Research Informed Teaching:

exploring the concept

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In 2006 the Higher Education Academy launched the **Teaching Informed and Enriched by Research initiative**. Higher education institutions could submit applications for funding from the Higher Education Funding Council for England for three years, until 2008/9. The Canterbury Christ Church University strategy was for academic departments to bid for funding to support projects. This book is the result of those projects.

Foreword

At Canterbury Christ Church University our approach was inter-disciplinary and interactive. Academic staff across the institution were invited to participate – and the response was inspiring. Every department of the University was involved. Individuals selected the approach they wished to take – in communicating their own research, in encouraging students to engage in research, or in undertaking research about learning and teaching. The consequence was a wide range of projects, each geared to the students and the advancement of knowledge and understanding within and across particular disciplines.

As the programme rolled forward across the three years of the project, the initiatives became more far-reaching and more confident. I hope that the benefits will stay with all of the participants and their students and I would like to commend everyone involved for their work, their enthusiasm and the results that they have produced. Research is an important skill for our students. The ability to clarify a question, to explore it and gather data, to distil and understand information and to reach conclusions – these are the core skills of 'employability', and as such they should be central concerns for all of us.

I would also like to place on record my thanks and appreciation to those who undertook the responsibility for (sometimes challenging) co-ordinating activities. Thanks are due to Professor Mick Healey from the University of Gloucester, who provided some of the inspiration. Simon Hoult led and managed the initiative within our University, ably supported by Dr Tom Duan. Phil Poole, Director of Learning and Teaching, and Professor Adrian Holliday maintained the momentum and balanced the dynamics across the learning, teaching and research agendas.

The projects, reported in the text that follows, convey some of the excitement of learning as part of a university-wide initiative. While the project itself is at an end, I hope that the inspiration for a research informed curriculum will be carried forward.

Professor Janet Druker
Senior Pro-Vice Chancellor

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Research Informed Teaching

Dr Lynne Graham-Matheson

Introduction

Research Informed Teaching is not just about pedagogic research or research into higher education, it is about the complex interplay of the core activities of higher education linked by their mutual relationship to learning (Brew, 2001). The relationship between the two activities of teaching and research within UK universities was established with the founding of the University of Oxford in the 11th century and was seemingly an unproblematic one. In the 19th century, Cardinal Newman's description of a university (Newman, 1858, 1907) as a place where the pursuit of knowledge and the education of the intellect were mutually supportive, provided a template for liberal education in a growing universities sector for the next 100 years.

> I say, a University, taken in its bare idea, ... has this object and this mission; it educates the intellect to reason well in all matters, to reach out towards truth, and to grasp it. (ibid, p124)

In 19th century Europe, the Humboltian university ethos was based on the principle that "... universities should treat learning as not yet wholly solved problems and hence always in research mode." (Humboldt, 1810 translated 1870, in Elton (2005) p110).

By the 1960s a schism had opened and the Robbins Report (1963) argued that it was important for university staff to both teach and carry out research because:

> The element of partnership between teacher and taught in a common pursuit of knowledge and understanding, present to some extent in all education, should become the dominant element as the pupil matures ... It is of the utmost importance that the ablest, who are capable of going forward to original work, should be infected at their first entry to higher education with a sense of the potential of their studies (paragraph 555).

The Research Informed Teaching (RIT) initiative at Canterbury Christ Church University (CCCU) was a response to encouragement from HEFCE to use Teaching Quality Enhancement Funding (TQEF) to develop strategies which supported the linkage between teaching and research:

> All students have a right to learn in an environment that provides the opportunity to fully develop their knowledge, understanding and skills. A learning environment informed by research provides learners with an understanding of knowledge creation (the research process and research methods) and its application (in economic, social, health and global contexts). It also stimulates key skills of critical analysis, respect for evidence and informed decision-making. We feel that a research-informed environment to stimulate the development of knowledge and skills is appropriate to all levels of student learning in higher education. (TQEF, 2006-2009; HEFCE, 2006).

The research-teaching nexus

The term *research-teaching nexus* is attributed to Ruth Neumann, who holds that the relationship is an issue that "... goes to the heart of academic work" (1994, p323). Neumann concludes that her study showed that:

> It was notable that all academics identified by these students as good teachers were, with only one exception, active researchers. However, not all active researchers were identified as good teachers, suggesting that active research involvement is a necessary but not sufficient condition for good teaching (ibid, p336).

Others, including the DfES, have expressed similar views:

> ... excellent teaching is, in itself, a core mission for a university. It is clear that good scholarship, in the sense of remaining aware of the latest research and thinking within a subject, is essential for good teaching, but not that it is necessary to be active in cutting-edge research to be an excellent teacher. (DfES, 2003 p54)

and

> Courses taught by those at the cutting edge of research will necessarily be of higher quality than those taught by those merely using the research results of others – whatever the apparent quality of their style of delivery.... Furthermore if teaching is undertaken by researchers the linkage is automatic, even if, as is often the case, they are not always teaching about their own narrow research specialism. (Lee, 2004 p9)

As Professors Mick Healey and Alan Jenkins wrote, as guest editors of a special edition of *Exchange* in 2002 on linking teaching and research:

> Whether quality teaching is based, dependent, or linked to (staff) research is a major research issue. Perhaps more significantly, it goes to the centre of individual academics' views of their role and practices, and to defining departmental and institutional policies.

More recently, there has been an increasing emphasis on embedding research-mindedness in the curriculum, and a shift from students learning in a research-intensive environment to becoming more involved in research themselves:

> We are all researchers now ... Teaching and research are becoming ever more intimately related ... In a 'knowledge society' all students – certainly all graduates – have to be researchers. Not only are they engaged in the production of knowledge: they must also be educated to cope with the risks and uncertainties generated by the advance of science. (Scott, 2002 p13).

Government policy has stressed the importance of the research/teaching link. In 2006 the then Minister for Higher Education, Bill Rammell, said:

We want all students to access the benefits exposure to teaching informed by research can bring. That is why we've provided £25m over 2006-08 to stimulate research informed teaching in universities which may not have a well developed research tradition or a significant research budget – to help them strengthen their research environment for learning and teaching ..... we believe an understanding of the research process – asking the right questions in the right way; conducting experiments; and collating and evaluating information – must be a key part of any undergraduate curriculum. (Rammell, 2006 p11).

The evidence collected for the recent House of Commons Select Committee report *Students and Universities* (2009) highlighted the differing views on the link between research and teaching. On the evidence from students, the Committee found that "Most of the students who responded to our inquiry saw the connection between teaching and research as positive, finding the proximity to research stimulating and the quality of teachers' scholarship enhanced" (para 170). The Committee suggested that

The nature of the relationship [between teaching and research] is, however, of crucial importance. It highlights a serious and fundamental question about the nature of a 'university education', the distribution of excellence and the relative roles of teaching, research and scholarship in supporting student learning, not least in terms of developing students' professional and learning skills (para 172).

Applauding the development which means that students are encouraged to develop research skills, the Committee said

In our view increased opportunities for undergraduates to engage in research within their programmes of study may lead to a requirement that those teaching such students have at least a basic appreciation and experience of carrying out research, thus leading to a strengthening of 'research-informed teaching' (para 173).

A framework for linking teaching and research

Griffiths (2004) analysed his and the LINK[1] project team's experience of developing an understanding of what was meant by linking teaching and research, developing a typology of teaching-research links:

- **Teaching can be research-led** in the sense that the curriculum is structured around subject content, and the content selected is directly based on the specialist research interests of teaching staff. Teaching is often based on a traditional 'information transmission' model: the emphasis tends to be on understanding research findings rather than research processes. Limited emphasis is placed on maximising the potential positive impacts of teaching on research.

- **Teaching can be research-oriented** in the sense that the curriculum places emphasis as much on understanding the processes by which knowledge is produced as on learning the codified knowledge that has been achieved. Careful attention is given to the teaching of inquiry skills and on acquiring a 'research ethos': the research experiences of teaching staff are brought to bear in a more diffuse way.

- **Teaching can be research-based** in the sense that the curriculum is largely designed around inquiry-based activities, rather than on the acquisition of subject content; the experiences of staff in processes of inquiry are highly integrated into the student learning activities; the division of roles between teacher and student is minimised; the scope for two-way interactions between research and teaching is deliberately exploited.

- **Teaching can be research-informed** in the sense that it draws consciously on systematic inquiry into the teaching and learning process itself.

Others, notably Healey (2004, 2005), Jenkins and Healey (2005), and Healey and Jenkins (2009) have also considered the link between teaching and research.

In 2003 Michael Bradford, then Pro-Vice-Chancellor (Learning and Teaching) at the University of Manchester, while developing the learning and teaching strategy, modified Griffiths' typology to:

- Learning about others' research
- Learning to do research – research methods
- Learning in research mode – inquiry-based learning
- Pedagogic research – enquiring and reflecting on learning.

(in Jenkins and Healey, 2005)

This typology is attractive for its simplicity and its emphasis on learning and pedagogic research rather than teaching. It was used as a basis for grouping the projects in this publication but it became clearer that we needed to add a fifth category – research to support learning, where academic staff are undertaking research or developing a 'product' which will be used in their teaching. And we changed learning *about* others' research to learning *through* others' research.

1   The LINK project was concerned with teaching and research consultancy links in Built Environment and institutional strategies in four UK institutions (www.brookes.ac.uk/schools/planning/LTRC)

Introduction

Research informed teaching at Canterbury Christ Church University

The RIT project was the first large-scale cross-institutional initiative bringing research and teaching together, initiated centrally within the University. Before this, the Research Office had always promoted small scale research through small study grants, but had only limited external funding (apart from PhD awards) and the Learning and Teaching Enhancement Unit (LTEU) was able to respond to individual ideas through the Development Leave Programme. Planned as a three year project running from 2006 to 2009 the RIT project was steered by the Senior Pro Vice Chancellor, Professor Janet Druker, working with the Heads of the University's Research Office and the LTEU: the RIT project was seen as an opportunity to link the work of these two support bodies for the benefit of staff and students.

The bulk of the funding, after the central costs for co-ordination and evaluation of the project, was devolved to departmental projects, through a bidding process. This required departments or individual applicants, with the support of the Head of Department, to set out objectives and an action plan for enhancing teaching through research – whether that was research by staff or engagement with research by students. Bids for funding had to be in line with the University's objectives for RIT:

- To ensure that all students receive a higher education that is informed by research and scholarship.
- To enhance teaching and learning through engagement with pedagogic research in all disciplines.
- To enhance the employability of graduates through engagement in research-based activities and experiences.
- To enhance the research profile of academic departments.

CCCU is committed to developing strong links between research practice and the learning experience of its students. We believe that teaching and learning that is informed by research activity and advanced scholarship adds greatly to the overall student experience. The RIT project has, in some cases, stimulated disciplinary research and in others provided a significant impetus for pedagogic research within the University. Importantly though, it has afforded the opportunity for some creative approaches to learning and teaching which involve students' engagement with aspects of the research process. In a few cases RIT has encouraged discussion and collaborations on research and teaching between departments and their academic staff.

Whilst it took some time to agree, initiate and implement the departmental projects, they did develop momentum. As the project drew to a close in July 2009 there was significant evidence that it had encouraged innovation and that Research Informed Teaching has the potential to significantly enhance the student experience and to make a valuable contribution to academic professional development in support of learning, teaching and research. A research project undertaken in connection with the RIT project also provided the perspectives of staff on their experience of the research teaching nexus.

The link with Professor Healey from the University of Gloucester has been valuable in offering models through which to explore and evaluate the different dimensions of Research Informed Teaching which have emerged. Professor Healey also facilitated the end of project dissemination conference, held at CCCU in June 2009.

The reports of the individual RIT projects reveal the very wide range of work which was undertaken. The reports are written by the project leaders/researchers themselves, some of whom are inexperienced researchers, while others are professors. They are 'warts and all' reports – they tell the story of their research journeys, some of which did not turn out as they had hoped, and in many cases they give advice for others on undertaking similar work. The projects cover the full range of activity within the University. Although many of the projects are from the two largest faculties – Education and Health and Social Care – they cover everything from Business and Computing to Media and Music.

In many cases the background to the projects is as interesting as the projects themselves. Some of the projects are opportunistic – looking at the *Every Child Matters* agenda in Education or arising from the revalidation of the very large inter-professional learning programme in Health, for example. Others are very much of their time – looking at or working with advances in technology in the 21st century, whether this is in grid computing and cybercrime or art and music. Some are simply a reflection of staff interests – such as the use of film and drama with trainee teachers, while others, such as those which evaluate current work or a different way of working, reflect work which staff had wanted to undertake but had not previously had the time or funding to do so.

Many of the projects involve students in research. The outcomes vary enormously, from high profile, international work and dissemination, to findings from a small scale local project. But they all have in common staff, and in many cases students, who can point to something they have gained from being involved in the RIT initiative.

The work on the various projects, activities and associated research and evaluation, together with the production of this publication, has involved many people at CCCU, academic and support staff and students. We hope that it will be interesting to read, whether dipping into individual projects or reading from cover to cover, and that it will stimulate ideas and inspiration.

