. Consider spreading some of the input across 2 modules – focus initially on referencing and use of literature, and as students move into the second semester look at how to use your feedback.
- Work more efficiently with limited resource – consider sharing support resources with other health science undergraduates.
- Translate self-evaluation tool into a digital format – use Pebblepad to allow students to carry self evaluation quiz across modules and attach evidence.
- Use the procedure as a starting point for more explicit teaching of academic literacy across the course.

From this project it’s clear academic writing can’t be ‘taught’ in one early module because of the personal and incremental nature of writing development. And it’s clear there are many constraints connected to timing, staff delivery and mechanics of delivery. The response of the students suggests the need to pace or stagger delivery developing academic literacy curriculum that naturally expands beyond one module. Student attendance figures clearly suggest sessions delivered by faculty staff have a high validity with students, which supports the notion of further embedding these activities within the module. There’s also a clear need to develop IT resources to work more effectively with the limited resources we have.

What emerges from this project is the fact that with simple early formative writing we can introduce key concepts and language for discussing writing and begin to engage students more actively and systematically in managing and directing their own learning.

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University of Bradford Learner Development Unit (2009), *Skills and Personal Reflective Activity (SaPRA)* (Bradford: University of Bradford Learner Development Unit), available at <http://www.brad.ac.uk/developme/sapra/sapra.pdf> (last accessed July 2010).

Appendices - Index

Appendix 1: Initial Writing Practices Forum Question

Appendix 2: Confidence Rating Tool (Blackboard)

Appendix 3: Mark scheme & Essay Question

Appendix 4: Sample Essay & Example Feedback Sheet

Appendix 5: Workshop Schedule & Evaluation

Appendix 6/ Workshop Handouts

- i. Organisation & Structure
- ii. Referencing & Use of Literature
- iii. Referencing - spot the errors
- iv. Editing & Re-drafting
- v. Editing Checklist

Appendix 1: Initial Writing Practices Forum Question

Thread: Here Is A Starter Question	Date Posted: 23 September 2009
<p>What was the last lengthy piece of writing that you did? Was it perhaps a piece of course work? What was the topic area?</p> <p>How do you go about constructing a piece of writing? Is it just pen to paper and go for it!</p>	
<p>Hi Jo</p> <p>The last lengthy piece of writing i've done would be a novel that i've started writing in my spare time (it's not very good) . Academically it would be my Physics report for my A-level consisting of about 6 pages with diagrams.</p> <p>When i write i usually brainstorm/mindshower (whatever it's called these days) topics i want to cover in the essay then make a simple plan to follow, after that i write out a draft and then add/cut to the word limit, or if theres something i've missed.</p>	
<p>Hi, Jo its *****</p> <p>The last peice of coursework I did was on my last year of my National Diploma in Health Studies course. It was all assignment based so I learnt how to reference properly. I found that I worked best going through each requirement of the assignment and getting the information I need and relating that to my notes so I then know that I have a full understanding of what im writing and then I was able to organise my assignment. Finally I will spell check and proof read my work. I may also get someone else to proof read just to make sure I havnt made any mistakes.</p> <p>*****</p>	
<p>Hi,</p> <p>my last piece of writing was a research project I did in biology which had to be 2500 words. the topic I covered was oral cancer, what it is and how it develops.</p> <p>I try to start by researching the topic as much as possible and getting the information I need. I then draft up a structure of where I want things to go, starting at the basics of beginning, middle and end (or intro, main text and conclusion) I'll then break this down into further sections so I know where I want certain parts of information going.....It's a bit like a story really....you can't have a middle and an end without the beginning and you cant have the end without the beginning and the middle!</p>	
<p>Hi there,</p> <p>My last piece of lengthy writing was a 3000 word essay on radiation effects about 2 years ago.I started by researching everything i needed to know, then writing down all important points that needed to be included and started forming paragraphs around those points.</p> <p>I'd then start structuring and keep creating drafts until everything fit into place.</p> <p>*****</p>	
<p>Hi this is *****</p> <p>*****'s last piece was a piece of biology coursework about woodlice and the environments they are best adapted to. I'm a pen to paper girl who has to do all her work on paper first then check my grammer and spelling and then type it all up.</p>	

*****'s last piece of coursework was health and social on mental health I studied depression and schizophrenia. There was alot of research to do so firstly I collected all the information, put it in order what I was going to type up and highlighted all the information that was relevant for me. I find using highlighters very usefull because my planning appears colourfull and attractive, that helps me complete my work.

Bye for now

Hi I'm *****

My last piece of lengthy writing was for my A-level English language and literature exam. I crammed in as much revision as possible for each topic such as understanding key terminology and also researching background knowledge on particular authors. I also aimed to make all of my paragraphs flow with each statement leading to a directly relevant one. This overall made my answer clear and precise.

Appendix 2: Confidence Rating Tool (Blackboard)

PR01 Writing Project : Academic Skills Confidence Rating

How confident are you of your academic writing skills?

Evidence:

- Why?

How confident are you of your content knowledge and understanding of physiology, pathology, oncology, radiotherapy and patient management?

Evidence:

- How confident are you of your understanding of physiology, pathology, oncology, radiotherapy and patient management?
- How confident are you of your ability to describe this information accurately and in sufficient detail?
- How confident are you of your ability to include diagrams and visuals in your writing?
- How confident are you of your ability to describe biological processes accurately and in sufficient detail?

How confident are you of you ability to organise a longer piece of writing?

Evidence:

- How confident are you of your ability to write introductions and conclusions that frame the essay?
- How confident are you of your ability to use paragraphs that develop and move forward your argument?
- How confident are you of your ability to use paragraph and sentence beginnings that connect to the argument?
- How confident are you of your ability to organise paragraphs to develop logical progression of information moving from generalisation to more specific detailed information and examples?

- How confident are you of your ability to mark connections between paragraphs clearly?
- How confident are you of your ability to use evidence that links to claims made?
- How confident are you of your ability to link claims to your overall argument?

How confident are you of ability to critically analyse material?

Evidence:

- How confident are you of your ability to evaluate and discuss material?
- How confident are you of your ability to present a coherent explanation?
- How confident are you of your ability to summarize main issues?
- How confident are you of your ability to evaluate major and minor issues?
- How confident are you of your ability to draw conclusions which are logical developments of a discussion?

How confident are you of your use of literature and referencing of material in your writing?

Evidence:

- How confident are you of your understanding of why you need to include sources of evidence in your writing?
- How confident are you of your ability to reference sources of evidence in your writing?
- How confident are you of your ability to select relevant information (range of resources, recency of resources)?
- How confident are you of your ability to integrate relevant information in to your writing, in your own words?
- How confident are you of your ability to use a range of resources to support statements in your writing?
- How confident are you of your ability to use appropriate reference material in the body of your writing?
- How confident are you of your ability to include appropriate reference material at the end in a bibliography?

How confident are you of academic use of language?

Evidence:

- Why?
- How confident are you of your ability to use correct and appropriate terminology?
- How confident are you of your ability to indicate an appropriate relationship with the reader?
- How confident are you of your use of accurate grammar (subject verb agreement, verb tense, correct use singular plural, appropriate clause structure)
- How confident are you of your ability to spell accurately?
- How confident are you of your ability to word process (appropriate use of headings, bullet pointed lists, text and diagrams)?

Appendix 3: Mark scheme & Essay Question

Essay Question: Describe and explain the concept of metastatic spread and why this affects the way that we manage patients.

	Fail D	Pass C	Good Pass B	Excellent A
Content	Serious omissions in content.	Main points covered - some omissions	All points covered	All points covered thoroughly
Critical analysis	Explanations are too short or serious errors of omission or fact.	Attempt at explaining process (some information /detail missing)	Processes generally clearly explained.	Explanations accurate, logical and thorough.
Organisation & Structure	Serious problems with organisation at level of text paragraph sentence	Text has an underlying logic. Paragraphs generally organised around a topic.	Text has a sense of logical progression and attempt made to link detail with broader statements of fact with detail or link understanding of oncology and patient management.	Excellent organisation across the whole text. Points developed and explored thoroughly. Clear links between details of patient management and oncology.
Language	Errors in English are frequent and seriously distract from understanding. Poor presentation.	English communicates reasonably - some inaccuracies which create ambiguity. Reasonable presentation.	English communicates well - some errors remain. Good presentation.	English communicates very effectively. Grammatically accurate & precise. Excellent presentation.
Use of evidence (referencing)	Poor range of sources or non academic sources used. No acknowledgement of sources of information. Risk of plagiarism.	Selection of sources may be inappropriate. Attempts made to acknowledge sources used - may be faulty in text or in bibliography.	Sources of information are largely academic. Good attempt to use references in writing to support points made. Attempts made to acknowledge sources are largely accurate, in text and in bibliography.	Good range of recent academic sources used to support claims made in text. Demonstrates reading and understanding.

Appendix 4: Sample Essay & Example Feedback Sheet

Describe and explain the concept of metastatic spread and why this affects the way that we manage patients

Our body, organs and tissues are all made up of cells. Cancer starts in these cells due to damaged DNA which starts dividing and multiplying these abnormal cells in an uncontrolled manner at a speed which exceeds the rate of normal cells. These cancer cells generally form a malignant or benign tumour around a primary area. In a benign tumour, the cells do not have the ability to spread around the body while a malignant tumour can spread beyond the original area. (Macmillan, 2009)

Metastatic spread occurs when cells from these malignant tumours detach themselves from the primary area and are transported to a new area in the body. These cells are then moved around the body through either local invasion, the lymph system, the circulatory system, transcoelomic (spread across body cavities) or iatrogenic (implantation) means and could possibly use a combination of these transport systems. If these abnormal cells survive the journey to a new area they may be trapped in a new site. Once the cells reach the new area of the body and are trapped they may continue dividing and growing if the conditions are favourable, and possibly form a new tumour replacing normal cells. This new area is then known as a secondary cancer or metastasis.

It is important that the tumour and metastasis are properly staged and graded as this can give us information on the severity of the cancer and general prognosis for the patient which affects future patient management. The different staging systems used to stage tumours are TNM-Tumour Nodes Metastasis, AJCC-American Joint Committee on Cancer, FIGO (system for staging gynae tumours) and Ann Arbour classification for Hodgkin's disease. The grading system used ranges from grade 1-4 with grade 4 tumours being more aggressive.

This metastatic spread can affect the way we manage patients as multiple tumours are much harder to treat with radiation than a single tumour. On discovery of metastases, the patient would have to undergo further CT/ MRI scans to confirm the extent of the metastases. These metastases would have to be staged and graded which would help choose the most suitable treatment to give to a patient. A new planning treatment by the radiotherapist may have to be put in place for possible radiation of the new tumour areas. Dependant on the size and number of metastases the patient management would be changed in accordance. Multiple tumours or metastases can also make the patient much more ill as there would be more areas of the body affected by the cancer, meaning more areas of the body not functioning correctly, and more areas of the body to now receive radiation treatment. Also the patient may have to be transferred to a palliative care treatment programme by the radiotherapist depending on the current stage of the metastases.

It is therefore imperative that the radiotherapist knows of any metastases spread as it has a direct impact on the treatment given and the patient care and management that are given to the patient.

Macmillan Cancer Support, (2009) [online]. Available: <http://www.macmillan.org.uk/Cancerinformation> [accessed 7th October 2009]

	Good Pass B	Excellent A
Content	<i>All points covered Evidence of relevant knowledge and principles. Aspects of the topic(s) have been generally well explained and summarised. This was a little narrow in context in places.</i>	
Critical analysis	<i>Processes generally clearly explained. Demonstrates clarity of thought and expression.</i>	
Organisation & Structure		<i>Excellent organisation across the whole text. Points developed and explored thoroughly. Clear links between details of patient management and oncology. Clear structure and exceptionally well organised approach</i>
Language		<i>English communicates very effectively. Grammatically accurate & precise. Excellent presentation. Work is very well presented. Evidence of appropriate academic style. No spelling or grammatical errors.</i>
Use of evidence (referencing)	<i>Sources of information are largely academic. Good attempt to use references in writing to support points made. Attempts made to acknowledge sources are largely accurate, in text and in bibliography. Accurate referencing. Shame that you did not include a book reference. Ensure that you use the correct style for books also.</i>	

Appendix 5: Workshop Schedule & Evaluation

Writing Support Workshops Radiotherapy & Oncology

Type: Drop-in Session **Organising your Work: Review of content**

Teaching week dates: 21/10/09

Time: Wed 10:00 - 11:00;

Time: Wed 11:00 - 12:00;

Type: Drop-in Session **Organisation & Structure**

Teaching week dates: 28/10/09

Time: Wed 10:00 - 11:00

Time: Wed 11:00 - 12:00;

Teaching week pattern: 15 **Use of literature & Referencing**

Teaching week dates: 4/11/09

Time: Wed 10:00 - 11:00

Time: Wed 11:00 - 12:00;

Type: Drop-in Session **Editing & Polishing your work (academic language)**

Teaching week dates: 11/11/09

Time: Wed 10:00 - 11:00;

Time: Wed 11:00 - 12:00; Locations: Main Bldg-D103

Workshop Evaluation

Workshop title

Date

Why did you come to the workshop today?

What was most interesting and useful about the workshop?

How could we improve this workshop?

What will you do next as a result of this workshop?

Would you recommend this workshop to other students and why?

Thanks for completing the questionnaire.

Appendix 6: Workshop Handouts

i. Organisation & Structure

Organisation & Structure R & O – student notes

There are three levels of organisation across any text.

1. Across a whole text.
2. Within a paragraph.
3. Within a sentence.

Organisation can be examined by looking at

the whole text	order of topics – effective use of introductions and conclusions
	links between paragraphs – how relationship between different sections is marked or indicated to the reader?
paragraphs	how topics explored & developed within paragraphs – links between sentences
sentence	grammatical accuracy of sentences – do they link coherently with those before and after? Is there a logical flow of ideas?

Today's workshop will look at how organisation is managed in a couple of sample texts.

Essay Question

The content and order of topics have all been determined by the essay question, so it's worth returning briefly to the question to examine it for clues. The organisation of the rest of the text is only appropriate if it actually answers the question. Look at your original question.

Describe & explain the concept of metastatic spread and why this affect the way we manage patients?

- Underline the instructional words in this question? What kind of writing is expected?
- List the concepts or key ideas you would expect to be covered?
- Can you re-phrase the question while making sure it stays the same?

Whole Text

- Make a list of the topics covered in essay A? List on blank worksheet.
- p/w Check
- Is there logical progression and a move from general to more specific detail?
- Does your essay cover the same topics?
- *In general most of the short essays covered the same areas, the same broad topics. It was also not very difficult to manage these as it was such a short piece. The difference was in the quality of the development of these ideas. The way these ideas were explored at the paragraph level.*

Introduction

What do you need to include in an introduction? and a conclusion?

p/w discuss 5 mins

Different websites use slightly different terms although they refer to the same things.

- background
- thesis statement (main idea of the essay)
- outline
- (unilearning <http://unilearning.uow.edu.au/essay/4bi.html>)

or introductory statement

thesis statement

overview

or i understanding of the title and what you are being asked to do.

ii. State your objectives in the essay i.e. say what you are going to do.

iii. Outline which aspects of the subject you are going to deal with and how.

iv. Indicate what you are going to argue. (RLF

<http://www.rlf.org.uk/fellowshipscheme/writing/planningandstructure/introductions.cfm>)

Can you see these features in the introduction?

Underline the topics listed in the introduction. How do these connect up with topics in the main body?

Does your introduction do the same thing?

In terms of organisation the outline or overview is particularly important as a way of 'drawing a map' for the reader to let them know where you are going. The end of the introduction frequently lists the order of topics to be examined in the main body of the essay.

For a quick exercise on whole text organisation see

http://unilearning.uow.edu.au/effective/2ai_q1.html

Paragraph development

Look at the order of topics. How are these explored and developed?

Place the strips in the envelopes in order.

Note in each paragraph or section the first sentence introduces the main point to be addressed, this is often referred to as the topic sentence. This is followed by more detailed or specific information. The samples of writing we are looking at are extremely short, some of the sections barely appear to be paragraphs (one or two sentences is too short to be a paragraph) but they clearly deal with one topic at a time and move from general statement to more specific detail.

For more examples of how topics are expanded into full paragraphs have a look at the site below.

http://unilearning.uow.edu.au/effective/2ai_a1.html

Link connecting words

Between paragraphs

Essay A look at paragraphs 3+4. What link words connect these paragraphs back to the introduction?

In paragraph 7, the first sentence introduces the main point. The development of this point is clearly marked for the reader, how is this done?

These links mark the relationship between sentences and paragraphs clearly for the reader. This contributes to the sense of logical flow of the essay.

Compare to the second essay.

The organisation is much more implicit – less overtly marked for the reader. The writer relies on the order of topics to communicate it effectively.

This is however a very short piece of writing. The longer and more complex the writing the more carefully you need to focus on the structure to ensure this is clear for your reader.

Organisation in your writing

How can you apply what we've discussed this morning to your next assignment?

p/w

Features of good organisation in essay include logical progression of ideas across the whole text (the topics covered and the order they are presented). The overall coherence of your writing depends on writing legitimate paragraphs that deal with one topic at a time and the way you explore these topics. Paragraphs are a basic unit of organisation in your writing. Developing paragraphs from topics may be relevant later when you come to your first draft. If you look at this diagram which illustrates the essay writing process <http://unilearning.uow.edu.au/essay/1b.html> at this stage you may want to focus on analysing the question.

What is your assignment question? Write it here.

Underline the instructional words in this question? What kind of writing is expected?

List the concepts or key ideas you would expect to be covered?

Can you re-phrase the question while making sure it stays the same?

Can you brainstorm 10 questions from your assignment question?

Which of these need to be answered in the main question?

Do you have enough information to start a draft? Have you a plan for your reading?

ii. Referencing & Use of Literature

Today's workshop will look at;

- Why you reference in an academic text?
- How you reference? What information do you need to include
 - A/ in the body of the text?
 - B/ at the end of the text?

Discuss these questions with your partner.

Why do you reference in an academic text?

- The main reason for referencing is to include the ideas of another writer to support or develop **your point**.
- The quotes chosen need to be apt, to the point and integrated into your argument.

How do you reference?

Two most common ways of referencing are Harvard Style or Footnotes

Which is the preferred style for this module?

<http://unilearning.uow.edu.au/academic/4cx.html>

- In the body of the text you need
 - paraphrase (author, year).Or
 - “direct quote” (author, year, page).

Which of these is most common in the Health Sciences?

NB careful of the punctuation - the citation appears before the full stop at the end of the sentence.

- At the end of the text check do you need a bibliography and a reference list?
- What's the difference?
- What information do you need to include in each?

Essentially the information in the text and at the end needs to be sufficient for the reader to find the source. There is an academic code, a system for doing this and one that you need to learn and use systematically. How you reference is however a fairly technical and superficial (but not unimportant) aspect of writing.

Using evidence effectively in your writing is more complex than mastering these technicalities. For a quote to be effective it needs to be well chosen to develop or support the point of the paragraph. Quotes cannot make the point for you. Quotes need to be integrated into your writing. To integrate evidence of your reading into your own writing takes practice and relies on an understanding of how paragraphs are structured. You may need to review paragraph structure and organisation.

Integrating quotes

- “There are many phrases & verbs that can be used to integrate quotes into writing
- -As Y observed/ pointed out / suggested/ noted / indicated “...” (year;page).
- According to X “...” (year;page).
- For example, x argued that “...” (year;page).
- X suggests that “...” (year;page).
- The need for it is widely recognised: “...” (year;page).
- Writing in 2003, X commented that “...” (year;page).
- To quote X: “...” (year;page).
- Recent research by X shows that “...” (year;page).”

(Jordan R 1990: 102)

<http://www.phrasebank.manchester.ac.uk/>

Bibliography

- Essentially your bibliography and reference list needs to include sufficient information for the reader to be able to trace your source.
- It is presented in alphabetical order.
- Check LITS leaflet for exact formatting conventions see link below.

https://staff.shu.ac.uk/lits/documents/Referencing_Leaflet_2008.pdf

For a fuller account please see;

<http://shuspace.shu.ac.uk/webapps/portal/frameset.jsp>

Evaluating use of evidence

Discuss these questions with a partner.

Look at the quotes and examples of student writing from the first short assignment.

Are the paragraphs well structured and developed?

Are the quotes well chosen? Do they illustrate the main point of the paragraph?

How are the quotes integrated?

Are the references (the in text citations and bibliography) correct - technically?

In terms of

- the information provided
- the punctuation and formatting

If you think they are incorrect can you correct them?

iii. Referencing - spot the errors

1a/ For metastasis to occur several conditions must be in place. At the primary site cells must become detached from the primary tumour. Secondly there must be a means of transporting detached cells to a new site. Furthermore the transported cells must survive the journey and become trapped in the new site and conditions in this site must be favourable to the new site to encourage the growth and multiplication of the cell. The spread of metastases may occur through the blood circulation, the lymphatic system, local invasion or by Tran coelomic or Iatrogenic means. The capacity for invasion and colonisation of distant tissues varies with different tumour types however with time most cancers acquire enough genetic change to become invasive and metastisising, but this may take several years even after the tumour is clinically apparent (Robert Souhami/Jeffrey Tobias – Cancer and its management) The most common places for metastasis to occur are the lungs, liver, brains and bones.

1b/ Bibliography

Clinical Oncology – Best principles and practice. Antony J Neal and Peter J Hoskin

Cancer and its management . Robert Souhami and Jeffrey Tobias

2a/ When metastatic spread occurs it is much more difficult to treat a patient and can make them more ill due to the infection affecting other body systems. Metastasis can be measured through the staging and sizing of tumours. “Staging often influences the choice of treatment and can provide valuable information on prognosis. Staging may include clinical, pathological, radiobiological and biochemical information.” (Bomford and Kunkler, 2003)

2b/ References

BOMFORD,C and KUNKLER, I (2003). Textbook of Radiotherapy. 6th ed., London, Churchill and Livingstone.

What Cancer Is. (2009). (online). Last accessed 5 Oct 09 at:
<http://www.cancerhelp.org.uk/help/default.asp?page=94>

3a/ The prognosis for patients with malignant tumours is fatal. The growth rate is much more rapid than that of benign. Souhami and Tobias, (2005) say ‘Metastasis is, however, a property unique to cancer. Furthermore, it is metastasis which in most instances kills the patient...’ . This helps to gain an understanding of how unique and complex metastasis is, and in turn, makes us realise why prognoses are usually bad.

References

3b/ Souhami, R, Tobias, J (2005:32). *Cancer and its management*, 5th Edition. Oxford: Blackwell Publishing

Bomford, C.K, Kunkler, I.H (2003:310). *Textbook of Radiotherapy*, 6th Edition. London: Churchill Livingstone

4a/ The fourth and fifth modes of transport in metastasis are transcoelomic and latrogenic spread. Transcoelomic spread is where the tumour is spread across a body cavity and often occurs in the ovaries and the lungs. When the cancer cells reach the surface of their organ, they break away and are carried the peritoneal fluid, this is the fluid which fills the spaces in the abdominal cavity, or by direct contact to other sites. (Cancer Biology, Roger J.B King, 2000). Latrogenic spread is where the cancer cells are spread to another site during a medical procedure, for example surgery.

4b/ References

Roger J.B King, 2000, Cancer Biology, second edition, Essex, Pearson Education Limited.

iv. Editing & Re-drafting

Where are you in process of producing your assignment? (please tick)

Have you written an overview/plan? ☐ a first draft? ☐ a second draft? ☐

What's the difference between a plan, a first draft and an assignment ready for submission?

Discuss with your partner what you may need to do to develop your first draft before you are ready to submit.

The following link provides an essay writing checklist if you put in your assignment deadline.

<http://www.kent.ac.uk/uelt/ai/ask/index.php>

Drafting

Once you have a rough plan, what do YOU do to get started filling on that first draft?

Compare your ideas to these here

http://www.rlf.org.uk/fellowshipscheme/writing/draftingandediting/the_first_draft.cfm

and these here which show the relationship between a plan and a draft

<http://unilearning.uow.edu.au/essay/4aii.html>

Re-drafting

When re-working your essay you can use the following headings as a way to organize your editing. Thinking about how you check and develop each of these aspects of your writing as you write a question for each heading?

Content

Organisation

Critical Analysis

Use of literature & referencing

Language

What feedback did you receive on your initial piece and on your draft? _____

What does this feedback suggest you need to focus on? _____

Which of these aspects do you need to address first? _____

Which ones come last? _____

Which aspect of the assignment writing do you feel most confident about? _____

Which aspect of assignment writing do you think is most challenging? _____

Have a look at the Editing checklist. For some guidelines for further study.

Organization & Structure

Look at the two sample essays.

Write notes on the text. What is the topic for each paragraph?

Where is the topic introduced?

What's the relationship between the main idea and the rest of the paragraph?

Look at the following excerpt. Write the initial sentence (topic sentence) for this paragraph.

One well known text (Walter and Miller's Textbook of Radiotherapy - sixth edition) describes lymphatic spread as occurring in the following way; 'Invasive tumours readily penetrate the thin wall of lymphatics. Then fragments of the tumour are carried downstream to lodge in one or more local lymph nodes. If the tumour cells survive this journey and proliferate in the node they form a metastasis, or secondary tumour' (Bomford and Kunkler 2003).

Weaker undergraduate writing often presents a lot of information. Tutors often label this as 'descriptive' writing. The way you organise this within paragraphs and between paragraphs shows how you understand and are control of this information. If you think this is where you need to develop have a look at Unilearning - the Essay Writing, product and

<http://unilearning.uow.edu.au/essay/4bi.html>

and the section on legitimate paragraphs

<http://unilearning.uow.edu.au/effective/4.html>

v. Editing Checklist

Content

Is the content of the essay (physiology, pathology, oncology, radiotherapy and patient management) accurate?

Is it described in sufficient detail?

Have you included diagrams and visuals in your writing?

Are these incorporated into your writing?

Do these have; Lead in (referred to in the text)

Label/ title & source (Ref)

Lead out (referred to in the text)

--

Organisation

Does your essay have you a clear introduction and conclusion?

Does your introduction address the question?

Does your introduction provide a map of the essay for the reader?

Does your conclusion return to the question and sum up major themes?

Do your paragraphs deal with one main topic or idea at a time?

Do the first lines of each paragraph (topic sentences) generally introduce the main topic?

Do these first lines connect meaningfully?

Try reading the first line of each paragraph. Does it give you an overview of the essay?

Are the paragraphs in the best, most logical order?

Are connections between paragraphs clearly marked for the reader?

Within the paragraphs is the information ordered logically - moving from general to specific or cause to effect?

Have you linked evidence to claims made?

Have you linked claims to your overall argument?

Critical analysis of material

Have you answered the question?

Have you evaluated and discussed the material?

Have you presented a coherent detailed explanation?

Have you summed up the main issues?

Have you evaluated major and minor issues?

Have you drawn logical conclusions which have emerged from the discussion you presented?

Use of literature and referencing of material in your writing

Have you included academic sources of evidence in your writing?

Is your referencing accurate?

- in text citations
- references
- bibliography

Have you selected relevant information?

Do you rely on a range of resources or just one?

Are your sources recent?

Are your quotes/ evidence integrated into your writing?

i.e. Main Point

- quote
- comment/ analysis

Use of academic language?

Is the terminology you use correct and appropriate?

Is the tone or the relationship with the reader appropriate? Too formal/ too chatty

Is the grammar accurate?

Check subject verb agreement, consistency verb tense,
correct use singular plural, appropriate clause structure

Is the spelling accurate?

Is the formatting correct?

To support student learning by embedding writing skills

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LEARNER SUPPORT TEAM, STUDENT AND LEARNING SERVICES

SHEFFIELD HALLAM UNIVERSITY

Abstract

Foundation year students have been given increased writing opportunities in order to encourage reflective practice and to develop the higher academic writing skills required of graduates. Students have been surveyed halfway through the academic year to obtain information about their confidence in producing the varying types of academic writing required in their course. They were also asked to give their perception of the importance of writing skills in their chosen career. It was found that regular online blogs promoted reflective practice by the students, developed learner autonomy and enabled tutors to provide timely support.

Introduction

The four aims of the project were to enhance students' learning through writing opportunities, to support their transition into Higher Education, to develop learner autonomy and to improve retention. Subject tutors worked collaboratively with a member of staff from Student and Learning Services (SLS) to introduce informal and formal writing activities with supportive feedback. These activities were designed to support students' learning while developing these skills and learner autonomy. The project focussed on 90 foundation year engineering students in the faculty of Arts, Computing, Engineering and Sciences (ACES) and 50 foundation year Biosciences and Healthcare Professional students in the faculty of Health and Wellbeing (HWB).

Rationale

Engaging students in writing and speaking about the content of their discipline is one of the best ways to get them to learn about the discipline (Anson and Dannels 2007). This has the potential to develop the learners' autonomy through students reflecting on their learning whilst developing graduate-level writing and speaking skills.

The 2007-08 report on the Usage of Learner Support Team Services (Academic Support for Learning 2007-2008) reports that ACES students (20% of the student population) were only 8% of the student users of the Drop-in Study Practice compared to 38% for HWB students (22% of the student population). This project gave the opportunity to compare the learning

experiences and the response of engineering students and biosciences students, both groups in the study being students on one-year foundation courses designed to provide a transition route to higher education.

Background

From 2006-2009, the tutor for the Mathematics for Bioscientists module had developed the students' use of a Learning Diary to encourage reflective practice and to develop learner autonomy. The diary also provided the opportunity for the students to write for a purpose and they developed the fluency of their writing. The students also took part in a Blackboard Discussion Group, typically containing 8 students, to exchange views on the purpose, design and progress of their learning diary and of their learning in mathematics. Interim submissions and assessments of the diary had been introduced to try to ensure that students were engaging in using the diary throughout the module. However there was still some evidence that students only wrote up blocks of diary entries just before the submission deadline. A way was needed to encourage and capture regular entries in the diary.

During the same time period the number of students on the Foundation Year in Engineering course was growing, and the course team was concerned that a significant proportion of the engineering students were not developing graduate writing skills as they progressed through their course. This had significant impact on their results in some semester 2 modules.

Motivated by a consultation meeting with a writing specialist from SLS, these two tutors designed this reported project to support student learning by embedding writing and speaking skills.

The Approach

For the foundation year Biosciences students the Learning Diary was adapted to become an individual blog within Blackboard, supported by a group blog during Semester One. This was to develop the accuracy and fluency of the students' writing alongside the primary purpose of developing the students' self-awareness as learners through recording, reflecting, action planning and reviewing. The diary was assessed at five points during the year and contributed 30% of the module mark. Writing opportunities also occurred on the other modules studied by the students. These included a poster presentation in Biology, an essay in Chemistry and the Skills module and laboratory reports and a PowerPoint presentation in the Physics module. Within the Mathematics modules the students had frequent mathematical group activities that also developed speaking skills, and this was also developed at the poster and PowerPoint presentations.

For the foundation year engineering students, a programme of writing opportunities was designed:

- *an individual blog* was introduced to encourage fluency and reflective practice. A small number of marks were obtained for writing an entry each week [there was an opportunity for most students to do this during their weekly Computer and Academic Learning Skills (CALS) session]. These were read most weeks, and commented on sometimes. The course leader also blogged, to encourage and set an example.
- *a glossary of engineering terminology* was developed during semester one in the CALS session. This was designed to develop research, technical writing and referencing skills. Again, it carried a small number of marks, and entries were once a fortnight.
- *taught sessions* on how to plan and write a lab report and an essay were given in CALS in semester one, along with time for the blog and glossary entries.
- *a 3000-word essay* on Sir Henry Bessemer, the Bessemer convertor and the implications of its development on British society was set at the end of semester one, which contributed 15% to a 10-credit semester 2 module. This essay was intended to develop research, formal writing and referencing skills. The feedback from this work was received in time to be helpful for reports required in two other semester 2 modules. In addition, there was one engineering laboratory report per semester and at least one presentation per semester during the course.

Discussion and evaluation

Students were asked to complete a questionnaire (Appendix 1) in order to assess their disposition and capacity to engage in writing activities (May & Thomas 2010). It was completed by 23 Biosciences foundation year students and by 23 foundation year engineering students.

The students were asked about their confidence in their English writing skills now and before they started the course. Approximately 75% of both the Biosciences and Engineering students either agreed or strongly agreed that they felt confident with their writing skills, with no significant change between before the course and the time of the survey. Only 2 students from each group did not agree that they were confident, the others being neutral.

For their highest previous qualification in English, 20 of the Biosciences students reported that they have a grade C or above at GCSE, compared to 15 of the Engineering students, 1 with Adult Literacy at Level 2 and one with IELTS Level 6.

In response to the questions about their English Language skills at the start of the course and after Semester 1, approximately 80 % of the students considered their skills either excellent or good, with no significant difference between the Biosciences and Engineering students.

The students were asked whether a) they understood terms about academic writing, and b) whether they were confident they could demonstrate them. From the data (Figure 1, Appendix 2) it is evident that the Bioscience students have a higher confidence in all areas,

and also these students feel more confident to demonstrate the range of aspects of academic writing.

The students were asked about the types of academic writing they had undertaken a) during the first semester and b) how confident they felt with each type of writing. The data for the two groups were compared (Figure 2, Appendix 2). It is evident that more Biosciences students, at the time of the survey, had used academic writing skills for a range of purposes. For these tasks their confidence was lower for all types of academic writing, but most noticeably in writing laboratory reports, taking notes and keeping a blog. By comparison, as many Engineering students had written laboratory reports but, as with the Biosciences students, their confidence in writing the reports was low. For all of the other types of academic writing the Engineering students reported they were confident in the tasks.

The students were asked which study skills support opportunities they had used. From the data (Figure 3, Appendix 2) it appears that the engineering students make better use of drop-in study practice. However the students may include 'Maths Help' drop in and this was mentioned by some students under 'Other'. Both groups of students report using internet based resources most often for study skills support. A representative selection of comments from the open questions is presented in Table 1.

What do you enjoy about writing at university?	
Engineering students	Biosciences students
Not a lot; don't really enjoy writing to be honest; nothing x 2; finishing it; chance to use new skills and practise old ones; learning how to structure an excellent lab report or essay; learning the material that I am writing about; the opportunity to be creative; light relief from maths and science; lab reports x3; lab reports as largely factual/analytical;	Creativity ; freedom to write; challenge of style; not enjoyed, just required; anything academic and interesting; using pens; writing about subject; more efficient in taking notes; can express what I think in diaries; notes; the feedback; writing about interesting things x 2; assignments and essays;
What do you find challenging about writing at university?	
Engineering students	Biosciences students
what standard to write to; where to find information; knowing what should be included, layout; essays; lab report and long essay x 4; use of unfamiliar language and engineering terms x 2; getting the in depth information into my work; keeping up with pace in lesson; trying to find the key word x2; spelling; critical analysis, knowing exactly what to write about, can't always relate marks scheme to content required – less obvious how to score highly than in	Lecture Notes; matching lecturer's expectations; referencing x 4; time management; high quality expected; remembering to use correct style; broad topics; making notes and applying in correct way; keeping up with pace and noting appropriate info; lab write ups and long essays; format of essays x 2; punctuation; essay writing; the standard of writing within the course; need guidance on where to get information; sticking to word limits;

technical/calculating reports;	
How important do you think accurate language skills are for graduates in your field of study?	
Engineering students	Biosciences students
Very important x 11; not extremely important, not very (engineer) all maths x3; engineers need to be able to communicate their ideas clearly x4; important for any graduate; not as important as other subjects, but there are certain phrases and words; moderately important; almost as important as mathematical and scientific skills;	Very important x 15; for lab reports x 3; for accuracy x3; writing notes in professional job; CPD; key words to be learnt and understood; writing reports;
What do you think you need to do to improve your English language skills?	
Engineering students	Biosciences students
My English is good enough x 4; listening and speaking and writing report or essay; to try my best to improve x 2; more reading and more practice at essays and reports; structure of paragraphs; need to practise reading, spelling and general writing skills x 4; write assignment physically instead of using a word processor; increase vocabulary;	Practice, have lessons; practise writing essays, read more x 4; written skills x 3; structure of essays; presentations; more presentations; keep practising x 2; pronunciation of words and spelling; do more English; a course to improve my English; spoken need to be more confident; written – better spelling and grammar;
What would help you develop these skills?	
Engineering students	Biosciences students
English help classes x 3; a dedicated class, perhaps 1 hour per week focusing on these skills x 2; being able to look at excellent bits of work and compare them to mine to see how I can improve x2; dedicate more time to improve my written skills; practice, see how to do on next bit of the course; remember terminology, practice until confident;	Uni support; how to write a lab report; English sessions; subjects classes, feedback and my peers; more practice x 4; coursework; experience; presentations, class discussions and debates; get others to read over my work; English lectures; a course; ask flatmates and parents for help; reading more regularly;

Table 1: Selection of representative comments on Open Questions.

The comments suggest that rather more biosciences students see the importance in writing but both sets of comments highlight the fact that the students recognise that they need the opportunity to practise and develop their writing skills for a variety of purposes.

For the engineering students, blogs were found to be a very effective way of keeping in touch with the part-time students, and some students found them a useful way to mention difficult personal issues that the course leader needed to know about. The lack of requirement for grammatical English removed a barrier to participation for some students who were then able to express their thoughts freely. Similar observations have been made (McDermott, 2009) when blogs were used with first year computing students as a tool to encourage reflection on their learning.

The majority of biosciences students engaged with the blog regularly and the structured assessment meant that the blog developed reflective practice and the use of formative feedback.

Further development

For the engineering students the blogs will be continued next year, maybe with a little more weighting given to them. The principles of 'blogging to learn' (Bartlett- Bragg, 2003) will be considered in order to support the development of the purpose, style and content of student blogs as they progress through their course, and thus to support the development of learner autonomy. The essay was also felt by the module team to be a very useful exercise, though its value was not appreciated by the students, partly because it tended to bring their coursework mark down, and partly because they could not see how it was relevant to the course. This needs to be made much clearer next year.

The glossary writing tasks did not develop the referencing skills needed for the essay and report writing, so this will be discontinued next year. A more structured session on referencing will be given instead.

Module leadership of the biosciences module is changing but it will be recommended that the use of blogs is continued. The current tutor plans to use the online blog facility to promote regular reflection and develop writing skills within another module.

Dissemination

The findings of this project have already been disseminated within the Department of Engineering and Mathematics (at an e-learning development day), the ACES LTA conference and the CPLA conference. Further opportunities will be sought to discuss this project at external conferences.

Summary and conclusion

The use of blogs has encouraged reflective practice which supports the development of learner autonomy. Also, retention has improved this year for the Foundation Engineering students. The blog for the Engineering students provided an effective and informal method of contact with the Course Leader, enabling issues to be addressed before they became

problems. For the Biosciences students, there is a positive correlation between the marks for the Learning Diary blog and the marks obtained in the rest of the module. The regular online entries allowed the tutor to see comments about difficulties the students were having, and to respond with timely support. The use of blogs has supported the transition to Higher Education for both the Engineering and the Biosciences students.

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Appendices

Appendix 1

WRITING SKILLS REVIEW December 2009

Instructions for form completion Please tick the boxes which best apply to the statements below. You may add comments to clarify your opinion regarding the statements and module.

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Strongly		Neutral		Strongly
	Agree				Disagree
1/ I am confident in my English writing skills now.					
Comments:	_____				

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Strongly		Neutral		Strongly
	Agree				Disagree
2/ I was confident in my English writing skills before the course started. Please state your highest English language qualification & grade. ie GCSE grade C, IELTS 6					
Comments:	_____				

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	excellent	good	ok	weak
3/ My English language skills (spoken, aural and written) at the beginning of the course were:				
Comments:	_____			

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	excellent	good	ok	weak
4/ My English language skills (spoken, aural and written) now are:				
Comments:	_____			

		A	B
5/ Academic Writing	Subject content	<input type="checkbox"/>	<input type="checkbox"/>
	Organisation & structure	<input type="checkbox"/>	<input type="checkbox"/>
A/ I am confident I understand the following terms :(tick all that apply)	Critical analysis	<input type="checkbox"/>	<input type="checkbox"/>
B/ I feel confident I can demonstrate these features in my written work; :(tick all that apply)	Accurate formal & appropriate language	<input type="checkbox"/>	<input type="checkbox"/>
	Use of literature & referencing	<input type="checkbox"/>	<input type="checkbox"/>
Comments:	_____		

		A	B
6/ Types of Academic Writing	lab reports	<input type="checkbox"/>	<input type="checkbox"/>
	note taking	<input type="checkbox"/>	<input type="checkbox"/>
A / This semester I have written the following:(tick all that apply)	Revision	<input type="checkbox"/>	<input type="checkbox"/>
B/ I feel confident in writing:(tick all that apply)	blog/glossary/reflective practice diary	<input type="checkbox"/>	<input type="checkbox"/>
	Essay	<input type="checkbox"/>	<input type="checkbox"/>
	a poster	<input type="checkbox"/>	<input type="checkbox"/>
	other (give details below)	<input type="checkbox"/>	<input type="checkbox"/>
Comments:	_____		

7/ I have used these Study Skills support opportunities (tick all that apply)	University English scheme	<input type="checkbox"/>
	Drop-in study practice sessions	<input type="checkbox"/>
	Key Skills Online	<input type="checkbox"/>
	Internet based resources	<input type="checkbox"/>
	SHU learning centres	<input type="checkbox"/>
	Study support in Education Guidance	<input type="checkbox"/>
	other (give details below)	<input type="checkbox"/>
	Comments: _____	

What do you find challenging about writing at university?

How important do you think accurate language skills are for graduates in your field of study?

What do you think you need to do to improve your English language skills (spoken, aural and written)?

What would help you develop these skills?

Thank you for taking the time to complete this form.

Appendix 2

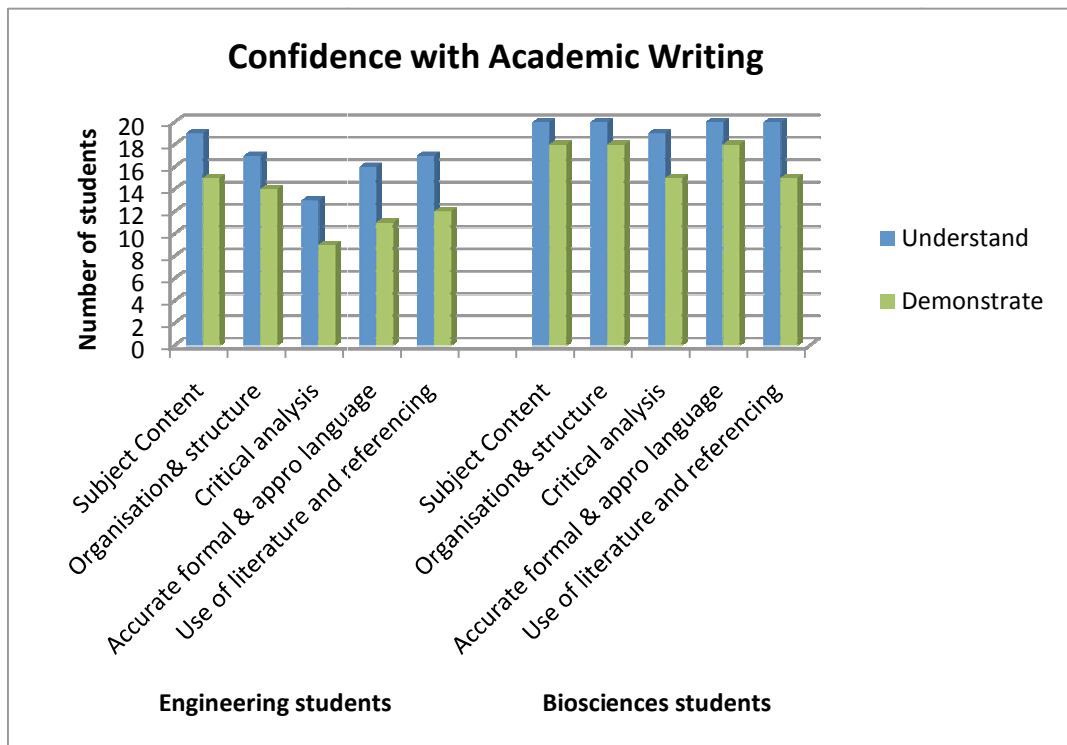


Figure 1: Students confidence to understand and to demonstrate a range of academic writing terms.

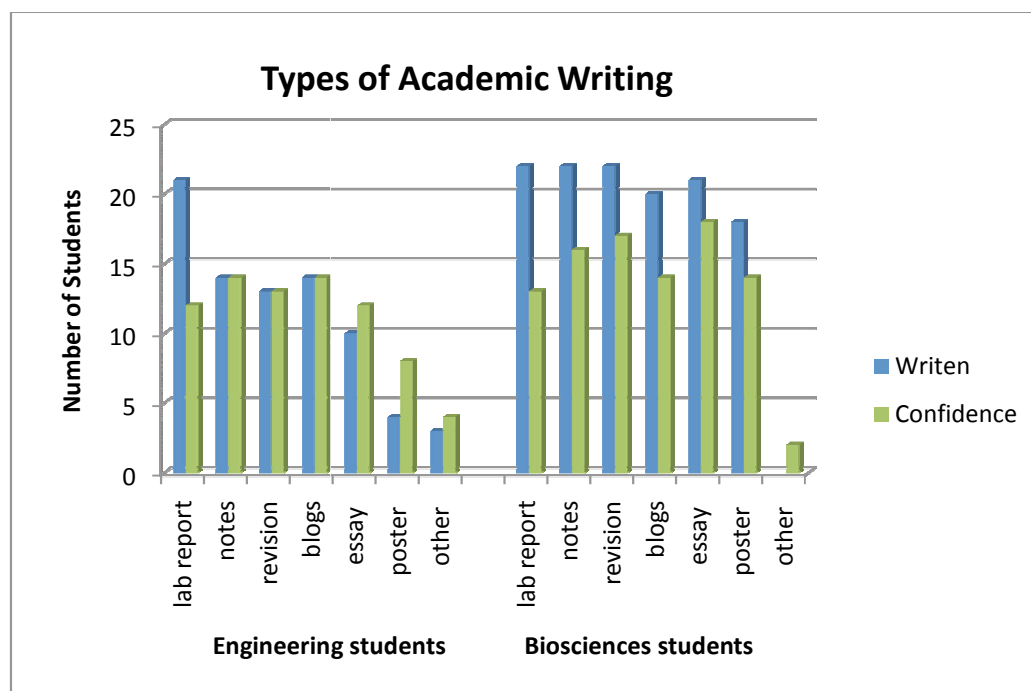


Figure 2: A comparison of the types of academic writing done, and student confidence.

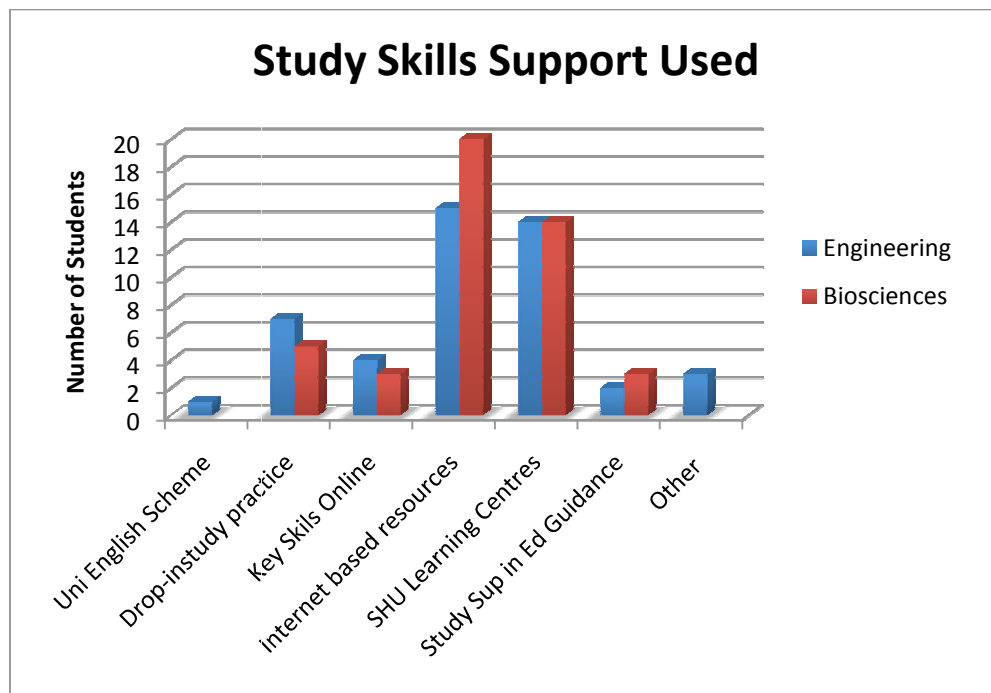


Figure 3: Comparison of the study skills support opportunities used.

My Real Estate: a case study of staff and student collaborative research

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Wider Project team

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Catherine Wynn, Athina Zisi (Built environment research students)

Abstract

This project developed from initial discussions about how to support skills development for students on vocational courses. A fresh approach was adopted by employing students as researchers and collaborators to investigate analyse and develop ideas on how best to provide support to their peers and future students when studying Real Estate. The process of research and the 'outputs' were determined by the students thus increasing their own autonomy and employability skills. The process used for this project could be applied to any vocational course and whilst the web resource is still in the early stages of development it is hoped that this will become a beneficial 'student owned' resource covering academic, career and social aspects of the student experience for all students of Built environment undergraduate courses.

Background

This project arose from discussions around Faculty needs for study support materials which are subject-related and relevant to students in developing their personal and professional skills. We chose to work with real estate students because of the vocational nature of their course and also because of the enthusiasm and previous work in this area of one of the academic staff, Jill Fortune. Jill's previous work was a HEFCE-funded collaborative project between three Universities. This involved research to establish the range of professional and business skills required by employers for graduates starting their careers in Real Estate.

At a workshop facilitated by SLS discussions were held in relation to the availability of resources to support students in developing key skills alongside their subject knowledge. There was consensus that in the context of vocational courses students are required from an early stage to apply their learning to 'real world' problems and scenarios. This is demanding for students experiencing a subject for the first time and therefore it is critical to help students see and develop for themselves the interrelationships between skills and subject knowledge. The real estate profession relies on networking and collaboration, therefore highlighting and developing these skills at University is essential.

We felt that by encouraging students to engage and question their peers this would lead to a student-authored web resource for real estate students to aid learning, provoke thought and create a sense of community. The resource would be somewhere first year students would go to find the information they need for studying a real estate course. It will help to support transition through the creation of a 'digital common room' which articulates advice and guidance from students in higher years, and also provide a point of access for a range of university services.

Rationale

We wanted to capture the student voice, with students giving guidance to their peers.

The project was designed to employ students to work collaboratively as researchers and writers. In the current economic climate real estate placement and graduate scheme employment vacancies have contracted. Students engaging in the project would gain valuable work experience thus enhancing their employment opportunities.

Our approach

Recruiting students to the researcher posts was more difficult than we had anticipated. Our plan was to work with second year students but in the event none applied. We employed four real estate students - three were in their final year having returned from placement; one was a first year student.

The student researchers were employed to produce a subject specific support resource for first year students on the Real estate programme. They worked with the SLS staff to scope the project and identified the key areas of advice that first year students would benefit from. It was important to us that the students contributed to work planning decisions rather than being given a series of tasks to complete. This would increase their autonomy and help them develop decision making skills.

As a result of the discussions with SLS staff three major areas were identified for the web resource - academic, careers and social - and the students chose the name 'My Real Estate'.

Working with two built environment research students the team compiled separate questionnaires for first year, second year and final year students, and for academic staff. They followed these up with focus groups for first year and final year students and staff.

The researchers were also tasked individually to contact and interview specific staff in SLS (Careers, study support, learning centre) and D&S (Built environment learning hub, tutors).

Two competitions were devised to encourage other real estate students to engage with the project and to provide content for the website. These were well thought out but not very well promoted, and there were no entries for either.

Towards the end of the involvement of the final year students (March 2010) the research students interviewed the four student researchers to record their views on the project, the process and the outcomes. Two of the students presented the work to an invited audience of staff from SLS and Development & Society.

Evaluation - students as researchers

The students all brought enthusiasm and ideas to the project, to the extent that they became frustrated at what they perceived as lack of progress (primarily with the creation of the website). The final year students were particularly interested in the Careers section and this is reflected in the amount of content that was created for this section.

Time and timing of the work was an issue which was sometimes hard to manage. Specific aspects were:

- working together effectively as project team leaders and finding time to meet outside of the project meetings with the students so that we gave the students consistent messages;
- coordinating the work of the students, and administrative work;
- encouraging the students in their work;
- making time for regular project meetings;
- planning the research around times when students and staff were available (Christmas and the mid-semester break interrupted progress on the research).

Student's individual skills and confidence were noticeably boosted by their work as researchers.

- One student mentioned in interview that they were not confident with presentations to people but would need this skill for employment in real estate. The same person gave a very confident presentation to staff in March 2010 which was highly praised by senior staff in SLS and D&S.
- Another student felt they had gained skills from interviewing staff and running focus groups that they wouldn't have otherwise experienced.

- The first year student was surprised at how much he'd learnt about the course from the final year students, and also recognised that the research skills he has developed will be very useful in his academic work.

Evaluation - the research

The research questionnaires were designed by the students who decided that the questionnaires should be printed and handed out to students in class. Each questionnaire was tailored for the particular year group but contained similar questions.

The student questionnaires all asked 'which first year module do/did you enjoy the most?' and 'which of the first year modules do / did you find the most difficult?'

Student engagement was a problem and the student researchers were surprised at how hard it was to get responses. The second year students were the most difficult to engage and the questionnaire had to be given to them twice, no second year students agreed to take part in a focus group.

Focus groups were set up for first year and final year students.

A staff questionnaire was distributed to tutors with the help of an administrator and 12 responses were received. The students were shocked by the attitude of one member of staff. It was followed up by a staff focus group which four staff attended.

Tutor questionnaire results

Tutors were asked to identify first year students' strengths and weaknesses

.Strengths – most tutors felt that students had "openness to new experiences and learning" and "enthusiasm and high levels of energy" when they start the course.

Weaknesses – tutors believe students need to take responsibility for their own learning from day one: "students are expecting too much spoon feeding" and "students want too much direction."

The tutor focus group discussion explored how My Real Estate could help to channel the strengths and address the weaknesses – this led to the suggestion that the website should be made available to students before they start their studies.

"Most students are not clear on what the profession expects and how to make the transition to being employable."

Evaluation - development of My Real Estate resources

The website design must engage students, use a mixture of media (podcasts, images, and video) and not contain too much text. Development of the website content was taken forward by the first year student after the final year students withdrew from the project in March. Creating the website has been delayed because of problems in employing someone with the right skills to do this.

Indicative content of My Real Estate:

Careers section

- careers map outlining the range of career options open to real estate graduates in the private and public sectors
- include the experiences of students who've been on placement
- link to careers resources such as CV / interview
- record the 'day in the life of' surveyors working in different disciplines
- keeping up to date with the world of real estate (where to look for news).

Academic section

- must be distinct from what already exists in Blackboard modules / organizations
- provide advice and tips from students, tutors and other staff with links to resources (link to information don't rewrite it)
- will use an image of a building to highlight the relevance of all first year modules to general practice and the range of career specialisms within Real estate.

Social section

- creation of a real estate student community / common identity
- student survival guide
- Built Environment Students Society and MATRICS
- information from field trips / photos
- student forum.

The resource will be actively developed and used by real estate students in 2010/11.

Summary

This project successfully engaged students in research, collaboration and writing materials for external consumption. The approach taken by the students provided new insights for Real estate lecturers into how students engage with technology to inform their learning and career development. For the academic involved in the project there was a 'eureka' moment

when one of the students very swiftly steered thinking away from written resources to more dynamic web based and 'snapshot' insights.

The value of this project will certainly be evident in what is provided to current and future students through the My Real Estate website. The process has been informative and demonstrated how motivated and inspirational students can be if given autonomy with appropriate support as required. The students led the project and the decisions making process and the output will be more relevant and valuable as a result!

Further development

My Real Estate will be further developed during 2010/11 within the Built environment department of D&S. This will be a transition year, and it will be included in course planning discussions with the aim of embedding the resource in teaching in 2011/12.

The manager of The Learning Hub will be supporting the ongoing development of the website. This is appropriate given the Learning Hubs role in supporting the student experience, including direction for academic and career development. It may form part of the portfolio of work given to the intern in 2010/11.

Links with the Built Environment Student Society will be used to highlight social and professional networking opportunities and these will form part of the Social and Careers area of the My Real Estate website.

Jill Fortune is running a mock assessment centre in November 2010 the results of which will feed into the Careers section.

Enhancing writing and digital fluency skills in Bioscience students as a route to autonomy

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Abstract

Writing is central to all aspects of academic life, from note taking, a means to ordering thought, through to the main method of communicating in assessments and then in employment. This study looked at a mechanism for improving this skill in an autonomous manner and looked at the baseline of this skill in bioscience students. Level 3 students and their teachers (Pre University) were asked about their writing skills to provide information about the experiences of our level 4 students. Level 4 students completed a skills questionnaire during induction week and then at the end of the teaching period of their first year. This was to assess their personal level of confidence in writing and digital fluency skills. The students were formally introduced to the concept of note taking and this skill was used and tested formatively along with their ability to construct an essay, under exam conditions. The feedback from this exercise was used to complete reflection workbooks so the students could form a plan of action to be used in the enhanced writing workshops. Improved students' writing skills was thought important so it did not hinder their capabilities to demonstrate their understanding of science. The marks from writing based assessments was collected and compared, along with tutor comments. Students entered with a wide range of initial confidence about writing, and the data shows that this did not correlate to their abilities. By the end of their first year the students had grown in confidence and there was a positive correlation between that confidence and their ability, but not statistically significant. The marks in all essay types did not improve, compared to previous years, but improvements in the techniques of referencing were improved as was their knowledge of how to use library databases.

Background

The Department of Bioscience, within the Faculty of Health & Wellbeing, has about 220 level 4 students on the Bioscience programme studying one of eight possible courses. They study 80 credits of common modules including 20 credits of a skills module, where they have lectures, labs, workshops and academic tutorials (1 hr/ fortnight in groups of 12). These students have a wide range of backgrounds, but will be expected to have studied science related level 3 courses and have 260 UCAS points. Fewer than 5% of students are categorized as overseas, but some will have English as a second language. About 10% will have a learning contract, the majority of which will include dyslexia. All bioscience students

will have grade A-C in Maths & English, or the equivalent: in consequence bioscience freshers may not have been assessed in any extended writing exercise for two years.

The skills module (Skills for Science) actively supports the other 100 academic credits by providing the underlying skills required in a timely and explicit manner; this releases these modules of the need to prepare students in areas common to many tasks and removes unnecessary repetition and potential confusion from the students' diet. The skills module also uses academic material from all but the course specific modules as a vehicle for expounding common skills (figure 1). The mode of delivery on this module is varied and includes laboratory sessions, weekly lectures, weekly maths tutorials; weekly workshops in IT enabled rooms and fortnightly academic tutorials.

Assessment is 50% maths and 50% science. The science part includes a CV and reflection; a 3000 word individual essay on a tutor led topic; a group oral presentation on a tutor based topic; a group based, time bounded enterprise/ entrepreneurial exercise; and formative multi-choice tests on material from all academic core modules.

The skills module is taught by bioscience specialists, maths specialists and experts from the learning centre.

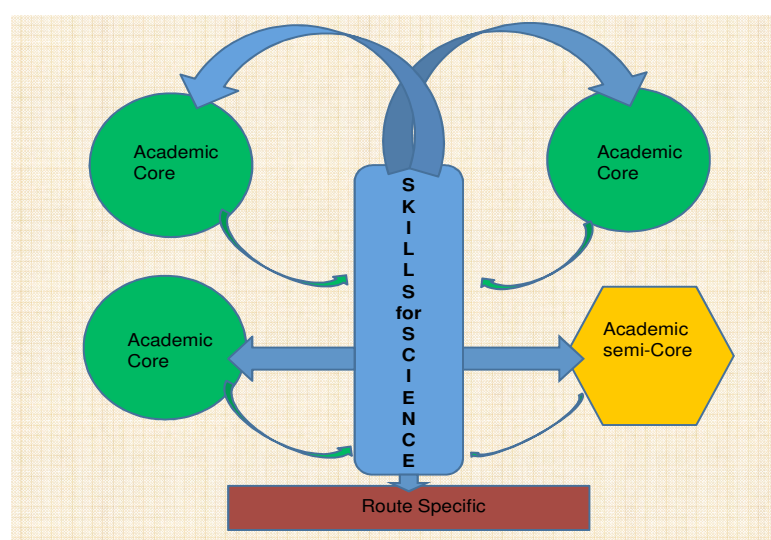


Figure 1: Overview of the Position of Skills for Science in the Level 4 Bioscience Programme

The department has a well established mechanism for monitoring attendance and this links to a support system to optimise retention; now it is time to look at enhancing progression and enhancing successful autonomy.

Observations from academic staff and external examiners have reported that bioscience students in our department have poor results in extended writing, including during exams. Students also have poor planning skills and are weak at selecting sources of information and have difficulty referencing. Students seemed unprepared for revision and ill prepared for

reading about the subject. Their ability to use taught material and engage with their course in an autonomous fashion is cause for concern. These weaknesses are not restricted to Sheffield Hallam University (V. E. McMillan & D. Huerta, 2000).

Writing was deemed important because the ability to prove independent thought at undergraduate level depends greatly on writing skills (due to the nature of assessments), and this is further reflected in the graduate world. Yet, science students may do little extended hand-writing beyond GCSE due to the nature of the level 3 science curriculum. In addition, the reliance of students, in lectures, on handouts or Blackboard means that the mechanical process of writing is unusual until an exam and makes students overly passive during lectures.

The process of writing, list making and organizing via a paper trail is an important part of cerebration and something we may underestimate in allowing students to develop a mechanism for thinking and recording thoughts. By writing and note taking we also process information and begin to memorise facts and the way information fits together. Level 6 students, at course committees, comment that note taking is an important skill and, though it is hard, you "do get better".

We have conventionally addressed these issues in a cross programme skills module. In reviewing this module we wished to embed writing skills, and link it to digital fluency. We wished to compare the outcome of students this year with cohorts under the previous system.

The basic premise was that students are not incapable of study at university level but there are other skills hindering their achievements; in fact we suspected that students cannot write well enough to succeed. Early intervention would have an impact at all levels of the course, but students need to see the need for this support as well as its relevance. (By writing we mean a wide gambit of scenarios, including word processing as well as physically applying pencil to paper).

By acting on the mechanical stylistics of academic writing within the subject of bioscience, using additional experts from this arena and asking the students to practise and reflect on their achievement to support their own development. It was proposed to achieve this by looking at students' initial confidence at writing, introducing lectures on note taking, using workbooks to aid students reflection and extra workshops on academic writing and referencing to improve overall academic achievement. It was expected that essay writing marks would improve.

Although the skill of writing was identified as a potential cause for lack of student attainment, discussion with experts in deconstruction of writing skills was needed to define explicitly the nature of the problem. Writing was broken down into the following Skill sets:

Understanding and Defining the Question/Topic/Title
Collecting Appropriate Evidence/Content
Logically Ordering the Content
Analysing and Criticising and Synthesising the Evidence into a Conclusion
Referencing the Sources When & Where Appropriate

Style of approach (teaching):

Step 1	Student self assess
Step 2	Student shown how to do a task
Step 3	Student practises task
Step 4	Reflects on feedback
Step 5	Makes plan to develop skill before
Step 6	Practise skill again...

Rationale & methodology

Bioscience students come from a variety of academic backgrounds, but all will have studied level 3 science based subjects.

To determine the literacy skills development and attainment our students encounter during level 3 studies, a questionnaire was developed and used in our link with schools & colleges. Both teachers and students were asked about their literacy skills to help us understand the present level of study, which is often hard to interpret from published curricula. This also opens links with this level of study so we can respond to the rapidly changing curricula at level 3 & 2.

At level 4 a questionnaire of skills was developed to allow students to self assess their confidence in various aspects of literacy. This was to give students a base line so they would realise they needed the support offered in the planned workshop. The questionnaire was repeated at the end of the year (at the end of the teaching period, after they had received feedback on the majority of the course, including formative feedback on draft essays, but before they had the final marks or sat the end of year exams). All these questionnaires were returned to the students.

A session on note taking was introduced during the first Skills session and this skill practiced in an academic content driven lecture. The skill of constructing an essay and using notes was practiced in an exam style essay, which was formatively marked and returned with feedback.

Workbooks were developed so the students could record their marks in formative and summative assessments and compare these with their initial assessment of confidence. Using this they were to plan how to use forthcoming workshops to enhance their skills. These workbooks were overviewed by their academic tutor.

Additional workshops were designed in conjunction with the library and student support services. These were to enhance the student's essays writing and planning skills and digital fluency when using the library databases. The timing of these workshops was to follow formative and summative assignments so that feedback could be used, but prior to significant summative assignments which would use these skills.

Academic tutors were asked about their perception of their level 4 tutees compared to previous years.

Results

The skills questionnaires, completed by SHU Bioscience level 4 students, show a relatively high level of initial confidence in writing and research skills (6 on a scale 0-10). When this confidence was compared to the results from the final skills essay (a coursework driven assessment where the title was given at the start of the year and developed through the year), it was seen (Figure 2) that there was no correlation between this initial confidence and their final ability ($R = -0.0688$).

At the end of level 4 the responses to the questionnaire show an increase in overall confidence in writing and research skills (7 on a scale of 0-10) and the correlation was now more in line with their achievement ($R = 0.215064$), but it still indicates that the students' perception of their skills is not very accurate.

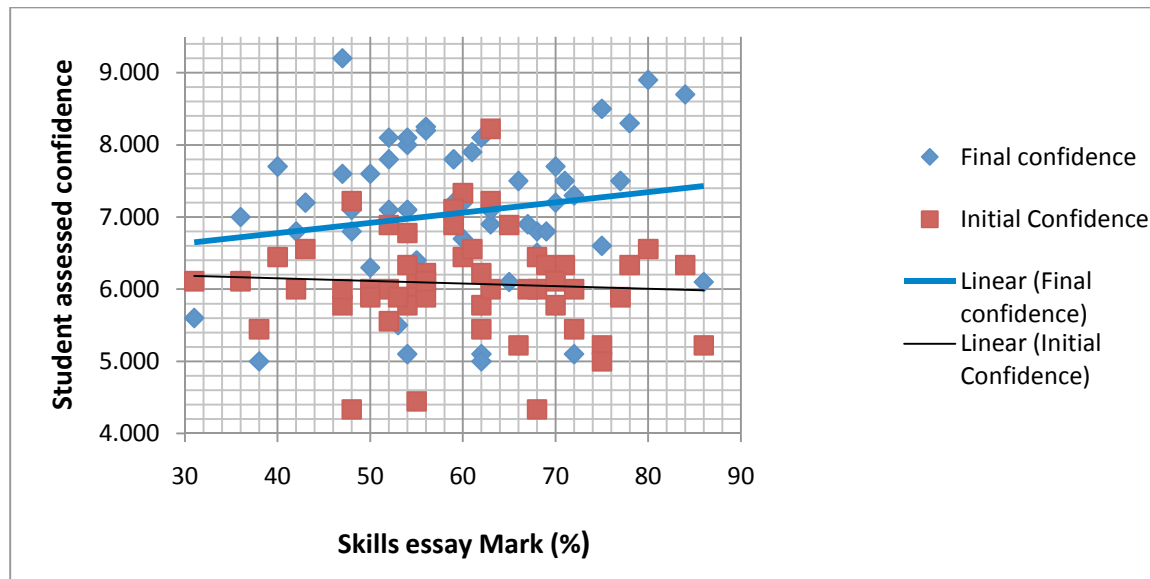


Figure 2: Comparison of the Correlation Between Initial Student Assessment of Writing Skills and their Final Assessment against Achievement in the Skills Essay

An unpredicted result of using the skills questionnaire was that students took the list of skills as a primer of the department's expectations. This was voiced by the students to the academic staff as they completed and returned the surveys.