Learning to do research

Links with Maidstone Museum

Professor Jackie Eales
Department of History and American Studies

Background

RIT is embedded at all levels and in all courses within the History programmes and some of the American Studies programme. The aim was to build on RIT where it already existed and extend the experience of RIT into a wider range of American Studies courses.

The Department was approached by Maidstone Museum with an invitation to use the Museum's artefacts. The objective was to maintain and build on links with the Museum and be able to use their collection as part of teaching resources. Students were supported to research the context in which items from the Museum's collections were produced.

Approach/methodology

In the first instance the project co-ordinator and 30 Year 3 undergraduates helped to curate an exhibition in 2008. The students researched the historical context of the Civil War Battle of Maidstone in 1648 using primary sources such as printed newsletters from the period. They researched the historical significance of the artefacts, which included 17th century political tracts, petitions, manuscripts, and Civil War weapons and armour. The students provided information on the exhibits, working in groups to produce texts to be used as labels and storyboards for the exhibition and for a brochure.

The research was organised in the same way that students would normally go about doing a group presentation, which forms part of the assessment in the third year of the course. The key difference was that they had unique access via the Museum's collections to a variety of historical artefacts and primary sources from the 17th century.

American Studies students also used the artefacts collected by Julius Brenchley in the 19th century to study Native American culture.

The Department held a conference on the English Civil Wars with experts from other universities, to contextualise the exhibition and so students could hear about the wider historical debates.

Outcomes

The students had to work very hard but they really responded to the challenge and were more enthusiastic and inspired than any previous group. The students made it a success – they went back to the Museum several times to take photographs and track progress and they said that they realised they worked harder because they knew the public were going to see their work.

Giles Guthrie, curator at the Museum, commented in *The Journal of Kent History* (Issue 66, March 2008) that "it has been a fantastic project so far and it has been a real pleasure to work with Jackie Eales and her excellent students".

Some students have subsequently worked with local museums as volunteers, which gives them good experience to add to their CVs.

Four students from the group went on to Masters studies, more than the usual number. The work with the Museum also highlighted different career opportunities, such as museum and archival work.

History students have been able to use their skills to show people in the community the type of work that is done in the Department and student evaluation forms have been positive. One student commented that "I have highly enjoyed the opportunity to be involved in the exhibition at Maidstone Museum. It has been a wonderful change from the inevitable essay-presentation-exam triad. I have been able to get enthusiastic about it".

This has enhanced the project co-ordinator's own work on pedagogic research by showing positive work that can be done with students. One change was to work with students so that they could articulate what they had learned during the course, developing a transferable skill. The project co-ordinator said that being involved with exhibitions is increasingly seen as research in the academic community, a bit like a professional performance from musicians, so this was a really good experience.

Students (and a friend!) working in Maidstone Museum

Enhancing RIT

The project encouraged students to think more about what they can do with primary material – they often work with documents as primary sources but it is unusual for students to be able to work with surviving artefacts such as weapons.

The co-ordinator learned a tremendous amount about organising an exhibition but also about how electrifying it is for students to be involved with artefacts like these. Although the students are used to working with their tutor's research this project enabled them to do their own research.

It was possible to integrate the scheme into existing courses very smoothly and the research that the students have done has been developed in line with existing coursework requirements ie group presentations in the Year 1 Native Americans course and in the Year 3 course on the English Revolutions. Students are assessed on their research using existing criteria for knowledge, methodology, argument, referencing, presentation, writing style etc.

Reflections and any future plans

The response from everyone was overwhelmingly positive. The Department has been awarded some money from the Heritage Lottery Fund to mount an exhibition – there is a professional researcher but the students will work on it too as guides. We have established close links with the Museum and will build on these.

As one student commented "working towards something that will be shown to the public is exciting and makes you want to work harder".

Details of the project are available as part of the Case Studies in Active Learning website at the University of Gloucester, available at http://resources.glos.ac.uk/ceal/resources/casestudiesactivelearning/undergraduate/casestudy5.cfm

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Advice for others

Approach local museums to see what use could be made of their collections, as this generally fits well with museum outreach work. This sort of relationship could work for other disciplines such as English, Geography and Science. If you are working towards an exhibition for the public, a lot of the work takes place just before the opening, so be prepared for a flurry of queries and label writing at the end of the project.

The Museum leaflet

Learning to do research

Disturbance and patch dynamics: introducing undergraduate Geography and Ecology students to map and field-based research

Professor Peter Vujakovic
Department of Geographical and Life Sciences

Background

The Department has a long and effective history of using local environments as a basis for field studies to inform undergraduate teaching. Elements of this have been underpinned by staff research, consultancy, and scholarly activity. The Department is committed to developing this work and integrating the use of field studies as research experience within the teaching of other key concepts and skills in Geography and Ecology. Current emphasis includes geographic information systems (GIS) as a key graduate/subject skills area in both disciplines.

The project focused on field-based research into natural and human-induced disturbance in two ecological/ landscape systems within the East Kent area. It introduced students to contemporary issues in conservation geoecology and biogeography (eg patch dynamics) with relevance to landscape history, habitat conservation, and land use planning, as well as skills relevant to future careers in the geographical and environmental sciences.

The project focused on disturbance ecology in ancient holloways and on wooded slopes. Both environments are subject to constant disturbance from natural factors (wind damage from storms, bioturbation, etc) and anthropogenic factors (eg erosion caused by vehicles, recreationists). These are important and potentially threatened landscape features of the environment of East Kent. In this sense the project also connected with CCCU's mission to support and enhance the local community and its environment.

The project involved students and staff in creating baseline survey data, providing a basis for long term developments in field investigation and research as part of the Department's validated programmes.

Approach/methodology

The project involved:

- identifying and mapping key field sites in East Kent
- developing materials, including a website, to support students
- field visits to enable students to develop their research skills and, through evaluation, to form the basis for long term sustainable use of the project outcomes as a RIT teaching tool
- creation of baseline data as a basis for long term student involvement in research based field study, underpinned by key graduate and subject specific skills
- potential for publication and dissemination of findings within the higher education network of geographical and environmental sciences.

Outcomes

As well as the basis for standard modules, two independent undergraduate theses have resulted from the project and there is potential for staff publication of research findings.

The project has provided baseline data for further research by staff and students.

The project exposed students to research techniques, both field based and laboratory based, eg use of GIS, and gave them the opportunity to engage in building a unique longitudinal data set for future student research and education.

There is potential for further teaching and learning activities, and research publications.

Enhancing RIT

The project has provided the basis for continuing fieldwork as part of the Biogeography module and further student project work.

Advice for others

Disturbance ecology offers a wide range of opportunities for student research. Disturbance, both natural and human induced, is ubiquitous – affecting a wide range of habitats. This allows for a range of innovative student research projects, from the micro-scale (impact of burrowing animals such as ants and worms) to large scale impacts (eg wind damage).

Field studies, as always, are contingent on a variety of issues eg access, weather.

Reflections and any future plans

The project remains active as part of a key module and a staff research project. The limitation remains the time to undertake detailed field studies.

The main work to date has focused on wind thrown trees and the associated disturbance ecology. Many trees survive being thrown and, now prone, are fascinating living sculptures which grab the imagination of students and staff who had previously imagined that windthrow would result in tree mortality.

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Learning to do research

Classroom practices and teachers' perceptions

Richard Cullen
Department of English and Language Studies

Background

The Department of English and Language Studies has a long record of successful research, most of it directly related to informing departmental teaching. For example, research into classroom language teaching and teacher education by several members of the Department directly informs teaching on the postgraduate MA TESOL programme as well as short professional development courses for English language teachers and other programmes, eg Media, Allied Health and Forensic Linguistics with Policing. The Department therefore had a good and continuing record of RIT which it was keen to extend. This project meant that for the first time students would be interacting with staff in the development and implementation of a research project which would directly benefit the programme they were following.

As part of one of the modules on the MA TESOL programme, English Language Teaching (ELT) Methodology and Classroom Research, the students (all of whom are practising English teachers) conduct a small scale research project involving observation and videotaping of English classes in the Department's language teaching centre. The RIT project built on this work by producing lesson transcripts of the videotaped lessons and post-lesson interviews with teachers, thus providing data on classroom practices (in regard to teacher talk and classroom interaction) and teachers' perceptions and beliefs. This data will form the basis of publications and will also provide input material for other modules on the MA programme, particularly Language in Use (which has a component on discourse studies, including classroom discourse) and Teacher Education.

Approach/methodology

The research consisted of a number of stages:

1. As part of the ELT Methodology and Classroom Research module the students were introduced to the tutor's own published research into teacher talk and classroom interaction and the processes involved in videoing classes and making transcripts. Other tutors presented their experience of using interviews with teachers to research teachers' beliefs and reflective practice.

2. Over five weeks students worked in pairs, with tutor support, to video record classes, conduct observations and interview teachers.

3. The students wrote up their small scale research projects as part of their assessment for the module.

4. The co-ordinator of this project worked with module tutors to produce materials for the modules using data from the students' work, ie transcript data from the lessons and interview data. This material was piloted by the tutors so students could see how the data they had collected directly informed teaching on the programme.

5. The co-ordinator worked with PhD students in the Department to transcribe the interview and classroom data collected by the students to provide a database of material for stage 6.

6. Small teams of interested staff worked together to produce two research papers from the project data.

Outcomes

Transcripts of the classes revealed, among other things, various strategies teachers used to involve their students in conversational episodes in their EFL classes and, by doing so, developing their students' conversational English skills. They also showed how teachers constantly switched roles from 'instructor' to 'conversational partner' and back again, and how this role switching affected the kinds of classroom interaction that took place.

The data from the lesson and interview transcripts have provided a valuable resource for ongoing staff research and teaching material for use on the MA Teachers of English to Speakers of Other Languages (TESOL) programme.

The project provided staff with materials for use in their classes, and a large body of data for analysis, leading to conference presentations (eg the *Cutting Edges* international conference at CCCU in June 2009 and the annual IATEFL conference in Harrogate in April 2010) and potential publications in refereed journals. One such paper is currently being written. (IATFL is the International Association of Teachers of English as a Foreign Language).

Enhancing RIT

The project enhanced learning by initially getting students involved in the data collection process (observing classes, interviewing teachers, transcribing and commenting on extracts from the classes). Later the transcript material provided a valuable teaching and learning resource for students and their tutors on the MA programme.

Advice for others

Plan the stages of the project systematically and carefully.

Consider the ethical issues involved in gaining the teachers' permission and agreement to be videotaped and to have their lessons transcribed and used for possible publication.

Reflections and any future plans

The material output of the project (lesson and interview transcripts) is immensely useful as a source of data, much of which is still untapped and awaiting analysis. This year it has been possible to collect additional data of the same kind through the Department's quality-related research (QR) funding allocation, and to involve new staff in the research processes involved in collecting and analysing the data, with a view to writing for publication.

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Learning to do research

Feeding behaviour in wheatears

Dr Britta Osthaus
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Background

This project was a research-based practical for Year 2 Psychology students: a week-long residential field trip to Lundy Island in the Bristol Channel to observe the feeding behaviour of wheatears. There were three learning outcomes of this trip:

- It substantially increased the students' knowledge of how animals behave. In a week of intensive work, they acquired a surprising level of expertise in the behaviour of one species, in one habitat.

- It gave the students an insight into the methods of fieldwork. Some of those methods are specific to the study of animal behaviour, but many of them are just as relevant to fieldwork in social psychology, market research, and other areas. This will greatly enhance their employability.

- It gave the students the chance to do a real research project, from proposal to final write-up, under the close guidance of their lecturer, and away from their usual study environment.

Approach/methodology

The students prepared their research proposal during the Michaelmas term. This included, apart from background research, the detailed methodology, risk assessments and equipment use. This enabled them to start with their data collection as soon as they arrived on the island.

The students were interviewed on the bus to Devon about their expectations, what they thought they would learn and anything they were apprehensive about. On the journey back they passed the video camera around and talked about what they had experienced and learned and what could be improved for future students.

The students on the field trip

Outcomes

In addition to a detailed data collection on the feeding behaviours of wheatears, the outcomes for the students were amazing. Not only did they all hand in work that was in the upper second class range or better (despite scoring much lower on previous assessments), their newly learned skills influenced their attitude to and the structuring of their final year research project.

The whole trip was very successful. All the student feedback was positive, their overall marks improved, and they can still be seen in groups on campus, although they did not know each other before the trip.

The students were very apprehensive to begin with and it was clear that most of them were out of their comfort zone – only two claimed to have any outdoor experience. The majority came from a Widening Participation background. As well as improving their research skills they improved their life skills, and formed friendships for life.

Here are some quotes from the interviews:

I am quite a reserved person, so normally I wouldn't really do anything like this, but I think if I don't take this opportunity I would never get it again so I think it's really important to grasp it while you have got the chance.

I enjoyed everything; I had a lot of fun. I was apprehensive, I thought I wouldn't have fun, and improvement, well I am proud that I did something like this. I actually really enjoyed myself.

Personally, I learnt that I can make myself a low maintenance person and I can just throw myself in a bush.

Everything was amazing, everything was fun, cool.