The formative exam style essay given in week 3 to allow students to practice essay writing and utilise their note taking efforts resulted in a reassuring set of marks (Figure 3). The students showed they were able to use lecture material to construct a satisfactory essay (mean 56 ± 18). Feedback provided indicated areas to improve, and students were encouraged to reflect using the workbooks and prepare for the relevant workshops.

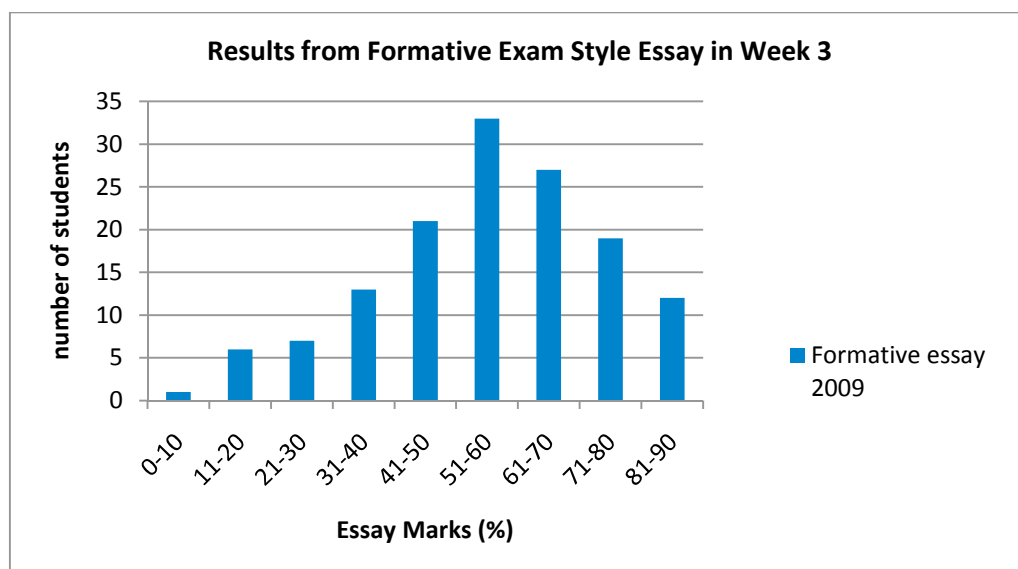


Figure 3: the Distribution of Marks in the Formative Exam Style Essay completed during Week 3

The results at the end of the year show that in course work, research style essays, there is no improvement compared to last year, but the change in attainment has been common over a number of years (Figure 4).

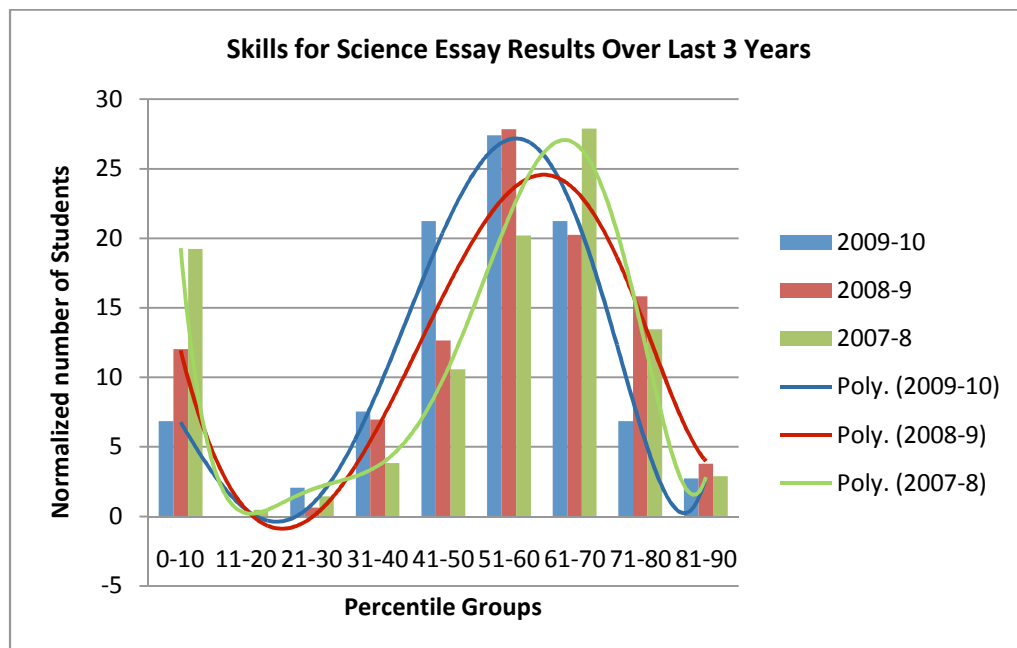


Figure 4: Comparison of the Distribution of Marks in the Coursework Style Summative Essay over the Past 3 Years (normalised for varying student number)

Although the marks had not improved, the students' ability to reference was improved and tutors now replied that the quality of the references used was poor, but were no longer concentrating on the process of citing within the text and using the Harvard system.

Students responded differently this year to the workshops provided by the Library staff. This year students did not report a gain in confidence as they had in previous years (Figure 5), despite seeing no significant decrease in ability to find relevant material for presentations.

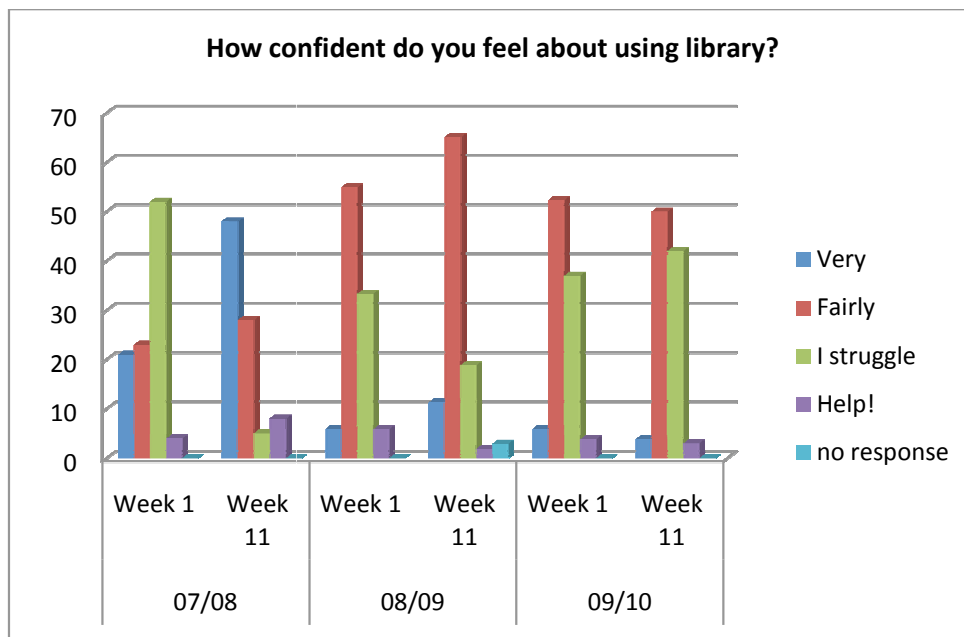


Figure 5: Student Self Assessment of Digital Fluency in use of Library Resources Over Last 3 Years.

The cohort of students in this study changed their preferred manner of evidence collection in line with previous years (Figure 6).

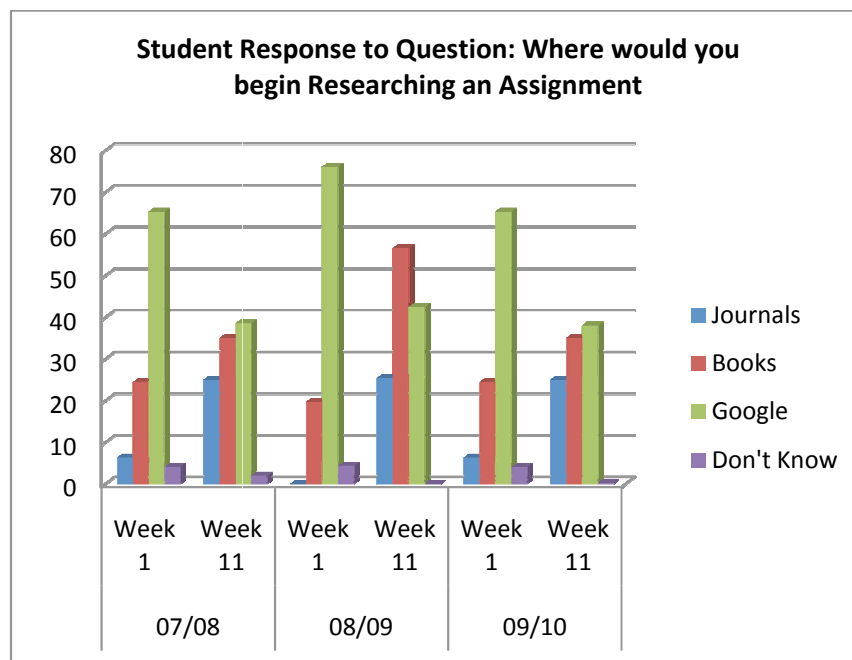


Figure 6: The Change in Attitude of Level 4 Students to Appropriate Resources for Evidence Collection

This year 30% more students understand the use of the AND Boolean operator compared to last year. Changes in exam essay results were not seen and students' final assessment of confidence in writing skills did not correlate with exam essay results (Figure 7).

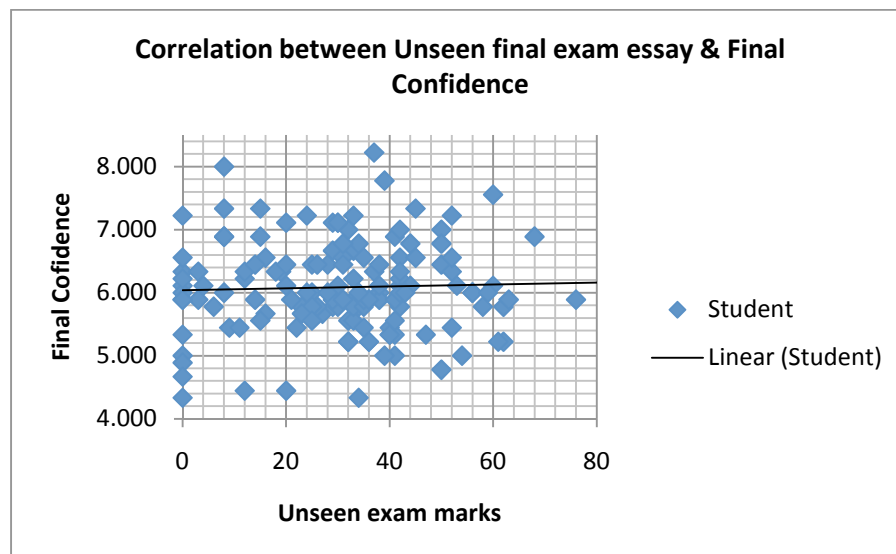


Figure 7: The Relationship Between Final Self Assessment of Confidence in Literacy Skills Compared to Results in a Conventional Essay Style Exam

Students completed the worksheets designed to allow them to reflect so they could plan how to use workshops: some semester 2 workshops, especially those designed to support writing skills, were very badly attended (20% attendance). Students were very reluctant to show the feedback received, or to produce written material during these sessions.

The questionnaires from level 3 institutions indicated that students were confident of their literacy skills, but their teachers thought that their skills from level 2 were weak and that they would need support to cope with some aspects of academic writing.

Discussion

Bioscience students come with a high level of confidence in their literacy skills, which follows on from the confidence seen in level 3 students. This confidence is not related to their abilities and suggests that students have poor understanding of the expectations and requirements of university work. This is not an original finding (Patricia Davitt Maughan, 2001).

By the end of level 4 the confidence students have in their writing skills has increased and, perhaps more importantly, is now positively related to their ability. This correlation is still weak and shows that students at this point still do not have a good grasp of university level.

That initial confidence is so high may mean that students do not see the need to engage in some of the skills sessions provided. While no one would want to crush confidence, it would be preferable to have, at least by the end of the first year, a more realistic self assessment of ability. Autonomy works better if based on self knowledge as well as access to appropriate support. These questions linked to assessments assay their personal assumption and are a route to effective autonomy.

The workbooks were designed to assist the use of reflection by students; they would be able to see what they, as individuals, could get from the workshops: it would be interesting to know how much this elevated self assessment hindered attendance at workshops. Interestingly, the students this year showed a reduction in confidence in use of the library databases as semester 1 progressed. As this was not reflected in a final inability to source suitable materials it could be that the change in emphasis on researching and referencing resulted on a more accurate self assessment in this area.

Students responded well to the initial emphasis on note taking and performed well when that work was assessed the following week. It was therefore disappointing that this was not repeated in other examined assessments. It seemed that students could write in a reasonably structured manner in assessments, but only when they were dealing with a discrete amount of information being assessment close to the time the students had engaged with it. This seems to mirror the style of assessment at level 3 where material is delivered and assessed in modules delivered of a short time scale.

Final student confidence showed no correlation with final exam essay achievement. This should not cause surprise as an essay in an exam requires a different skillset to that needed within the coursework derived assessed essay. It was anticipated that the mechanical skills associated with writing and practiced in note taking should have influenced exam performance, and staff did report that there was an improvement in hand writing (not a trivial comment when so many scripts need marking in a short time). It was also anticipated that note taking would improve retention of information by making the student a more active learner during lectures; it has been suggested that this was not seen, as the marker could now be more critical of the content as they were now able to read it! This suggestion is welcomed, but needs some method of testing its validity.

While students became more confident in their essay writing and researching skills, this was not repeated in the final essay, although the technical ability to reference was reported. This year on year downward trend in marks needs further investigation. It can be seen that a greater proportion of students are engaging with the assessment and this may be skewing the marks down and it could be proposed that fewer students are inhibited from attempting to write and submit an essay.

Further work

The use of workbooks to link reflection and feedback to produce a more autonomous and focused use of the support workshops available needs to be refined, especially in view of the students' view of their abilities in certain areas.

The skills needed to prepare for examinations need developing.

References

Davitt, M. P. (2001), 'Assessing Information Literacy Among Undergraduates: A Discussion of the Literature and the University of California-Berkeley Assessment Experience', *College & Research Libraries*, 62(1): 71-85.

McMillan, V. E. and Huerta, D. (2000), 'Collaborative Instruction by Writing and Library Faculty: A Two-Tiered Approach to the Teaching of Scientific Writing', *Issues in Science and Technology Librarianship*. Available at: <http://www.library.ucsb.edu/istl/00-fall/article1.html>

Useful sites

<http://www.rlf.org.uk>

Appendix - Material developed and used in this study

Questionnaires

Note taking instructions

Books presentation on reading

Marking schemes

Feedback sheets

Essay writing Presentations

Workbook sheets

Referencing presentation

Essay peer marking sheets

Here are the peer marking sheets to mark the drafts of the essays in this week's academic tutorial.

In your next tutorial (week 33) students should bring a draft of their essay. Most students wanted their draft looked at by an academic, but they also valued the experience of marking and seeing another's effort.

Take in the essays and redistribute them amongst the group. Hand out the peer marking sheets. Ask the students to tick the boxes to indicate whether the essay they are marking has the relevant sections or content present. They can also write any comments on the sheets. Comments should be helpful and supportive!

You have a choice of what to do with the drafts-

1. Ask the students to mark each section out of 10 to generate a mark (say you will moderate these marks so no fights break out) give feedback and hand them back.
2. Mark/give feedback on them as a group in the tutorial and hand them back.
3. Take them in, mark them/give feedback, hand them back via reception ASAP as the final essay has to be in on 26th March.

Please e-mail me if a student does not submit a draft: the marks for this a formative.

Hand back the feedback sheets to the authors of the essays.

Skills for Science Essay Feedback Sheet

Student:.....

Tutor:.....

	Poor	Fair	Good	Comments + mark
Marking criteria	√	√	√	
Presentation - Text in 11 or 12 point, double spaced. Good English, grammar and spelling; appropriate scientific style/ 10 .				
Structure - Contains introduction, main section with subsections containing linked paragraphs, conclusion./ 10				
Content - <ul style="list-style-type: none"> • Introduction - Defines the topic/title. Outline of why the topic is important; background context /10 • Main section - Relevant information to appropriate depth. Demonstrates understanding of concepts. Evidence of critical discussion. /30 • Pictures, diagrams and figures - referred to in the text, legends/titles. /20 • Conclusion - Pulls together the themes and arguments./10 				
References Appropriate use of relevant literature./ 10 References cited in the text. Correct format (Harvard) followed.				
Areas you have done well in:				

Areas that need improvement:	
TURNITIN score	Comments on TURNITIN score
Overall Mark %	

Dear Academic Tutor,

Please use these feedback forms to mark your tutees' essays. The feedback and marks are really important as it give the student a real understanding of what is required of them later in the course - sometimes we have to be cruel to be kind.

- If the essay was late then mark it and give feedback, but show that it will get ZERO as it was not on time.
- If there is no TURNITIN report then the student also gets ZERO as this was a condition of submission
- If the Harvard system has not been used, but perhaps the numbering system, then the student can get some marks, but less than 40% for that section.
- If the references are all web sites then the mark should indicate that this is substandard
- If there are fewer than 5 references then the mark should reflect that this is substandard (I would expect at least 10, but I realise this is not a numbers game)
- If there are no diagrams (graphs or the like) then the student loses 20% points and the same process for absence of intro/conclusion.

Please printout the TURNITIN reports and comment on those about poor practice - too many students have whole paragraphs from another source and others are too keen on the "copy and then alter odd word" school of essay construction!

The students have had workshops and lectures giving them very clear guideline as to what to include, but if you have any queries than do come and see me.

Please get the essays back to me as soon as possible, with a deadline of Wednesday 5th May.

Many thanks for all your work, the students seem very happy with the tutorials this year, lets hope we all see them flourish into beautiful second years....

Yours,

Jane G

Note Taking

To take notes you do not need good handwriting & you do not need perfect spelling - remember; only you have to be able to read it... You need suitable pen and paper. You can use a laptop.



You may well be slow when you start. Your writing may be poorer than usual. You will get faster and clearer & it is a lifelong skill worth acquiring.

You need to read through your notes at the end of each lecture. At this time you can put in any bits you missed or are unclear while you still remember. You will find it useful to look at the related material in the handouts/ Blackboard site or in the textbook - make sure you have planned time to do this.

It is important to **WRITE** your own notes - do not rely on Blackboard or handouts - Remember, when you do an exam you will need to **write** it down and **draw diagrams** - this is the time to practise both - **GET DRAWING!**

Hints on note taking

- Develop your own form of shorthand
- Read about the topic before the lecture - if you are more familiar with the words then copying while listening gets easier. (Most module handbooks tell you the topic of each lecture at the start of the semester).
- Don't give up, it will get easier
- Different lecturers **DO** have different styles
- Think - do you need to copy everything - if a lecturer says this is just an extra example and you don't need to include it - then believe them. Think! Is the lecturer saying the same thing in a different way? Look at the summary slide - have you got everything on there.
- Buddy up with someone and ask each other if you think there are gaps in your notes
- Always attend the lecture - your own notes are far better than trying to interpret any one else's!



What next?

Remember to label all your notes:

Name of lecturer

Subject of lecture

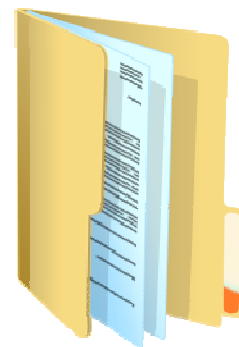
Module of lecture

Date of lecture

Remember to label each page of your notes for that lecture

Most people use an A4 pad - use a good quality paper - it is easier to write on and you will need to refer to it again and again - poor quality paper wears out! Don't use paper with too narrow a spacing between lines.

Keep your lecture notes safe - most people keep each module in a separate file and at the end of the year they transfer all their notes into an arch-lever file.



Your notes are for use - read through them, add to them. Do not wait for an exam before you dig them out! You will need this year's notes next year when to extend topics - lecturers will assume you have them and that you will automatically refer to them!

A lecture is not just an animated text book - it is your time to link the oral and the written - it is your time to learn how an argument is constructed - it is your time to develop critical thinking and to ask questions - even if they are just in the margin of your notes)

Think! Why are you taking notes?

Answer: To engage intellectually with the subject matter

To make you own, individually a record of the event

to start your own road to discovery in this area

Now add you reasons.....

Induction Skills Questionnaire

Level 4

Skills for Science

During your course you will learn many new things, often in a different way to previously. As an undergraduate you need to acquire more than just facts, you need to be able to use them in a creative, intelligent and critical manner. Your course allows you to gain and develop the skills needed by a graduate scientist. Many of the skills you need you already have, you have used them before at school and college, some skills may be less familiar to you; but you will have ample chance to advance and consolidate all skills needed on your course - this is done at level 4 in the Skills for Science module.

To help you get the most from this module, by focusing your mind on areas where you may need extra support, we would like you to complete the following questionnaire. Remember to be as honest as possible and to think carefully about the evidence on which you are basing your answers. Your responses will let us see what you, as a group, see as your strengths and weaknesses so we can tailor the module appropriately. Your answers will also give you a baseline against which to compare your progress in assessed exercises this year.

Remember, one of the most frequently asked questions by students is, "What level do you want? How does university work compare to school?" through this questionnaire you will start to get an answer and develop a method of realistic self evaluation.

Skills Questionnaire

Name:.....

Course:.....

Student number (if known):.....

Part A

Thinking about being a bioscience student at Sheffield Hallam, which of the following do you think you will need to do?

	Sometimes	Often	Rarely	Never
Attend lectures
Attend workshops
Attend tutorials
Attend labs
Prepare for lectures
Prepare for workshops
Prepare for tutorials
Prepare for labs
Write lab reports
Use PowerPoint
Work in groups
Produce advertising material
Create and test a hypothesis
Make notes from books
Make notes in lectures
Take notes during labs
Take notes in tutorials
Take notes in workshops
Make notes from the internet
Read scientific papers

Part B

Which of these activities have you done before?

	Done	Not done
Produced and used an essay plan
Done lab work
Attended lectures
Taken notes in class or lectures
Made notes from a book or internet
Used library to find appropriate books
Used electronic data bases to select information
Used EXCEL
User PowerPoint
Produced word processed work
Written an essay
Written an essay in an exam

Part C

How Confident do you feel about each of the following? - give a number for each.

0-2	3-4	5	6-7	8-10
V Unconfident - no idea where to start need LOTS of help	unconfident done it before but not good at it need help	Q. Confident Done it before & OK at it Might need a bit of guidance	Confident Done it before & done it well. Will not need much guidance	V. Confident Had no problems in the past - lots of experience & done it well. Will not need guidance

Write your number on the line

Planning an essay	.....
Collecting appropriate information for an essay	.....
Writing essays	.....
Word processing	.....
Making notes from books	.....

Making notes from the internet	.....
Deciding on the reliability of a source of information	.....
Referencing material used	.....
Indicating in an essay exactly which sources you used	.....
Making notes in class/lectures	.....
Preparing for exams	.....
Doing multi choice tests	.....
Answering short answer questions	.....
Answering essay style exams	.....
Doing lab work	.....
Analysing data	.....
Using electronic data bases	.....
Presenting data clearly in tables	.....
Doing basic statistics (eg mean, median, mode)	.....
Reporting results in an appropriate graphical format.	.....
Calculating the molarity of a solution	.....
Producing a PowerPoint presentation	.....
Reporting your findings orally to a group	.....
Answering questions orally	.....

Remember to hand this in. You will get your responses back. You will need to use this initial self assessment of abilities when planning and discussing your work.

Remember, alot of undergraduate learning relies on you directing your own learning. Once you start to see when and where you need to improve then you will have to take a personal responsibility and engage with support material. Remember too that when you find something that interests you, you will have plenty of opportunity to develop that interest yourself.

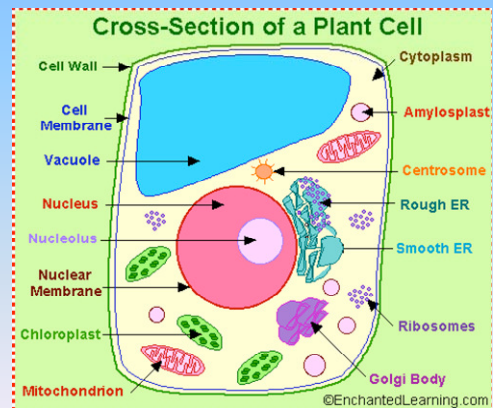
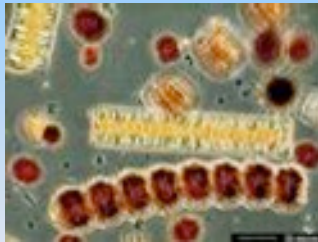
Writing for Biosciences Skills for Science

Cathy Malone
Education Guidance Adviser
Student & Academic Services
c.malone@shu.ac.uk

Writing

A Practical Exercise

The Cell



Referencing

Essay Writing

Workbook sheets

Skills for Science Workbook

Name:.....

Course:.....

Introduction:

These sheets will form a workbook that is a record of your progress over the year. You will get pages on a variety of topics through the year. Please complete them and store them carefully.

As you complete sections of the workbook, your tutor will sign them off during tutorials*.

If you do not attend with your work book sheets on the correct day, you cannot expect your tutor to sign your book.

This booklet will count toward your Skills for Science reflection grade, but more importantly it is your guide on how to get the best from your studies. As you fill in the pages you will see how to use feedback and become a reflective worker - this will soon become automatic and you will naturally do it for yourselves (most people already do it to a certain extent). You are aiming to become an autonomous learner who can direct their own studies beyond the narrow confines of the taught program.

The skills you demonstrate in this booklet will also act as a reminder when you need to provide evidence of certain skills on application forms and at job interviews.

This is the first year we have tried doing this activity in this manner - we look forward to any comments (nicely put please).

*As you need to get your tutor to sign this there is no electronic copy - please, DO NOT LOSE IT!

Writing and Note Taking

You have been attending lectures and taking notes.

How confident were you, initially, about taking notes?

Look at your skills questionnaire Part C qu 11
and fill in the box

You have had to use your notes to write an essay.

How confident were you, initially, about writing an essay?

Skills qu C3

Record your essay mark here using the headings

Structure

Content

Analysis

Can you see where you might be able to improve?

Yes

No

Identify help that is available to you (think about the library staff led sessions)

Do you think you were over or under confident about your abilities at the start of your course and if so please comment on the reasons for this?

Tutor signature & Date

Referencing and Researching

You have been looking for material to support your presentation, essay and to augment your lecture material.

Look at your skills questionnaire part C question and fill in the box

C2

C7

C17

You have had to use the learning centre facilities to access information.

How confident do you now feel about (use scale from questionnaire):

selecting books

using electronic data bases

selecting appropriate scientific papers

Think about the workshops associated with selecting information

Did you attend any?

Did you find them useful?

What might you do next to improve your researching skills?

Do you think your initial assessment of your ability was accurate (please explain why)?

Please describe how, and why, your skills have changed during the year

In your work you have had to indicate exactly which sources you used.

How confident did you feel about doing this at the start of your course?

Skills questionnaire Part C

C8

C9

How confident do you feel now?

C8

C9

Please explain how your referencing skills have changed and what you may do to further enhance them.

Tutor signature & Date

Formal Lab reports

You have written a partial formal lab report in semester 1 & a full one in semester 2.

How confident were you, initially, about writing in such a scientific style?

Look at your skills questionnaire about

	initially	now
presenting data (C18)	<input type="text"/>	<input type="text"/>
producing graphs (C20)	<input type="text"/>	<input type="text"/>
doing lab work (C15)	<input type="text"/>	<input type="text"/>
analysing data (C16)	<input type="text"/>	<input type="text"/>

Record your lab report grades here

Please describe how, and why, your skills have changed during the year.

Tutor signature & Date

Presentations and Group Work

You have worked as part of group n a number of occasions this year.

Look at your skills questionnaire part c question and fill in the box

How confident did you initially feel about group work?

Part C qu23

How confident did you initially feel about producing a PowerPoint presentation?

C 22

Please describe how, and why, your group working skills have changed during the year

Please describe how, and why, your presentation skills have changed during the year.

Tutor signature & Date

Revision and Examinations

During the year you have completed a number of exam style assessments and shortly you will engage in your end of year exams.

How confident did you initially feel about preparing for exams?

C11	<input type="text"/>	C12	<input type="text"/>	C13	<input type="text"/>	C14	<input type="text"/>
	(prep)		(MCQ)		(short ans)		(essay)

How confident do you now feel about preparing for your exams?

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(prep)	(MCQ)	(short ans)	(essay)

Please describe how, and why, your skills in exam preparation have changed during the year.

Tutor signature & Date

Receiving & Using Feedback

This year you have had feedback on work you have done

Please tick the type of feedback you have received and give an example.

		example
Group feedback in lecture/tutorial	<input type="checkbox"/>
Peer feedback	<input type="checkbox"/>
Blackboard based feedback	<input type="checkbox"/>
Marks	<input type="checkbox"/>
Grades	<input type="checkbox"/>
Individual written comments	<input type="checkbox"/>
Feedback sheet	<input type="checkbox"/>
Other (please state)		

How do you use the feedback you received?

Tutor signature & Date

Developing autonomous learning in part time 'return to learn' students

MARY HAYNES (M.HAYNES@SHU.AC.UK)

FACULTY OF DEVELOPMENT AND SOCIETY (DEPARTMENT OF EDUCATION,
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Abstract

The aim of this project was to improve the process of transition into higher education for part time non-traditional students enabling them to begin to realize their potential for autonomy in learning through the embodiment of study skills at the beginning of their course. An innovative feature of the project was the multidisciplinary approach to module planning and design. The first module of the foundation degree in early years was redesigned by working collaboratively with a small team of faculty and central support staff including the Learning Hub, IT Support Services, Student Study Support and Library Information Advisory Service. Knowledge of the specific needs of part time foundation degree students from previous work was used to develop a 'tool box' of study skills tailored to ease their transition into higher education. The team explored relevant interventions to promote learner autonomy in the form of purposeful workshops and provision of appropriate supplementary support materials that could be embodied into module delivery. These were developed by specialists within the team and systematically integrated into the module programme. Although module delivery was primarily facilitated by the module leader other team members were also directly involved in delivery and support of students during seminars. Data was collected through surveys and focus groups to measure confidence, levels of digital fluency and perceptions of learning in higher education to evaluate the impact of interventions. This case study will explore how a collaborative approach to planning and delivery enhanced transition and nurtured students to start to develop an autonomous approach to their learning. It will also emphasize the breadth of insights gained through multidisciplinary working which contributed to the success of the project and led to mutual understanding of roles across the university.

Background

The Faculty of Development and Society at the university has a specific focus and commitment to the enhancement of part time student experience; this project emerged from the previous experience of the module leader and Learning Hub manager working with a group of part-time, work based foundation degree students to improve this area of provision. Evaluation of earlier work suggested that the experience of transition into higher

education for some part time foundation degree students was one of frustration and estrangement which hampered learning and achievement. Although additional study support and access to central services were offered with the aim of raising levels of confidence and developing autonomy in relation to learning, it became increasingly noticeable that some students showed signs of dependency, failing to take advantage of additional support and continuing dissatisfaction. The purpose of this project was to improve the transitional process by embedding tools and confidences at the beginning of the foundation degree to encourage an autonomous approach to learning with a group of part time students.

The focus group for the project was a group of twenty-five part time, female work based students starting the first module of the Foundation Degree in Early Years. The majority were experiencing higher education for the first time, for some prior educational experience had not been positive. All had followed a vocational route to achieve level three and most had not been engaged in formal learning for a number of years. They were all employed in the early year's sector working within the same large metropolitan borough, having a diverse range of roles and levels of responsibility including nursery officers, room supervisors and managers. Most students were initially extrinsically motivated; the majority directly targeted by the early years workforce development officer to enrol onto the foundation degree, as part of the national drive to upskill the early years workforce, with the incentive of full course funding and other benefits such as cover costs and books. In support of the widening participation agenda and in response to the local authority and employers, the foundation degree has traditionally been delivered to this group of students in a small community centre, with little access to IT, just over ten miles from the university. Each module is facilitated in four hour sessions over a period of ten weeks. University resource, particularly access to IT and the learning centre, is critical and the local authority agreed to provide transport for the students to attend the university four times during the project.

The project team comprised of the course leader and module leader from the Early Years Foundation Degree, the Manager and intern from the Learning Hub (support and information). There was additional involvement from Student Study Support, Library Information Advisory Service and Information Technology Support Services, one of whom had not experienced the student interface, who were all interested in becoming involved in the development of effective support strategies for part time students. The wealth of expertise promoted a multidisciplinary approach to the project and added another dimension to the project.

Key objectives were to:

- develop and embed appropriate and purposeful interventions at the beginning of the foundation degree to ease transition into higher education;
- work collaboratively with faculty and central support staff to develop study support to enhance transition and promote autonomy in learning;
- create a 'toolbox' of study skills and specialist support materials to nurture and promote autonomous learning;

- provide additional study support and guidance tailored to meet the specific needs of students;
- evaluate the impact of the project on FdA Early Years confidences, digital fluency and autonomy.

Intended benefits and outcomes:

- enhanced part time student experience of transition;
- learners able to recognise problems encountered and know how to solve them;
- empowerment as an autonomous learner;
- access to a range of specially tailored supportive materials;
- improved student achievement;
- higher retention;
- evaluation of an alternative approach with part time foundation degree students to enhance transition and promote autonomy in learning;
- insight through multidisciplinary working and mutual understanding of roles across the university;
- support part time student experience more cohesively;
- focussed commitment to the enhancement of the part time student experience;
- sharing of good practice and lessons learnt.