I learnt that I can walk a lot further than I thought I could and academically I learnt how to collect data. I learnt how to bake scones.

The project co-ordinator commented that it is much more work for teaching staff to involve students in research rather than just doing it yourself but it is very rewarding. Also the time invested pays back in the supervision of their final year research as these students need far less input than others. Although the running of this practical involves a full week of round-the-clock teaching and supervision (not just research, but cooking, outdoor skills and interpersonal skills), it is an amazing experience and helps to maintain my enthusiasm for teaching for the rest of the year.

Enhancing RIT

The students learned to take responsibility for their own research. In contrast to many in-class activities, nothing was predictable and there was no 'spoon-feeding' of learning materials. It enabled the students to evaluate field research more realistically. Reports of research can make everything seem very straightforward and simple. Fieldwork is rarely either. Only by carrying out such work themselves can they get a true appreciation both of the achievements of researchers, and of the limitations of their conclusions. Also, the students were taught by example, another experience that is rather uncommon on campus.

Advice for others

Do not be put off by risk assessments, funding problems and other obstacles – students value it immensely when staff let them take part in their actual research.

Reflections and any future plans

It would be good to be able to do this field trip every year despite the relatively high costs per student. The value gained is immeasurable.

Some of the project funding was used to buy hoodies with 'CCCU, Lundy 2009'. Not only did they help the students to keep warm, they also made a real difference to group cohesion.

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Learning in research mode

Using RIT to enhance the learning of professionals who are dubious of its value

Denis Edgar-Nevill
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Background

The RIT project in Cybercrime Forensics ran from January 2007 to July 2008. It involved students on the MSc Cybercrime Forensics and the BSc Forensic Computing programmes. The MSc is jointly validated and taught by the Department of Computing, CCCU and the National Policing Improvement Agency (NPIA). The NPIA is responsible for all high tech specialist training for the regional police forces in the UK.

The RIT Cybercrime Forensics project was focused on breaking down any barriers. Cybercrime Forensics is very new. Changes occur all the time in legislation, offences committed requiring investigation, approved procedures and the underlying computer technology. To be effective those working in high tech crime units, and those training those professionals, must keep up to date. To assist in this process the RIT project created the infrastructure to bring students together with others in the field.

Engaging professional people working at the cutting-edge of their disciplines is not always easy. They can have very strong convictions that the way they are doing things is 'the right way' for such things to be done. They may also distrust the ideas of people outside their normal sphere of activity. Students on the MSc course exhibit the traits one might expect of serving police officers – they are assertive and forthright in their views. Members of the police force are also a very tight-knit group and can treat others as outsiders. While necessary in many contexts, these attributes can be a barrier within the educational process, where ideas from different sources can be considered and valued beside practical experience.

Engaging trainers who work outside HE can also be problematic. The MSc Cybercrime Forensics is taught 50% by the University and 50% by NPIA trainers as Associate staff of the University. The trainers are very skills focused and need to be supported to make the transition to delivering Masters level education.

Approach/methodology

The following activities were undertaken:

- Developing a research network in Cybercrime Forensics including universities, police training through NPIA, the National High Tech Crime Training Unit of Wyboston and commercial security companies, promoting an annual international conference, developing an integrated website, virtual forums and streamed lectures using e-technology.
- One to one interviews with MSc students on the use of RIT during the taught components of their programme.
- Interviews with prominent researchers in the field in the UK.
- Open research seminars with invited academics from other universities, police officers and security industry speakers.
- MSc students and staff attended and presented a research paper at the 2007 international Cybercrime Forensics Education and Training (CFET) conference.

Outcomes

All students had the opportunity to attend CFET 2007 and the two subsequent conferences (CFET 2008 and CFET 2009) with three or four each year presenting position papers on their MSc dissertation work to the international audience. This has led to their involvement in wider networks of researchers and students going on to extend their studies to PhD. Undoubtedly the overall quality of the learning experiences of students has been enhanced.

Plenary Speakers

Bill Crane   Gary Kessler   Adam Laurie

The Department of Computing hosted this conference at the Canterbury Campus of the University based in the Powell Building. The conference attracted 42 delegates from eight countries (UK, USA, Canada, Ireland, Australia, Sri Lanka, Nigeria and Croatia) and included serving police/law enforcement officers, computer forensic investigators, solicitors, academics and masters students.

Nine staff in the Department completed 40 publications (book chapters, national and international conference papers and journal articles) as a direct result of this project. Four staff had the opportunity for international travel to attend conferences to liaise with researchers from around the world.

The Department hosts the CFET conferences as an annual event bringing in distinguished national and international speakers from 18 countries. Selected papers from CFET 2008 appeared as a special invited edition of an international journal.

In 2008 Denis Edgar-Nevill was invited to propose the formation of a new national British Computer Society Cybercrime Forensics Specialist Group (BCS CFSG). It held its inaugural meeting at CCCU in December 2008 where Denis was elected as founding Chair (subsequently re-elected in September 2009). Two other staff in the Department hold positions on the national committee. At the time of writing the BCS CFSG has grown to a membership of more than 900.

It is important to bring together a wide range of external and internal academic and professional expertise establishing credibility when offering programmes at the cutting edge of new disciplines.

Certainly the credibility gap has been spanned by this project. The quality of the work being produced by the students on the MSc in Cybercrime Forensics has been particularly praised by the external examiner for the award who is himself a prominent leading international researcher in this field. This project has had a major impact on the staff and students of the Department of Computing at CCCU. It has clearly established the work of the Department at a national level in the UK.

Enhancing RIT

The project has created many new links and opportunities for students and staff. Learning and teaching is as much a question of who you know and work with as what you know. Of great importance has been developing a range of visitors to the Department giving insight to professional experiences through master-classes and conference presentations. A number of master-classes have been given to undergraduate students by students from the MSc Cybercrime Forensics discussing their roles working for police high tech crime units. These experiences will be remembered and useful to the development of individuals every bit as much as the content of the lecture programmes.

Advice for others

None of the funding provided for this project was used to buy staff time. Remember that it can be a greater and longer-lasting incentive for staff to travel, attend a conference or acquire a piece of equipment.

Reflections and any future plans

The RIT project came at an opportune time to bring together work in the Department. Its undoubted success is partly a result of the many opportunities which arose as a result of the networking and developing relationships with external organisations. This brief report gives only an indication of the many outcomes and events which have their origin in the project.

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Learning in research mode
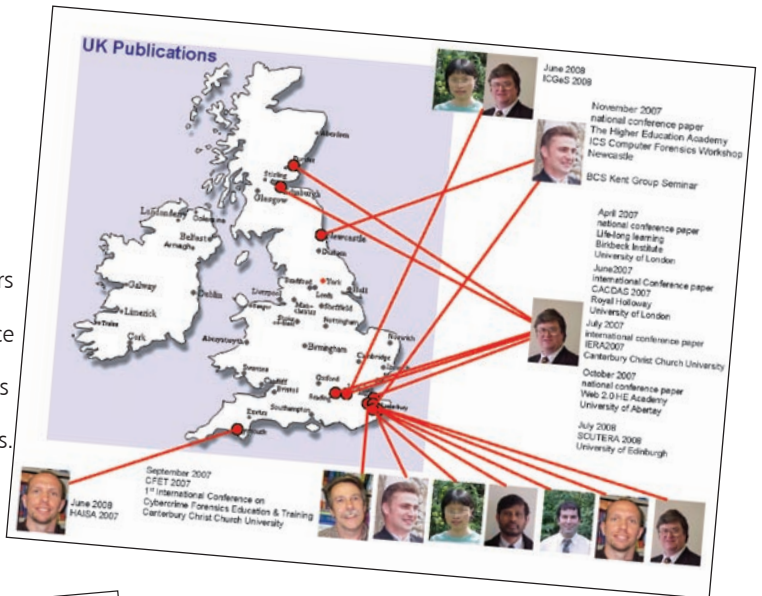
The development of RIT within postgraduate public sector management courses

Dr Steve Hayler and Andy Perkins
The Business School

Background

RIT is not strong in the Business School. Staff engaged in research do so largely on an individual basis and there are no formalised mechanisms or procedures to demonstrate that their research informs the teaching process. There is a means of recording and discussing staff research but this is purely internal to the Business School.

The basic idea behind the project was to see whether the material postgraduate students produced as part of their research could be incorporated into the curriculum. The aim was also to deliver a curriculum which was more focused on the public services, rather than offering the high proportion of students who come from the public services generic Masters (M level) management courses.

The project aimed to ensure that students on management courses related to the public sector receive a higher education that is informed by research and scholarship, have teaching and learning experiences that engage them with broad pedagogic experiences and enjoy a teaching and learning experience enriched by their tutors' engagement with contemporary public sector research. It also aimed to enhance student employability through engagement with real-life public sector (research) situations.

Through a developing understanding of research processes, students would engage in a curriculum rich in the research experiences from national and international research as well as those of staff and ultimately the students themselves. The systems put in place were designed to disseminate research findings across the Business School (public sector) academics and practitioners but particularly students, and to ensure such findings are incorporated into developing curricula.

One aim was to encourage students to see work as a continuum, so that perhaps in the future they might take work done by someone else and move this forward, or suggest research that is needed.

Approach/methodology

Visits were made to other universities to discuss with them how they archive research produced by students and staff and how they incorporate it into the curriculum. No university Business School had a structured, formal process.

The aims for the research were only partially met. An interesting discovery was how (comparatively) little staff research might enhance the curriculum and how much more applicable student research could be. Interestingly, no Business School visited seemed to 'deeply' consider the potential of student research - all started from the perspective of staff research.

Outcomes

The establishment of an electronic database and network for dissemination - the Public Services Research network (PSRN) - enabled interested students to:

- be speakers at Masters Colloquia
- be involved in providing case study material for M level public services modules
- be part of an active alumni (also a bespoke social network)
- advise on curriculum development
- have electronic access to ex-student dissertations
- nominate speakers for public lectures.

In short, the opportunity for an active student community based around student research. Research active staff were informed by collaboration and supervision of postgraduate public sector students via forums for dissemination of potentially publishable work. There may be future possibilities for bespoke postgraduate courses, eg a Masters in Public Sector Management, where demonstrable practical research can feed into the programme.

Advice for others

Focus on student research – although this project has only suggested the high value of student research at Masters level.

Reflections and any future plans

There is a need to maintain the systems and events established. Part of the project touched on scoping the possibility of a Centre for Public Sector Management and this should be pursued further. Emerging from the project was the possibility of a 'virtual' Public Services Academy for Kent, located in the Business School.

There is also a need for administrative support to carry the positives forward.

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Learning in research mode

The use of drama as a RIT strategy

Paul Skinner and Dr Elizabeth Hoult
Department of Postgraduate Initial Teacher Education and Faculty of Education

Background

This project used drama to challenge restricted notions of research and practice in teacher education. We were concerned that classroom and behaviour management are perhaps the most problematic aspects of learning to be a teacher. We adopted Augusto Boal's ideas about forum theatre in order to open up the teaching/research nexus and to escape the supposed theory/practice binary. We wanted to explore how a play could provide a safe space for teaching professionals to talk honestly about the difficulties of managing behaviour in secondary schools. We both had a long-standing concern that literary texts represent important ways of knowing about the world and that such ways of knowing tend to be marginalized in many forms of education research, where social scientific texts and methodologies tend to dominate. Similarly we wanted to bring the valuable insights from the long-standing tradition of drama in education into a higher education context.

The project sought to demonstrate that an examination of the relationship between teacher and student is key to understanding the challenges and complexities of transformational learning. This contrasts with the limitations of the conventional, mechanistic exploration of pedagogic strategies, common amongst teacher educators. Dramatic fictions have the capacity to engagingly present these relationships in stark relief. Willy Russell's *Educating Rita* and David Mamet's *Oleanna* are clear examples of the way the teaching and learning scene can be illuminated and read openly when it is viewed as drama. They present contrasting manifestations of successful and unsuccessful teaching. These plays have had tangible and active responses from their audiences, highlighting the extent to which the figure of the higher education teacher in these plays is embedded in the public imagination. The outcomes of each play are dependent on the capacity for change in both the teacher and the learner as the pedagogic journey progresses. We were convinced that this literary genre introduces a helpful alternative to the conventional range of social scientific models currently promoted as the dominant academic discourse on teaching and learning. The project funding allowed us to write our own play - *NoManzLand* - which was inspired by these texts.

Approach/methodology

Paul Skinner had previously studied the art of playwriting as part of the prestigious Masters course at the University of Birmingham, under the leadership of David Edgar. Elizabeth Hoult used drama texts prominently as part of her doctoral research into resilience in adult learners in higher education. They therefore combined a theoretical commitment to the use of drama as a method of both research and teaching. They began by writing the play together. What emerged was a depiction of a 60 minute English lesson which descends into a 'lesson from hell'. Postgraduate English, Drama and Media students then auditioned for the roles and the script was developed in workshops led by Paul over the Easter holidays. The students worked very hard and developed their characters' personas into a final script which was captured by Paul. Boal's principles were used throughout to develop the creative response to the issue of concern. All through the process Paul worked with the students to develop their understanding of behaviour and classroom management in response to the action. The play was rehearsed and dress rehearsed and eventually performed to a professional, student and community audience in June 2008. Filming the play provided experience for an MA Media Studies student.

Outcomes

When the play was performed it was very well received – the students in the show were very convincing and all the student teachers recognised the problems that were being faced. As a drama it was a very condensed and exaggerated way of showing the behaviour issues that might be experienced over perhaps a term, but it was an interactive way of engaging student teachers with some of the behaviour issues they will encounter.

We were amazed at the way that the drama had a powerful effect on the members of the audience as well as the actors - the discussions that took place at the end of the performance were marked by a level of frankness that we had not seen before. The comments from the audience were highly favourable, including "the best piece of professional development I have ever attended."

The project was very successful as a model of RIT. It had a discernible impact on the students who took part and the audience. It developed our thinking about the possibilities for using dramatic, literary and creative texts as part of a professional learning course.

Now working as teachers, the students are still talking about the experience. The evaluations, which we have captured digitally as part of the post-performance discussion, demonstrate very significant engagement with the project and that the students considered it very important in their development as beginning teachers.

We now have a product – the final script of NoManzLand – which has been performed once again already and will be performed again in 2010. It is simultaneously a pedagogical tool and a record of a piece of research. We are intending to develop the methodology in a new setting.

Learning in research mode

Enhancing RIT

Learning was enhanced by the deep consideration of the issues involved in classroom and behaviour management. The simulacrum of the classroom provided a very safe space in which to explore the student teachers' thoughts and feelings about managing behaviour. Students helped each other to think of solutions. The original research text (the play script itself) was intrinsically linked to the students' learning needs because it was developed directly in response to them. Secondary research is emerging from the project, including a paper presented to the *Teacher: icon, identity and image* conference at the University of Glasgow, 2008.

Advice for others

The project gave us the confidence to take risks and to develop something that we felt passionate about. Our advice is to use the opportunities afforded by RIT to work in more radical and innovative ways than are sometimes possible within the restraints of the mainstream teaching funds.

Reflections and any future plans

We are developing ways of disseminating the work on this project more widely. We would like to turn the play into a DVD so that it could be more widely available and we would like to work on more research publications about the methodology.

The play has been used with a second year of PGCE students and will be used again in 2010. We are hoping to apply our methodology to a new problem in another community setting. The work illustrated the issues around observation – what it means to the student and to the class when a PGCE tutor is present – and there are many issues that could be explored through further research.

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It's 2.10 pm on a dank Thursday afternoon in November and the bell has long since gone ... Meet Mr Leeson's GCSE English class. He is their new student teacher, and they are about to teach him a lesson he will never forget ...

NoManzLand, the Research Informed Teaching drama project from PGCE English designed to support and develop engagement in behaviour management issues, was first performed on June 25th 2008, to the following unsolicited reviews:

Pure genius. I've been thinking about it non-stop and I wanted to thank you. The script and the delivery were absolutely spot on.

Louise Cameron, *English teacher*

Fantastic stuff ... excellent script and high energy performance ... It was so like being in a classroom and yet great as drama also ... No text book, however well written, can equal the immediacy of the experience, both for the actor and the audience ...

Andrew Humphries
Modular PGCE English Course Leader

Last night was GREAT!!! Superb acting. I was knocked out by how natural the acting was – superb play too!! Wonderful work.

Dr Andrew Lambirth
Principal Lecturer in Primary English

Incredibly realistic portrayals of Year 10 pupils ... it has to be the most powerful piece of learning I've been part of within the PGCE.

Simon Hoult,
Director of 11-19 Initial Teacher Education

... it really was very, very good - well written, funny, excellently performed and also quite provocative

Dr Ian Marsh
Senior Lecturer in Occupational Therapy

I was really moved ... made me realise yet again how vulnerable students are ... a safe space for people to say stuff ... I would love to sit with a group of professional [teacher] mentors and watch that ... a screen version would be great ...

Chris Carpenter
Senior Lecturer in PGCE Secondary PE

... clearly needs a much wider audience as it says rather more to lay folk like me than any statistics or league tables could ever achieve!

John Telfer
former Chief Student Resident Manager

... thrilling. It worked very well as a drama, but also as a very significant contribution to teacher education both for actors and audience, for staff as well as students ...

Professor Tony Booth
Professor of Inclusive and International Education

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Learning in research mode

Interdisciplinary RIT in Sport Science, Tourism and Leisure

Professor Mike Weed
Department of Sport Science, Tourism and Leisure

Background

There were two contexts for this project, the subject and the Department.

The subject context:

The rationale for the existence of the subject area for RAE and QAA Audit purposes is that there is a set of interests and issues common to Sport, Tourism and Leisure. In understanding such interests and issues a multi-disciplinary approach (drawing on multiple disciplines to understand multiple problems) is commonly employed in both teaching and research. Students in the Department of Sport Science, Tourism and Leisure (SSTL) are therefore equipped with the skills to deploy appropriate disciplines to understand particular problems.

What is less common in the sport, tourism and leisure field is an interdisciplinary approach (integrating perspectives from two or more disciplines to address the same problem). This RIT project explores and integrates interdisciplinary research as a learning and teaching facilitator in SSTL.

The Department context:

The Department of Sport Science, Tourism and Leisure was CCCU's largest single department submission to RAE 2008 and the only subject area at CCCU to receive research funding from HEFCE following each of the previous two Research Assessment Exercises (RAE2001 and RAE2008). Facilitated by the Centre for Sport, Physical Education and Activity Research (SPEAR), the Department attracts research funding greater than the national median (as assessed by RAE2008). Following the RAE2008 outcome, HEFCE increased funding to CCCU as a result of the work of Sport-related Subjects by over 80%

A RIT project priority was to examine ways in which the innovative aspects of our current research strengths can both facilitate our teaching practice and further develop our research interests.

The RIT project was inter-disciplinary and was made up of five mini projects, each of which was established with four requirements:

- impact on at least two degree programmes
- draw on perspectives from at least two disciplines
- be sustainable for teaching beyond the life of the project
- have a tangible research outcome.

Approach/methodology

The five mini projects (together with the amount invested) were as follows:

1. **Understanding the influence of research contexts** (£3,000) focused on ecological validity in Sport Science, highlighting the different results regarding placebo effects that might be obtained in the laboratory versus the field. It examined interdisciplinarity across psychology and physiology with Year 3 students.

2. **Secondary analysis in Sport Science, Tourism and Leisure** (£6,000) involved the production of four exemplars of the use of secondary analysis across the disciplines in Sport Science, Tourism and Leisure for integration into the Research Methods modules and to inform individual studies. The four syntheses are:

   a) narrative literature review of paralympic legacies (sociology and management)

   b) meta-analysis of placebo research (physiology and psychology)

   c) secondary analysis of national statistics to establish size and value of sports tourism in the UK (management and policy)

   d) systematic review of the evidence for extending the formal school curriculum of physical activity (physiology and education).

3. **Cross-cultural comparisons of leisure policy and provision** (£3,000) involved setting up an exchange visit for students studying sport science (sociology) and sport management to France to collect data and compare the management of leisure provision across cultures.

4. **Motor control in sport** – RIT using the ski simulator (£3,000). The prime purpose of this project was to produce a student-friendly manual to enable students to use the ski simulator in modules across sport science and sport and exercise psychology degrees, and to enable the incorporation of the ski simulator into undergraduate research projects.

5. **Qualitative research on fitness cultures** (£3,000) examined the use of ethnographic methods in researching the phenomena of 'environmental exercise', thus examining interdisciplinarity across sociology and environmental management, including the development of 'ethnographic practice' sessions with Year 2 students

Outcomes

The idea was to make the research more real for students. They can read about such topics in books and think it is far removed from their experience, so we wanted to show them how it could be done and the outputs. We could just give students some data to play with but we wanted them to be able to see 'real' research. Each of the projects has allowed students to either be involved in, or to participate in activities informed by, current cutting edge research.

Two refereed publications have been accepted/published, two are under review and a further two are in preparation/ planned.

Understanding the influence of research contexts – a paper has been submitted to *Medicine and Science in Sport and* Exercise, entitled 'The placebo effect in competitive field cycling' (Foad, Beedie and Coleman)

Secondary analysis in Sport Science, Tourism and Leisure – a paper entitled, 'A Missed Opportunity Waiting to Happen! The Potential of the London 2012 Paralympic Games' (Weed and Dowse) has been published in: *Journal of Policy Research in Tourism, Leisure and Events*,

At last two further refereed journal papers are planned (one each from b) and d)) when the full impact of this work becomes apparent. The work from c) will not form the basis of a paper in and of itself, but will inform, feed into and provide the background context for a range of other papers in sports tourism.

Cross-cultural Comparisons of leisure policy and provision - a report for policy makers in the UK and France will be discussed at a meeting in 2010.

Motor control in sport – RIT using the ski simulator - the manual for use of the simulator has been used by students from the start of the academic year 2009/10

Qualitative research on fitness cultures - paper presented at the *North American Society for the Sociology of Sport Annual Conference. Sport and Peace/Social (in) Justice*. The Curtis, Denver Colorado. 5-8th November 2008: 'Fitness Cultures and Environmental (In) Justice?' (Mansfield)

Paper published in *International Review for the Sociology of Sport*, entitled 'Fitness Cultures and Environmental (In) Justice?' (Mansfield)

Enhancing RIT

All six undergraduate programmes in Sport Science, Tourism and Leisure were impacted upon by at least two projects.

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Learning in research mode

'Showing Off' – promoting undergraduate Media work beyond the bounds of the University

Dr Karen Shepherdson
Department of Media

Background

This project sought to enhance the undergraduate experience and the subsequent employability of Media graduates through engagement with exhibition design, curating and events organising.

The funding provided an 'Exhibition Box' which was utilised within the new and innovative Photography and Digital Media module – Exhibiting and Exhibitions.

The 'Exhibition Box' provided reusable equipment for display (flats, frames, benches, mounting, display cases etc), marketing materials (flyer template) and a guidance pack.

With the support of a tutor, students became project managers for Photographic and Digital Media exhibitions at the Broadstairs Campus.

Through the module's content of guest speakers, exhibition planning workshops, gallery visits and committee meetings, students have taken exhibition planning through to successful delivery.

The project has also brought external speakers into the University to share industry and creative arts experience and has encouraged greater networking with external agencies.

Approach/methodology

The approach used was transferring theory into practice.

Outcomes

Three exhibitions have thus far benefited from this project:

- *You Are Here!*
- *The 'C' Word*
- *FOL10*

In addition an ongoing visual project has been formed:

OPEN EYE which offers further opportunity to promote and exhibit work publicly.

Exhibition feedback from visitors has been very positive and the students' formative and summative evaluations of the module evidence their perception of the module's relevance.

Students benefit through being equipped with employable skills and through engagement in activities and experiences which have currency beyond the University.

Based upon the quality of the work exhibited, students have been invited to undertake commissioned work. For example, the Mayor of Margate and his various officers requested that their formal portraits be taken by one of the photography students. Other students are now contributing images to Thanet District Council, Canterbury City Council and the Environment Agency.

The project has provided a case study for the Department to document and examine its underpinning philosophy of theory/practice interchange.

Enhancing RIT

Evaluation of the project will be disseminated across CCCU as a model for engaging students in project management and forging links with external partners.

Reflections and any future plans

The 'Exhibition Box' has a legacy. Future students who take this module will 'inherit' the reusable exhibition equipment and most importantly benefit from a now established culture of exhibition. At the point of proposal the Broadstairs Campus had yet to develop any tradition in exhibiting visual students' work. Now students assume and expect to exhibit throughout the year.

Students, buoyed by their campus success, have subsequently exhibited throughout Kent and London. Since the initial exhibition, students have not only sought further opportunities to exhibit but have repeatedly taken the initiative whilst demonstrating a clear understanding for project feasibility and the need to approach tasks in a pragmatic, confident/competent way.

Discussions are currently underway with Thanet District Council for additional exhibition space at Broadstairs Harbour. This area of the town has a tremendous footfall and would offer further opportunity for students to show their work publicly.

Discussions are also taking place with the Sidney Cooper Gallery in Canterbury to show key works from summer 2010 and it is hoped that some London space will be secured for graduation work by 2011.

As the related programmes have developed in both numbers and ambition, the need for still more exhibition space and equipment is beginning to become apparent. Whilst challenging, this can only be perceived as a positive and ways to facilitate expansion are currently being explored.

Feedback from the Visitors Book includes:

> *This fantastic exhibition is a tremendous credit to the Media Department, its staff and, above all, its students. The University has much to be proud of here. I thought it was brilliant.*

> *I didn't realise that the quality of work amongst students was so high and I am glad that the exhibition has shown me the amazing work students are doing.*

> *A superb display of high-quality work, showing both skill and imagination. I enjoyed the exhibition immensely.*

> *What a stunning show – congratulations to all!*

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The exhibition

Students building the exhibition

Learning in research mode

A RIT mediation clinic

Dr Leo Raznovich and Ben Waters
Department of Law and Criminal Justice Studies

Background

A Law curriculum can be developed in many different ways in order to provide experiential learning opportunities or clinical legal education (CLE) to students at university level. With the assistance of RIT funding and after a year of preparatory research, two members of the Law/Legal Studies team within the Department of Law and Criminal Justice Studies at CCCU have set up a mediation clinic as a fundamental element of the development of the study of law and, in particular, to enhance the recently introduced Law degree.