Rationale

The landscape of higher education is steadily changing as the agenda for life long learning and widening participation become increasingly prominent (DfES, 2003). Foundation degrees were introduced in 2000 as part of the government agenda to increase provision and enhance access to higher education. Foundation degrees were designed to meet the needs of both the student and workforce by integrating academic study with work based learning to raise the level of skills, knowledge and understanding within the workforce and help boost the economy (DfES, 2003). Workers in the early years sector are poorly qualified; early years foundation degrees are recognised as a key progression route for mature students employed in this area and are well funded as part of the drive to build a more highly trained workforce in the sector. This is reflected in the growing numbers of part-time students on the foundation degree in early years at the university. The need to adapt institutional habitus has signalled the reconsideration of the nature of the teaching and learning experience to accommodate and meet the needs of an increasingly broad range of provision and progressively more diverse population of students (DfES, 2003). Despite the growth of foundation degrees there has been little research into teaching and learning for this provision (Tierney and Slack, 2005). Studies of part time work based students (e.g. Askham, 2008) alongside broader work investigating the first year experience of students (e.g. Kift, 2008) are however a source of observation and commentary into relevant issues.

Students arrive in higher education with the capacity for developing an autonomous approach to learning and it is suggested that the learning environment is the key

determinant in the realisation of this attribute (Fazey and Fazey, 2001). Non-traditional students are often positioned in an environment that hampers learning and the significance of the structure of the learning environment should not be undervalued (Askham, 2008). To cultivate autonomy in learning Fazey and Fazey (2001) emphasize the pivotal role of those who construct the learning environment, which Bamber and Tett (2000) suggest should be underpinned with adequate and appropriate support that will enable non-traditional learners to develop confidence and experience success. It is therefore critical that as part time, non-traditional learners start their journey into higher education, they experience a milieu where they are encouraged and supported to develop strong study skills (Tait et al, 1995) that will help them to build confidence and take responsibility for their learning. Although students on foundation degrees often worry about levels of support for academic study (Tierney and Slack, 2005) Clegg, Bradley and Smith (2006) found that students tend to be reluctant to access student support services suggesting that the integration of study support into course design would be a more effective approach. Krause (2005, p5) identified the embodiment of opportune support through "transition pedagogy" at the beginning of a course that would help students to have a positive transitional experience into higher education. Yorke and Longden (2008), Kift (2008) and Krause (2005) also emphasise the significance of course structure at the transitional stage to improve experience and achievement of learners. Knox (2005) calls for reconstruction of content, delivery and assessment to support non-traditional students to experience success in higher education. To nurture autonomy students "need to be supported with strategies for taking responsibility for their learning in a scaffolded and supportive environment" (Krause 2005, p65) highlighting the influence and significance of tutors and associated support staff in the creation of a learning environment conducive to nurturing autonomy in learning. Integration of both academic and other support services has the potential to further enhance and transform the learning experience (Kift, 2008) for part time non-traditional students. The project team drew on this work to inform their approach to develop study skills of foundation degree students during the first module to promote autonomy in learning and improve the process of transition.

The team started the project by exploring their previous relevant experience, the work of others in the field and taking into account the indicative content, delivery and assessment structure of the first module, Young Children Playing and Learning. Study skills and competencies were identified that would be most useful to help students gain confidence, start to manage and take responsibility for their learning. These fell into three broad areas: IT skills such as file handling, storage and saving materials, introduction to the conventions of academic writing and library skills including accessing electronic sources of information through the module reading list and avoiding plagiarism. The need to adapt the prior pedagogical approach to the module was explored, leading to the reconstruction of the module to provide an infrastructure that embodied appropriate and purposeful study support to nurture autonomy in learning. Where study support sessions had been incorporated a model of co-delivery with the module tutor and relevant study support specialist was adopted to create a supportive learning environment to scaffold learning. This innovative approach of delivering sessions with both the module leader and specialists from the team drew heavily on staff resource with high levels of personal contact but, as Bamber and Tett (2000, p73) point out, working effectively with non-traditional students is

'teacher intensive'. The specialists within the team designed and created a 'toolbox' of related support materials to help students' practice and reinforce their skills independently.

Enabling the students to build confidence and competencies in digital fluency was a priority because Blackboard (virtual learning environment) was the key method of course and module communication; a potentially considerable barrier to the management of learning. The first integrated session was therefore a two hour workshop to familiarize learners with Blackboard, understand expectations and to learn how to use and apply basic IT skills and competencies. The Learning Hub manager and intern facilitated an active session to familiarize the students with Blackboard; including accessing the module site. The IT specialists supplemented this with interactive guidance on file handling, storage, saving and retrieval of electronic materials. The session was connected to a small element of an assessment task to make it purposeful. Students had to navigate the module site on Blackboard to locate a skills grid which they went on to save onto their own part of SHU space. They then had to appraise their study skills associated with the module and set targets for their own development. The two IT specialists, Learning Hub manager, intern and tutor offered differentiated levels of support to scaffold learning as individuals and small groups worked purposefully during the workshop; peer assistance was encouraged to further develop confidence. Comprehensive hard copies of guidance, also available online were given to encourage learners to take responsibility for the development and reinforcement of their skills through practice and application to nurture an autonomous approach. Additional telephone support from the IT specialist was offered for further support when using a computer away from the university. The co-delivered sessions with Student Study Support and Library Information Advisory Service followed a similar model.

Assessment

The module delivery pattern and pedagogical approach was reconstructed to provide an infrastructure that embodied timely and purposeful study support with clear and relevant links to assessment tasks. By scaffolding learning and nurturing autonomy, the aim was to empower students to take responsibility for their learning, gain confidence and ultimately experience success in module assessment. The module comprised of three assessed tasks. The first task consisted of two grids; one to reflect on professional development in relation to recognised professional standards within the sector and the other to appraise and set targets for the development of academic study skills. As previous students had experienced difficulty in accessing the grids from Blackboard this task was introduced in the second week during a co-delivered study support session, described above, that introduced Blackboard, file handling, storage, saving and retrieval of materials. The second task was a poster presentation of a small piece of quantitative research undertaken in the workplace and presented in the seventh week. Interventions that focused on the tasks were co-delivered with IT specialists on graphical representation of data collected by the students and Information Advisory Service to find and select relevant sources of information to support their presentation occurred. The final task was a written reflective account of a pre-selected aspect of professional practice, and supported by sessions introducing academic writing by the Student Study Support Service and the Information Advisory Service on

referencing and avoiding plagiarism. Student Study Support also worked alongside the module tutor with individuals and small groups to provide further guidance on conventions of academic writing, during academic tutorials. Although the nature of the assessment tasks was not changed as such, the innovative feature was the co-delivery and embodiment of timely and purposeful study support directly relating to the assessment tasks.

Summary and evaluation

Both quantitative and qualitative data was collected for the project through surveys to measure confidence, levels of digital fluency and through focus groups to gain deeper insight into perceptions of learning in higher education at the beginning, middle and end of the first module of the foundation degree. Data was collected by the Learning Hub Manager and Intern having agreed that the module tutor would not be involved because it may have inhibited or influenced student responses. By the end of the project period the Learning Hub Manager and Intern had become so involved with the student group that an independent researcher led a final focus group after students had received feedback. This was supplemented by evaluations of study support sessions co-delivered by specialists alongside mid and end of module evaluations to further enhance the data set. Further data was gathered through perceptions of the experience from the project team. After module assessment had taken place and grades were available the data was analysed by the project team, using a thematic approach to evaluate the impact of the project on autonomy in learning and the process of transition, as a basis to improve the development of practice.

Findings

Quantitative data collected at the beginning of the project suggested that students had low levels of confidence and digital fluency. Student confidence was assessed by using the academic confidence scale (Sander & Sanders, 2003). The chart below demonstrates increasing confidence between the beginning and end of the module; each bar is an average score, out of 125, across the cohort.

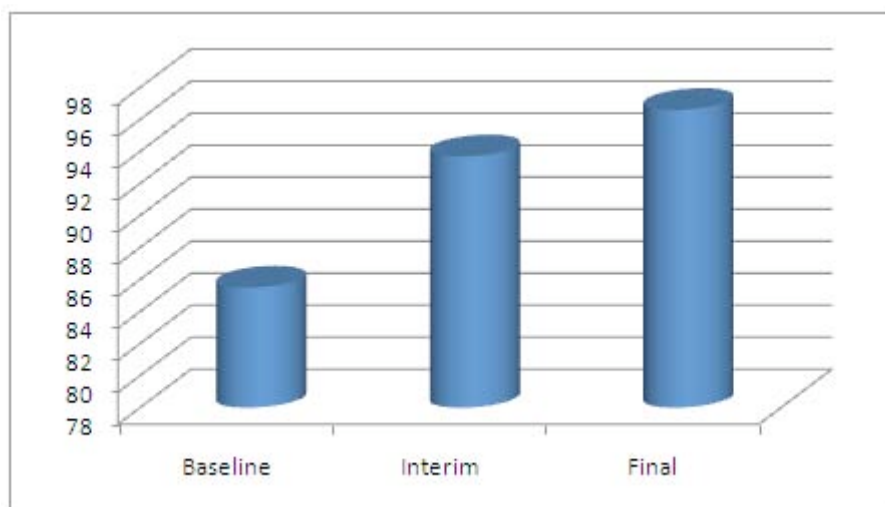


Figure 1: Average confidence of students throughout the module

Focus group discussion and the digital fluency survey further supported data from the confidence survey; the main worries emerging at the beginning of the module were lack of confidence in academic writing and IT skills. Several students said that they were nervous at the beginning of the foundation degree feeling like a 'fish out of water' and 'not capable of being clever enough'. Data collected from the focus group suggests that the raised confidence levels, particularly by the mid-point of the module reflected the intensive initial support and development of a supportive learning environment which one student said had 'boosted (her) confidence and self esteem'; both linked to autonomy in learning (Fazey and Fazey, 2001)

Digital fluency was measured using a survey that assessed levels of confidence and importance of six areas of IT: handling basic IT functions such as word processing, use of power point, online communication, searching the web for information, and using the virtual learning environment (Blackboard). Although the students rated IT skills as reasonably important, data collected at the beginning of the project confirmed that they had low levels of confidence and digital fluency; one student in the focus group said that she had 'no computer skills'. Interestingly base line data indicated that just over 10% of students did not believe that communicating on line and using Blackboard was important to their study but by the mid data collection point attitudes had changed and the whole group regarded these skills as important. At the beginning of the module well over half of the students were unconfident with use of Blackboard and only one was very confident whereas at the end of the module, with the exception of two students, all rated themselves as confident in its use. Overall the importance attached to IT skills and levels of confidence were raised by final data collection point at the end of the module. Qualitative data from the focus group matched this trend, confirming that IT support sessions 'helped us to become confident with BB and SHU Space' and that support materials were used 'to look back on at home' to practice and reinforce skills. Fazey and Fazey (2001) link the desire to achieve proficiency, in this case IT skills, alongside positive perceptions of personal competence to an autonomous approach.

Although not principally concerned with final assessment grades, the project team believed that comparison with a similar cohort from the previous year would be insightful in relation to attainment and associated increases in student confidence. A direct comparative tool was used to weigh attainment grades of the foundation degree group and a similar group from the year before. The data comparison shows that the average grade increased from 47.6% the previous year to 55.4% for the project group, a rise of almost 8%. Confidence scores were then compared to overall assessment grades to see if there was a correlation. The data was represented in scatter plots, followed by regression analysis. The initial analysis of data showed weak negative correlation between confidence and attainment which is converse to what was expected. On further examination it became clear that this was due to two influential outliers which skewed the data set. These outliers were removed to allow for a more representative sample and the results can be seen below.

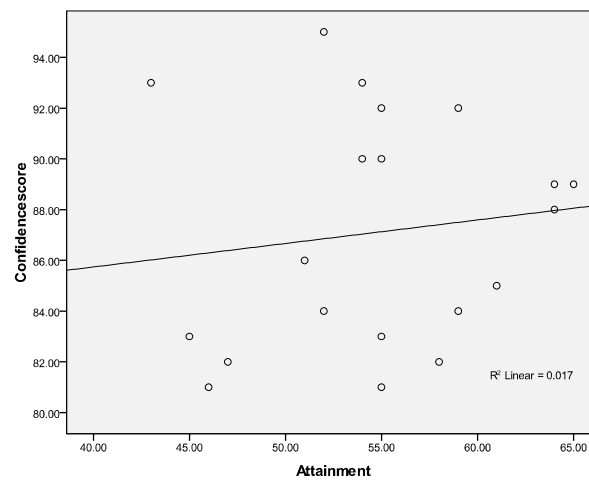


Figure 2: Confidence and attainment of students on the module

The data shows a positive correlation highlighting the link between confidence and attainment suggesting that there were positive links between increased confidence and final summative assessment grades for this group of students.

Impact on student experience

Fazey and Fazey (2001) emphasize the creation of a positive learning environment to promote autonomy highlighting the crucial role of those involved. Feedback suggested that this was achieved with focus group comments such as:

"the module tutor has been very supportive and has shown lots of empathy to us new learners that have been away from learning for such a long time. She has been patient and understanding of all our individual needs."

They recognised that support had 'been built in' agreeing that support from specialist staff 'had been ace'. Feedback from students regarding embedded study support was overwhelming positive;

"it has been very positive experience to our learning, helping to develop confidence and experience success. ..they were very tuned in to being a student and identifying support needed."

Gaining confidence within the academic dimension of the foundation degree spread to other aspects of their lives, many believed it had also "given me a confidence at work" as well as having a positive impact on personal life.

Qualitative data suggested that students had engaged with the process of nurturing autonomy. Expectations of successful study in higher education and the advantages of

developing an autonomous approach to learning were carefully explained to students during the module one student said, "yes, we understand the expectations, they are high", acknowledging that starting the foundation degree was a "big jump from level three to four." Bamber and Tett (2000, p74) suggest that "a two-way process of change and development is required if non-traditional students are to enjoy a successful experience of higher education." During a co-delivered study support session the module leader reiterated the expectations of both staff and students; the Information Advisory Specialist mentioned that:

"emphasising the responsibilities of staff and students during the session was new to LIS staff and felt like an important message to address."

Empowering students to adopt strategies to take responsibility for their learning helps to develop autonomy (Krause, 2005), the majority of students in the focus group took a proactive approach to problems by using support materials from the 'toolkit' of support materials, starting to show signs of becoming more intrinsically motivated to develop competencies for success. Responsibility was assumed for overcoming barriers, particularly those associated with IT. One student explained that she:

"would phone a friend - phone or email the university to discuss the problem with the relevant department."

IT support services confirmed this approach with evidence of both telephone and email requests for guidance and advice from the focus group of foundation degree students. In terms of starting to take responsibility for learning the students found sessions with the study support service extremely beneficial:

"we now know how to map out ideas and structure your work, we were keen on top tips for writing, it was all useful and helpful to have handouts to relate to later."

Contrary to findings of Clegg, Bradley and Smith (2006) a high proportion of the students came to the university campus on a Saturday to take advantage of additional study support sessions for part time students organised by the Learning Hub. It seemed that encouragement to use support services by the team and, more critically, having met specialist support staff during module delivery with whom they felt comfortable was a key factor in take up of additional support provided by the university. Although the model of co-delivery was heavily reliant on staff resource, meeting so many staff seemed to ease transition allowing the part time students to feel part of the university community and settle quickly into it, one student said:

"It is so big, it's fantastic, I didn't think that I would ever feel part of it but I do now, we've been everywhere, there's so many people to help us."

After reflecting on the process of transition the focus group agreed that it had been a nice challenge' suggesting that it had been a positive experience. It is worth adding that retention for this group of students was 100%.

Although student evaluations after each intervention of study support suggested that students were highly satisfied with the module there were a minority of students who quickly acquired new skills and competencies. Although the students did not pass comment, the project team agreed that there was a need for greater differentiation to provide sufficient challenge within the integrated sessions and was something to address more fully in future planning.

There were issues which hampered the student experience in relation to university resource and the use of IT causing frustration for a minority of students. Initial problems with administration and enrolment systems prevented access to Blackboard for a couple of students which not surprisingly appeared to have had a negative impact in terms of their motivation and confidence. Some computers in IT rooms had faults that had not been reported and meant that not all students had access to their own computer, not conducive to the development of individual skills and competencies. A major issue linked to access of IT resource is one of equity; traditionally this group of students would have been learning in accommodation off campus with no access to IT. To support the project the funding authority agreed to finance and provide transport to allow the students to experience some module delivery on the university campus. They were pleased to go to the university because "we haven't got learning facilities here" although one student said "it was a pain to go to Hallam." This creates a dilemma; the course team support and work under the umbrella of the widening participation agenda but access to university resource, particularly IT and the learning centre was critical to the success of the project thus bringing potential inequities to the fore. A sustainable solution in terms of access to crucial resources to embed study support in the foundation degree is essential, if confidence and competencies that nurture autonomy in higher education are to be developed with students learning off campus.

Impact on staff experience and professional development

The wealth of expertise and collaboration between academic staff and specialists added another dimension to the project. Discussion was rich during intense initial project development as the team began to conceptualise an alternative model that fully embodied study skills into the module, allowing them to appreciate each others diverse roles, share knowledge and draw on past experiences. In depth explorations of the study support needs of part-time work-based students at the time of transition into higher education further enhanced the debate.

"I think that I gained a lot of understanding about the needs of the students, which gave us a focus for developing our materials and content of the session, although the material was not too different from other sessions we have delivered. The approach of little and often, advocated by the module leader was beneficial as it allowed us to

concentrate on developing understanding of a particular topic, e.g., referencing, rather than covering a lot of ground in one session as often occurs."

This was echoed by other members of the project team who had found working collaboratively towards a common goal made the work much more focused and purposeful in terms of student experience. Not only was an alternative pedagogy adopted within the reconstructed framework but specialists in the team supplemented it with the production of relevant additional support materials to create a 'toolbox' of support materials, to encourage students to practice and reinforce skills to nurture autonomy in learning. These materials directly related to co-delivered study support sessions, using a systematic stepped easy to follow format tailored to meet the specific needs of the students. Hard copies of materials were given to students, during the relevant session, which were also available online and specialists valued acknowledgement of their specialist skills to produce them.

The adopted approach was new to study support specialists who tend to deliver study support sessions in isolation, one regarded the work as a "bolt on mechanical training exercise" because they are not integrated into course structure. The most innovative aspect of the work therefore was the adoption of a model of co-delivery of study support with specialists alongside the module leader integrating study support more holistically into to module teaching, learning and assessment. The unification and commitment of the team during relevant sessions not only helped to create a supportive learning environment but also offered the opportunity after each session for reflective dialogue to further develop professional practice. One of the central IT support specialists who had not previously worked at the student interface felt that the project would benefit future work, having raised his awareness of differences in staff and student systems, that he had previously not known existed. Some specialists within the team were more used to engaging with students than others and although more of a challenge for some than others was highly successful.

"It was very useful to have the (module) tutor in the classroom with us in order to manage helping students through their hands on tasks. The students were clearly engaged, asking lots of questions which made for a pleasant experience." (LIS).

The team agreed that the collaborative approach encouraged them not only to simply share their wealth of expertise but to think more deeply about their pedagogical approach and re-frame practice. The team took a social constructivist approach to scaffold learning; students did not tend to differentiate between the academic member of staff and study support specialists during sessions, recognising them all as 'teachers' which made the team feel respected and was a source of great satisfaction. This approach not only enabled the students to feel part of the university but also gave the project team the opportunity to make meaningful connections with colleagues across the university as they worked closely to achieve common goal. All team members agreed that the whole project experience had not only been remarkably positive on a personal level but exceptionally beneficial in terms of professional development.

Further development

Adapting the prior pedagogical approach and reconstructing the infrastructure of the module created tensions for the module leader between meeting professional body requirements through indicative content and associated learning outcomes (the foundation degree is recognised as a key driver to raise the quality of practice and has been awarded sector endorsement from Children's Workforce Development Council) vying against the time needed for purposeful and effective embodiment of study skills, to nurture autonomy in learning and ease transition. There was great deliberation about what to leave out in order to accommodate sessions for development of study skills. The positive outcome of the project clearly demonstrates the success of the approach but some students commented that they would have appreciated greater development of subject content relevant to their work within the sector. This will be considered during the revalidation process of the foundation degree next year. Redesigning the structure to allow the incorporation of a high level of study support in the first module, aligned to learning outcomes and assessment tasks, without being overly burdened by prescribed content, will be a useful starting point.

Sharing the work with other part-time programmes in the department is the first priority, as well as trying to disseminate the model used along with the practical resource of the 'toolbox' of supplementary study support across the faculty. Currently the 'toolbox' of specialist materials is to be used on pilot pre-enrolment Blackboard sites that Learning Hubs are supporting. A potential issue however is sustainability; the project relied heavily on staff resource however specialist support staff involved in the project believe that, if this approach was to be developed and embedded into practice, more widely refinements and streamlining would ultimately make it much more efficient and productive in terms of staff resource and student experience than currently. The library information specialist has discussed the success of co-delivery and integration of library information skills into courses prompting a written strategy which has been taken to the university Learning Teaching and Assessment Committee. More widely the work has been accepted at the 2010 Centre for Learning and Teaching Research Conference at Edge Hill University.

Some of the students in the focus group attended a pre-enrolment Welcome event, organised by the Learning Hub, and during the project students who had attended started their course with clear expectations and confidence as they made the transition into higher education. This is also something to build and develop to improve the process of transition and help non traditional part-time students to become more confident at the beginning of their journey into higher education. Supplementary Saturday study support sessions were also valued and well-attended by the study group, yet another area to build on. It will however be critical to ensure that the students do not associate the opportunities with failure but as something to help them experience ongoing success.

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Developing as a teacher project

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Background and rationale

This CPLA funded project was based around the development of a year long 20 credit point level 6 module, '*Developing as a Teacher*'. *Developing as a Teacher* is a mandatory education module for undergraduate students enrolled on the 3 year BSc course leading to Qualified Teacher Status (QTS). Because of the requirements of the professional year when students are engaged in professional teaching placements, it is taught in the second year of the degree programme.

Developing as a Teacher is a cross curricular module involving undergraduates studying to be teachers of Design Technology, Mathematics and Science. In the current year (2009/10) there are approximately 50 students equally split between the three curriculum areas. This is a significant increase on previous years (+25%) and is set to grow over the next two years to between 60 – 70 students. Typically students on the 3 year BSc have come straight from school, although there are always a small number of older students.

In recent years *Developing as a Teacher* has consisted of two components, taught sessions (comprising mainly seminars with a few lectures) and a five day serial placement in school. Assessment consisted of three components:

- a reflective portfolio based on the school placement (this was intended to include a reflective diary), mandatory but not contributing to the assignment mark;
- a group presentation on one aspect of the taught sessions (25%);
- an essay on raising achievement (75%)

The rationale for the existence of the module had become somewhat unclear over the years and the CPLA funded project provided an impetus to rethink the structure of the module both with respect to the teaching model and the assessment model, and also to rethink its central focus and the rationale behind it.

Developing as a Teacher has gone through several modifications in its lifetime including at least one change of name. In a former existence it was called *Education as a Discipline*. This was unfortunate as many students misunderstood the nature of the module, believing it was to do with behaviour management in schools rather than what it actually was, and is, that is, an education module which is endeavouring to prepare them for the hard task of becoming reflective practitioners both in the Professional Year and afterwards when they are practising teachers. Unfortunately after the name change many students have continued to misunderstand the nature of the module, albeit differently: the current title has led many

students to believe that *Developing as a Teacher* is to do with tricks and tips for classroom teaching.

Students studying to be teachers are notoriously subject focused (John, 1991) and many students can find it difficult to take on board the wider aspects of the profession they will be entering. Thus many students have found it difficult to engage with *Developing as a Teacher* as they have failed to understand its relevance.

For some students, outputs, in terms of assessment for the module, have differed from outputs in their subject areas. Some of these students have been surprised, and indeed shocked and disappointed, at this mismatch.

There were a number of factors coming into play here that led to the need to rethink the module. These were:

- partly as a consequence of the students' subject focus they failed to regard *Developing as a Teacher* sufficiently seriously;
- there was little opportunity in the disciplines in which the students were engaged to develop the sort of academic skills that are required to operate effectively at level 6 in a specifically education module;
- the purpose of the module was unclear to the students and indeed to the staff teaching it and hence the module lacked focus.

The project

Over recent years a major government drive has been to increase the number of students involved in STEM (Science, Technology, Engineering and Mathematics) as it is seen to be important for the economic prosperity of the country (Roberts, 2002). The three subjects involved in the *Developing as a Teacher* module are all central to the STEM agenda with DT covering both engineering and technology. Using the CPLA funded project as a driver and the government STEM initiative, *Developing as a Teacher* was restructured so that there were good reasons for students in all subject areas to work cooperatively in cross curricular teams called STEM groups. The intention was to increase student motivation for the module by providing a coherent justification for thinking outside the subject and thus to improve the overall staff and student experience.

Previously the module had been focused on raising achievement in schools, but through staff changes over the years this had blurred so that it was unclear what the point of the module really was. There was some limited experience for the students of being in school on a five week serial placement but there was no real remit for the students other than gaining experience in school. This, in itself, was valuable as the students are all studying to be teachers but it was problematic for some students in that they had no clear idea about what they were doing there and neither did the school.

The module has always had getting students to work together in teams across subject boundaries as one of its aims. The CPLA funded project facilitated an initial restructuring of the module so that there would be worthwhile reasons to work cooperatively in cross curricular groups. The new central theme for the module was 'what it means to be an engaged learner in your particular subject area' with one of the major focuses of the module being on the students working cooperatively together to plan, organise and run a STEM workshop during Science Week. The idea was for the students to provide a day-long experience for a group of school pupils focused on STEM activities. After an initial brief introduction the plan was for each STEM group to run three interconnected workshops with a small, mixed group of pupils from different schools.

This also entailed a major shift in the assessment of the module with the new assessment model incorporating:

- a group hand-in before Christmas on the development process for the STEM day up to that point (mandatory but not contributing to the module mark);
- a reflective piece on the planning, preparation, organisation and execution of the actual STEM day workshops (20%);
- an essay on 'what it means to be an engaged learner in your subject area.'

To achieve this major shift in focus students were allocated to STEM groups by staff from the start of the module taking into account subject and gender as far as possible. Each STEM group consisted of six students of whom two were from each subject as far as was possible. The students remained in these groups throughout the module and, subject to the limitation of places offered by schools, were in their groups on placement. (Not all schools offered six places, and not all offered places for all subjects). There were three tutors involved in teaching the module, one from each subject area. Initially there were 54 students on the module, so each tutor was responsible for 3 STEM groups.

After an initial workshop on what it means to be a critical thinker the students were introduced to the STEM agenda. Tutors presented several starting points as possibilities for the STEM activities for the students. Students were not constrained to these ideas, however, and were also free to work on their own ideas. To facilitate the production of the STEM workshops the next three sessions were allocated to the students to work on developing their ideas for the STEM day. At least one tutor was available for the students to consult during these sessions.

Following these sessions students were on placement for the next five Thursdays. The brief that the students were given for the placement included:

- gaining experience of schools through helping in lessons and through observation;
- investigating the impact of the STEM agenda on their placement school;
- observing lessons in the other STEM subjects (if possible).

The general feedback from students suggested that the STEM agenda had not impacted on schools to any great extent and indeed many were not even aware of it. The following comments from students about the placements were typical:

"The placement was very useful, however STEM wasn't introduced...which was a disappointment" (DT student A, end of module evaluation¹)

"a bit pointless, used it more as time observing...lessons rather than anything to do with STEM" (Mathematics student A, end of module evaluation)

In itself this is worthy of note, perhaps contradicting much of the current rhetoric about STEM. The STEM agenda is very much a top down initiative driven by the government, rather than a bottom up initiative driven by teachers, which may help to explain this. Despite this, most students had felt that they had a worthwhile experience, the placement giving "a good insight into school life." (Mathematics student B).

At the end of the autumn term each STEM group submitted a report on the development and planning process for the STEM day. On reading these it became apparent to the module tutors that many groups had not really thought through their teaching sessions. This was probably due to lack of experience and should have been foreseen. For some of the students this was the first time they had experienced planning a learning session for others. Many groups assumed that:

- everything would proceed smoothly, exactly as they had planned;
- the work they had planned would be at exactly the right level for the pupils who would understand it immediately.

It was also apparent that many groups had not worked through the activities they had planned themselves and did not appreciate how essential this was to good planning.

It also became apparent that several groups were not functioning properly with some group members having little or no input. For example one student reported that:

"we set up meetings and those that went to them benefited and were organised ...[however] some of the other members of the group had very little (virtually none) input into the preparation." (DT student D, end of module evaluation).

One student said :

¹ Feedback on the module was by means of a questionnaire which was returned by just over 60% of the students, in almost equal proportions from the 3 subject areas.

"Not all groups were able to meet – finding communication hard." (DT student B).

One student reported that "all members attended all meetings" (Science student A). This was not typical. It wasn't clear why students were not able to meet regularly as timeslots were available.

The original plan for the structure of the module had been for the four sessions at the start of semester two to have been focused on the development of critical thinking skills. Only the initial session went ahead as planned. The following three sessions were rescheduled to enable each STEM group to work through their three sessions using their peers as substitutes for the pupils:

Session	
1	Each STEM group teaches first hour of lesson to peers
2	Each STEM group teaches second hour of lesson to peers
3	Each STEM group teaches third hour of lesson to peers

The attendance at these sessions was excellent. In this way each STEM group taught each hour session to their peers, receiving feedback from them and also from their tutor, but more importantly they became aware of problems in their own planning, preparation and teaching as they delivered it.

For the STEM day the tutors had invited three schools to bring a cohort of thirty year 8 pupils. This meant that each STEM group would be working with a group of approximately ten pupils, slightly less than one to two. On the day, however, because a school cancelled unexpectedly at the last minute due to the advent of OfSTED, the student:pupil ratio was nearly one to one. The event took place as planned with most groups working in a large university hall; two groups who needed access to water worked in a science laboratory. Because of the shortfall in numbers of pupils, groupings were altered, but there were no other major glitches. Several groups found that despite all of the advanced preparation, not everything went to plan. In some cases the activities did not work as expected and in other cases the pupils proved to be more able than the students had planned for.

The majority of students (88%) felt that they were personally well prepared for the STEM day, although only 70% felt the same about their groups. Nearly all of the science students thought their groups were well prepared as did most of the mathematics students. However, only half of the DT students thought their groups were well prepared. One difficulty appeared to be that some DT students were concentrating on DT work that needed to be done in workshops and consequently gave a much lower priority to the cross-curricular work.

Overall just over half of the students thought it was worthwhile working in STEM groups, with the mathematics students being most positive and science students being least positive. One mathematics student said it:

"Provided an opportunity to work with other subjects which I found very enlightening and gave ideas for when we start teaching... [and also provides] experience of working with other people as you would be doing within a school" (Mathematics student C, end of module evaluation).

One particularly negative comment came from a DT student who did not find the experience worthwhile:

"I know what I am up against in school now" (DT student C, end of module evaluation).

Science students' views differed radically, one reporting:

"I do not see the point, it did not make a difference to the projects" (Science student B, end of module evaluation).

to :

"very informative, raising important issues" (Science student A, end of module evaluation).

The remaining sessions of the module focused on various aspects of what it means to be an engaged learner that had not been covered during the preparations for STEM day. Attendance dropped off significantly at these sessions.

As previously explained, the shift in focus of the module, from raising achievement to engagement as a learner in mathematics/science/ DT, using the STEM project as the driving force, led to a significant change in the assessment model. The new model incorporated specific sessions on developing critical reflection and it was hoped this would lead to an improvement in assessment outcomes for the module. Early indications from assignment task 2, the reflective write-up of the planning and development process and the actual event, indicate that this has not been achieved and more work will need to be done on improving this aspect of the student learning experience on this module.

Overall the three tutors felt that the approach to the module and their experience of teaching on it was much improved on the previous year. There was more of a sense of purpose to the module and it was felt that there was more point to it. However, although this was the experience of the tutors, there was some discrepancy with the experience of the students, many of whom were still failing to engage properly with several aspects of it. The change in approach to the module was partly successful. Although more than half of the

students felt that working with the other subjects had been beneficial, a substantial minority remained unconvinced or were even opposed to it. The undoubted highlight for the majority of the students had been the STEM day.

There is obviously a need for further development work on the *Developing as a Teacher* module. The current structure does not allow for effective formative feedback to the students: there is insufficient time for the students to act on the feedback from assignment task 2 to produce a more informed assignment task 3.

Within the module, students have been given greater autonomy to develop as learners, but they are more dependent on the cooperation and collaboration of the other members of their group; this was not always forthcoming. The underlying aim of the module, which is for them to develop as reflective practitioners, is currently not achieved for the majority of the students, as they are still focused to a very large extent on the mechanics of teaching their subject.

Further development

In the forthcoming year, as tutors we are intent on a further restructuring of the module. Our tentative proposals are:

- the form of the serial placement to be reconsidered as it no longer meets the needs of the module;
- the STEM day to be moved to December with all preparation for it to be in the autumn term;
- the title of the module to be changed from *Developing as a Teacher* to *Education: Critical Reading and Reflection*;
- taught sessions and seminars to be rethought around an enquiry based learning approach in the second semester.

Finally we are considering inviting more schools to send fewer pupils. For example one proposal is that schools are invited to send 6 or 12 pupils so that approximately 120 pupils are present on each day. If there was sufficient interest there would be the possibility of running two separate days.

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A buddy scheme - supporting transition and progression for students with Aspergers Syndrome

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Abstract

This paper describes a project setting up a Buddy Scheme to benefit both students with Aspergers Syndrome and non-disabled students currently studying at Sheffield Hallam University. In particular, it was hoped that by participating, the AS students would develop greater learner autonomy to enhance their student experience. The project model employed was thought most likely to improve social integration and enhance student retention and success. The work spanned nine months and included the development of a stakeholder group; a recruitment and training process for volunteer students; the development of a set of project boundaries; supervision for the Buddies and an evaluation methodology. Evaluation data revealed the perceptions of all of the AS students and Buddies to be entirely positive and there was some evidence to suggest the development of learner autonomy amongst the AS student participants. The outcomes of the project will be incorporated into proposals for a longer term project within the University, which will include involvement of pre-entry AS students during their transition to the University from schools and colleges. It will also be of value to other universities thinking of setting up similar schemes.