The clinic at CCCU is unique because it is the first such clinic to be based within a UK university and provides students with the opportunity to learn experientially in an innovative way. The aim of the CCCU mediation clinic is threefold:

- to provide mediation services to the local and wider community by offering a dispute resolution service facilitated by a third party mediator in a neutral setting

- to enhance teaching and learning across curricula by making use of the work undertaken by the clinic, involving students in the running of the clinic, enabling students to observe negotiation and mediation and reinforcing the theory which underpins practice in these areas

- to encourage research in order to inform pedagogy; this will be achieved through projects undertaken by members of academic staff connected with the clinic and by partnering external bodies to assist in projects of mutual interest.

The research aim will enable the clinic to act as a forum for knowledge sharing.

The idea of experiential learning (or learning by doing) is not a new concept but it is one which could be promoted through the development of a university-based mediation clinic. Kolb (1984) believed that students learn by doing through reflection and conceptualisation that takes place during the event. It enables teaching staff to engage in new and innovative teaching and learning strategies and will allow students to develop a range of legal practice skills as well as transferable skills to use in their studies and future employment and thus enhance employability aspirations.

Approach/methodology

The project leaders undertook mediation training with two leading UK training providers in order to be able to operate the clinic.

An extensive literature review and online research has been carried out. Meetings have been held with members of a number of differing sectors, including the University of Kent Law Clinic, a District Judge and the Head of Legal Services at the County Council. This established a local need and enthusiasm.

Mediation models in the US were thought most likely to be useful – most law schools of any note have some form of legal clinic and the use of CLE, which focuses on enabling students to understand how the law operates through becoming involved in the process, is widespread in the US. The project leaders therefore travelled to the US to visit five institutions with live clinics.

Outcomes

When developing the curriculum with an experiential emphasis in mind, it is important to consider the most suitable type of clinic given a whole range of criteria. At the outset, it was envisaged that an important pedagogical aim of the clinic would be to provide students with actual experience of 'real life mediation'. Hence the model adopted is a live clinic combined with simulation, to provide students with a good understanding of mediation as a method of resolving disputes and a clear knowledge of how the process operates.

The initial research undertaken during the conceptual stage of the project enabled the project team to set up a mediation clinic, within the envisaged timeframe. The clinic has been established with the aim of informing curriculum delivery, introducing a mediation service and engaging in research at a time when alternative dispute resolution is becoming ever more popular in the UK. Two undergraduate modules have been created at HE Levels 5 and 6 to link into the work of the clinic; the Level 6 module enables students to learn in a more experiential way, through which they gain valuable transferable skills.

Students following courses of study in association with the CCCU mediation clinic gain an appreciation of the importance of effective problem solving. They also develop professional skills and an understanding of ethical issues. Importantly they have a sound knowledge and understanding of the benefits and limitations of mediation and other methods of dispute resolution.

For students pursuing the Law or Legal Studies degrees the clinic introduces them to the range of legal skills required to more effectively deploy their knowledge and apply it to both intellectual and practical legal problem solving.

Students who successfully pass the Practice of Dispute Resolution module together with the Open College Network (OCN) component (see below) will not only gain 20 credits towards their degree, but will also be awarded a certificate of community mediation.

The skills that graduates gain through their experiential learning enhance their employability. The clinic also provides a possible focus for postgraduate study.

Staff associated with the project have been able to develop new skills through individual accreditation as mediators. In addition to the personal development of staff members, the Department has been able to develop the curriculum through the introduction of experiential learning approaches. The clinic will also provide opportunities for staff to combine their interest in research in this area with supervision and postgraduate teaching.

Enhancing RIT

Teaching and learning have been enhanced by the mediation clinic project through the development of clinical pathways which have been built into the degrees in Legal Studies and Law. An agreement has been reached with the local community mediation service about conferment of a mediation qualification through an OCN course for students enrolled on participating mediation modules. For the academic year 2009/10, the OCN component forms part of the Practice of Dispute Resolution module at Level 6, and this element of the module is taught by the manager of the local community mediation service, with assistance from academic members of staff. Students learn experientially by being given the opportunity to manage their own mediation cases under supervision and to act as assistant mediators.

Advice for others

Careful planning and realistic goals should be set. For a project such as this it was essential to meet and talk to those with experience in the relevant subject area.

Reflections and any future plans

The goals set by the research team, which broadly speaking included the setting up of a mediation clinic and developing the curriculum to link in with the work of the clinic, have been achieved. Discussions are ongoing both within CCCU and externally at local, national and international levels, with a view to continuing to develop the curriculum and provide training to externals. Seventeen mediations, led by members of the newly created panel of mediators, have been successfully completed and steps to retain an increased level of mediation work are in place.

From the point of view of mediation service provision, the clinic has achieved a success rate of well over 90%, ie cases mediated in the clinic have produced a settlement either on the day or soon after.

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Learning in research mode

Exploring an enquiry-based learning approach with Year 1 Business Studies students

Tan Yoke Eng
Faculty of Business and Management

Background

The Business School has experienced a huge increase in student numbers in recent years which has created many challenges for the tutors such as group size, accommodating students from diverse backgrounds, recognising different educational experiences, and taking note of varying abilities, motivation, needs and expectations. A key challenge has been to find ways of engaging students in educational tasks and encouraging them to be more proactive in their learning. These problems prompted me to question the appropriateness of my practice and to seek ways to address these challenges.

Research literature documents an increasing paradigm shift from traditional methods of teaching concerned with 'knowledge dissemination' to a more learner-centred approach in which students assume an active role and tutors facilitate learning. There are suggestions that solving problems, conducting research, engaging in discussion, and taking responsibility for their own learning has a greater impact on students' learning (Prince, 2004). At the same time, there has been a corresponding emphasis on the value of co-operative involvement among students in enhancing academic achievement, attitudes and retention (Prince, 2004). Enquiry based learning (EBL) is a learning method that is achieved through a process of structured enquiry and can take many forms including problem-based learning, small scale investigations, project work and research activity. Kahn and O'Rourke (2005) suggest that this method of learning has the capacity for deepening students' involvement and motivation. In engaging with the enquiries students also develop interpersonal skills such as communication, self-confidence, negotiation, resolving conflicts and solving problems, all of which are essential features of employability.

In pursuit of this interest I attended the 2008 Learning through Enquiry Alliance (LTEA) conference in Sheffield and was particularly attracted to the notion of EBL outlined by Allan (2008). Broadly, in this approach, a typical enquiry-based learning session consists of four components (see diagram below):

1. An engaging introduction to a new topic presented at the end of a lecture session to stimulate student motivation.

2. Outside the classroom, students carry out their enquiry. This process requires them to research, evaluate, make sense of the information and find the solutions for the task.

3. In class, students work in small groups, discussing and sharing ideas. Through discussion with their peers, students develop and broaden their perspectives.

4. The final stage is an open forum in which the whole class discusses ideas. This holistic learning experience helps to consolidate their learning.

Approach/methodology

It was decided to trial Allan's (2008) EBL model on one of the Year 1 modules. There were 392 students on the course. The students were divided into 14 seminar groups supervised by four tutors (three part-time tutors). Data were collected using observation, conversation with students, student reflection on the values and challenges of the learning and end of term evaluation.

An Enquiry-Based Paradigm
(Adapted from Allen, 2008)
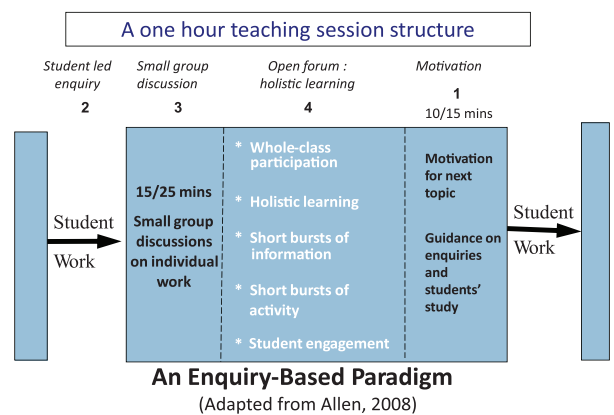
Outcomes

Responses from both students and supporting tutors indicated that an EBL approach is enjoyable but challenging for all concerned. Student responses to survey questions are outlined below:

To what extent has the enquiry task encouraged you to learn?

Some students reported that the enquiry tasks provided a focus for learning. To complete the task they had to research, read and find the answers, and completing the task had helped to identify gaps in their knowledge. Students who came to class without preparation tended to cite technology, poor memory, lack of personal resources (time and energy), demanding workload and distractions as the reasons for not engaging with the learning. A small number of students said they did not know what to do and would have preferred the tutor to be more directive - this was how they learnt in their country.

How useful were the group and whole class discussions in developing your understanding?

A small number of students indicated that group discussion was more fun than working individually and they enjoyed having their learning validated by peers. Others expressed a dislike for group work. Overseas students cited shyness, inadequate language skills and lack of confidence as the explanations for non-participation in discussion.

Tutor feedback indicated that:

- Students, in general, found the notion that a question could have multiple interpretations challenging and wanted to have the 'right' answer.
- Tutors were uncertain about how to deal with students who were inadequately equipped and prepared for the sessions.
- Tutors needed more training in facilitating discussion.

Students might explore an area outside the tutor's direct knowledge. This could be threatening and knowing how to handle this situation is critical.

The feedback confirmed the values of EBL highlighted in the literature, but also revealed many challenges which had to be recognised

The project has encouraged colleagues to experiment with the more active learning methods.

Enhancing RIT

At the end of the project students were asked to reflect on their learning and write a letter of advice to next year's cohort. Their advice included:

- regular attendance
- doing the homework
- being committed
- lots of reading
- taking responsibility and being proactive
- listening to the tutors
- not being afraid to ask questions
- making friends and working with others.

This feedback suggests that the EBL approach has begun to have an impact.

The question for the tutors is how to build on this foundation so that this way of learning becomes the norm rather than an exception.

Advice for others

On the surface, Allan's EBL model looks simple to implement, but the reality of how it works proved much more complex. The unpredictability and uniqueness of each student meant that they were all involved in individual learning journeys. How they interacted with the method as well as the context in which learning took place influenced its effectiveness. The tutors too exhibited variability. External factors such as unclear course expectations, concerns regarding finance, worries about social integration, lack of personal commitment, inadequate contact and lack of feedback on progress added further complications. Implementing EBL is not a miracle cure for all difficulties and it is impossible to get it right first time. Given the wide range of variables involved, further research and refinement would be valuable.

Training in EBL is necessary for all. Ensuring consistency in facilitating learning can be challenging.

Reflections and any future plans

The project has provided some interesting insights into the dynamics of student learning. First, students need to know their peers and feel confident with them before they are able to engage in any meaningful collaborative learning. Secondly, they also need to have the skills for independent learning. Based on this experience, the module has begun with inducting students in group working and developing their academic skills. The aim of the exercise is to build the foundation for further learning.

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Learning in research mode

Developing the skills and competencies of Mental Health Nursing students by introducing student co-facilitation of supervision groups

Dr Doug MacInnes, Claire Barber, Pam Pringle and Mark Wilbourn (until August 2008)
Centre for Health and Social Care Research and Social work, Community and Mental Health

Background

Staff in the Department actively use their knowledge of current research to impart knowledge and guide the students, but there is currently no research activity regarding the use of RIT.

Since 2001 lecturers in the Department have facilitated weekly reflective clinical supervision for all IPL Mental Health Nursing students. This is an innovative teaching approach not used in other health programmes within the University. The aim of the project was to develop this approach by using students in their supported practice placement (their final clinical placement) to co-facilitate two of the supervision groups for Year 1 and 2 students. This would develop their skills and competencies in clinical supervision and clinical practice (Bradshaw et al, 2006).

The project examined the impact of co-facilitating a clinical supervision group on the students' skills and competencies and their views of clinical supervision. The specific aims were to:

- examine the views of students and practice educators on the skills and competencies developed through participation in supervision groups
- produce a teaching package to develop the facilitation skills of students
- introduce the practice of using a group of supported practice students to co-facilitate clinical supervision groups
- evaluate the skills, competencies and views of clinical supervision of a group of students who undertook co-facilitation and compare these with a cohort of students who did not.

Approach/methodology

The project utilised a mixed methods design (Creswell and Plano Clark, 2007). The student participants were four consecutive cohorts of Year 3 Mental Health Nursing students undertaking their supportive practice placement:

- Cohort 1 – no students allocated to co-facilitate groups (baseline assessment)
- Cohort 2 – half the group allocated to co-facilitate group and half allocated to non-facilitator group.
- Cohorts 3 and 4 – all members of the cohort who wished to co-facilitate were allocated to a group.

Fifty-one students participated in the project with 28 co-facilitating supervision groups and 21 non-facilitators undertaking the assessments.

A teaching day was devised to support those students co-facilitating groups.

There were three different data collection approaches; student group self-report information (taped discussion), in-depth interviews of practice educators (semi-structured interviews) and students self-scoring on the Manchester Clinical Supervision Scale (MCSS) (Winstanley and White, 2003).

Thematic analysis was employed to interpret the qualitative data (student self report and practice educator interviews). Statistical analysis was employed to examine differences in MCSS scores between facilitators and non-facilitators. The results were presented to the students (and their responses noted) in an end of cohort conference that was developed as part of the project.

Outcomes

Student self reports – overall, the process of how supervision groups developed was clearly described with three identifiable stages –

- initial (establishing role in the group) – difficulties in talking within the group at beginning
- conflict (between group members, personalities) – this confrontation helped in making disagreements in practice less frightening
- resolution (deconstruction and reconstruction of roles, relationships) – this was the point at which effective clinical supervision was able to take place.

The students also identified areas where they had developed during the period of receiving clinical supervision. These were similar for both the facilitator and non-facilitator groups:

- developing competencies
- self development
- process of clinical supervision
- working with patients
- working as a group
- learning
- transferable skills
- communication skills
- group facilitation.

However, the facilitation groups appeared to have a more in-depth understanding of their own role within the group in these areas, being more aware of the facilitator's role, their actions/behaviours on the group supervision experience, reflecting upon what was being discussed, understanding of group processes, their knowledge limitations and being more able to sit back and listen to others.

Senior Lecturer interviews - three areas were viewed as being the main areas for clinical supervision and where the main developments in the students occurred:

- developing the student as a practitioner
- developing the supervision skills of the student
- clarifying the accountability of a student from a professional standpoint.

There was no clear differentiation made between those students who had facilitated groups and those who had not.

It was evident that Senior Lecturers had different perceptions about their role in supervising groups and used different styles accordingly. The focus on the development of the students often corresponded to a view of the role (ie if there was a focus on developing the supervision skills of the student, the perception of how well the students had performed was primarily based on how well they were able to elucidate supervision theories and practices). Any future developments were also based on that focus. Interestingly, there did not seem to be a consensus from the team overall as to the Senior Lecturer's role.

Four sub-scales recorded higher scores for facilitators compared to non-facilitators (trust/ rapport, supervisor advice/support, improved care/skills, reflection), two were virtually identical (importance/value of clinical supervision, finding time), and one sub-scale score was higher in the non-facilitator group (personal issues). The overall mean MCSS was 137.4 for the facilitator group and 131.2 for the non-facilitator group, indicating a higher overall perception of the effect clinical supervision had on their personal and professional development. None of the differences were statistically significant.

The main aims of the project were able to be achieved:

- It was possible to document the skills being developed by the students during the three years that they underwent clinical supervision.

- A detailed one-day teaching programme was developed and refined during the project. It was positively evaluated by students and appeared to have adequately prepared them to co-facilitate supervision groups.

- The opportunity to co-facilitate clinical supervision groups was viewed positively by the students involved. It led to an increase in their clinical supervision knowledge and skills, especially in their ability to stand back and reflect upon their own and others' practices and also upon the supervision process. It was difficult to evaluate whether these attributes were already more inherent in those volunteering to facilitate the supervision groups.

Students gained skills and competencies in facilitating clinical supervision. They were able to comment directly on the role of clinical supervision in professional practice and to reflect upon how this had developed (and why) over the three years of their studentship. Taking part in this study meant that students gained wider experience of the research process through having a lecture about the study and an explanation of the project protocol, participating in the study and through receiving a presentation on the findings in conference style format. All three of these settings presented the opportunity to discuss the rationale underpinning the project methods.

Staff developed a dedicated teaching package for students and found that taking part in the study enabled them to develop their inquiry skills. There was a realisation that different members of staff had different perceptions about the nature and role of clinical supervision and their role in the students' facilitation skills.

Enhancing RIT

The inclusion of facilitating clinical supervision groups by students resulted in the growth of their skills and competencies. It also enhanced interpersonal skills and the ability to engage in reflection as noted by Butterworth (1996).

A clearly defined teaching package was developed to support the students' facilitation skills.

There was an appreciation of developing specific questions and employing specific evaluative techniques as a method of inquiry.

Reflections and any future plans

The work is being written up for publication and there are plans to present the findings at conferences.

The use of clinical supervision is still viewed as an essential component in the education of student mental health nurses.

There are plans to develop clinical supervision training and skills as a post-qualification course.

The end of cohort conference has now been enhanced and there will be a mental health conference this year (2010) with participants coming from CCCU, trusts and other institutions, service user and carer organisations and mental health charities.

A review is being held by members of the educational team to examine the type of facilitation approach being used to support Mental Health Nursing students, and the parameters of the facilitation.

Time for the project was an issue - one member of the team left to work elsewhere after one year of the project and another had a period of extended sick leave. There were also difficulties in being able to identify other members of staff who might cover teaching or other responsibilities. This led to problems with the amount of free time that could be devoted to the project and also for the whole team being able to meet together on a regular basis.

An unanticipated finding was the positive response from the students receiving supervision. They were very impressed with the depth and breadth of knowledge of the facilitators and their supervisory skills. It also led to recognition of how much development had taken place in students by the time they were about to qualify and the awareness that they would be attaining the same level of knowledge and skills by the end of their training.

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Learning in research mode

'In the moment': exploring improvisatory techniques and approaches within new music and media

James Dean, Dr Andrew Gower and Dr Matt Wright
Department of Music

Background

Within popular music and jazz as well as, increasingly, within electronic music, improvisation is an integral element of composition and performance. 'In the moment' sought to engage undergraduate students of Commercial Music and Creative Music Technology (based at the University's Broadstairs Campus) in an exploration of improvisation through the composition and performance of new music composed especially for the project by three members of the Music Department. The compositions explore different facets of improvisation including, for example, melodic and harmonic invention, interdependence, decisions and interactions, freedom within structure as well as spontaneity within musical development. In addition, the project engaged students of Digital Media (also based at Broadstairs) in the process of producing improvised visualisations in response to the project's music using specialist computer-based video processing software.

Approach/methodology

The research project led to the composition of three new musical works:

1. ***As it was bright*** for flute, vibraphone, cello and electronics by Andrew Gower offers a musical reflection on a verse of poetry from *The World* by the 17th century Welsh poet Henry Vaughan:

> I saw Eternity the other night
>
> Like a great ring of pure and endless light,
>
> All calm, as it was bright,
>
> And round beneath it, Time in hours, days, years,
>
> Driv'n by the spheres,
>
> Like a vast shadow moved, In which the world
>
> And all her train were hurled.

The flute plays a special role within the ensemble as the intermediary between the acoustic and electronic, or in this context between the present and the otherness of what is beyond. Through seven sections the discontinuity of the opening music is drawn gradually towards continuity by the resonating, sustained quality of the metaphorical light conveyed within the electronic sound.

2. ***Burn like Icarus*** is a collaboration between Matt Wright, the saxophonist Evan Parker and the University's electronic music ensemble, CONTACT[1]. It is an open-form composition, built over a series of workshops between Evan, CONTACT and Matt. Designed to be memorised and freely navigated by improvisers, the structure borrows from a range of dialectical sources – Greek lyre music, turntablism, contemporary composition and the 'noise' scenes of New York and Tokyo. It takes its impetus from the Greek myth of the flight of Icarus and deliberately calls on musical metaphors such as *Learning to Fly*, *Ascent*, *Burn*, *Descent* and *Crash*. In particular, Matt was interested in a sense of music at the edge of collapse (something he has been interested in since hearing records fall out of sync with each other as a teenager). A final section rewrites the myth, with a digital Icarus ascending skywards.

3. ***Spaces*** by James Dean for nine-piece band consists of seven linked movements comprising composed and improvised content, and is influenced by jazz in terms of its instrumentation, harmonic and rhythmic sense as well as improvisational approaches. The composed elements in *Spaces* provide a structure around which improvised content is developed, based on given chord sequences. In addition electronic loops and samples are triggered by laptop computer and used to create links between movements whilst providing added texture to some sections of the music.

Outcomes

The focus of the project, on contemporary musical languages and collaboration between composer and performer, enabled the 16 Music students directly involved in the project to develop their practice-based research skills in the areas of composition and performance, as well as in music and media production. Through engagement with research-based activities the students gained highly relevant experiences in improvisation, music production and performance that directly enhanced their potential employment as composers, arrangers, performers and/or music producers. As part of the musical development process Music students attended workshops and rehearsals with saxophonists Evan Parker, Paul Booth and Keir Neuringer, and took an active part in the project as performers.

The project made a significant contribution in bringing to the fore research and academic scholarship in the Creative Arts at the Broadstairs Campus. It provided an exciting opportunity for collaborative working between academic colleagues, and through the public performance of the music as part of the Sounds New contemporary music festival at Orange Street Music Club in Canterbury, as well as the distribution of the music via the Department of Music's record label (C3U Records), the project has acted to enhance the research profile of the Departments of Music and Media.

Enhancing RIT

This project acted to strengthen a research-lead curriculum centred on the specialist interest of the staff involved, with experiences gained by both staff and students integrated prominently into the learning experience. Students were engaged directly with practice-based research as composers (contributing to participatory workshops), as performers (including within CONTACT) and as music producers. Learning and teaching were further enhanced through the involvement of external contributors including international saxophonists Evan Parker and Paul Booth. The project proved to be an excellent opportunity to strengthen and develop synergies between Commercial Music, Creative Music Technology and Digital Media.

Reflections and any future plans

The success of this project has lead to another collaboration between Dean, Gower and Wright, now joined by another colleague from the Music Department, Robert Stillman. The results of the 'Mobile Music' collaboration will be performed in a concert as part of the Sounds New festival in May 2010.

From the *Kentish Gazette*, Thursday 7th May 2009:

Three modern works premiered

The more intimate setting of Orange Street was perfect for the premiere of three works as part of the Sounds New contemporary music festival and attracted a large audience.

An unashamedly modern piece, As it was bright, by Andrew Gower, a reflection of a 17th century poem, started the evening. Electronics and a vibraphone (Ethan Lewis Maltby) were used to good effect complementing the mellow cello (Phoebe Anagnostou) and the lightness of the flute (Heledd Francis).

Burn Like Icarus, by Matt Wright, Evan Parker and CONTACT, was an amazing piece, with Evan Parker on soprano sax. The piece finished with a bird-like digital sound as Icarus rose skywards.

The third piece was James Dean's Spaces, with Paul Booth on saxophone. The evening finished with a performance by Fusion, featuring music students.

Sian Napier

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Pedagogic research
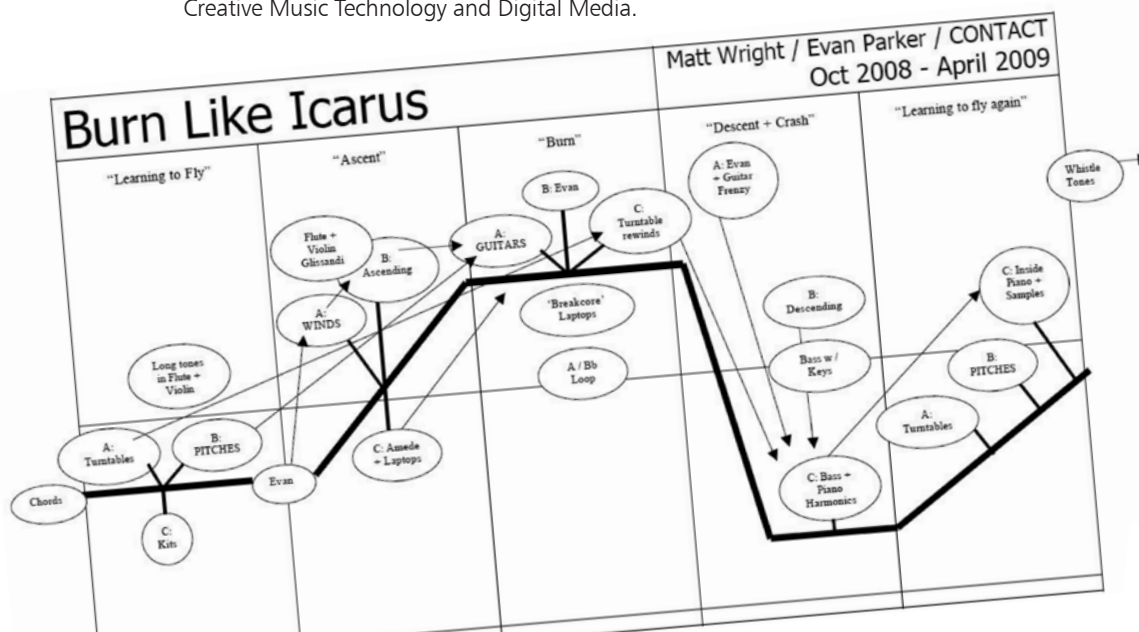
A comparative review of the pre-registration IPL programme interprofessional curriculum

Hazel Colyer
Faculty of Health and Social Care

Isabel Jones
Senior Teaching Fellow, University of Derby

Background

The Pre-registration Interprofessional Learning (IPL) programme has eight pathways and prepares approximately 750 students a year for professional practice in health and social care. It became due for review and revalidation between 2007-9. The aim of the RIT project was to develop a new interprofessional curriculum and associated competence framework as part of the revalidation process.