Background

"Asperger Syndrome (AS) is an autistic spectrum condition, which can result in often subtle differences in aspects of social behaviour, communication and application of mental flexibility" (Martin, 2008). The number of students enrolled at Sheffield Hallam University with Asperger Syndrome (AS) has increased from 3 students in 2004/2005 to 32 in 2009/2010. This rapid increase is expected to continue as the promotion of widening participation in Higher Education is a key objective and the Diversity and Equality agenda continues to be valued. Students with AS are currently spread disproportionately across the University with 17 out of the 32 students studying in the Faculty of Arts, Computing, Engineering and Sciences (ACES).

Students with AS are more likely to struggle with social and communication skills than the general student population. The impact can be highly stressful and their student experience is often characterised by feelings of isolation and loneliness. These difficulties can impact significantly on peer and tutor interactions, jeopardising individual, group work and placement outcomes.

Prior to the commencement of the project the Disabled Student Support Team (DSST) had received requests from prospective students with AS who were keen to join a university run peer support scheme at their chosen place of study. In addition to student feedback, case work undertaken by the DSST indicated that many students with AS were finding the transition from school or college to higher education challenging. Some students currently accessing higher education can be affected by the pedagogical gap in the transition from school or college to higher education with a shift from direct to independent styles of learning (Oxford Centre for Staff and Learning Development, 2009). Evidence taken from research projects conducted by the National Association of Disability Practitioners (Martin, 2006) and the Higher Education Academy (Madriaga et al, 2008; Madriaga and Goodley, 2009), suggested that the development of a buddy/befriending scheme would be of value to achieving learner autonomy for students on the autistic spectrum.

The project aimed to benefit both students with AS and non-disabled students by

- promoting opportunities for students to develop greater learner autonomy;
- supporting the personal development of students with AS to enhance their student experience, performance and ultimately their ability to gain graduate employment;
- to encourage participation of students with AS in a wide range of university activities;
- enabling students participating as buddies to develop a range of skills and attributes needed to gain graduate employment;
- improving the relationship between students with AS and their peers;
- enabling the project team to develop sufficient knowledge and resources to propose a longer term voluntary scheme in future. This might include working with AS students in transition to the University to alleviate anxieties known to be experienced by this group of students preparing for higher education.

Rationale

Purpose and goals

Work undertaken by the University's Improving the Student Experience Group - Retention and Student Success considered a range of research to inform the development of a Retention Policy and Framework. To summarise the research undertaken by Yorke (1999), Yorke and Longden (2008), and the National Audit Office (NAO, 2007) and House of Commons Committee of Public Accounts (2008), the main reasons that students withdraw are:

- inadequate preparation for Higher Education;
- poor institutional and course match;
- not coping with academic demand/ making poor progress/ lack of engagement;
- poor social integration with their peers and academic/ support staff;
- financial issues and personal circumstances.

There is a clear rationale therefore for considering models of student support which are likely to improve social integration. Similarly Jones (2008) in his review of widening participation, Student Retention and Success, recommends that institutions assist students in developing a sense of belonging through induction, student centred learning and social integration.

Peer mentoring has been identified as a key priority in Sheffield Hallam University's Corporate Plan as part of a strategy of developing the support for students which is available at key points of transition. This initiative clearly sits within this strategic framework and has enabled the institution to evaluate a particular model of support so that we can collectively improve and develop our practice. It is hoped the findings of this project will not only inform the institution's policy and practice in disabled student support provision, but to examine the benefits and costs of a particular method of enhancing student engagement which may benefit all students.

Concept

The project built on the work of Martin et al (2009) Promoting Learner Autonomy through Mentoring which evaluated existing mentoring provision and developed a training programme for mentors.

Central to the work of the DSSP is the promotion of an inclusive approach to teaching and learning and of encouraging student autonomy. This is a particularly complex issue when supporting students with AS and it was hoped that this project would enable the institution to work towards a greater understanding of how best to support students with AS within an HE setting.

Assumptions and Context

The approach taken was premised on the notion that by developing a Buddy Scheme AS students would gain the opportunity to have social conversations with their non-AS peers in a reliable, empathetic and supportive context with potential for:

- some reduction of general feelings of isolation and loneliness;
- some development of specific skills in the art of holding a conversation, thereby enabling each student to make progress towards becoming a more autonomous learner;
- an increase in confidence in terms of participating a specific social context, which might be transferred to other social contexts.

Methodology and Approach

The project team consisted of two members of the DSST Management Team and two mentors who were employed to carry out the research and prepare the materials. This was

an action research project employing an ethnographic methodology. The team began the project by carrying out research to identify peer support schemes within other organisations. Preliminary research revealed the specific area of enquiry to be unique; the closest comparator being a scheme within a UK university aimed at international students. The team also conducted research with organisations such as the National Autistic Society. The purpose of this was to identify guidance for organisations that may have been considering the development of a buddy / befriending scheme.

In addition to external research, the team contacted various departments and academic faculties within Sheffield Hallam including the Autism Centre, and also the Students' Union, to try and identify examples of peer support schemes currently in operation within the University. Hallam Volunteering has significant experience of running the Jigsaw Project, a befriending scheme for people with AS, and the project team were able to draw on their experience.

A two stage approach for the research with students was agreed. The content of the scheme was agreed with input from a stakeholder group, chaired by a student with AS and there was a series of interviews with AS students.

1 A Stakeholder group was set up which included the following representatives:

- Current students with Asperger syndrome (AS)
- A representative from the Students' Union
- Representatives from the Disabled Student Support Team
- A representative from the Learning and Teaching Institute
- Representatives from The Autism Centre
- DSA Mentors
- A SHU graduate
- The Discussion Group took place last December and was chaired by a student.

Disabled students were members of the Stakeholder Group, whose advice and support were at the heart of the project. Their involvement not only provided the project with an authentic student voice, it also empowered them to have a stake in the direction, implementation and the dissemination of the overall project. The meeting provided a good starting point for sharing ideas and views about the role and scope of the proposed Buddy Scheme. Training materials were devised and work was done on creating a set of boundaries within which the scheme would operate.

2 Students were also interviewed on a one to one basis. The interviews were recorded and the responses were used by the team to generate further ideas about the role and purpose of the Buddy Scheme.

Following the research stages, a role description was put together by the team and was advertised via SHU Space, Faculty Blackboard sites, the Students' Union and through the use of direct emails. The role was advertised for two weeks and during that time the team received approximately twelve responses from students who were interested in becoming volunteer Buddies. All volunteers were asked to submit a CV and personal statement by the deadline date. The team received eight in total.

Before recruitment took place, the team conducted a review of all CVs and personal statements. After considering each application the team decided to invite all eight candidates to a half day recruitment event. During the event the team presented information about the project and existing services provided by the DSST

Following the introductory presentation, the candidates were asked to complete a group activity which tested their views and understanding of the boundaries of the Buddy role. After the group activity the candidates were interviewed on an individual basis by two members of the team. The successful candidates were then asked to attend a training event at a later date and unsuccessful candidates were offered feedback.

The team held a training event two weeks after recruitment for the six successful candidates. The training took place over half a day and covered a wide range of topics including:

- The role and boundaries of a Buddy;
- Disability Equality;
- Confidentiality and Duty of Care;
- Support for participants.

Following the training event the team considered the suitability of the volunteers and decided that they all met the role criteria. The team then invited the volunteers to the Buddy Scheme launch event.

Prior to the launch event the team held a meeting to decide how the volunteers would be matched with the students who had requested a Buddy. After careful consideration of the number of students involved with the scheme (six volunteers and four students with AS) the team decided to form four groups:

- Two groups of three people;
- Two groups of two people.

The team then put together a programme for the launch event and decided to divide the session into two parts:

1. The first part of the session was allocated solely for the students who had requested a Buddy. This gave the students an opportunity to ask questions about the scheme in a confidential way before the volunteers arrived. Boundaries of the role were

clarified during this time followed by a discussion of suitable activities for the Buddy groups to participate in.

2. During the second part of the event the volunteers arrived and everyone was given the opportunity to introduce themselves in a very informal way. The team used an 'icebreaker' game to help create an informal atmosphere for the introductions and this was followed by smaller group discussions to allow more time for the participants to get to know each other and arrange their first meeting.

The event was concluded by a short presentation from the team to clarify issues such as confidentiality, duty of care and the scheme boundaries. On-going support was offered to all students involved with the scheme.

Four AS students and six Buddies were matched into three separate buddy relationships. The buddy meetings took place during the period 18 March to 28 May 2010. Supervision was offered to the Buddies and the AS students were encouraged to discuss any issues which arose with their DSA-funded Mentors if required. Volunteers were offered a support session once a month with a member of the team. The purpose of each session was to allow volunteers to discuss their role in a confidential way and to raise any issues they came across. Students who were matched with a Buddy were offered the opportunity to raise any issues with either their DSA Mentor or a member of the team.

Evaluation

All three buddy relationships were successfully maintained during the period of the scheme and all participants kept within the agreed boundaries. Participatory research was the premise of this study with the stakeholder group comprising both students and staff. Summative evaluation comprised three separate questionnaires for the AS students, the buddies and the project team. Two focus groups were also held, one for the AS students and one for the buddies, which captured student narratives regarding their expectations and impact of participating in the scheme.

Quantitative analysis of the questionnaires was not appropriate as the numbers completed was small; 4 from the AS students and 4 from the Buddies. But the outcomes did mirror the data which emerged from the focus groups. In summary the questionnaires revealed the following:

- All respondents rated the recruitment; training; matching event and Buddy Meetings as Good or Very Good.
- There was a consensus regarding the boundaries of the scheme from both AS students and Buddies. All agreed that they had been appropriate except for the restriction for the Buddy meetings to be limited to the City and Collegiate campuses. There were six specific requests/suggestions for the meetings to take place 'close' to the campus, e.g. in the Winter Gardens. Three respondents suggested that this should be allowed to happen once the Buddy relationship had become well established.

Finishing sentences in the questionnaire, AS students commented:

- *"The most useful learning experience for me, with regards to the scheme was... it gave me the opportunity to learn outside my lectures and seminars: understanding social skills; working as a group."*
- *The thing that I feel is most valuable about the Buddy Scheme is "...it helps integrate students with AS into university life."*
- *"It has made the adjustment to University life more easier. I felt a bit unsure before. Now the Buddy Scheme has changed all that. I certainly would do schemes like this in the future. I thoroughly enjoyed the Buddy Scheme and I think it should continue."*

Comments from the Buddies, when asked what skills they had developed as a result of their participation in the scheme:

"A greater understanding of AS. My interview skills have developed through the feedback given."

"Understanding of how non-verbal signals, i.e. silences can affect someone. This has affected the way I interact in group situations."

"Empathy & sympathy, time management, communication."

Results from the AS student focus group in terms of positive outcomes of the project:

- *"Well, it's helped with social skills and it's helped me to integrate more into the university life."*
- *"It helped me settle in a bit more."*
- *"I think it's helped me boost my communication, boost my confidence talking to other people."*
- *"I suppose it's put me at ease in some way, and it's just helped take my mind off some things, when I'm feeling stressed out about certain things it has helped to put my mind at ease."*
- *"I've found more of a social life with the Buddy Scheme, because I felt a bit lonely really, didn't really talk to anyone very much, but I have really enjoyed it. I hope it continues next year."*
- *"you learn that there are people who want to learn about AS."*
- *"I've felt ... I can still speak my mind even with a learning disability It's just kind of helped me open up a bit more I suppose, in some ways."*
- *"The group experiences and how that might have helped towards how in employment you have to work in groups..."*

What did you enjoy most?

- *"...being out socialising, and being out with people you can trust and have confidence in."*
- *"...just social stuff that you look forward to."*
- *"you learn how to be more independent, arranging meetings and so, it's like a team of individuals."*

The need for a longer term scheme was expressed and there was recognition that the process of developing communication skills is long term:

- *"the scheme is only a stepping stone in a way because you can't go 'right I've learnt this' in one scheme or a few months you've literally got to carry on for a year or more so. It's like doing a course, you can't do 2 weeks and then bang!"*

Results from the Buddy focus group, regarding employability:

"... it ... really helps you critique your own behaviour, like with time management and ... leading the meetings and knowing when to take a step back and when not to, and what questions to ask if you thought someone didn't want to disclose something, the empathy you've got and just everything. ...I helped to look back at what you've done ... what went well or didn't go well if it got awkward with silences or something ... it was good just to analyse how I was."

"... I usually don't bother about being 10 minutes late But to be honest it (time management) has improved, and I never wanted to be late ..."

Summary of the main findings of the project:

- An overwhelmingly positive perception of the scheme by the AS students and Buddies.
- AS students did experience some reduction in their feelings of isolation and loneliness.
- Outcomes suggested a greater integration into university life and the development of specific social skills by the AS students with some progress towards becoming more autonomous learners.

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Work based projects in the humanities: autonomous learners and satisfied students?

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Abstract

This paper will present the successes, challenges and key lessons learnt from the year-long Work Based Project modules (WBP) in the Humanities.

The findings are based on a research project which was funded in the academic year 2009/2010 by the Centre for Excellence in Learning and Teaching (Centre for Promoting Learner Autonomy) at Sheffield Hallam University. This project studied and evaluated second and final year undergraduate Humanities students' learning experience on WBP.

The research focused specifically on the students' perceptions of how the WBP experience impacted on their development as autonomous learners, their awareness of skills and attribute acquisition in relation to employability, as well as the effect of reflective learning diaries and logs on their personal developmental processes.

The research was carried out by analysing both quantitative and qualitative data, such as mind maps, self assessment audits and goal free questionnaires. It highlighted the conscious linking of the WBP with students' previous 'traditional' academic learning experiences; the students' employability through reflecting on their skills and experiences, and transferring them to match employer expectations.

Background

Work Based Projects in the Humanities at SHU have been established for 15 years but with no quantifiable research undertaken. WBP at level 5 is mandatory for BA English Language students but optional for all other Humanities students. This year's cohort consisted of 19 students at level 6 and 64 students at level 5.

Work Based Projects can be negotiated and tailored to meet the needs of the students and project client whilst maintaining the academic integrity of the module. Each student can have a different starting point and reflect upon their journey, be it specific skill acquisition or self understanding. In that way, the module can be said to incorporate inclusive practice and indeed students with Learning Contracts were guided in their choice appropriate to their circumstances and needs. Writing reflectively is possible for most students but where this is particularly challenging, for example, students with Aspergers syndrome, it can be overcome with carefully structured questions to draw out learning and considered response.

In this year, projects ranged from external agencies and schools to internal university opportunities. The following examples illustrate the range:

- Journalism
- Treatments and pitches for a TV company
- Media company brief to develop resource for on line teaching support
- Sports coaching and mentoring disaffected young people
- Publicity for regional theatre and council
- Traditional dance publication
- Look Good Feel Better- cosmetic work with patients
- Stroke rehabilitation
- Human trafficking –awareness raising
- School based support/mentoring
- In house magazine –student led
- English- Chinese Club
- Establishing an English society
- Hallam Volunteering projects: publicity, environment, older adult fitness, nutrition, ‘time travellers’ and dance outreach.

Taught and tutorial support structure

Students have 3 introductory workshops, a mid-course and final workshop with access to tutorial support across both semesters whilst undertaking their projects. Initial workshops establish students’ passions and interests and offer possible projects for those who have not established contacts. Students are asked to consider what they wish to gain in terms of experience or knowledge. Health and Safety, professional behaviours and the use of the tutorial support system are explained.

They are asked to maintain a folder throughout the module recording their Learning Log, Learning Diary, Supporting Materials created, Evaluative Report/SWOT analysis and appendices. The Learning Diary (approx.3000 words) is the opportunity for reflective writing in terms of academic connection; skills and behaviours; ethical, social and cultural contexts.

Mid-term workshops review progress, share ideas and solutions, measure perception shift and regroup momentum for completion of the module. Final workshops celebrate success, discuss how to present the folder, consider skills learnt and connect to careers workshops offered in conjunction with the Careers and Employment Service’s link Careers Adviser.

Rationale

The rationale for this research is to create a benchmark for further enquiry and to be a transparent tool for the students to view their own progress and thinking. Gaining feedback from students and project hosts gives clarity about improving the course design, tutor

delivery and student experience. Work Based Projects can be perceived as a 'Cinderella' subject within the tradition of Humanities, so establishing its worth to tutors, even in times of economic downturn and student demand, is still a challenge. Evidence is required.

Methodology

3 Skills Audits were completed at the beginning, middle and end of their projects. The first was to establish numerical score and baseline of self perceived skills; subsequent audits would give a picture of perception change. The Skills Audit asked the students to score, on a scale of 5-1, their perception of skills under the headings of interpersonal skills; managing self; communication and presentation skills; ability to reflect critically, constructively and sensitively; use of IT; learning and study skills; problem solving; practical skills; money management; statistical skills and 'other' skills identified. This method was chosen to give a quantifiable measure to complement the qualitative data gathered.

Mind maps (Buzan 2007) were selected as an alternative visual recording method, which required students to think from their perspective rather than answer other people's preformed questions. Mind maps were used as a starting point to draw together ideas on the students' interests and to project forward to consider potential connection to their degree, career ideas, networks, knowledge and skills. These were revisited in the workshops across the course and built up a growing awareness of change, development or unexpected outcomes.

A Goal Free questionnaire (Scriven, 1991) was designed to gain more qualitative insights and to enable students to respond freely without outcome expectation expressed in the question. In addition to collecting data the questionnaire aimed to establish what students thought about skill, attributes and strategy acquisition; degree relevance and transfer of skills/employability. Permission was sought from the students to use their feedback in this research.

Self-perception of skill acquisition differentiated by module level

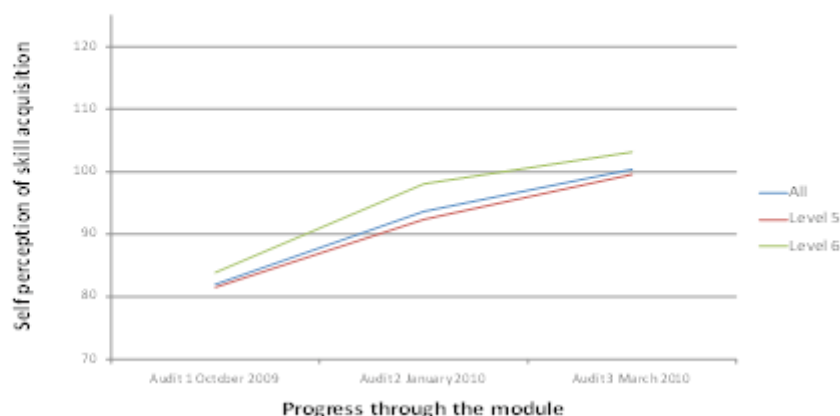


Figure 1: Self perception of skill acquisition differentiated by module level.

Figure 1 demonstrates that both levels of students felt that their skills had improved. Notably, both levels progress in parallel as to their perceived skill acquisition. There was, however, a differentiated starting point between level 5 and 6 students' perceptions. This could be caused by greater maturity at level 6 or because they elect to take this module and are more conscious of their skills acquisition. The majority of level 5 take the WBP as a mandatory module and may not have considered their skills at the outset or be as engaged.

Changing perceptions: Mind maps

Mind maps were initially used as a teaching aid to help the students think through what they wanted to achieve but it soon became apparent that this was a recording tool of progression of thought and changing perceptions.

Consequently, students recorded their journey from initial thoughts to full blown completion of the project. They noted unexpected outcomes and connections. (See Figures.3 and 4)

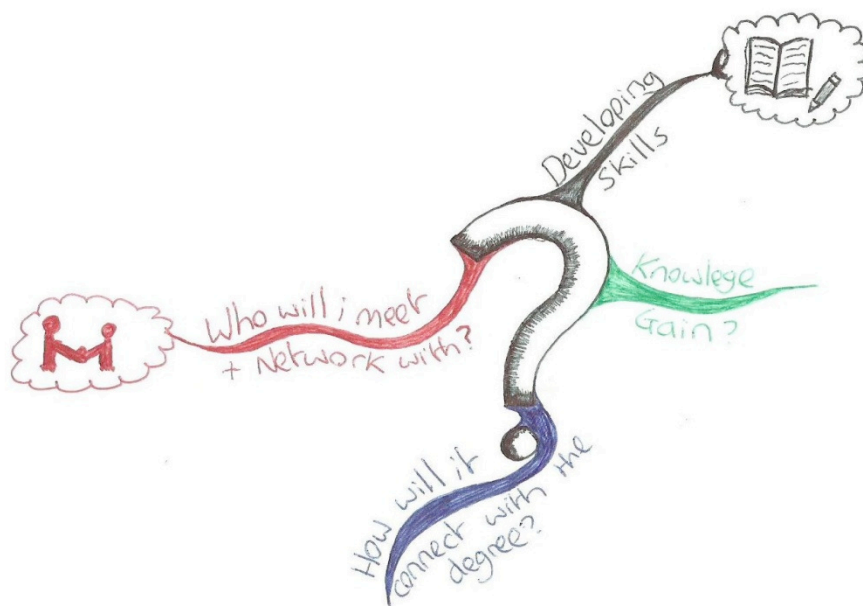


Figure 2: Typical initial mind map at the outset of the module

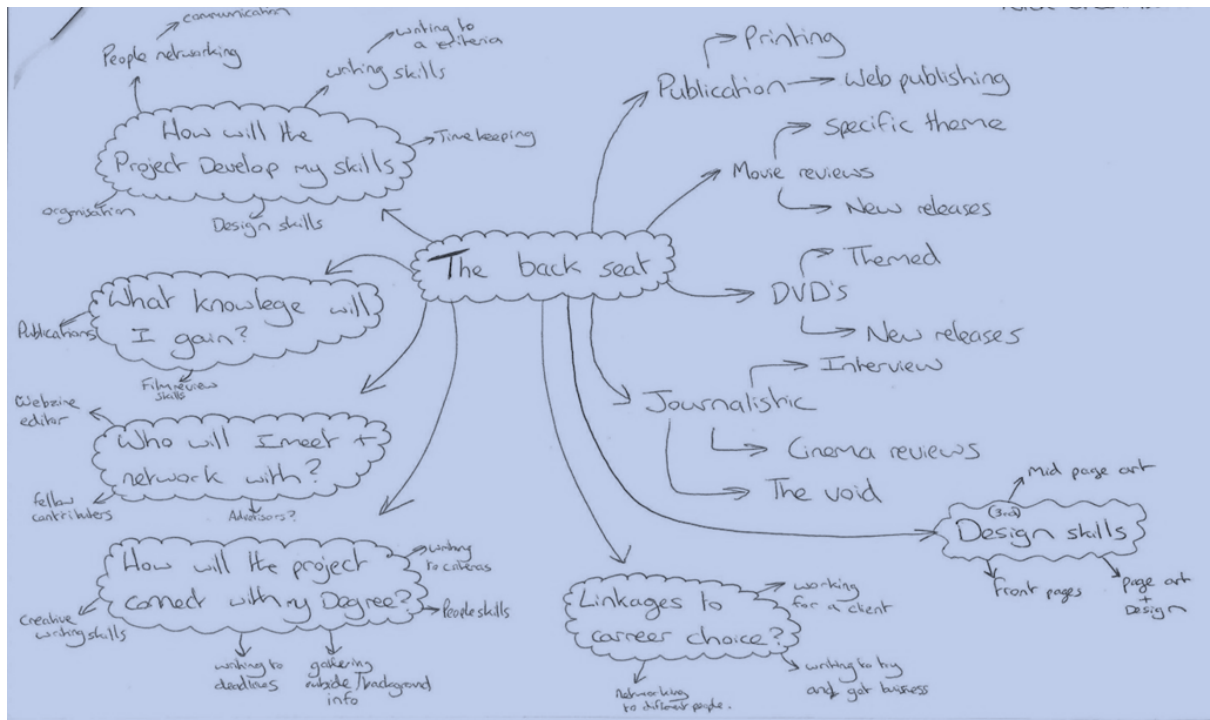


Figure 3: The final mind map for the Back Seat in-house film magazine

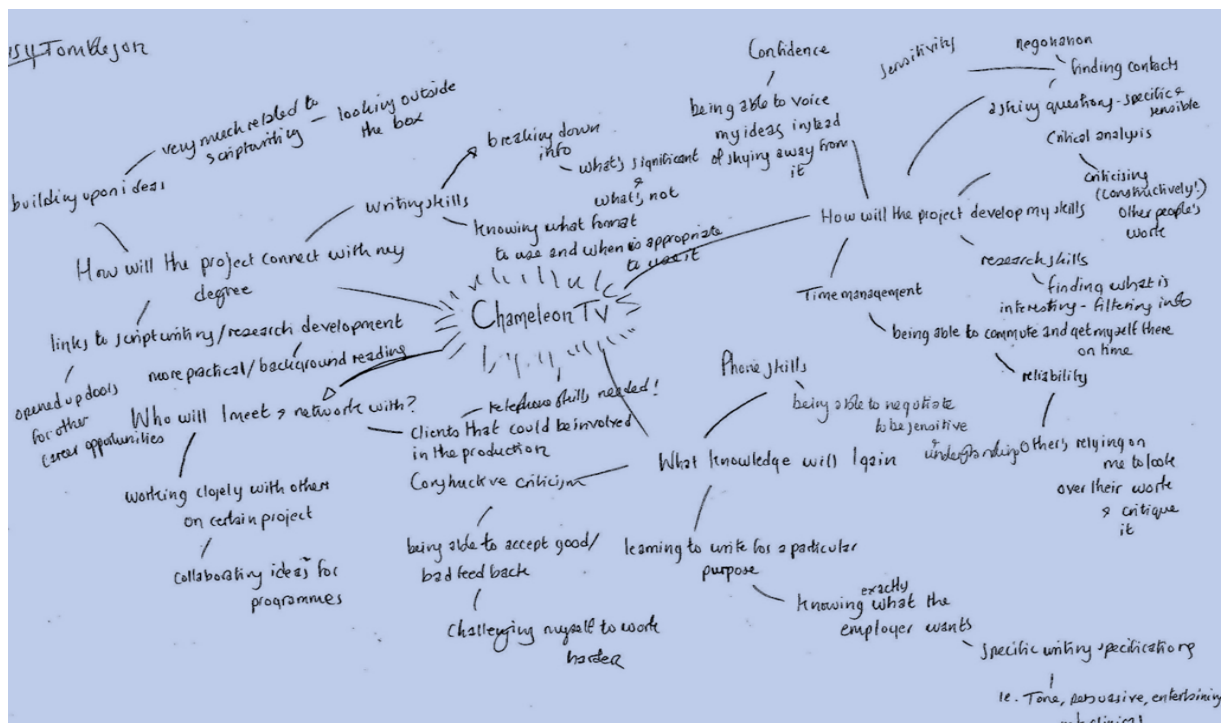


Figure 4: The final mind map: working on pitches & treatments for Chameleon TV, Leeds

These maps serve to demonstrate the expansion of ideas, not only from specific skills such as *'design'* and *'writing skills'* to more developmental awareness such as *'confidence'* and *'sensitivity.'* Through the build up of words the students realise their expanding horizons and greater self knowledge. This then feeds to the resolve to *'challenge myself to work harder'* and to ask *'sensible questions.'*

(I can honestly say I was taken aback by the emerging results from this exercise. Students were silent, concentrating on thoughts, eyes looking upwards in creative recall. I will certainly develop this next year.)

Changing Perceptions: Goal Free questionnaire feedback

From the typical responses collected it is clear that students can see the journey travelled and have changed their view on themselves and their wider engagement.

- *'I definitely feel more confident around new people and am more mature in these situations with an ability to step forwards and take control.'*
- *'A chance to find out who you really are and whether you have the necessary skills, commitment and enthusiasm to fulfil your goal.'*
- *'Social and interpersonal skills; writing for a specific audience; being innovative with my ideas; confidence; reliability. Time management is something I have struggled with in the past but I now I feel with this experience I have finally got the hang of it.'*

Analysis of their responses, however, highlighted that they identified skills developed in 3 main areas:

- academic;
- career /employability;
- personal development.

Perception of the value of WBP for academic progress

Many students chose projects that did not relate directly to their subject specialism but drew upon their academic skills. What is particularly interesting is their realisation of how the project enhanced their overall degree experience and brought skills, abilities and behaviours back into their main degree studies. The Learning Diary was the pivotal element in the project submission that captured reflections on all encounters.

- *'A course that allows you to prove to yourself and others that you can stand on your own 2 feet in real situations, **not just in an exam hall.**'*
- *'Really helps with my **essay writing**- trying to stick to deadlines- improved time management.'*
- *'Enabling me to **apply the theory** that I have learnt, for example, Child Language Acquisition and also enables me to ask questions that I can investigate.'*

- *'Responding to my work **critically and reflectively** will help me when responding to other **essays and coursework** in my degree.'*
- *'I did learn how to take my leadership skills and **translate** them into a group project for a different module.'*

Perception of the value of WBP for career development or employability

The following quotations represent a selection of responses. Some responses concern specific career goals such as:

- *'I have experience which is crucial to gain a place on a Speech and Language Therapy Masters.'*
- *'Confidence, timekeeping, professionalism but also my awareness of trafficking in the UK specifically as I want to pursue a career in Social Work'*
- *'Contacts in Speech Therapy, Aphasia Training, being a member of the Stroke Association is helpful to progress my career.'*

Others make observations on attributes and behaviours which they now possess and are consider that they will be valued by employers.

- *'To promote myself as an individual and ensure future employers receive a complete picture of the relevant skills I have to offer as an employee.'*
- *'Working with professionals and companies to communicate and act upon a brief efficiently and effectively. Working as a team member and also an individual to get the project done to a high standard. Working to deadlines in the workplace, on a new topic and putting the work in to find out more and research the area. Reflection and personal critique in order to improve at a future date.'*
- *'Communicating with professionals and realising the manner in which to do this.'*

This is exciting in that it is an expression of internalised learning about themselves as employable people with much to offer rather than fitting into a job profile. This connects to the university agenda for a wider understanding of the concept of employability.

Perceptions of the value of WBP for personal development

Sometimes the response can be very humbling to read as one student's verbal feedback, ***'it helped with the loneliness'*** reminds us to think what university can mean to our most vulnerable members. The most recurring word in feedback is 'confidence' which most students feel they have gained through interaction.

For all students it is a challenging module, reflected in the advice to subsequent students:

- *A chance to find out who you really are and whether you have the necessary skills, commitment and enthusiasm to fulfil your goal.*
- *An excellent way to learn about your skills, learn new skills and translate your degree experience into 'real world' situations in a safe and supported environment*
- *There is something for every personality and every ability. I've got so much out of it that I know I will use in my future career.*
- *Confidence in talking to others: developing self management and an ability to adapt. Communication, IT and time keeping all improved vastly.*

Discussion

The scope of this project was limited by time constraints. Further analysis might focus on specific skill acquisition, elective v. mandatory, gender difference and tutorial uptake.

To discuss the significance of WBP we need to return to the questions asked:

- The impact on the development of the autonomous learner;
- Awareness of skill in relation to employability;
- Significance to personal development.

Using Moore's (2008 p4) definition, Humanities WBP students are autonomous learners in that they have:

"Developed the capacity to take at least some control over their learning; and the learning environment provides opportunities for the learner to take control of their learning."

"Developing capacity requires a set of personal qualities: confidence, motivation, taking and accepting responsibility, and ability to take initiative. It also involves a set of skills: academic, intellectual, personal and interpersonal."

The typical feedback from WBP students stresses their sense of independence, growing confidence and self criticism in being responsible for their own learning and responsibilities to others. This would suggest that WBP students do achieve autonomy through their projects. This can be summarised in the quotation:

"My independence and confidence has grown but most of all I know how I work and think."

Satisfaction is expressed in terms of achievement, learning and the recommendation to other students:

'Do it! It will be one of the best experiences of your life. WBP is a perfect way of gaining experience through your degree and gaining academic credit for it!'

Employability is clearly in the students' vocabulary. Some see WBP as an opportunity to develop specific sector skills such as speech therapy or social work. Others wanted experience to research various work environments or roles. For some students they were accumulating transferable skills for an unknown role, but conscious of employer expectations and the need to build the CV beyond the degree. Understanding strengths, areas for development and personal accountability is a significant learning curve for any student but especially for non-vocational students.

Personal development is a significant outcome evident from the volume of responses. 'I've found out more about myself than anything else,' is a classic comment. For 3 students, personal growth has been externally recognised. Two students received Volunteer England Awards 2010 for Achievement and for Dedication. Another student was awarded, Runner-up Volunteer of the Year for Hallam Volunteering 2010. Many students included excellent references from project hosts in their folder submissions.

Further development: Looking to the Future

Drawing upon the support of other staff as administrators will become increasingly important as we meet a more diverse student body and are compelled by the Revised QAA Code of Practice to ensure the 'securing, monitoring, administering and reviewing' of all WBP experiences in university. This is driven by the duty of care and Health and Safety agenda, which, whilst being correct, is likely to reduce the external opportunities and risk taken by institutions. External project hosts may not cope with the institutional paperwork when there is no obligation to offer projects and there may be limited returns. External relationship management will become critical in being able to maintain good quality experiences for students. Simulations or IT mediated interactions may offer alternatives to WBP; whilst these are valuable and have their undisputed place, they do not answer all the developmental needs of students or employers.

Little (2006) discusses the implications for WBP in the HE sector extensively, agreeing its value but also its cost, and the need for appropriate design and support. We are at a critical pass in this area with university funding about to be severely challenged. Universities value the importance of WBP for their students and the marketing of courses but can they afford it?

Research projects such as this one are critical in exploring the value of Work Based Projects both to the students and external partners. The evidence relating to personal, professional and academic development suggests that WBP deserves greater understanding in the academic community and adequate funding for quality provision.