It was intended subsequently to use it in a comparative review at two institutions – CCCU and the University of Derby. The undertaking of a similar review by Derby would provide the opportunity for cross-institutional collaboration and strengthen the credibility of the findings.

The present interprofessional curriculum and associated competence framework within the IPL Programme was derived from a documentary analysis of subject benchmarks (QAA, 2002) and tested within the Department of Health funded project *Modernising Allied Health Professions Education* undertaken by CCCU. These were evaluated in another RIT project, Learning and Teaching for Collaborative Practice, with equivocal outcomes.

There have been a number of more recent, national initiatives to further elucidate the concept and develop interprofessional competences. These include: national occupational standards (NOS), the *Creating an Interprofessional Workforce (CIPW) Framework (2007)* and the *Interprofessional Capability Framework (2004)*. It was therefore timely to review current published work and develop a robust framework to use in the academic review of the IPL curriculum.

Approach/methodology

A qualitative methodology was employed in two phases:

Phase one comprised an extensive documentary search and analysis of published interprofessional competence frameworks in the UK, Europe and North America with the purpose of developing an inclusive framework for review and development of the 2004 CCCU interprofessional curriculum.

Statements that referred to interprofessional working and collaboration, professional attitudes, behaviours towards others and team working, were drawn out and re-framed in the light of the values represented.

Phase two explored the newly developed framework using open questions in a focus group comprising the CCCU curriculum development group (n=17). This enabled identification of questions for individual interviews with seven group members, conducted by Isabel Jones.

Outcomes

Phase One: The documentary analysis brought the concept of collaborative potential to the fore and the researchers decided to modify the initial approach. A collaborative potential curriculum framework was developed that consisted of four aspects representing an incremental approach to becoming collaborative in practice. Each of the four - Professionalism in Practice, Reciprocity in Practice, Relational Practice and Collaborative Practice - comprises a number of learning outcomes.

Phase Two: The focus group confirmed that the decision to step back from collaborative practice to collaborative potential was welcomed by the CCCU curriculum development group. Individual responses highlighted benefits and barriers to successful implementation.

Overall, the framework was perceived as contributing to the ideal of making interprofessional learning meaningful for students and promoting their personal and professional development as collaborative practitioners.

The process employed assisted with ownership by the curriculum development group. The collaborative potential curriculum framework has been successfully embedded within three modules of the 2009 Pre-registration IPL Programme.

Students study one module per year of their undergraduate programme. The learning outcomes support their potential to become effective collaborative practitioners. The first two modules will be delivered and evaluated in 2009/2010.

Staff from all Faculty departments and professional teams have the opportunity to be involved in module delivery. This is challenging to organise but supports staff's own interprofessional development.

The ethos and mode of delivery (peer action learning) models that of the Year 3 Collaborative Practice module in the outgoing curriculum, which has been very positively evaluated by staff and students.

The findings have been presented at a number of national and international conferences including *All Together Better Health IV* in Stockholm June 2008.

Advice for others

The biggest challenge is to create ownership of what is proposed beyond the enthusiasts who are involved in the project.

Reflections and any future plans

The comparative element of the project is planned for 2010 at the University of Derby with funding obtained from their Teaching Inspired by Research fund.

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RESEARCH INFORMED TEACHING

An exploration of the ways in which pedagogy is represented through film and how notions of pedagogy can be discussed and challenged by engagement with dramatic representations of teaching, learning, knowledge and understanding

Dr Andrew Lambirth and Dr Ken Fox
Departments of Primary Education and Media

Background

The researchers share a passion for film and pedagogy. They were interested in making an intervention into the ways in which students of film and student teachers conceptualise pedagogy represented in film, while seeking to establish the importance of film as a vehicle for discourse, debate, research and learning about the process of education in its multiple forms. The use of film narrative as a source of learning about educational processes adds to a growing repertoire of multi-modal models of knowledge transfer activities in both Faculties.

Approach/methodology

The pilot stage of the project involved showing the film *School of Rock* (Linklater, 2005) which dealt with the theme of pedagogy, after an introduction setting out the project. There was a discussion after the film, which was supported by a discussion board on the course virtual learning environment (VLE) sites where those who saw the film could continue or initiate discussion.

Those who took part in the screening and discussion were asked to research and suggest other films. This led to a twice termly screening over the next 18 months, covering a range of fiction film and documentary that included: *Etre et Avoir* (Philibert, 2003), *If....* (Anderson, 1969) and *Happy Go Lucky* (Leigh, 2008).

Students were encouraged to include reflective writing on the films as part of their reflective journals or professional development planning (PDP).

Outcomes

Up to 70 students (and staff) came to the films.

There was no formal evaluation but the researchers collected the comments made by students.

Although Education students might be shown clips of films as part of their programme, this was an opportunity for them to see a relevant film in its entirety and then discuss it with others. Students from both Faculties were able to benefit from hearing different views and perspectives.

As a number of Radio/Film/TV and Media students go on to do a primary or secondary PGCE, this gave them an introduction to some education issues and students.

The researchers worked together on a presentation for a teacher education conference in Carlisle. They also arranged their own conference for PGCE and English Language specialists around literacy and film making. Dr. Ken Fox contributed to a TeachersTV.com programme on favourite school movies and provided an introduction for the screening of *The Fox and the Child* at the Odeon Cinema, Canterbury, during Film in Schools Week.

The external review of the Primary Education Department thought that Primary working together with the Department of Media was a very positive development.

Reflections and any future plans

Following on from this project the researchers developed a module on film and education for Year 3 Education Studies students. They are hoping to develop Masters level modules.

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RESEARCH INFORMED TEACHING

An evaluation of the use of the service user and carer mini conferences within the first year BSc Occupational Therapy programme

Rayya Ghul
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Dr Diana Crampton
Service User researcher

Ana Hashemi-Ahmady, Carol Jarvis and Patricia Smith
Undergraduate second year student researchers

Background

In 2003, the Occupational Therapy degree programme at CCCU decided to invite service users and carers into the classroom early on in the students' education. This fitted in with the wider move by the Department of Health to include service users and carers in the design and delivery of services. Occupational therapists need to be able to see a person as an expert in their own life so that they can genuinely work with them to provide workable and lasting solutions to living. In considering the best way to do this, it was noted that service users and carers were sometimes wary of attempts to include them. They dislike being placed into classroom situations to simply tell their story without understanding the learning context, viewing this as 'tokenistic' (Harrison, 2002). Many institutions have dealt with this by instituting training programmes for service users and carers in teaching and presentation skills (Leckey et al, 2008). However, not all service users and carers want to undertake such training and for the institution this is impossible to achieve without adequate time and funding. In order to address these two concerns, the Occupational Therapy pathway of the Allied Health Department developed an innovative approach based on a conference format. Embedded within the Participation in Occupations module were two 'mini-conferences', one called *Barriers to Participation* and the other *Enabling Occupation*. The mini-conference format is similar to that of a professional conference.

The mini-conferences had been evaluated highly in the end of module evaluation process, being consistently rated as the most valuable aspect of the course. The impact on student learning had also been demonstrated through a reflective element within the module assessment and this had shown a shift in attitude in a majority of students. There had, however, been no formal evaluation of the impact of the mini-conferences on student development. Informal feedback from the service users and carers had indicated a high level of approval for this model of involvement but the staff team had received some criticism about the lack of prior training for service users from external institutions also utilising service users. The aim of this study was therefore to investigate:

- the impact on students' learning
- the experience of service users and carers of being involved in the mini conferences.

Approach/methodology

The research was carried out in two parts. The first part involved employing one of the service user/carer expert panel members, Dr Diana Crampton, as a researcher to carry out interviews with five other panel members to produce a series of short journalistic interviews providing some narrative information about the person's life and an impression of being involved the mini-conferences. The lead researcher and three student researchers worked together to carry out a four-stage interpretative analysis (Braun and Clark, 2006) of a one-question online survey to collect data from all cohorts who had participated in the mini-conferences (n= c220). The question was:

In what way, if any, has participating in the service user and carer mini-conferences in the Participation in Occupations module affected your development as a student occupational therapist?

Outcomes

The research carried out by Dr Crampton indicated that all the service user and carer interviewees were strongly committed to participating in the mini-conferences and perceived them as being beneficial to themselves, as in this way they were able to depict a story about their lives, as well as to the Occupational Therapy students. The experience delineates the service-users and carers as in some sense experts in a situation where previously it has been possible for certain people in authority to 'speak over' them. No interviewee had seen a downside in the experience. The format of the conferences was viewed as good, with just 20 minutes to speak. Being on a panel with people with different conditions, service users and carers, and with different experiences, but curiously similar in some ways, was interesting. As one interviewee commented "It's interesting to hear the strategies for staying well".

The results of the research carried out by the project leader and the students were presented as a letter to service users and carers. The results indicated a profound shift in attitudes towards future clients and appreciation of the ethical responsibilities of being a health and social care professional. For example:

Hearing about negative experiences made us realise the importance of collaborating and building relationships in future practice.

We gained an awareness of the lived experience of others and this gave us a new understanding of issues such as power imbalance and stereotyping.

It made us explore our thinking which led to greater open mindedness and self awareness.

The students involved with the data analysis said it had been a very useful experience – next time they read qualitative research they would understand more about interpreting the data and issues of validity. One student commented: "I realised the grand scale of what we were researching, and how detailed and intricate the process was. I felt a new appreciation for articles I've read in journals and also how bias may occur in findings". Another student who had been very sceptical about the authenticity of qualitative research said: "As the research progressed ... I became fascinated by how the raw material of individual voices refused to be manipulated out of shape by the sorting and re-sorting of 'data'".

Enhancing RIT

The research confirmed the value to Occupational Therapy students' professional and personal development of bringing service users and carers into the classroom. It also confirmed that the format of the mini-conferences provided a respectful environment for the panel members to share their personal stories. This has raised the staff team's confidence in the learning opportunity they have created and provided supporting evidence for its continued use within the programme.

Advice for others

One of the problems was that the students were out on placement when we wanted to carry out the research, so timing needs to be given careful thought. We had to run the project in July, when many students are already thinking about disengaging from university for the summer.

Reflections and any future plans

Rayya Ghul, the project leader, said:

Participating in the Research Informed Teaching project has been one of the most rewarding activities I have carried out as an academic. Having the students as co-researchers was exciting because it was an opportunity to share with them the excitement and difficulties inherent in qualitative data analysis. It is fair to say that I worked the students very hard over an intense period of time but it allowed them to have firsthand experience of working with meaning and interpretation. In addition, reading the service users' and carers' narratives produced from the interviews by Dr. Diana Crampton provided evidence that our experts do enjoy and appreciate the conference format we have developed here at Canterbury Christ Church University.

The work was presented at the *Authenticity in Action* conference in November 2009 and extremely well received. One conference participant wrote to say

I am not often impressed by presentations at these conferences, but your work, and your passion for it, were remarkable and inspiring.

It is hoped that at least two publications will come out of this project. If a similar project runs in the future it would be good to bring in a writing expert to help the students write up the research for publication.

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Pedagogic research

Study to examine students' and staff supervisors' research knowledge and experiences of research teaching within the IPL programmes

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Background

The changing needs of health and social care services demand practitioners who can not only access but analyse sources of evidence for practice. Traditionally students undertook a piece of research as part of an honours degree. However, following changes within research governance (DoH, 2001) CCCU, like most other HEIs, significantly reduced the opportunity for undergraduate BSc interprofessional learning (IPL) students to complete an empirical study. At CCCU, most pre-registration undergraduates in Health and Social Care complete a literature critique in Year 3. Currently only those Radiography students researching radiation doses using phantom models and not using NHS facilities can complete empirical research.

There is little evidence in the literature regarding the teaching of research to IPL students and little is known about the research knowledge of students on completion of undergraduate programmes. Anecdotal evidence of students entering the MSc programme suggests that few have any experience of research knowledge or skills leading to a need to increase taught input. Those that have completed a study have usually only used one research methodology. Similarly, the impression gained from colleagues is that staff acting as supervisors had limited experience of different methodologies.

This study clarified the research knowledge of students entering the MSc programmes and identified their needs. The study also explored the research training needs of staff within the Department to enable a tailored staff development programme to be developed and inform curriculum planning. The aims of the study were to:

- determine the level of research knowledge and skills in MSc students in the IPL programme
- identify the specific training needs for supervising staff.

Approach/methodology

A mixed case study methodology was used (Bowling, 1997, Gomm et al, 2000) and involved several stages.

Stage 1: The students in the IPL MSc Programme were identified on entry to the programme and their knowledge regarding research was evaluated using a questionnaire.

Stage 2: All students in the Research Proposal Module in one MSc cohort were identified and their knowledge regarding research evaluated using a questionnaire. Volunteers were invited to a focus group to discuss their perceptions regarding research and their supervision needs.