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Enquiry-Based Learning for Science of imaging technology

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Abstract

Diagnostic radiography is a science based health course. Due to the variation in science background at entry level the imaging science modules can be problematic. Enquiry based learning (EBL) was introduced as a teaching strategy into an imaging science module in order to promote learner autonomy and enhance the student experience.

The impact of working as a team was a strong theme emerging from the evaluation of the project, with the majority of students viewing this as beneficial to their learning. It was identified that they gained support from the team, and this assisted their learning. The enhancement of transferable skills and the promotion of learner autonomy were achieved. Areas for further investigation are the utilisation of peer assessment and a science event for the summative assessment.

Key words: Enquiry based learning, learner autonomy, transferable skills

Background

EBL is a pedagogical approach to learning which promotes critical, analytical thought and develops self-directed learning (Morris and Turnbull 2002). It can encourage students to take responsibility for their own learning and promote learner autonomy (Morris and Turnbull 2002). It can also help to bridge the theory practice gap (Horne et al 2006, Rowan et al 2007). The benefits of student empowerment should be seen in clinical practice (Morris and Turnbull 2002).

EBL is thought to encourage a deeper exploration of a topic, wider reading and increase research awareness (Horne et al 2006). EBL has the benefit of combining the acquisition of knowledge with transferable skills such as team work and managing conflict; incorporating a social aspect of learning (Horne et al 2006, Deignan 2009). A further benefit of EBL is that it can accommodate a students' individual learning style (Deignan 2009).

Andragogical approaches such as EBL make assumptions that all adult students are ready to take responsibility of controlling their own learning. However, there is the potential for this self directed approach to induce insecurity amongst some students, raising anxieties about the level and depth of knowledge required (Morris and Turnbull 2002, Rowan et al 2007). Whilst for others it can build confidence and the ability to be more autonomous (Horne et al 2006). Many use group presentations as a method of assessing EBL and this can provoke anxiety in some students (Morris and Turnbull 2002).

Successful EBL requires a willingness to take control of one's learning, and not all learners are suited to this self-directed approach. It also requires group collaboration and this is an area that is a concern for some students (Horne et al 2006). The dynamics of each group requires close monitoring by the facilitator. Thus EBL can be challenging for staff as good facilitative skills are needed to support students through the EBL process (Deignan 2009).

This EBL project was set in a Science of Imaging Technology module as part of the BSc in Diagnostic Radiography. The module ran in the second semester and followed an earlier Science of Imaging Technology module delivered by more traditional methods in Semester one. The aim of the module was to consolidate and put into practice the information gained during the first module. The sessions were all delivered in an interactive manner. They consisted of a combination of whole group sessions (n=36), seminars and practical sessions. Many of the group sessions were dedicated to the enquiry based learning aspect of the module with facilitated group sessions. The small group structure lends itself to a reflective, discursive format.

The Project

The EBL project was conducted in small groups of 4-5 students. This is the optimum group size for EBL (Rowan et al 2008). They were tasked with producing an exhibit for a science fair. The learning outcomes were used as the 'trigger' for the EBL. Within the confines of the learning outcomes they could focus on whatever aspect they were drawn to and present their findings in any form of stand alone exhibit i.e. it was not to be a power point presentation but something that others could come in and view.

Four groups were already pre-selected for other aspects of the course and the students split themselves into two, giving eight groups in total.

In preparation for the module a focus group was held with second year students to gain feedback regarding this project. They put forward suggestions for projects and methods of exhibiting and these suggestions were presented to the first years to support them through the process of developing their initial ideas.

The science event

Due to the confines of the module descriptor the science event was not, on this occasion, used as a summative assessment. Phase tests and written essays are currently used to assess the students' knowledge. The results of the summative assessments followed a normal distribution curve. Future developments could see the incorporation of the summative assessment into the science event.

Feedback was provided to the students from both their peers and from the second year students who came to view the event. As well as written comments the observers were asked to decide on which they would place first, second and third. Prizes were awarded to the best exhibit.

A variety of methods were used to present the outcome of the group work. These ranged from models, games, film shows and quizzes. The feedback from the observers was very positive and the event was seen as both enjoyable and informative, proving that EBL can stimulate learning on a 'dry' subject (Deignan 2009).

Evaluation

Interim feedback was obtained during the module from the students via a discussion board on the Blackboard site for the module. A short focus group with lecturers was also undertaken. This was to highlight any problems where remedial action might be necessary.

Formal evaluation with the students was undertaken via a questionnaire containing both open and closed questions, which provided quantitative and qualitative data.

Trustworthiness

Thematic analysis was undertaken on the responses to the open questions. The themes identified were verified by an independent observer and by the students who were given the opportunity to comment on the themes. The quantitative questions were used for descriptive analysis.

Findings

The most common theme related to group work. This could then be broken down into three areas, impact of working as a team, conflict, and the supportive nature of the group.

The impact of working as a team

From the question of what they found most helpful, over half the students said working as a team. They benefited from the sharing of ideas and the input from other team members. This was also the case for what made the learning most effective and what helped them as a learner. Only 1 from 35 did not enjoy working as a team and 30 of 35 could clearly see how they could contribute to the task:

“The most useful skill I learnt was that effective team work can lead to fantastic results.”

There were many comments about adapting to facilitate group work:

“The thing that most changes the way I learned was mixing different learning styles.”

Problems were also highlighted:

“The thing I found most difficult was during the activity, to find the right balance between ‘taking over’ and being too passive.”

“To help me improve as a learner, what I need to work on is improving my communication to work as a group.”

Conflict and collaboration

The group work was not entirely without problems and a number identified things they found difficult. Amongst these were time to work together as a team, equality of input into the task and sorting out opposing views within the group. One student did turn their group problems around, and commented that one skill they learned was conflict resolution. Some suggested that they benefited from discussion within the group and learning to see other ideas and points of view. 32 of 35 found that the activity helped them to develop their team working skills.

Supportive nature of the group

Many comments about the thing the students found the most helpful and what made their learning most effective was the support received from working as a group. Lots of these comments centred on sharing ideas and views.

“The thing I found most helpful was.....
.....sharing ideas as a group”
.....having other views from the group members”
.....having the other group members around to bounce ideas off”

“What made learning most effective for me was.....
.....taking control of it but with support”
.....looking at different peoples perspective of a topic”
.....being able to talk to others about the work”

32/35 found team members helpful to their learning.

Learner autonomy and transferable skills

The evaluation also highlighted the value of EBL in developing learner autonomy and transferable skills. Time management featured quite highly, some commented that the project had enhanced their time management whilst others recognised it as an area for improvement. Many have improved their research skills or identified the need to improve this area.

Presentation Skills

Presentation skills were also mentioned on many occasions. 30 of 35 could see good ways of presenting information and 25 of 35 learnt how to present their findings to an audience.

“The thing I found most helpful was seeing a variety of presentations set up all in different ways.”

“What made learning most effective for me was overcoming talking in front of people.”

Approximately a third of the students had stated that they had learnt the useful skill of presenting information, although some had found this difficult. Some also benefited from the creative nature of the project and the variety of media.

“What made learning most effective for me was
.....using a model to explain the science”
.....watching videos and live demonstrations”

One student sums this up nicely.

“What made learning most effective for me was adding a fun element rather than being given loads of facts.”

Autonomy

The autonomous nature of the projects provoked both a challenge and a learning opportunity. Some found this difficult whilst for others it had an impact on them as a learner.

“The thing that most changed the way I learnt was.....
.....being able to control my own learning without a tutor present.”
.....being given a wide range to base our project on, it made us all think for ourselves”

“The most useful skill I learnt was a freedom of learning as I learn by rote a lot and this was a great experience in terms of that.”

One third felt that the exercise had made them more confident in their ability to evaluate information they had found. Only one person felt that they were unable to take responsibility for their own learning.

One other transferable skill is that of communication, both listening to others and putting forward their ideas.

“The thing that most changed the way I learned was incorporating other ideas along with my own.”

Feedback on the Science Event

Each person attending the science event, primarily first and second year Diagnostic radiography students, was asked to feedback on the exhibits. The quality of the feedback was excellent with many providing a comprehensive critical review.

Table 1 gives an example of the positive and negative points made.

Positive comments	Negative comments
Very creative	Validation of information needed
Well presented and entertaining	No references
Good clear explanation and presentation	Lack of structure
In-depth information	Slight lack of innovation
Insightful, detailed posters	Could have used more appropriate wording.
Good interactive learning	Too much text on slides
Applied theory to practice	Some confusion in the video presentation
Very innovative	A bit long winded
Useful handout	Grammar wasn't great but information mainly correct.
Lots of detail, very intriguing	Vague
Organised well	
Very informative and enjoyable	
Attractive and informative posters	

Table 1: Feedback on the Science Event.

Reflection

During the group sessions in preparation for the science event there was obvious collaboration between group members and often such hilarity that I questioned the quality of their learning. However the finished products paid testimony to the amount of work put in. I listened and participated in the preparatory discussions and did not detect any friction. However one student did comment that their group did not work well, as she felt that one member had dominated their group and did not value other people's contributions. It is therefore considerably important to be perceptive when facilitating a group and observe non verbal cues and group dynamics.

The science fair appeared to be a success, the atmosphere was vibrant and the students went round to view all the exhibits. The second year students gave positive verbal feedback about the amount of work the first years had put in to their projects and how they have enjoyed viewing them. The exhibits were all different and some were particularly innovative and entertaining. The students were aware that there was a prize for the best project and this possibly increased their motivation.

At the end of the event one first year student approached me at the end of the session, to discuss how stressful she had found it and how difficult she had found the group work. Another student had been concerned about the quality of their contribution but had been pleased that it had been well received with positive feedback.

This negative feedback at the end of what had been perceived as a successful venture was a severe blow to my confidence. Without formal evaluation, that restored a balance picture, the negative feedback would have influence on any future decisions.

Discussion

There is no doubt that, as the literature suggests, EBL promotes learner autonomy and transferable, employability skills. This platform for learning is dependent upon group collaboration for success. It is very clear that the majority of students benefit from working in a group environment. They valued the interaction and support from other team members. Although getting along together as a group was at times problematic, they felt the benefit from the social aspect of working with other people. It must be remembered that not all learners are suited to a self-directed approach to learning and find this stressful. This could be due to their lack of confidence.

The role of the tutor in EBL is different to the traditional role of the lecturer and requires different skills. It could also be said that the emotional investment of the tutor is greater in these circumstances and be likened to a parent knowing when to let a child go. You need to provide the students with the facilities to be self-directing and release control. It can be difficult to achieve a balance between non-participation and active facilitation (Horne et al 2006). This can promote feelings of concern and uncertainty in the facilitator and concern that the students are learning what is necessary. However, whatever the method of delivery individuals will only learn what is meaningful to them (Morris 2003). Therefore delivering a power-point lecture may provide the lecturer with the comfort that the curriculum had been delivered but not that it has been received. With EBL the students have more freedom to learn what and how they want. This will provide them with much richer knowledge.

Involving peers in providing feedback was at face value successful. It developed the analytical skills of the observer and provided rich feedback to the presenters. This is an aspect for further development and evaluation. A further development would be to utilise the science event as a summative, rather than formative assessment.

Conclusion

The aim of the project was to promote learner autonomy by applying EBL approaches. The added value of enquiry based learning is clear. The students have learnt the subject matter as the results produced follow a normal distribution curve. This teaching strategy promotes learner autonomy and transferable skills. However, it is not 'one size fits all'. A minority find this method of learning particularly challenging and stressful. This highlights the need for effective facilitation particularly regarding group work.

Given the nature and size of the participant sample these findings are suggestive only and highlight potential benefits and areas to be aware of. Areas for further investigation and evaluation are using peer assessment and the science event as a summative assessment.

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Nursing IT: a peer assisted learning project for Nursing and IT students

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Abstract

Previous research indicated that nursing students lack IT competence, (Fetter 2009), but have strong social skills. Equally, observations by the Placement Employability Experience Unit in the Faculty of ACES have identified that IT students are technically able, but weaker in social skills. Employers are seeking graduates with a broad skill range in both subject specific and employability skills, (Ehiyazaryan and Baraclough, 2008). It is recognised that peer assisted learners can communicate to one another in a language that they both understand (Smith et al, 2007). Therefore this project aimed to address these issues through a peer learning activity.

This symbiotic activity was offered as a venture opportunity for level 5 computing students to manage in the Venture Matrix at Sheffield Hallam University. The Venture Matrix is a managed risk enterprise and entrepreneurial environment which is open to all students. It offers a framework in which students can operate micro-businesses to develop and apply their subject knowledge and employability skills to support real business opportunities/activities offered in the Venture Matrix (Laughton 2010).

The Nursing IT venture was offered as business activity with the aims of providing an opportunity:

- for computing students to apply their IT skills and develop their employability skills;
- to meet the individualised IT learning needs of the Level 4 nursing students.

This IT service was offered by the computing students to all level 4 student nurses who commenced their course in September 2009 and January 2010. The value of the learning in the venture was evaluated by both sets of students.

Analysis of post-project student questionnaires, evaluations and staff discussions showed that all stakeholders recognised the potential and sustainability of this service. The key learning points are that the project:

- created good cross-faculty communication and sharing of expertise, for both staff and students. Although only a small number of nursing students took the opportunity to use the service, they valued the support they received;
- the computing students enjoyed the opportunity to disseminate their IT skills.

Background

The key focus of this symbiotic project was to improve the employability and professional skills of students in HWB and ACES. In particular it aimed to improve level 4 nursing students skills in digital fluency, particularly their computing technology skills, ability to literature search, and overall IT competence and confidence. At the same time it hoped to provide the computing students the opportunity to develop their employability skills, through the engagement in a venture opportunity offered in the Venture Matrix. The benefits for the nursing staff included: the opportunity for cross faculty collaboration; an opportunity to provide a non-modular student managed project; the promotion of learner autonomy from an early stage in the programme: to equipping the students with skills which are essential to clinical and academic practice.

Business & Enterprise students in Computing need to improve their employability skills to assist in the development of their curriculum vitae, and in preparation for employment on their placement year. These skills are developed through engagement in venture opportunities in the SHU Venture Matrix.

Rationale

The project objectives were to:

- develop, and implement a sustainable peer-assisted learning (PAL) framework that benefits both sets of students and will continue beyond the duration of CPLA of the project;
- develop and implement a mechanism that enables both sets of students to identify and evaluate their skill sets deficiencies and design strategies for improvement;
- provide a learning opportunity for both sets of students through peer-assisted learning and to the mutual benefit of all stakeholders;
- provide opportunity for computing students to apply their technical skills to support non-technical students and to develop their behaviour, attitude and interpersonal skills;
- provide opportunity for nursing students to develop practical IT technical skills, self awareness, IT competence, confidence and apply their nurturing skills to support computing students personal skills development;
- increase learner autonomy in each of these groups of students in skills learning and development.

This project aimed to promote peer assisted learning, develop learner autonomy, meet student employability needs, and encourage collaboration between staff and students. The rationale for using a peer assisted learning (PAL) approach is that it has been shown to have benefits for both the junior and senior student. Smith et al (2007) highlight the key benefits for the junior student as being increased confidence, an increased understanding of the course, improved study skills and improved problem-solving methods. With reference to the long-term experience of PAL at Bournemouth University, it is clear that peer assisted learning empowers students by encouraging them to take more responsibility for their own learning. It enhances the first year experience of Higher Education by improving integration into university life and giving a sense of belonging. Wallace (1997) suggests that it helps the senior students reflect upon and manage their own learning as well as improving their self confidence. Other benefits include improvement in their communication and presentation skills, as well as development of leadership skills. The focus is upon collaboration to facilitate learning rather than teaching.

The development of learner autonomy is an increasingly important aspect of the student development in readiness to meet the challenges of the workplace. The PAL sessions were optional to the main curriculum for all the students involved. Throughout this project the students were encouraged to self evaluate their skills, identify goals, identify strategies for achieving these goals, give and receive feedback, develop confidence and competence in transferrable skills.

Level 4 nursing students in the Faculty of Health and Wellbeing (HWB) initially needed to recognise their IT competence deficiencies and the need for personal IT development. The need for digital fluency in nursing is becoming more evident in response to Government initiatives to digitalise the NHS (Osbourne, 2009). Therefore, digital fluency is essential to nursing practice if nurses are to meet patient care and organisational targets, demonstrate evidence based practice and coordinate the interprofessional team of carers. In addition the academic learning within the University involves a blended approach of taught sessions and e-learning opportunities through University Virtual Learning Experience (VLE) using Web 2.0 technology. This provides the facilities and tools for staff to adopt, develop and apply e-learning resources, for example: e-assessment submission as used by Radiotherapy and Oncology, (Bridge and Appleyard, 2007); podcast audio approach as used by Nortcliffe and Middleton, (2007) with engineers; assessment feedback tool as developed by Hepplestone (2008). Consequently the ability to be effective and efficient in the use of technology is an essential skill for nursing students both academically and professionally.

However, there is no dedicated IT module in the nursing undergraduate programme and the inclusion of this into a crowded curriculum would be difficult to achieve. As a result there is no formal assessment of computer skills, or a strategy for incremental learning in information technology throughout the programme. Nursing students are expected to self evaluate their IT abilities and seek out appropriate support.

Computing and IT students in the Faculty of Arts, Computing, Engineering and Science (ACES) are required to evaluate their employability skills in the embedded career

management elements of a level 5 module designed to prepare all computing students for placement employment. They are encouraged to gain or develop their employability skills in order to enhance their curriculum vitae. This opportunity to apply their technical skills and support other students enables them to develop and improve both their communication and employability skills.

The Nursing IT project provides all students with the opportunity to take control of their learning and also gain experience of working with students from another faculty. The Nursing IT venture employed level 5 computing students to act as project managers. Through this role they are able to take ownership and responsibility for the venture and employ level 4 students to operate the IT service desks.

Consequently this venture provides opportunities for:

- level 4 students to gain experience of using their IT skills in practice and developing their communication skills, working with others and being an employee;
- level 5 students to develop project planning, organisation, organisational management, venture promotion and marketing and IT service desk management and delivery.

Therefore, this opportunity for level 5 computing students not only provides a peer assisted learning opportunity of learning social skills from nurses, but it is also an enquiry based learning approach for their personal development. An enquiry based learning approach has been found to be an inspirational approach to developing student professional and personal skills, and the development of student attitude to take responsibility for their learning and actions. It therefore increases their learner autonomy (Moore and Bramall, 2010). Both level 4 and 5 students were overseen and facilitated by staff from Sheffield Hallam University, the Faculty of ACES and the Faculty of HWB who collaborated on the development and management of the project.

Implementation

Nursing IT was advertised as an opportunity within the venture matrix and student groups applied to manage the service. The facilitators selected two groups of students; and each group operated a Nursing IT service desk at the Robert Winston Building one day a week. Each micro-business was required to plan and organise their service desk venture. This included identifying resources, marketing, and staffing required. They also needed to negotiate with both facilitators and technical staff, and the other level 5 ventures; and recruit the level 4 students, who were registered in the Venture Matrix as part of their New Venture Creation Module, to operate the service desk. The level 5 student managers also planned, and prepared the questionnaires, feedback, service desk systems, and determined and managed the reporting requirements of the venture.

The level 4 nursing students were informed of the project during their induction to the undergraduate programme by their personal tutors. This was to ensure that all students

received the information: to encourage the students to self evaluate their IT skills, and to promote the opportunity for students to be proactive in their learning. In addition a plasma screen presentation was repeatedly shown throughout the day in the foyer close to the cafe. In semester 2 posters were also distributed throughout the Robert Winston Building.

In semester 1 the sessions were offered in an open access area in the Robert Winston Building cafe area and used Faculty of HWB laptop computers. The reasons for the location were the clear visibility of the service and large student 'foot fall'. However, student feedback indicated that this was an unsuitable location as the area was extremely cold in the winter and noisy. In semester 2 a designated computer laboratory was made available.

The nursing students completed a proforma which enabled them to self-assess their IT skills and identify learning outcomes for the session to enable the computing students to meet their specific IT skills deficit. At the end of each session both students completed an evaluation form to promote and develop feedback skills and also to provide documented evidence of the service provision and satisfaction.

The academic staff accessed relevant equipment; liaised with the Timetabling Department and Level Managers; oversaw the project and acted as facilitators of the project; supported and guided the level 4 and level 5 computing students in the management of the project; and encouraged participation from the nursing students. In particular, the academic facilitation focused on the level 5, business and enterprise in computing students, and focused upon how to overcome all the issues of starting and running a new venture.

The computing students operated the venture in partial fulfilment of assessments for a Managing a Growing Business module at Level 5 or New Venture Creation module at Level 4. The students were regularly monitored on the progress they made in operating the opportunity through meetings with academics from both ACES and H&W. To fulfil the assessment, in addition to the regular monitoring of progress, the students presented a final report. In the report they reviewed the success of the venture and discussed strategy, marketing, realisation and finance, and they gave an oral presentation justifying further investment and growth of the venture.

Evaluation

It is difficult to quantify the evaluation of this project. All participants recognise the potential of this project, and the student evaluations received clearly demonstrate satisfaction with the project. However, it must be recognised that the number of nursing students who accessed this service was extremely low in proportion to number students enrolled on nursing programs, therefore we lack quantifiable evidence.

There are a number of reasons why the nursing students did not participate. The delayed start to the Venture Matrix programme severely impacted upon the project in semester 1. The nursing students commenced their programme in the third week of September but unfortunately the level 5 and level 4 students Business and Enterprise students were not

recruited and ready to operate the service desk until November. This resulted in student nurses wanting to attend when the service was not available and then losing the impetus to attend due to other constraints on their time. The computing students were frustrated by some technical issues, and then by the lack of response from the nurses. In addition the nursing students were only in University for 10 weeks before starting a 10 week clinical placement therefore, the delayed start shortened their opportunity to attend. In semester 2 the venture was operational at the start of level 4 enrolment, the marketing material was improved and there was greater collaboration and coordination between the two groups operating the service desks on the two different days. In addition a designated room was allocated for this project. However, the room was difficult to locate, away from the key student 'footfall' in the Robert Winston Building and there was insufficient signposting.

It was also recognised, by the computing students, that they required more support from the facilitators. To address this, they were asked to provide regular feedback on the attendance of the nursing students and the type of IT difficulties that they raised. Staff monitored the attendance of both the computing and nursing students, and greater cross faculty communication and liaison between the academics was initiated.

Development

We have collaborated with the Module Leader of the interprofessional module 'Using Knowledge and Evidence to Support Study and Practice' to embed the initial student self assessment of IT competency and skills in this module. This module is studied by all level 4 health professional students. The module aims to prepare students for evidenced based practice and introduces the use of information technology to develop literature searching skills. Through this activity students will have the opportunity to self assess their IT skills, and be proactive in gaining support via this peer led service to enable them to complete an assignment. To reflect the wider inclusivity of the future service it will be called Peer IT support (PITS) in 2010/2011.

Students who will manage the project at level 5 in the academic year 2010/2011 need to be recruited to the Venture Matrix before the end of semester 2. This will give them sufficient time to plan and implement the project in September/early October, when the next 'Using Knowledge and Evidence to Support Study and Practice' is delivered.

The service documentation regarding the self assessment, attendance, content of the IT sessions, feedback for both sets of students, and service questionnaires have been developed throughout this project by the level 5 students. Through these the students and the academics will be able to conduct a more robust evaluation and will be able to evolve and enhance the service further. The project is also planning to collaborate with the Learning and Information and Technology Service (LITS) to provide this service in a designated room in the Learning Centre. This will provide an area that is easily accessible to all students, frequently visited by all students and where LITS personnel are available to provide appropriate support for IT activities the computing students cannot resolve, i.e. forgotten passwords, disabled accounts, etc.

The evaluation has highlighted the need to publicise the service more robustly and effectively. Consequently we have purchased two roller posters which give full details of the service and which will be placed in the foyer of the Robert Winston Building and the Learning Centre. Students will receive information in their induction packs, and this information will be repeated on Blackboard sites, screen savers and plasma screens.

Cross faculty projects operating on two sites create difficulties for staff members who are monitoring the progress of a project. While there are many ways of communication, regular meetings need to be incorporated into the planning to ensure that all project goals are being addressed and documented and to maintain the momentum of the project.

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"If you build it, they won't necessarily come!" Engaging student representatives beyond the course level

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Abstract

This project aimed to make more of the potentially valuable role of student representatives, through enhancing their own personal and professional development and the integral role they play as mediators between the wider student body and the institution. Within this, an underlying aim was to foster the development of autonomy within the student representative community and, hopefully, increase levels of engagement with the opportunities the University provides to incorporate student voices in enhancing the student experience. The original objectives and outcomes of the project were:

Objectives:

- Increase level of student representative participation in existing processes/mechanisms;
- Develop new mechanisms/processes in partnership with student representatives and the Hallam Union; and,
- Empower student representatives to set agendas and actively research and pursue solutions.

Outcomes:

- publications/conference presentations, some in partnership with students;
- 2 large faculty student/staff fora;
- research with student representatives into effective/engaging mechanisms;
- trial at least two new mechanisms; and,
- training and development events/workshops for student representatives.

Background

The Faculty of D&S has around 360 student course representatives in any one year, from courses across seven academic departments¹ and, in 2009/10, had 12 faculty student representatives working across these departments. The student representative community is a diverse body, including students on different modes and levels of study, and represents the diverse nature of the Faculty student body as a whole. For example, 40% of students in the faculty are 'commuter students', which reinforces the need to provide effective opportunities for these students to engage as student representatives alongside their studies and personal commitments (Kuh et al., 2001; HEFCE, 2009). Engaging this diverse body of students has been a challenge in the past and, in 2008, the last Faculty Forum of the year attracted only one student representative to attend, indicating that existing structures were both costly and ineffective. Preliminary efforts to change our approach yielded promising results: more than 40 student representatives attended the Faculty Forum in March 2009. This project aimed to build on this limited success by providing scholarly understanding of what makes partnership with student representatives engaging and how to effect change in practice.

The project is also set in the context of the priorities articulated in the institution's Corporate Plan (Sheffield Hallam University, 2008), specifically those relating to improving the student experience.

Rationale

Within UK universities, student representative systems play an essential role in accessing and articulating the concerns of the wider student population and contributing to the development of institutional policy and practice. A recent report commissioned by the Higher Education Funding Council for England (HEFCE) concluded that there is much variability in the approaches institutions use for working with student representatives, and their perceived effectiveness. In particular, these approaches were seen to function better at the 'institutional and operational (i.e. school / department / programme) level than at the intermediate (faculty) level' (Little et al., 2008: 56). Furthermore, there are growing calls for strategic approaches to enhancing the 'student voice' more generally (SPARQS, 2010) and the way in which institutions frame their relationships with student representatives and their approach to student engagement. Whilst the impetus for this project emerged from local practice, it drew on and addressed some of these broader issues. In particular, the National Union of Students have challenged the emphasis on consumerist models of relationships with students, and suggested, instead, that institutions develop approaches rooted in the scholarship of communities of practice (Streeter and Wise, 2009; Lea, 2005). In exploring the potential of this community of practice model in the context of this project, insights have been drawn from developments in the school and college sector (Fielding, 2001; 2008). Inherent in this is an assumption that, if it is possible to engage school pupils in collaborative development and authentic student voice activities then, the principles

¹ <http://www.shu.ac.uk/faculties/ds/>

underpinning these approaches should be easily transferable to working with undergraduate and postgraduate students.

The approach

To achieve the aims and objectives the project team developed a number of interventions, which are described in more detail below. The strengths and weaknesses of each these interventions are considered in the evaluation section.

Establishing a faculty student council

Drawing on experiences in the schools sector (e.g. Rudd et al., 2006), the project team decided to trial a faculty level student council. Council membership comprised the 12 Faculty student representatives and the faculty Head of Student Experience. The council met four times a year and meetings were scheduled to be the best fit with all students' timetables, to support student attendance. The aims of establishing the council were to provide a student-led forum for identifying and working collaboratively on issues of importance to students at the Faculty level and to co-direct efforts at engaging and supporting course representatives in the faculty. The emphasis was on empowering the council to jointly set agendas and enable them to influence the 'big' issues. To this end, the council were able to extend invitations to their meetings to key senior staff to discuss these 'big' issues face to face. This was well supported by the senior staff and key outcomes and recommendations were communicated to appropriate faculty groups and committees.

Mentoring for all faculty representatives

Each of the faculty representatives had a responsibility for sitting on one of six Faculty level committees. Historically, Faculty representative attendance at, and active participation in, these meetings had been variable. The project team posited that one reason for this could be that students did not feel adequately informed or supported to actively participate. To address this, each faculty representative was assigned a staff mentor, who sat on the same committee, and who would meet with the student prior to committee meetings to go over the content, agenda and format of the meeting and how they could contribute.

Re-design of the Faculty Forum

In addition to regular staff-student meetings at the course level, the faculty run two meetings a year (Faculty Forum) where all course and faculty representatives are invited to raise and work on faculty wide issues concerning the student experience. In the past, these events had been poorly attended but some progress had been made through redesigning the format, to be more interactive, focussing on dialogue and co-constructing solutions, and less adversarial. In the 2009/10 academic year, two Faculty Fora were run in November 2009 and March 2010. The format of the November forum was developed by the project team and used a table-top discussion tool called a dialogue sheet (Oxley and Flint, 2008) to frame discussions between staff and student representatives. The room was laid out 'cabaret' style,

and a group discussion was facilitated by a member of staff on each table using the dialogue sheet. The content of the sheet was decided by the project team which included representation from the Hallam Union. Key issues were identified from the Faculty's National Student Survey and Sheffield Hallam's (internal) Student Engagement Survey results around two themed topics: student identity and student feedback. The format and content of the March forum were developed by the student council, who had identified a need for professional development around specific topics for course representatives. This forum took the form of a workshop and was facilitated by a member of staff from within the Faculty, who had specific expertise in this area. The outcomes and actions from both fora were communicated to the relevant staff groups, Faculty committees and all student representatives. However, the format of this communication was re-designed to improve accessibility and engagement.

Re-design of a Faculty student representative training day

To complement the excellent training events run by the students' union, the faculty offer a student representative away-day to provide personal and professional development. This was an annual opt-in event, held off-campus (to emphasise the notion that this was a high-profile development event), with places for between 12 and 15 representatives. This was a high-quality event, which used expert facilitation, and focussed on fostering the creativity and enthusiasm of the student representatives to deliver tangible products and outcomes. The focus of the 2009/10 event, facilitated by a professional poet, was for participants to develop their creative writing skills and create a series of poetic riddles, which reflected aspects of the student experience at Sheffield Hallam. These have been used in posters and postcards as part of a campaign across the faculty to encourage a better understanding of the student experience, and will be used in autumn 2010 as part of the campaign to recruit course representatives.

Alongside these interventions the project team also reviewed the Blackboard organisation, that was used to communicate with and support student representatives, and invested significant time in personalising communications with student representatives. For example, when inviting students to attend the faculty fora and the student representative away-day, staff responded individually to e-mails and followed up those students who were not able to attend, to explore what barriers existed to student engagement with these opportunities.

Evaluation

The evaluation of the project addressed each of the three over-arching objectives for the project, through a mixture of qualitative and quantitative indicators. This comprised:

- collation of attendance figures for faculty level interventions (the Faculty fora, student council, and away-day);
- a short online questionnaire administered through the student representative Blackboard organisation to all representatives, focusing on notions of ownership and empowerment within the student representative community (drawing on

Wilson-Grau and Nuñez, 2007). Students were invited to participate in this at the start and close of the project to compare perceptions over time;

- feedback from individual student representatives following the faculty fora and away-day;
- a reflection session with the project team exploring the strengths, weaknesses and future challenges of the specific interventions; and,
- one-to-one semi-structured interviews with faculty representatives.

Increased levels of student participation in existing mechanisms were evident through the attendance figures for the faculty fora: 49 individual students attended the Faculty fora (43 in November, 15 in March, with 9 students attending both). This represented a slight increase in attendance from the previous year. However, non-attendance does not necessarily indicate a lack of willingness to participate. Feedback from students unable to attend the fora indicated that the students' academic commitments precluded them engaging with the fora: in November it clashed with taught sessions or placements for many students, and in March the assessment workload meant students did not feel able to commit the time. This feedback was corroborated by comments from individual faculty reps in interviews. An unanticipated positive outcome of the project was that, in contrast to the previous year where no faculty reps were recruited before the summer break, all but one of the faculty reps were in place (June 2010) for the 2010/11 academic year.

Students were very positive about the *new mechanisms* trialled by the Faculty. When asked to provide three words that described their experience of the away-day, students said it was: inspiring; enjoyable; constructive; fantastic; useful; effective; engaging; valuable; and, rewarding. Staff felt that the risk-taking, in terms of using creative approaches at the away-day, had paid off and valued the tangible product of the event (in 2009/10 the riddle postcards and posters). Faculty representatives and staff reported that the mentoring arrangements had helped reduce anxiety around contributing to their Faculty committee, and had contributed to a sense of feeling involved, informed and supported. In addition, Faculty representatives said their experiences as a whole had provided them with a better understanding of how the institution worked, greater empathy with staff, and more confidence in mediating between the university and the wider student body. The feedback from faculty fora indicated that students appreciated the changes that had been made, and found the interactive format and student-led focus engaging.

"The training was insightful; I really enjoyed the tasks on advocacy as this reinforced my understanding," (Student feedback on the March Faculty Forum).

"Useful to have a group work and discussions as it allows for the opportunity to hear the views and ideas of others," (Student feedback on the March Faculty Forum).

Staff felt the fora was 'slicker' and better organised than previous Faculty forum meetings, that there was a good balance between staff and student contributions, a high level of discussion, and were proud of the fact they fed back the 'notes' to students within 5 working days of the forum.

The student council was well thought of by staff and students. It was felt to be genuinely student led (though well chaired by the Head of Student Experience), the attendance of senior staff was felt to add profile and value to the meetings and, although students may not have been actually *researching* solutions, they did feel they were able to make suggestions that led to tangible actions.

The online questionnaire results suggest that over the course of the project student representatives did gain a better understanding of the purpose and aims of their role (from 83 to 95% agree), felt more able to participate as much as they wanted in course/faculty decision making processes (from 71 to 90% agree) and use their initiative to influence the development of the student rep community (from 73 to 85% agree). A greater number of students also agreed (from 63 to 75% agree) that it was clear how the faculty responds to and/or acts on the issues they raised. Many of the other questions indicated students maintained already positive perceptions of their role. For example, over 90% agreed in both iterations of the survey that they felt able to express their opinions and raise issues. However, there were some anomalies in the results that provide potential foci for future work. In both iterations of the survey, only 50% of students agreed student representatives felt a sense of ownership over the student rep community. Whilst the results indicate that student representatives did feel part of a community, and felt able to express their opinions and participate in decision making processes, they did not necessarily feel that they *owned* that community. Similarly, although students indicate they could raise issues and see how the Faculty responded, they were less confident at the end of the year that this had made a difference to the wider student experience in the Faculty (a drop from 85 to 60% agree).

Overall, the strongest theme emerging from the evaluation was that the interventions introduced as part of this project led to a deepening of the relationship between staff and student representatives in the faculty and, for the students, a sense that their contribution was genuinely valued. From the staff perspective this meant they felt they had persuaded at least some of the students that "we are serious about this". From the student perspective this led to a greater sense of inclusion, partnership, feeling well supported and, ultimately, engagement. Chickering and Gamson (1987) describe the staff and student relationship as one of the key principles in engaging undergraduate learning experiences. Our findings indicate that these principles may hold true beyond the students' learning experiences, and have the potential to be utilised to provide greater student engagement with issues across the broader student experience.

Further development

The evaluation raised a number of areas where there is potential to build on the strength of the project and further improve the engagement of student representatives.

- Attendance at meetings and fora was still an issue and staff are exploring possibilities for scheduling these to obtain a better fit with the majority of student timetables, and placing these meetings in students' electronic timetables. In response to student feedback the student council, and possibly the faculty fora will

be 'front loaded', with meetings more frequently earlier in the year when students are better able to attend and to help them develop a sense of their role. As the Faculty committee meetings are already in the calendar there is potential to match faculty representatives with committees based on their availability as well as interest.

- Recognising the contribution Faculty representatives are making to the faculty, exploring links to the careers service, the Hallam Award and possible certification. This is a topic already discussed by the student council in the 2009/10 academic year.
- Extending successes from working with Faculty representatives to Course representatives.
- Ask the student council to collaborate in the design of the 2010/11 away-day.

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A faculty-wide approach to embedding assessment for learning to enhance student learning experience

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Introduction

Assessment does not simply provide information on the students' progress in the form of a grade, rank, and/or feedback; it can also be used to improve students' approach to learning. Previous research has shown that assessments shape how students view the curriculum, and make decisions about what they learn and how they learn it (Boud, 2002; Ramsden, 2003). The type of assessment and the approach to teaching and learning within a particular module need to be aligned if the learning is to be effective (Biggs, 2003). Assessment practices which demand self-awareness, reflection, metacognitive knowledge and collaborative learning, requires more student-centred pedagogical approaches than traditional types such as unseen examinations, and can contribute significantly to students' learning. Such approaches together with their integrated assessment strategies empower learners to take more responsibility for their own learning thereby increasing their engagement in the learning process which, in turn, leads to improved motivation and more effective learning (Bandura, 1977; Feuerstein, 1991; Ushioda, 1996). *Assessment for learning* which focus on the process as well as the outcome of the learning can therefore enhance the student learning experience, and foster the development of autonomous lifelong learners.

Following a review of pertinent literature and a brief description of the institutional context including central initiatives, this paper will outline the approach to the development of *assessment for learning* taken across all the undergraduate programmes of a large Faculty, based on a pilot project carried out between 2003 and 2005 in the School of Business and Finance (now part of the Faculty of Organisation and Management). This paper will examine: the approach to change pre and post-validation; the nature and implication of the newly revalidated assessment programmes in relation to student support and curriculum design; and some preliminary findings from the 1st year qualitative review¹ including student and module tutor feedback.

The paper will conclude with a reflection on the benefits of *Assessment for Learning* at undergraduate level and issues surrounding its development in an HE context with reference to the above case study.

¹ The modules were running for the first time for the 2007/2008 cohort. The full review is expected to be completed by July 2008.

Literature Review

Student engagement and motivation are key to successful learning. Cognitive and more particularly socio-constructivist views of student learning suggests that learners' active and independent/ interdependent involvement in their own learning increases motivation to learn (Dickinson, 1995; Ushioda, 1996; Williams and Burden, 1997; Benson, 2001). Furthermore the ability to influence one's own learning has been associated with improved academic performance (Findley and Cooper, 1983; Feuerstein, 1991; Bandura, 1977 and 1986). Yet the prevalent teaching methods of teacher-led lectures and seminars have tended to encourage dependence and passive learning. Recently, technological progress combined with resources' constraints and the increasing importance of preparation for lifelong learning have led many UK universities to consider radical moves towards more student-centred approaches to Teaching and Learning, and Sheffield Hallam University (SHU) is no exception. At the heart of these new modes of delivery, lies the need to develop in students the skills necessary to become autonomous learners both in order to enhance their learning experience, and prepare them for lifelong learning. Traditional assessment strategies, such as unseen examinations, tend to focus on knowledge acquisition and its application to specific issues rather than on knowledge construction and problem-solving. If student-centred approaches are to be successful, assessment programmes need to be aligned to these changes in curriculum design.

Although all assessment will lead to some form of learning (Boud, 1995), assessment can be categorised as being **of**, **for** and **as** learning depending on whether the main purpose of the assessment is formative or summative (Scriven, 1967; Knight, 1995; Boud, 1992). The Quality Assurance Agency (QAA) for Higher Education defines formative assessment as "designed to provide learners with feedback on progress and inform development, but does not contribute to the overall assessment" (QAA, 2000). The notion of providing feedback is key here; this needs to be provided during the individual module or course so that students may identify what they need to do in order to improve their work and have the opportunity to make those improvements (Brown, 2001; Knight, 2001). In this way formative assessment can be described as assessment for learning. In contrast summative assessment refers to "a measure of achievement or failure made in respect of a learner's performance and in relation to the intended learning outcomes of the programme of study" (QAA, 2000). Summative assessment always contributes to the marks for a unit of study or degree (Brown, 2001) and provides "'feed-out' in the shape of a warrant to achievement or competence (such as a degree certificate)" (Knight, 2001). Summative assessment is therefore a judgment (Elton and Johnston, 2002) of learning. It should be noted that differences in the nature of formative and summative assessment have led to the argument that combining formative and summative aims in an assessment task should be avoided. Summative assessment tends to be 'high stakes' assessment where reliability and accuracy are of utmost importance. The aim of formative assessment, however, is to encourage learners to be open about the level of their understanding/knowledge/learning so that advice on how to improve can be given. Therefore, reliability and accuracy are not as central to formative assessment (Knight, 2001). However, in reality the distinction between formative and summative assessment is not always clear. Ramsden (2003) has argued that the purposes of assessment (as a way of contributing to student learning and reporting on

that learning) cannot necessarily be separated, and that formative and summative are not distinct concepts in reality. Boud (2005) advocates a holistic approach to assessment where learning and all assessment activities contribute to an overall assessment profile, in which students play an active role. In order to actively participate in the assessment of their learning, students need to have an idea of the target level/goal of the assessment task, be able to compare their own performance with that level, and be able to take action to bring these closer together (Macfarlane-Dick and Nicol, 2004). In this way students are considered central and active participants, undertaking a significant amount of self and peer evaluation.

For students assessment may have a different role; principally in shaping how they view the curriculum, and make decisions about what to learn and how to approach their learning. Ramsden (2003:67) acknowledges the role of assessment in shaping students' learning:

"The methods we use to assess students are one of the most critical of all influences on their learning".

Therefore it is essential that the assessment used give the right messages to students about what they should be learning. One possible way of achieving this is to align the assessment methods to the teaching and learning outcomes for a module or course of study (Biggs, 2003).

According to Ramsden (2003) the way that students approach learning is directly affected by aspects of the teaching and learning environment. Marton and Säljö (1984) have described two such approaches as deep and surface linked to a hierarchical set of conceptions of learning: 1. quantitative increase in knowledge; 2. Memorising; 3. the acquisition of facts, methods etc which can be retained and used when necessary; 4. the abstraction of meaning; 5. an interpretative process aimed at understanding reality. Conceptions 1 and 2 are associated with surface approaches, 3 is an intermediate stage, and conceptions 4 and 5 are associated with deeper approaches (Marton and Säljö, 1984:52).

Deeper approaches, while not necessarily always associated with better grades, are believed to lead to a better understanding of material (Ramsden, 2003) and a longer retention of knowledge (Gibbs, 1992). Approaches are flexible and relate to the process of learning, rather than student skills, therefore many students alternate or mix these approaches. The strategy or approach used may vary according to the student's interpretation of what is being asked of them, i.e. the learning or assessment task (Marton and Säljö, 1984), and the student's previous educational experience (Ramsden, 2003). Factors that may encourage a surface approach to learning include: coverage of breadth of material at the expense of depth, assessing for knowledge rather than understanding, and using assessment that creates anxiety and cynicism (Biggs, 2003; Gibbs, 1992). Strategies that may encourage a deep approach involve; assessing for understanding, involving students actively in assessment, and using teaching and assessment that support the stated aims of the module (Gibbs, 1992; Biggs, 2003). Gibbs (1992) suggests that problem-based learning, group work, reflection, independent learning and experiential learning are all activities which may

facilitate deeper approaches. Whilst these activities may act to encourage or discourage certain approaches, this does not mean that these approaches are inevitable (Biggs, 2003).

Whilst many authors advocate the broad usage of conception of, and deep approaches, to learning there has also been some criticism of the model (see for example, Haggis, 2003). The distinction between surface and deep approaches to learning whilst retaining its advocates is also being contested (see Greasley and Ashworth, 2007) in favour of more holistic approaches arising from the interaction between a student's 'lifeworld' and the 'matter to be learnt'. This alternative learning model would reinforce the need for more student-centred assessment activities.

As well as providing students with an appropriate mixture of formative and summative assessment, the assessment diet that students undertake should utilise a variety of methods (Brown, 2001). One reason for this is that some assessment methods may favour some students over others. When a diverse range of assessment methods are used all students have the chance to show their learning (and potential) through at least some of the assessment tasks (Race, 2001). One strategy for achieving this is to use a variety of sources of assessment; possibly incorporating peer, self, group, tutor (Race, 2001) and computer aided assessment (Bull and Danson, 2004).

Involving students in the assessment process, through self, peer and group assessment strategies, can contribute positively to student learning for a number of reasons:

- *"Because students are already self-assessing and peer-assessing quite naturally*
- *Because tutor assessment is not sufficiently valid, reliable or transparent*
- *To deepen students' learning experiences*
- *To let students in to the assessment culture*
- *To help students towards becoming autonomous learners*
- *To help students develop skills relating to life-long learning*
- *To help students gain much more feedback that would otherwise be possible." (Race, 2001, 6-7)*

Feedback from peers may also be easier to accept and phrased in more accessible language than that from tutors (Macfarlane-Dick and Nicol, 2004). Boud (2000) suggests that learners require a greater amount of self, peer and negotiated assessment to reflect lifelong learning in the learning society.

Computer-assisted assessment (CAA) can utilise a range of technologies (for example, the internet, intranet, CD-Rom) for formative and summative assessment purposes (Bull and Danson, 2004). There are many benefits in using CAA, including the possibility of providing prompt marks and feedback to students (Hepplestone, 2004), more flexibility for students to take tests remotely and at a convenient time (Bull and Danson, 2004), and bringing the assessment environment more in line with the kind of learning environments students experience (Hepplestone, 2004).

The Institutional Context

The University LTA strategies in recent years have focused on flexibility in provision, meeting the needs of student diversity and the appropriate use of technology (Sheffield Hallam University's LTA Strategies, 1999 & 2001). The overarching aim of the 2002 strategy, in particular, captures the context in which the assessment project was developed:

"The University is committed to ensuring a high quality learning experience for all students, teachers and all other staff and stakeholders within a learning community". (SHU LTA Strategy, 2002: 2).

Its emphasis is on the active engagement of learners, the enabling of students to become independent learners and take increasingly greater responsibility for their own learning. The most recent strategy (2006) reinforces this LTA strategic vision:

"We will provide creative, flexible and responsive learning opportunities and environments to enable autonomy and employability". (SHU LTA Strategy 2006: 1).

In order to deliver high quality teaching and learning experiences, the University identifies assessment as one of the most pressing areas in need of development. It regards assessment as an essential part of the learning process, rather than being separated from learning. It assumes assessment *for* and *as* learning, as well as *of* learning. Learning, teaching and assessment needs to be considered together, to provide a holistic approach to enhancing the student learning experience. This founding principle is adopted to achieve alignment and integration between learning, teaching and assessment. Behind it lies the need for clarity in relation to:

- What is to be learned (learning outcomes);
- The activities to promote successful learning (learning and teaching methods); and,
- The means to know what and how well learning has taken place and be fed forward into future learning (assessment and feedback).

This study follows the development and integration of the Assessment for Learning approach to course planning through a change agent cascade programme at one of the four faculties within the University – i.e. the Sheffield Business School.

The Faculty Approach to the Assessment for Learning Project

The Project Aims

The Faculty aims to move from an assessment culture which focuses on student failure to one which puts assessment at the heart of the learning process, through underpinning the development of all teaching, learning and assessment practices by assessment for learning and its associated approaches. By laying the foundation early on through a strong focus on

the process of learning alongside the development of other skills, it seeks to engage students actively in the learning and assessment process. Module leaders/teams are strongly encouraged to develop the use of self, peer and negotiated assessment where appropriate, through the promotion of innovative student-centred assessment practices in other sectors of education, and encouraging the use of new technologies to enhance student learning experience. The Faculty hopes that the change in assessment practices will enhance the overall student experience, promote more effective learning, and improve retention/progression rates, particularly in modules with high failure rates

The Pilot:

The pilot, funded by the Centre for Promoting Learner Autonomy (CPLA), began in 2004. Building on the findings of an audit carried out in 2003, it aimed to develop more student-centred assessment practices across the Faculty, in order to enhance the student learning experience and promote student engagement in the learning process. It sought to: (a) identify current assessment practices across the whole Faculty; (b) identify and disseminate good practice; and (c) evaluate the effectiveness of current practices in the light of best practice and current literature. In order to define what was meant by "good practice" for the purpose of the project, the key principles relating to Assessment contained in the University's Assessment Policy Statement provide a useful starting point. Much of the literature reviewed for the pilot study (Flint & O'Leary, 2004: 2-7) strongly supported these principles:

- I. Assessment as an integral part of learning in which it acts as a vehicle and motivation for learning e.g. use of formative as well as summative assessment. There is strong student engagement in the process i.e. self, peer and collaborative forms of assessment.
- II. There is clear and easily accessed information regarding all processes and regulations relating to assessment with students actively encouraged to engage with it.
- III. Assessment suitable for a diverse student population and should be accessible and inclusive as much as possible.
- IV. Assessment of all learning outcomes through a mix of formative, summative and diagnostic outcomes as appropriate.
- V. Assessment criteria provide framework for learners to demonstrate their achievement and assess their own progress.

The Method

The pilot employed a very simple two-stage method. Stage One, data on assessment practice for each module was collected by using module information from the existing module database complemented by a simple questionnaire to be completed by module leaders. The questionnaire was designed to provide answers for the following key research questions:

1. What types of assessment are used across the Faculty?

2. What were they measuring/ testing? (Link to learning outcomes)
3. What contribution do these assessment instruments make to the student learning experience? (e.g. formative/summative, for/ of/ as learning)
4. What is their impact on staff workloads? (e.g. nature of feedback, marking time)
5. What is the diet of assessment across a level for a given course as well as for a whole course?

Stage Two, once the module data was collected, the assessment methods of all modules were mapped out based on the key research questions.

The data collection covered a total of 84 modules, representing 220 units of assessment, out of the 190 active modules which had been targeted.

The findings showed that the existing assessment practices revealed little evidence of 'good practice'. Traditional methods such as paper-based, tutor-marked and summative assessment dominated the methods of assessment. There was limited evidence of innovation in assessment tasks e.g. portfolios, learning logs etc. The qualitative data gathered, however, highlighted clusters of innovation which were very much in line with the University Policy on assessment. Case studies involving successful examples were disseminated through workshops, pre and post validation, to inform changes in assessment practices. The findings of the pilot also highlighted the predominance of certain types of assessment, such as group work or examinations in some courses. The module database could be used as a modelling tool for Programme planning groups to ensure a varied diet of assessment across a level for a whole course. Most importantly, the findings provided the basis for the Faculty's rollout strategy, which will be implemented between 2007 and 2010.

The Faculty Rollout

The 2006 revalidation of all the Faculty's undergraduate programmes presented a unique opportunity to embed the assessment for learning principles across all the Faculty programmes. The rollout has begun for modules delivered at level 4 (i.e. year 1 of undergraduate studies), laying the foundation for other levels in subsequent phases of implementation. To enable staged rollout, which mirrors a change agent cascade programme, there are six phases to the process:

Phase	Action
One - Establish a Faculty-based working group	Faculty Assessment Implementation Team (FAIT) was established. It consists of Head of LTA, Head of Quality, Head of Student Services, Head of Quality Support, the Teaching Fellow for Assessment and the TAL ¹ Fellow. The

¹ TAL¹ is The Assessment for Learning Initiative which is coordinated by, and funded through the University's Learning and Teaching Institute.

	<p>team is led by the Faculty's Assistant Dean for Academic Development. The constituent of FAIT ensures a balance of senior management and academic as well as administrative inputs into the change process.</p>
Two - Establish assessment principles	<p>The Faculty assessment principles covering the overall student experience rather than individual modules were as follows:</p> <ul style="list-style-type: none"> • All module assessment to engage and motivate students through relevant formative and supportive activities, supported by appropriate feedback. • All module assessment strategies to encourage deep learning. • A balanced and varied diet of assessment approaches to cater for individual needs and preferences. • Peer feedback and personal reflection as part of the design wherever possible. • Peer and self-assessment to be introduced as appropriate. • Summative assessment to reflect individual student achievement. • Assessment to consider the strength and weaknesses in a student profile holistically. • Assessment programme, including summative assessment schedules to be coordinated across the level, with cross modular assessment where appropriate
Three – Raise awareness of the project, establish rationale for change	<p>A careful communication plan to raise awareness of the project to ensure that maximise engagement of staff to the process. The plan entails a series of briefings, workshops and one-to-one support to ensure maximum opportunities for dialogue and prevent anxiety caused by confusion.</p>
Four – Collect data on assessment practice for each module	<p>Module leaders are request to submit detailed information on their assessment practice in their modules. Specifically, the information supplied consists of:</p> <ul style="list-style-type: none"> • the module assessment tasks • the relative weightings of assessment tasks (weightings should reflect importance of /number of learning outcomes being assessed) • if any assessment tasks that must be passed individually due to professional body requirement?

Five – Conduct ‘mapping’ of modules across level to ensure balance of assessment diet.	Information is stored onto a database from which module assessments are mapped across each level with each course/programme to ensure there is a balanced diet of assessment methods.
Six – Evaluation of impact	To evaluate the impact of the project on student and staff assessment experience.

The underlying principle behind this process is that departments and staff should feel that through being in this process they have ownership of the outcomes, and that the outcomes would enhance the assessment experience of students as well as staff involved in the process.

At the time of writing, the project rollout has entered Phase Four and Phase Five. It is still too early to conduct a full, meaningful evaluation and report on its impact on assessment practice. Initial observation suggests that there is evidence of a much greater variety of methods to assessment being used. There is a much better match of assessment process to module as well as programme learning outcomes. Modules which have been mapped show clear descriptions of assessment tasks. Self- and peer-assessments are now more common and is valued for its formative role in students’ personal development. Portfolios and learning logs are used to allow for individual exploration and reflective learning.

It is evident that the change agent cascade process is now embedded. An evaluation of the full impact of the project on student and staff assessment experience will be conducted in due course.

Conclusion

Changing the way students are assessed is key to laying the foundations for effective learning, not just at University but throughout life. Embedding assessment for learning alongside assessment of learning within the undergraduate curriculum constitute a shift of focus from knowledge acquisition, and its application to specific issues, to knowledge co-construction and problem-solving. This change in emphasis implies the adoption of a very different pedagogical approach to curriculum delivery. The biggest challenge to its success may well be the staff development implications.

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Interdisciplinary and cross year course mentoring and integration

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1. Abstract

The work aimed to create opportunities for enhancing students' learning experiences by developing links (initially informal) between design / mechanical engineering final year projects and taught classes in other engineering disciplines. Continuing work involves formalising such links for operation across the engineering area in future years. Students' project management skills, as a framework for developing autonomy, were also in focus.

2. Background

In September 09 students returning from placement at Rolls-Royce PLC were asked to undertake a final year project with a greater emphasis on interdisciplinary aspects of engineering. Often final year engineering projects are narrow in scope and sit firmly within students "*what I can achieve on my own*" comfort zone. Such projects can be challenging, but they do not prepare students for real world engineering, where multidisciplinary projects are commonplace. However, it is unfair to expect students to define and participate in interdisciplinary projects if they are not exposed to this way of thinking and working during their formative foundation years. The aims of this project were to address these issues:

- to inspire students and staff by using an interdisciplinary approach to enable broader scope and greater depth in undergraduate projects and applied coursework;
- to help students better understand their development towards becoming professional engineers capable of working autonomously in multidisciplinary projects.

3. Rationale

Engineering has always presented multidisciplinary challenges in the workplace and problems for the education of undergraduates (Armstrong et al 1982). The teaching of engineering undergraduates at a multidisciplinary level is still a requirement which is made problematic today by the same difficulties of separate academic disciplines. Interdisciplinary project work can be used to provide a real world scenario for integrating single discipline subject knowledge, but the challenge is overcoming the above issues.

3.1 Interdisciplinary Projects

Such projects require students not only to work on single step problems but also to solve multi-step problems. However it is our experience and backed up by the literature that students entering university can't solve multi-step problems. (LTSN Engineering Guide; Learning March 2004). If students can't problem solve then they will find it difficult to work with multidisciplinary tasks.

3.2 Personal Time Management and Autonomy

Traditionally students are expected to develop such skills on an ad-hoc basis. But academics do a lot of hand holding so students do not need to develop these skills, leaving it to staff to guide their management of the projects. Students are expected to deliver results, but not to deliver a project. The LTSN Engineering Guide proposes that in year 1, problem solving should be taught to first year students, via an agreed general problem solving process so that students will be guided and experience a problem solving approach which they can build upon more autonomously throughout their course.

Vemury and Devlin (2009) agree that autonomy requires guidance and they propose that guided autonomy can only be achieved by understanding the students' personal circumstances, which really means close contact with students and staff.

Without doubt, one of the major hurdles experienced by students is time management and this is exacerbated where multidisciplinary projects are concerned. Rebenich et al (2010) quote Mochizuki et al (2008) regarding the enhancement of students personal time management by exposing student progress to other group members in group based learning projects.

Mullins (2002) lists a number of important aspects of time management, three of which can be related to student projects and should be adopted as part of guided autonomy. These are:

- clear aims and objectives;
- planning for the future;
- prioritising activities.

4. The Approach

So the approach has attempted to build in the aspects detailed above. Six final year students returning from placement at Rolls- Royce were invited to an open forum meeting to discuss the possibility of undertaking final year projects of an aerospace nature. The meeting involved two members of staff. The first member of staff was a mechanical design engineer and the portfolio director for EDT who would also act as project supervisor. The other member of staff was an associate lecturer who lived and worked in Sweden and who had aerospace experience and was a qualified glider pilot instructor and who would act as

mentor for the students. The students were presented with a number of aerospace “themes” to explore, with potential to provide multidisciplinary projects and were requested to develop their own project ideas from these themes.

Broad themes, encouraging multi-disciplinary thinking, were defined to help engineering design students “*think outside of the box*” as far as the scope of their projects was concerned and the themes are shown in figure 1 below.

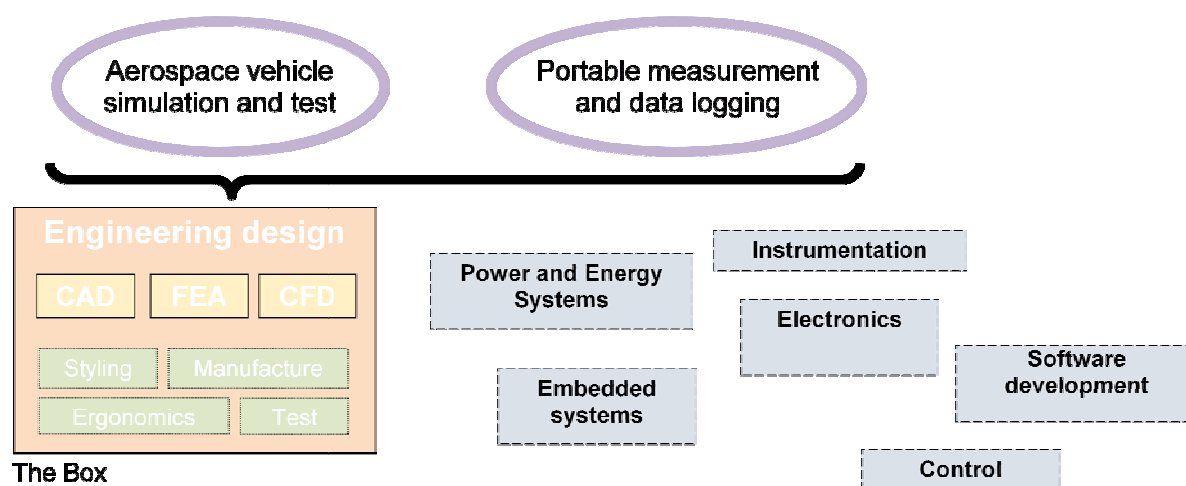


Figure 1: Final Year Project Themes Incorporating Interdisciplinary Elements

Normally, the “Box” incorporates topics that they undertake and use predominantly as part of their course and which tend to be mechanical engineering subjects. For interdisciplinary project working students need to be involved with topics such as power & energy systems, instrumentation, embedded systems, electronics, software development and control to link mechanical operation to sensing and control etc. A separate meeting took place between the project authors and a range of other staff from within the EDT subject group and the electronics and control area of the department of engineering and mathematics. The meeting reviewed where staff could potentially support possible interdisciplinary topic areas emerging from the final year projects, both in supporting the final year students and integrating some aspect of the project into their undergraduate classes.

4.1 List of Final Year Projects with the Potential for Inter-disciplinary Working

Final year project ideas were brainstormed by the staff and students as allowing / requiring interdisciplinary knowledge to be applied, either by final year students together with or independently, students on other years of a range of course disciplines. All projects were supervised by a project supervisor, with expert input being provided by other members of academic staff, and the expert mentor from Sweden to support the interdisciplinary content.

Students were required to undertake formal registration on the project module as is normal in the faculty of ACES.

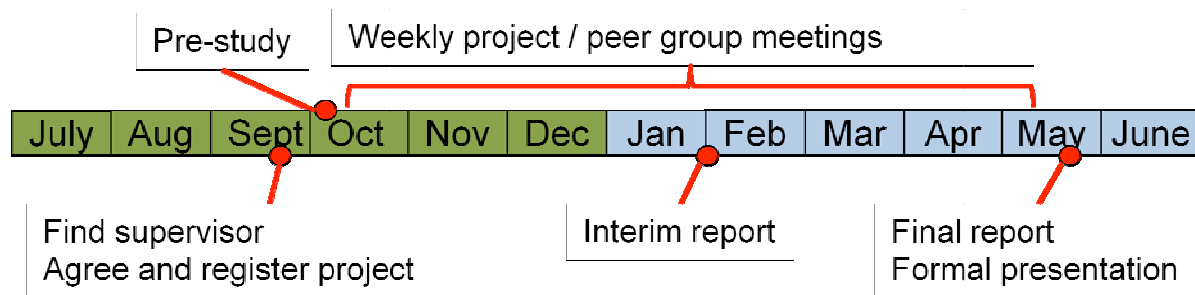


Figure 2: Final Year Project Timeline

Formal registration defines time constrained activities and outcomes that students must satisfy throughout the module in September, February and May. Extra to the formal registration and as part of this CPLA project, students were encouraged to complete a 'pre-study' within the first three weeks of the project to define the way forward for the project and any potential problems that might be encountered. Formal weekly project / peer group meetings were operated based on a standard format whereby students were asked to identify in a one page document, "Tasks completed ":" Tasks not completed ": "To do next week" There was a module requirement to keep a logbook of work carried out and an organisation Group Blackboard site was set up for students as a discussion board and to convey information.

4.2 Student Profiles

Students were chosen also on the basis of obtaining a spread of courses. Of the six students involved in the interdisciplinary projects, three were taking the final year of a CEng level course in Mechanical and Computer Aided Engineering, two were enrolled on a MEng in Mechanical engineering which extends the CEng course by a year and includes some level seven modules in this year and their final year. One student was undertaking the final year of a BSc (Hons) course in CADT.

4.3 Final Year Project Briefs

Design of a Drop-Rig for Glider Crash Test

The drop rig was based on one or more impact scenario, eg heavy landing of a glider etc., with the aim of recreating this event(s) in the lab. The department own a crash test dummy which can be used to measure impact forces experienced by a human in the scenario. Additional instrumentation is required to measure and analyse the impact experienced by the aircraft structure.

Design of a Glider Motion Platform Simulator

A motion platform and spaceframe cockpit were designed by final year engineering students 2008/09. No physical prototype has been made to date. The problem of actuation / servo positioning of the motion platform was to a large extent ignored. This project aimed to rectify this omission.

Release Mechanism for a UAV Recovery Vehicle

Docking devices for use in UAV's for both airborne and submersible vehicles are widely used. These UAV's often also require payload to be secured and electrically connected to the UAV themselves. This project involved the investigation and design of a quick acting, self-retrieving device for delivering payloads by UAV's to disaster areas.

Design and Development of a Static Hover UAV

Neutral buoyancy and hovering UAV's provide specific opportunities and challenges compared to devices that rely upon forward motion to develop lift. This project involved the design of a mechanism for linking up a slave UAV to a master UAV. Interdisciplinary input required to develop efficient propulsion, navigation and environmental awareness system

Design/ Development of a Scanning Rig for Large Scale Products

Measurement and reverse engineering of large stylised / freeform structures such as motor vehicle shells, aircraft fuselage, engineering and art castings does not always require the levels of accuracy achievable in high end measurement systems. The project involved the development of a simple rig for measuring and logging profiles (x, y coordinates) at different heights (z) capturing slices through the artefact at mm accuracy for later recreation in CAD software.

Design, Manufacture and Testing of a Force-Feedback Joystick

A key feature of flight simulators is the fidelity of the feel of the controls, including how much force is required to hold or move the control in a given situation. Aircraft are particularly sensitive to this. Due to the high cost of commercial force feedback controls, many simulator builders ignore this problem, resulting in a simulator with at best, very dead feeling controls. In this project the student aimed to recreate the significant forces experienced in an aircraft joystick.

4.4 Interdisciplinary Activities and Means of Achieving Them

Each of the projects described above had the potential for interdisciplinary activities and the scope of these activities is shown in figure 3. Three broad areas were identified as the means of achieving the inclusion of interdisciplinary topic areas and activities; "FC", "FP" and "CC".

"FC", indicates that an existing foundation course/ module involving a relevant topic area eg electronics, instrumentation, software development, materials science, aerospace structures or flight mechanics would provide a suitable link for developing interdisciplinary areas of the project. "FP" indicates that there is scope for linking the project with another final year project in another discipline e.g. control, electronics etc. "CC" proposes that the final year project student undertake a continuation study in the area- usually where the topic area is/ has been part of the study diet of the student, but the student is likely to require wider or more in-depth knowledge.

Project	Interdisciplinary Activity	Achieved by (Other Courses)		
		FC	FP	CC
Design of a Drop-Rig for Glider Crash Test	Instrumentation of the rig for measuring and logging velocity of the drop sled.			
	Instrumentation of aircraft mock-up for measuring and logging of velocity, acceleration, position of suspension components, seating, etc.			
	Use of video techniques for analysing impact.			
	Logging real world data from glider / aircraft for calibration of drop rig and aircraft mock-ups			
	Analysis of cockpit structure, aircraft seat, suspension elements			
Design of a Glider Motion Platform Simulator	Development of a slaved aircraft model oriented using servo motors and data from simulation software.			
	Development of servo system for the current platform design. This will require development of advanced control algorithms, ie washout filters.			
	Physical integration of potentiometers etc into generic flight controls (Stick, rudder etc.) being designed and manufactured by 1 st year aerospace students. (A COTS interface card will be used for the electrical integration.)			
Release Mechanism for a UAV Recovery Vehicle	Electronic actuation of coupling mechanism			
	Data transfer using physical or wireless means.			
Design and Development of a Static Hover UAV	Analysis of aerodynamic and structural elements within the UAV.			
	Development of electric propulsion system using state-of-the-art batteries or power cells.			
	Location and navigation based on beaconing, collision avoidance using active components.			
	Navigation and collision avoidance using video techniques			
	Auto-pilot based on GPS.			
Design/ Development of a Scanning Rig for Large Scale Products	Development of position measurement and logging for each movable axis in the rig (X, Y, Z)			
	Reverse engineering of scanned data.			
Design, Manufacture and Testing of a Force-Feedback Joystick	Development of servo systems to provide force feedback.			
	Instrumentation of joystick to allow measurement and logging of actual stick forces			
	Development of algorithms to provide instantaneous control force data for servo system			
	Logging real world data from glider / aircraft for calibration of force feedback system.			

Figure 3: Interdisciplinary Activities and Means of Achieving Them

5. Summary and Evaluation

Potentially the work has led to much better overall projects and much broader learning outcomes than single discipline projects. This is evidenced by the breadth of topics involved in the student projects and the critical reflections written by the students.

Certainly interdisciplinary project work can stimulate and motivate both students and staff. This has been evident during the project by the group cohesion demonstrated by five out of the six students involved. They consistently turned up to review meetings and video conferencing sessions which were not part of the assessment requirements for final year projects. They recognised how the activities were being driven by themselves and the beneficial effects they were deriving from their heightened involvement and often ran these activities autonomously without staff remaining present.

From our experiences with this project we feel that interdisciplinary projects are very good practice for real world projects after graduation, providing unstructured and less defined problems than a traditional approach.

A further advantage is the opportunity for cross year interdisciplinary learning and mentoring. This has been achieved here with a group of first year aerospace students liaising with final year students and building simplistic controls and a small glider flight simulator.

Such projects are challenging and potentially high risk due to the inter-dependencies of such projects on more specialist interdisciplinary areas. The question here is; "how to provide a safety-net for students?" where they achieve the basic aims of the final year project but fail to achieve interdisciplinary connections (either through their own efforts or as a results of interdisciplinary help disappearing or not being developed in the first place)

There were also "grading issues" issues to be considered. Final year students have delivered their own projects, but with peer group support and advice and assistance from specialist areas and academic staff and so defining the students input to the final outcome needs to be nailed down in assessment criteria at the start of such projects.

The final success or otherwise of this CPLA small project has to be in part the student results (and the degree classifications support this with three 1st class marks, 2:1s and a 2:2). Student comments about the project are very supportive and are tabled below.

Student Comments

"It feels like we are so much further on than other students that we have contact with."

"Even if you get stuck, you know you have support on hand."

“Having a number of aerospace themed projects running concurrently has really helped us by allowing us to share ideas and build on each others work.”

“The weekly progress meetings and update reports have helped us critically evaluate our own progress. We feel we are letting staff down if we don’t deliver.”

6. Further Development

For the future, the team wish to develop formal links with staff from within other discipline areas in the department and offer final year project themes based on these. We also wish to develop the concept of interdisciplinary assignment work across different modules and levels in the form of “Linking Assignments”

There is a need to raise the awareness and status of final year projects through, for instance;

- “Project days” with prize for best project (By subject);
- peer review of presentation and report;
- formal requirement for lower years to attend presentations;
- more projects based on industry problems / opportunities.

We also need to assess, and improve if necessary, the teaching and practice of project management skills over all years of our courses.

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The Alchemy Exchange

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1. Abstract

The Alchemy Exchange (TAE) recruits students from all levels and courses to complete projects for external organisations. These projects typically consist of secondary and/or primary research into a specific issue that has arisen for the client or an area of interest they have which they require further knowledge in. This case study discusses the enhancement of student CVs and employability skills. The case study covers a number of perspectives, from The Alchemy Exchange team, the academics involved in the unit and the Associates in the pool. This report discusses The Alchemy Exchange's first year of operations and how it has helped to develop their plans for the future.

The report also discusses core achievements that TAE feels it has helped Associates achieve. This includes areas such as; growth in confidence, complete a task outside their comfort zone and new levels of responsibility. It also highlights areas such as gaining 'real world' experience and identifying skills they have acquired during education and to apply them to a real world context.

2. Background

What is The Alchemy Exchange?

The Alchemy Exchange (TAE) is based in the Centre for Individual and Organisational Development (CIOD) in the Sheffield Business School (SBS) at Sheffield Hallam University. TAE recruits students from all levels and courses to complete projects for external organisations. These projects typically consist of secondary and/or primary research into a specific issue that has arisen for the client or an area of interest they have which they require further knowledge in.

The outcome of the project is a report discussing, analysing or advising the client on the output of the research in detail and a presentation highlighting the key findings.

Who is involved?

The Project team

TAE is made up of a Project Manager and Project Facilitator. The position of Project Facilitator is undertaken by a placement student from the University. Each project team is

made up of the Project Manager, Project Facilitator, Academic and Associates (the selected students who are successfully selected become known as Associates).

Academics

Academics are selected according to the needs of the project and are experts in that specific field. TAE requires Academics from a broad range of backgrounds, who have expertise and interests in order to satisfy the varying client's needs. The role of the Academic is to guide the Associates with their project, advising them on factors such as; secondary research, primary research, report writing and the final presentation to the client. Academics commit approximately two days of their time to a project. This time includes attending client meetings, progress meetings, reading the report and providing guidance as well as attending the final presentation.

Associate

An Associate can complete projects individually, with a fellow Associate or in a team. This selection depends upon the nature of the project and the client's specifications. A number of factors are taken into consideration when deciding which Associate(s) should complete a project. These factors include; their course, work experience, the amount of time they are able to commit and their interests and expertise. On most occasions, all Associates are emailed the opportunities. In other cases, where a project looks ideal for an Associate, they are emailed the opportunity solely and they determine whether they are interested in completing it.

Associates are paid on a casual, flexible basis. This means that they are not guaranteed a project from TAE.

TAE recruits students from all years and levels from all departments across the University.

In May 2010, TAE had 30 Associates in the pool. The majority (18 Associates) of these are from the Business School in their final year studying Business Studies, Economics, Finance or Marketing.

The recruitment process

Applicants are asked to fill out an application form. This form requires them to state the modules they have studied, exam results, key skills and a personal statement answering why they are a suitable candidate. All applications are then reviewed by TAE team; references are then sought out for those who appear, on paper, to be suitable candidates to join the pool. Academics are asked to provide information about the student in the following key areas; ability to work autonomously, ability to work as part of a team, written communication skills, verbal communication skills, ability to manage time effectively and ability to cope with conflicting deadlines. If the student receives positive feedback from the

Academic, they will be invited to attend a selection event. TAE selection event is highly competitive and tests the following skills:

- Strong team working skills;
- Dedicated;
- Motivated, resilient student;
- Ability to work autonomously;
- Strong team player;
- Report writing skills;
- Presentation skills;
- Manages time effectively;
- Professional;
- Understanding of role;
- Relevant skills.

These students are classed as an elite group of individuals who study or have studied at the University.

The selection event

Two weeks prior to the selection event, candidates are provided with a generic case study which is commonly presented to the unit for a project. From this, they are asked to prepare a presentation for the selection event. They are posed with the question, “if you were presented with this information, what tasks would you undertake and how would you answer the clients problem/issue/area of interest? The presentation should last between ten and fifteen minutes.

The next stage of the selection event is to answer interview question. These questions cover the following topic areas; group work, personal experience and time management. To date (May 2010) 105 students have applied to join the pool of Associates. 32 of these candidates were successful and joined the pool of Associates.

The clients

TAE clients are from a wide variety of industries. This includes; food, manufacturing, engineering, childcare and retail. The clients can be any organisation, large or small who want to examine an issue or an area of interest which they require further information on.

TAE has helped clients on a diverse range of projects including; undertaking feasibility studies to assess the potential market for a new product or service, managing events, benchmarking performance against competitors, undertaking market analysis for international expansion and exploring financial implications.

The majority of TAE projects involve secondary and/or primary research into a specific problem or an area of interest the client requires further details on. Primary research has taken the form of questionnaires and focus groups.

Funding

A number of TAE projects have come via Business Link funding provided by Yorkshire Forward; these are known as Innovation Vouchers. This funding provides £3000 to contribute or pay for a full project. However, this funding will discontinue at some point in 2011.

ECIF

ECIF is the economic challenge investment fund provided by HEFCE. This is to provide support for academic engagement with business to help companies respond to the challenge of the recession. This started in June 2009 and the funding is due to end in September 2010. The budget for the scheme is just over £1 million. This scheme is in collaboration with the University of Sheffield.

Goals and objectives

TAE was piloted in the summer of 2008 however; TAE was not fully operational until August 2009 when Project Manager Felicity Mendoza and placement student Lucy Skowron started. At this point there were no procedures in place, no Associates in the pool and only one Academic, Andy Cropper, who was a core element of the pilot study.

The first year of operations was to establish procedures, gain approximately 30 Associates and a number of Academics on board to support the projects.

Project activities

TAE team meet with the client to discuss their business, their issues or ideas and what they would like to achieve from the project. The Associate(s) is then briefed on what the initial activities are to start the project. The Associate then gets acquainted with the task at hand and completes the key objectives set by the project team. A progress meeting is then set up on a regular basis to review the objectives set and determine what needs to be done next. This occurs approximately every fortnight until the deadline of completion.

The key objectives of the progress meetings are to support the Associate, ask/answer any questions, clarify thoughts, guide research and advise. The purpose of this is to create a coaching and mentoring ethos to support and aid Associate learning.

Progress meeting

Once the initial briefing meeting has taken place between the Project Manager, Project Coordinator, Academic and Associate, the progress meetings commence. The Associates are supported by regular progress meetings throughout the project. The purpose of this is to track the progress of the project, allow the Associate to ask any questions and verify any information, discuss any problems or interesting areas they have stumbled upon, monitor the progress and ensure the quality level is maintained.

Client involvement

The degree of how involved the client is with a project varies between the different clients. Some clients have supported Associates with developing primary research tools such as questionnaires. When such activities have occurred, the Associate and Academic create the questionnaire and then email it to the client to review. This ensures the client receives the desired outcome.

The report and the client presentation

As the project is close to completion and the Associate has drafted the report, the Academic and TAE team review the content. The purpose of this is to review the findings, spot any gaps in research, assess the structure and check grammar. The Associate is then provided with feedback which they address to ensure it meets the usual TAE standard. Associate Matthew Burke stated "The most enjoyable part of the project was confirming our findings with the client, which confirmed the thoughts we had about their market. The benefits of the project were a drastic improvement to my report writing skills and presenting the information in a professional way, while qualifying everything which was written".

TAE presents the findings of the project back to the client. TAE promotes an interactive style of presentation; this is to encourage the client to participate in discussions and ask questions while the Associate is going through the presentation slides. It is the Associate's role to put together the PowerPoint slides for the final client presentation. However, the Academic involved in the project and TAE team review the slides and provide feedback as to what would make them more effective in the delivery of the findings. The Associate is also encouraged to attend a practice presentation with the Academic and a member of TAE team. This is to ensure all parties are comfortable with the content and the presenter (Associate) appears professional and knowledgeable in the area of research.

Project feedback

After the client presentation is completed, a member of TAE team asks for feedback on the project which has been supplied. The Academic and Associate complete an internal form which covers the following areas; successes, any difficulties encountered and advice for future participants. The client is also asked to complete a feedback form. This rates the

project's success levels, the quality of the output and what they would recommend TAE to do in the future.

The training workshops

TAE runs training workshops for the Associates in the pool. The purpose of this is to prepare the students for all things TAE. The following workshops have been provided to the Associates to aid them with the projects and enhance the effectiveness of the projects.

Induction

An Induction event was run in December 2009. The purpose of this was to introduce the newly assigned Associates to TAE team and an opportunity for the Associates to meet fellow Associates who will attend training events and those they could be completing projects with. Associates noted that they would like to develop skills such as networking and presentations to an external audience. For the latter, we plan to run a workshop on presentation skills in June 2010.

Focus group training

Associates could be faced with conducting primary research in the form of a focus group as an element of their project. This workshop covered areas such as - when they are appropriate, preparation, body language, recording and analysis of the results. Associate Susan Walker commented; "I would feel comfortable running more focus groups. (The) information was very valuable." Attending this workshop would enhance an Associate's CV, if they could put the theory into practice as it shows they are able to maintain control of a small group, and if successful, steer them to stay on the same subject.

Questionnaire design training

Questionnaires are one of the more common forms of primary research TAE conduct in projects. This therefore means skills in this area are essential to ensure the Associates conduct them using the most effective methods. This workshop covered the following areas; the process, data collection, setting the questions, targeting those to complete the questionnaire, tools and techniques, sampling and analysing and reporting the results.

Associate Kristina Mee stated; "There is a lot more to consider when designing a questionnaire than I had realised." Associate, Vivek Thawkar stated that from the session he has discovered the "Importance of a well planned and thought out questionnaire."

Long documents in Word training

The long documents in Word training was provided to help the Associates format reports. This workshop covers areas such as styles, which will help Associates format their reports

for TAE. Associate Edyta Tunkel stated; "I do feel better equipped to format documents in Word. The trainer explained clearly the purpose of certain functions of Word which helped me better understand how the programme works and why I used to experience problems in the past. I have learnt how to avoid these problems." This will help this particular Associate in her undergraduate studies as well as her work with TAE.

Networking skills

The aim of the networking skills session was to build the Associate's confidence when they meet TAE clients. This session covered - the verbal business card, etiquette at networking events and gaining contacts. Associates were then provided with the opportunity to put these skills learnt into practice at a networking event ran by the Centre for Individual and Organisational Development in the Business School in the University. Associate Natasha Wall stated; "(I) met people from other organisations and learnt about other projects that were taking place or coming up in the future." Associate Eleanor Critchlow commented; "I feel it's been a great way to meet new businesses and fellow Associates. It's given me a better understanding of what others have been working on."

3. Rationale

TAE was set up as an extension of the course based modules that are ran in the University surrounding student consultancy. However, these projects are supported by an Academic which assures a level of quality to the client, and therefore provides them with that level of security in the output.

Benefits to the Associates

TAE provides numerous benefits to students. These include the following:

- Enhances their CV;
- Part-time, flexible work;
- Fits in alongside their studies;
- Networking opportunities;
- Mentoring and support from Academics;
- Training courses provided;
- Develops their report writing and presentation skills;
- 'Real world' experience;
- Enhances the learning experience.

Goals and objectives

- Associates - TAE hopes to enhance student's employability, improve written and verbal communication, provide 'real world' work experience and provide the

opportunity to put theory into practice. For the next academic year, TAE hopes to increase the number of Associates to 150.

- Academics - TAE would like to engage Academics from across the University. This enables expert knowledge from a wide range of areas, therefore expanding the diversity of projects TAE can undertake. Also, if the number of Academics increases, this means the number of projects can follow this trend and increase as there will be more resources to monitor projects available.
- Projects and clients - TAE aims to complete 36 projects between August 2010 and July 2011. This equates to 3 per month.
- KTPs - TAE is looking into the administration and setting up of Knowledge Transfer Partnerships (KTPs) for the Business School. This will diversify TAE offerings. TAE can also make use of the Associates in the pool, as the graduates may want to apply for these positions.
- Systems - no systems were in place when TAE became fully operational in August 2010. One of the main goals was to create management information systems to ensure data could be easily stored and disseminated. Also, so key knowledge requirements such as paperwork for Associates were known to ensure University guidelines were met.

Concept

The students and academics

One of the main reasons TAE was set up was to enhance employability skills of the students at Sheffield Hallam University. Dr Dawn Lees, Employability Co-ordinator at the University of Exeter Graduate Employability Centre, in a literature review states; 'De la Harpe et al. (2000) suggests that there is concern world-wide that existing undergraduate programmes are not producing graduates with the kind of life long learning skills and professional skills which they need in order to be successful in their careers. TAE therefore would like to counter this view and offer an enhanced learning experience for students who apply and are successful. Joining TAE provides Associates with employability skills and they are faced with a real life industry brief with set deadlines. This enhances crucial skills such as time keeping and prioritising.

TAE would also believe that it will contribute to a student's knowledge cycle as outlined below in figure 1. This reflects how Associates are putting the theory they have learnt from their course into practice by completing real world commercial projects which will have an impact on a client's business operations.

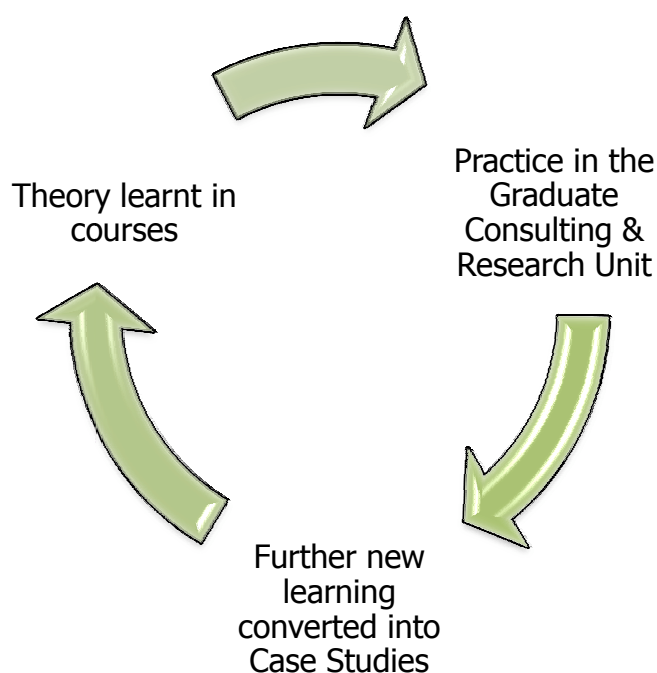


Figure 1: Students knowledge cycle (Damodaran, 2009)

Associates are supported throughout the process by an academic mentor. This coaching and mentoring ethos provides Associates with a platform to ask questions as the academic supports the Associate, creating a mentored learning approach. This method has proven successful as the academic and project team support the Associate with their research, presentation and report writing skills. Associate Matthew Burke who completed a project for an automotive firm stated; " I feel the internal team worked effectively, each time I forwarded a new draft Andy (academic lead on the project) would ask me questions, to qualify what I had written, to include a new section which gave the overall analysis more depth, and offering guidance on where to source difficult information from." Matthew further stated "The most enjoyable part of the project was confirming our findings with the client, which confirmed the thoughts we had about their market. The benefits of the project were a drastic improvement to my report writing skills and presenting the information in a professional way, while qualifying everything which was written." This further supports the theory that the mentoring model is effective at supporting the students and enhancing essential skills for TAE projects, University and graduate life.

The clients

TAE collect and collate feedback from all clients. The purpose of this is to highlight key successes, how on reflection they would have changed the project and what advice they would give to clients considering a project with TAE. When asked to provide feedback Kimberley from Panik! Marketing stated the "Final report and presentation was good and covered many points and the analysis was insightful. (The) Staff (were) friendly and experienced." Kimberley rated the overall experience of working with TAE as 8/10.

4. The approach and assessment

The approach

TAE has been fully operational since August 2009. At this point no students were recruited to join the pool of Associates; therefore this process had to start imminently or there would be a delay to the start date of any projects. The first wave of recruitment was targeted towards placement students who were returning from their year in industry. The placement team within SBS sent a direct email out to this set of people. This provided TAE with approximately 15 Associates.

The next promotional activity was to set up promotional stands outside the lecture theatres of the modules and courses TAE felt would attract the most students within the Business School. This included Business Studies, Marketing, Economics, Finance and HR courses. Academics who presented at these lectures were also asked to introduce TAE to students and highlight that members of the team were on stands outside the lectures if they required further information and a promotional leaflet.

Next TAE team attended fairs ran within Sheffield Hallam University such as the Placement and Venture Matrix (another similar internal organisation to TAE) fairs. Several Academics within SBS posted TAE advert on their Blackboard sites.

As the majority of Associates are in their final year, it is vital that TAE recruits continually throughout the year to maintain a steady number of people to complete projects. This is particularly heightened at specific times of the year, including; Christmas, Easter, summer holiday and during the exam period. As TAE is a commercial venture, it is vital that projects do not come to a stand-still, so it is required that there is a pool of resources available. One way TAE has countered this is by employing graduates who are not restrained by exams and deadlines like Undergraduates and Master students.

Another method of recruitment TAE has utilised is running an information session. At this event the Project Facilitator outlined what TAE is, expectations of the students, the recruitment process and the projects. An Associate then discussed his experience of working on a project and the training sessions he attended. A question and answer session followed to allow students the opportunity to ask about any queries they have. Approximately 150 students signed up to attend this information session at the end of May 2010.

Systems

A number of key systems have been put in place to ensure TAE operations run smoothly and that there are areas for key information to be stored. A database and SharePoint site are maintained by the Project Coordinator; this manages candidate and Associate details.

Assessment

TAE ensure feedback on projects and training sessions are completed. This provides TAE with a method of tracking the progress of Associates, how they have developed whilst being a member of the pool, and assess client feedback to ensure they are satisfied with the quality of work which they have received.

An initial questionnaire was sent to Associates when they joined the pool. The purpose of this baseline evaluation is to gauge expectations and preparedness for the activities they will be completing, the skills they anticipate they will acquire and reflecting on their own skills to date. The purpose of this is to assess where Associates think they are at before competing a project or attending a training workshop and where they are wishing they will be once they have left TAE pool of Associates.

Associates are asked to complete feedback forms for all the training workshops they attend. The reason behind this is for Associates to assess the information acquired at the workshop and to state how valuable they felt it was. To date (May 2010) TAE have forms completed for the focus group, networking, questionnaire design and formatting long documents training sessions. TAE has found this is an effective method of assessment as TAE can then tailor and plan other workshops to suit the Associates' requirements.

Academics and Associates are required to fill out feedback from the projects they have completed. The feedback form acts as a tool for reflection. This is to analyse how they feel the project went, where they think any improvements can be made in terms of their own and the team's performance, and as an opportunity to make suggestions for future projects to enhance the learning experience for Associates.

Throughout the project, assessment of the Associates are made. This relates to the outputs they supply throughout the project and meeting the deadlines. Their performance is assessed in their report writing skills, presentation skills, research skills, their ability to assess information and their ability to pick out key pieces of information. The assessment is made by TAE and academics. Associates are guided throughout the process and suggestions are made. The purpose of this is to improve their skills and make them feel part of a team working on a project of commercial value. As part of the feedback, Associate Kristina Mee was asked whether the project met her expectations, she stated; "Yes and exceeded them as we were treated as part of the team instead of like we were students." This emphasises the working relationship TAE wishes to promote.

TAE asks clients to answer a set number of questions relating to the project, the team, communication and the quality of output in terms of the report and presentation. TAE is continually looking for ways in which they can improve the service offered and enhance the client's experience of working with the unit.

Projects typically cost a client between £3000 and £5000. In the pilot study three projects were undertaken, the price varying between £1,500 and £15,000. The project at the higher

end of the scale proved to be more successful in terms of operation for TAE and output for the client. No matter what the price of the project is, the initial cost of setting it up is the same, as they require the same project management and administration. These tasks include creating the brief for the project, finding/recruiting the Associate and creating the contracts.

Typically, TAE projects last around 3 months. This is approximately 1-2 days commitment per week for the Associate. A project is spread over this period of time to ensure the work does not disrupt their University work. The academic is asked to commit around 2 days of their time for the whole project. This covers client meetings, progress meetings and the final presentation.

5. Discussion summary

Expanding TAE core offerings

TAE aims to increase the number of projects they are currently completing per month from 1 to 3. The purpose of the first fully operational year was to establish TAE, engage academics and create systems to manage the unit effectively. The purpose of the second year is to expand what is currently being offered. This is going to happen via a cycle. TAE hope to increase the number of Associates, which, in turn means that they have more resources to complete more projects for clients.

In order to undertake further projects, more academics need to engage and support TAE projects. TAE ran an internal event for academics across the University in June 2010. The event was entitled 'What TAE can do for you'. The purpose was to get more academics actively involved with the projects and provide them with material to promote the opportunity to students.

TAE also hope to increase the number of training events they offer. This will enhance Associates CVs further and provide Associates who are ready and prepared to approach all things TAE.

Expanding TAE offerings

TAE plan to expand their offerings and support other areas of CIOD. The main area they wish to support is Knowledge Transfer Partnerships.

Sustainability

Many of TAE projects are funded via Innovation Vouchers, which is £3000 provided by Business Link Yorkshire; however this funding is stopping in 2011. This may prove challenging for TAE if there is not access to another funding stream, as clients may be more wary of parting with their money in order to fund such projects. Therefore, TAE must ensure they build a strong and highly publicised reputation in terms of quality and output.

This will ensure that potential clients are aware of the benefits and have more confidence in the output of the project.

6. Key learning outcomes

TAE set out the following learning outcomes which they would like Associates to attain whilst they are members of TAE pool:

- Grown in confidence and complete tasks that are outside of their comfort zone
- They have gained an understanding of the world of work and their communication skills have improved.
- They have gained new levels of responsibility. Identified key skills that they have acquired during education and applied to a real world context.

Lucy Skowron, Project Facilitator for TAE also would like to achieve these aims. Lucy is a placement student from Sheffield Hallam University on the Business Studies course. Therefore, she is gaining the same 'real world' experience that the Associates hope to achieve.

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"Putting students in the lecturer's shoes"

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Abstract

Placing the students in the lecturers shoes aimed to develop and deepen the student learning through students' investigating, planning, developing and delivering supplementary instruction to support their own, as well as their peer's learning, teaching and assessment in a module. This case study highlights the approach adopted and applied to level 4 sports management, level 5 engineering and level 6 nursing students with a view to promote student learner autonomy. As previous research indicates, this style of higher educational teaching encourages students to discover and reflect on a subject. Nortcliffe (2005) suggests that when students have been given the opportunity to drive and deliver a module, the module assessment results indicate that a higher level of learning had occurred. In addition as indicated in this case study, from feedback from staff and students, this approach offers the students an opportunity to develop different key skills, autonomous learning and active learning styles. However, it should be noted that not all students are willing to engage and put the effort into such a formative learning exercise, despite the evidence clearly showing a deeper level of learning and understanding by the students as a result of engagement in supplementary instruction.

Objectives

- To gain a clear understanding of learner autonomy
- To develop a framework for implementing student led teaching
- To establish if students at different academic levels were capable of learner autonomy

Guiding Principles

The basis for autonomous learning is the humanistic theories of education (Rogers 1969) that human beings have a natural potential to learn; the perceived relevance of a subject promotes learning; significant knowledge is acquired through learning. Constructivist theory (Bruner 1990) is where learning is active, the learner selects and transforms information to construct ideas/solutions beyond the given information. A student that perceive themselves to be in control of their learning have confidence in themselves (McCarthy 1998, Fazey and Fazey 2001). The learner who perceives success or failure to be their responsibility will behave in ways to improve results in the next exam. Therefore

learner autonomy will develop within the space the tutor opens up to the learners (Benson 2000). The learner's capacity to learn autonomously will be nurtured and grown through these opportunities of practice, McGarry (1995). The case studies presented in this paper illustrate examples of such autonomous learning opportunities that enabled the learners to focus and become involved in the learning and teaching process as active learners. The aim was to motivate students to develop a deeper understanding of the subject material, while at the same time offering them control of their learning. By providing learning opportunities that encouraged the students to act as teachers, learning was demonstrated through the preparation and delivery of e-enabled supplementary instruction materials, which have been shown to encourage multi-level student learning (Nortcliffe, 2005). Figure 1 illustrates this process;

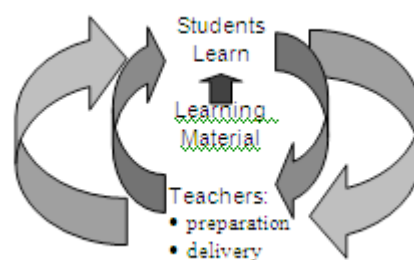


Figure 1: Multi-level Learning Model

In addition, students who participate in live delivery of supplementary learning instruction in conjunction with peer assessment, achieve an even greater level of learning, figure 2, (Nortcliffe et al 2003).

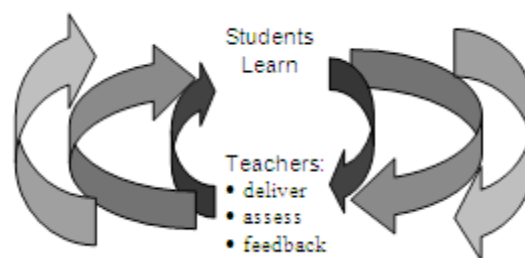


Figure 2: Complex level learning through learning teaching and assessment model

The skills that we anticipated would develop in our students were those of:-

- self appraisal, reflection, strategic choice and application;
- ability to place theory into context and into practice;

- achievement behaviours i.e. persistence, challenge, interest, resilience to failure;
- goals setting and strategies to achieve these goals;
- time and resource management;
- strategies for managing unforeseen situations.

All the above identified skills are transferrable and are of relevance to all students irrespective of their programme. In all three projects the students had to consider their existing knowledge and experience and match this against the demands of the scenario. Collectively they had to set goals, prioritise, decide, justify and demonstrate the options to their peers. The role of the facilitator was to develop the capacity for learner autonomy. Each project took a slightly different approach to achieve the goal of promoting autonomy.

Description of the projects

Level 4 - Sport Business Management

Groups of 3 or 4 students devised and delivered a 20 minute interactive seminar on one of the topics below. They were allocated to a group and question in the third week of teaching. From week six, during seminar sessions two groups delivered a seminar that they had prepared, and submitted documentation relating to their seminar within their individual Portfolio. Consultancy slots were made available for each group prior to delivery of their seminar.

<i>Topic</i>	<i>Question Area One</i>	<i>Question Area Two</i>
Structure of Sport/Events	Lottery - The impact it has had on sport/events	The Sport England Strategy 2008-2011 - what will it mean?
Commercialisation & Technology	The use of new technology to increase participation	Home based leisure and its affect on the sport/events industries
Events - Community to Major	The benefits of sports events to a local community	The use of sports events to aid social inclusion
The Global Market Place	Olympics - The Future	The global market place for sport/events
Total Leisure Product	The Total Leisure Product for Ponds Forge	The Total Leisure Product for London 2012
Managing Change	The formula for successfully managing change.	The challenge of managing resistance to change.

Presentations were thoroughly researched and academic information was transposed into an accessible language. All presentations were satisfactory but those which demonstrated excellent qualities were based on the following:

- a presentation using PowerPoint, that included an introduction to the topic, facts and background information; an activity for the group they were delivering to and a conclusion;
- they also provided a handout at the seminar for the audience.

Level 5 - Engineering

Engineering students, in groups, designed and delivered standalone PowerPoint presentations on Case Study Human Computer Interaction (HCI) of electronic devices.

There were a total of six groups of students. The assessment was formative. The students were required to introduce the theory of good practice HCI with reference to the literature. They had to apply theory to practice, by reviewing an existing electronic device and highlighting where the device heeded or failed to adhere to good HCI practices/principles, again citing the literature. The students were finally required to demonstrate the application of the theory in practice by redesigning the electronic device, adhering to good HCI practices.

Standalone PowerPoint presentations were placed on the Virtual Learning Environment for each group to review each others work and learn from one another. The academic provided feedback against each assessment criteria and learning outcomes.

Level 6 - Nursing

The student groups used scenarios based on real instances in child, mental health and adult learning.

There were a total of 70 students who were allocated to four 6 hour sessions.

Where possible we mirrored practice i.e. random selection of group members, time management, equipment, writing a care plan.

We asked them to produce two power point slides. Slide 1 detailed their initial thoughts of how to solve this problem; for slide 2 they documented the care plan, giving the rational for why they had chosen a particular move.

Each group of 5 students was allocated a facilitator who worked with the group. The students took responsibility for the choice of moving and handling technique. The students then demonstrated the technique to their peer group. All groups received a peer evaluation. All projects were supported by information and activities on the Blackboard site.

Academic Learning

We increased our understanding of learner autonomy due to our role as facilitator, opposed to traditional module delivery. Feedback from the academic team facilitating the level 6 nursing exercise;

"Felt the students ended up knowing a lot about a narrow area of Moving and Handling."

"More detail needed in the scenario for the students to 'get their teeth into.'"

"Liked the detailed back up for the Facilitator."

"Found it beneficial for the students to look at what they initially thought was an easy manoeuvre and they could spend time breaking the move down."

"It made the students 'think a lot'."

"a good way to learn."

"hard to stand back."

These comments therefore demonstrate that staff were acting as facilitators in the process, opposed to delivering knowledge and practice.

Students were able to demonstrate learner autonomy at all levels, as shown by the quality of the assessment submission and presentations. Some students apply themselves more than others, just as comparable with other previous assessment experiences with the students, for example for the Engineering case study the student formative assessment submissions ranged from 35 to 68% in comparison to formative learner autonomy assessment submission which varied from 33 to 80%.

Some students engaged and valued the learning opportunity more than others. This was demonstrated by the student submissions and in comparison to other assessment submissions. This was particularly observed in engineering level 5 students, as one group's formative student submission was observed to be considerably of a lower (low pass mark) standard to their usual summative assessment submissions (usually 2:1) standard.

Feedback from the level 6 nursing students on their learning, demonstrated that they found the approach beneficial as it widened their methods of learning;

"Being made to show your methods to the group and physically put literature onto the laptop, I felt this helped two styles of learning."

"Exploring different scenarios and teamwork. It was good to look at different techniques within each case study."

"Having to think about a task, instead of just doing the easiest thing that you always do."

"Directing our scenario, helpful to discuss different techniques, refreshes your memory after being told."

Challenges to the implementation of learning autonomy

Externally imposed quality assurance regimes may paradoxically hinder the development of learner autonomy. (Smith 2000) For example:

- The current trend for the Government to emphasise skills based, work focused, competency based learning, coupled with concerns such as falling standards, has promoted a target driven philosophy, to demonstrate achievement to know the theory, but lack the ability to apply the theory into practice.
- Employers' demands to provide more relevant, tailor made education in a shorter time frame.
- Professional bodies stipulate prescribed competences for a programme while expecting autonomous practitioners.
- Internally imposed restrictions i.e. larger classes, lower student staff contact hours, large groups and there is a need for uniformity of delivery of content, reduces the opportunity for autonomous learning.

Consequently there is a tension between these philosophies and we need to consider how learner autonomy can be managed within this framework. However, we agree with McGarry (1995) who writes: 'it is clear that learner autonomy is a capacity ...it will grow with practice, or be lost through inactivity'.

Recommendations and further development

- Introduce the concept of learner autonomy from the start of the programme.
- Give clear, staged information as to what is to be achieved/worked towards.
- Provide a sound rationale for the use of learner autonomy, i.e. there are learning opportunities away from the classroom and from one another.
- Motivate the students to engage in learner autonomy exercises through demonstrating the value in their personal development and increased employability.
- Promote a uniform strategy of implementation throughout the programmes.
- Identify and disseminate an effective monitoring system across the programmes.
- Build learner autonomy into assessments.
- Ensure that there is an effective and efficient feedback and support system in place.

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