Stage 3: Data from a recent audit of staff research knowledge was used to develop a questionnaire to assess Faculty staff knowledge and research experience, and volunteers participated in individual interviews to discuss their perceptions regarding research supervision and their training needs.

Outcomes

A total of 14 different disciplines were involved in the sample of 51 students. MSc students entering the programme had somewhat limited research knowledge and skills. The performance of peers at the proposal writing stage was not significantly different, so little research knowledge had been gained throughout the programme; there are no research specific modules until the proposal stage.

There were 10 different disciplines represented in the staff sample. Despite the belief that staff had a limited range of research skills, most staff had several research skills although few described themselves as highly skilled. However, whereas 80% were confident in supervising undergraduate studies, only 44% of them were confident in supervising MSc studies. There was a limited range of methods and variance in staff confidence in these with 26% having skills in using interview methods whereas only 7% had skills in random controlled trials. Interview key themes were elicited from the data and coalesced around: the process of supervision, academic development of students, programme development issues and staff development issues.

The study identified where support was needed. There was general agreement that programmes within the Faculty should be developed further to incorporate research within them. The hope was expressed that the new curriculum for undergraduates may go some way toward achieving this.

The academic development of students, enabling them to blossom and achieve their potential, was seen as a very rewarding aspect of supervision; all participants enjoyed the experience and gained a great deal of intellectual satisfaction from it.

Most participants thought that there was a need for the development of all staff in research methods and they would welcome more research supervisor training and training in a broad range of specific methods. There was general agreement around the anticipated benefits of extra workshop and seminar activities to supplement those offered in the Graduate School.

Enhancing RIT

Student needs were clearly identified and areas where greater focus was needed, informing curriculum developments. The necessity to have a structured process for supervision was identified as being paramount, as was the need to set ground rules for the basis of a good working relationship.

Advice for others

Beware of programme planning that impacts on your plans for your study. Build in more time for Ethics review. A member of the Ethics Committee commented "Your questions testing staff research knowledge are likely to put them off completing it. I wouldn't ask them anything too difficult if I was you".

Reflections and any future plans

Although the project is complete the work is ongoing. The seminar series will be evaluated and the questionnaires developed for the study will be able to be repeated as an audit tool.

There were changes in the planned project due to significant changes to the planned curriculum for undergraduate study that caused initial delays and eventual significant adjustment to the project. Ethical review took longer than anticipated and the planned questionnaires were scaled down to maximise responses although this limited the scope of the study.

Quote from a staff member "The idea of a Research Summer School is great but not in the Summer. This is our busiest time and by August most of us are too exhausted!"

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Pedagogic research

An investigation into the use of commercial computer-based learning materials to support the teaching and learning of anatomy and physiology in the Adult Nursing curriculum

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Background

Anatomy and physiology are important subjects, providing scientific underpinning for nursing practice (Akinsanya, 1987, Casey, 1986) and it has been demonstrated that good biological knowledge will lead to good patient care (Clarke, 1995, Jordan and Read, 1997, Jordan and Potter, 1999). However, many nursing students experience difficulties learning and understanding these subjects (Wharrad et al, 1994, Jordan et al, 1999). Some of these difficulties have been attributed to poor levels of previous academic achievement, the teaching and learning strategies employed and the limited amount of time available to teach students due to curriculum overload (McKee, 2002). At CCCU there has been a persistent problem of small numbers of Adult Nursing students who find this subject difficult.

For these reasons, among others, there has been a growing interest in the use of computer-based learning (CBL) in nurse education (Lewis et al, 2001). In recent years there has been an increase in the number and availability of commercial CBL packages and online resources from publishers of anatomy and physiology textbooks, but there is a lack of evidence in the literature to demonstrate the effectiveness of these resources.

The aim of the project was to evaluate the effectiveness of using a commercial CBL package in the teaching of anatomy and physiology to Adult Nursing students on an interprofessional learning programme within one university.

Approach/methodology

Before the study began the researchers reviewed three commercial CBL packages and visited two HEIs to see how these packages were used in practice. The selection of the package used in the study was based on the user friendliness of the materials, the extent to which the materials matched the course learning outcomes and the degree of interactivity offered.

A convenience sample of 15 students was selected from the February 2008 cohort of Adult Nursing students, who began their taught anatomy and physiology module in September 2008. These students (22% of the cohort) were chosen because they were being taught by one of the researchers and were based at a different campus, thus separate from the rest of the group. The remaining students in the cohort were used as controls. The nature and aims of the study were explained to the students and they were given the option not to participate. The Faculty of Health and Social Care Research Committee gave ethical approval for the study.

Before the taught course began, each student in the study group was given access to the CBL material and a copy of the companion textbook. The students were briefed on how to log on to and use the web-based materials. They were asked to complete a short pre-study questionnaire designed to elicit biographical data and a VARK (visual, aural, read/write, kinaesthetic) learning style analysis in order to help determine whether CBL is more beneficial to students with a particular learning style. The students in both the study and control groups followed the same course of lectures during the module and were assessed against the same learning outcomes. In addition the study group was given a plan of CBL activities, tests and relevant reading from the companion textbook, selected by the researchers to supplement the taught lecture content of the course. They also had free access to the CBL materials which they could use as and when they wished to support their own learning. The students' use of the website was automatically monitored by a tracking function within the software.

At the end of the taught course the examination results of the study group were collated and analysed using a two-tail test to assess what difference, if any, the use of CBL materials had made to their knowledge and understanding of anatomy and physiology. The study group was also asked to complete a post-course questionnaire to elicit their views about using the CBL materials. The exam results were analysed to identify any relationship between learning style preference and achievement.

Outcomes

Fourteen of the 15 students in the study group reported that they enjoyed using the CBL materials. In addition the majority also felt that the CBL materials helped their understanding of anatomy and physiology as indicated below.

Not at all	1
To a small extent	2
Moderately	7
To a large extent	5

In spite of this, the examination results did not appear to show any benefit in terms of increased knowledge and understanding of anatomy and physiology compared with the control group. The mean exam score ± standard deviation (SD) for the study group was 31.8% ± 14.9 (range 15-58) compared to 50.6% ± 17.2 (range 12-93) for the control group. The SDs and breadth of marks illustrate the wide ability range within the student Adult Nursing population. The difference between the means was 18.8, which is highly significant ($p < 0.001$). Multivariate analysis demonstrated that the only significant difference between students in the study group and the controls was that the study group had lower exam scores in previous modules.

The results of the VARK learning style analysis showed that the range of learning styles amongst the study group encompassed multimodal, mild aural, mild visual, mild kinaesthetic and strong kinaesthetic. The relationship between the different learning styles and average exam scores of the study group is shown in the table below.

Learning style	Average exam score
Multimodal	35.1%
Mild aural	18.2%
Mild visual	58%
Strong kinaesthetic	18%
Mild kinaesthetic	31%

The numbers are small but the findings seem to suggest that CBL suits students who have a visual learning style, as would be expected.

The funding provided for this study enabled the researchers to demonstrate that the use of commercial CBL learning packages within the Adult Nursing curriculum at CCCU requires further investigation, eg whether bespoke software would be more appropriate than generic material.

Enhancing RIT

The research demonstrates that it was not the teaching and learning strategies but the students' academic ability that caused the high failure rate. As the addition of the CBL materials had no impact on exam results it is necessary to examine other factors that might be affecting the results, such as curriculum design and entry qualifications of the students.

The students were exposed to alternative methods of teaching and learning and the majority enjoyed using computer based materials.

The study reinforced the importance of face to face, small group teaching methods in this subject and the fact that additional technologies should be used selectively.

Advice for others

It should not be assumed that computer based technologies are more effective than traditional pedagogic approaches. Commercial CBL packages should be used with care as they may not meet the needs of individual courses or students.

Reflections and any future plans

As a result of this study it has been decided not to incorporate commercial CBL packages into the current curriculum. However, these materials may be of benefit in future when nursing becomes an all graduate profession and students have higher entry level qualifications.

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The influence of the personal tutor in supporting students with specific reference to attrition

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Chris Hayre, Adam Meredith, Bethan Watson, Rachel Wilson
Student research team

Pedagogic research

Background

The purpose of this study was to assess the current learning and teaching role of the personal tutor in enhancing the learning experience of students registered on the BSc Radiography degree. The main objectives were:

- to determine how personal tutors can identify students at risk of early withdrawal, due either to academic failure or personal factors, with a view to reducing attrition
- to investigate the level of support that students anticipate from a personal tutor when they join the programme.

Approach/methodology

The study consisted of two elements:

1. A longitudinal study aimed to determine whether it is possible to identify Radiography students at risk of failing by looking at their demographic characteristics. The following demographic data was therefore collated on all Radiography students registered on the BSc programme: age, gender, level of qualification on entry, distance from home to university and clinical placement, number of dependants and academic attainment throughout the placement. This data collection is on-going and will be analysed on an annual basis, when end of year assessment marks are known.

2. A qualitative study to look at support provided by the personal tutor. Current Radiography students were invited to become part of the research team. Four students accepted the offer and were guided through the research process. They were introduced to the following methodologies: focus groups, questionnaire design, and semi-structured interviewing. A questionnaire was devised by the student researchers which they piloted on students within the institution using a focus group. The questionnaire consisted of open questions and asked students about their understanding and experiences of the personal tutor role, and whether their expectations had been met. The questionnaire was distributed to all Radiography students by members of the research team.

The student researchers then subjected the questionnaire data to thematic analysis, and used their findings to create a semi-structured interview to explore the views of Radiography lecturers on the role of the personal tutor. Questions included: the levels of support they believed they provided to personal tutees, how they identify failing students and what actions they then take, what they think students expect from a personal tutor and whether students' expectations are realistic. The data gathered was used to develop a model for the personal tutor role.

Outcomes

From the questionnaire it was identified that personal tutors were seen as someone who would be readily available to provide support and guidance for students throughout the course.

> *Someone to support me through my university experience by offering help and advice, knowing where to direct me for any problems or matters (Year 2 student).*

However, an important finding was that a few students were confused regarding the roles of the link and personal tutor and were unaware that the tutor who visited them on placement (the link tutor) was also their personal tutor. This confusion appears to have arisen because the link visits were used for 'personal tutoring' and a lack of distinction had been made between the roles. This was further compounded by the fact that students tended to have group discussions with the link tutor unless they specifically requested an individual meeting, and these discussions tended to centre on clinical issues. Consequently, these students did not feel they could approach the link tutor with academic or other issues because they did not think it was part of their role.

From the staff interviews it was apparent that staff and students' perceptions of the personal tutor role were fairly well aligned, although there was some surprise that students were confused by the link and personal tutor role. The following terms were used to describe the role: multi-dimensional, guiding, responsible, there to help students reach full potential, all concepts which appeared in the students' responses to the questionnaire. There was, however, also acknowledgement of the need to recognise one's own limits, and that as personal tutors they are not necessarily qualified to deal with all the issues facing students.

Using students to conduct the research was key because as 'service users' their understanding of the student body ensured that the student voice was heard. Findings from the research were fed into the recent revalidation of the programme and has directly influenced the way in which the Radiography team implement the personal tutor role.

The students who undertook the research gained a greater understanding of the research process and reported that they enjoyed the experience, indeed one of the students has since applied to do a PhD. For the students who participated and completed the questionnaire some have since reported that it raised their awareness of the role of their personal tutor, and has meant that they are now making more use of them.

Since this research has been completed the role of the personal tutor in the Interprofessional Learning Programme and hence Radiography has been linked with personal development modules. The link and personal tutor role has been separated and students are briefed regarding the role of the different staff supporting them during their course. This has been a positive outcome for both students and staff.

Enhancing RIT

The project engaged the students in the process of research, and enhanced their written and verbal communication skills through the construction of a questionnaire, undertaking a focus group and interviews. The students who completed the questionnaire now have a practical example to review and reflect on when critiquing published research and staff members are able to refer to the questionnaire as an example of research during taught sessions.

Advice for others

Involving students as part of the research team does create more work initially, but it adds a valuable extra dimension to the research.

Reflection and any future plans

Guiding students through the research process in this way was hugely rewarding and demonstrated that actually undertaking a piece of research does support understanding through experiential learning. Since we have now changed the personal tutor role it would be valuable to conduct a similar piece of work to assess whether the changes have made any difference to the ways in which students feel about how they are supported in their learning. Future work would look to involve students as part of the research team.

I have enjoyed being a part of this research project. Being able to take part in this has allowed me to gain a huge insight into the research process and the different aspects that make it up. I feel that it has also boosted my confidence hugely when I have carried out the interviews with lecturers, and after the initial nerves wore off I enjoyed it. I would definitely say that this has been worthwhile, as if I were to go on and do some of my own, I now have ideas and some background information into how it could be done (Member of the student research team)

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Pedagogic research

An exploratory study into final year Midwifery students' experiences

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Background

Prior to this project there was a paucity of qualitative research specifically into the use of interprofessional learning in terms of Midwifery students. Furthermore, the project was timely, because the findings could feed into the validation of the new Interprofessional Learning (IPL) programme. It also meant that the student voice could inform the development of the programme.

Approach/methodology

A qualitative approach within the interpretivist paradigm was used and data was gathered using individual in-depth interviews with a topic guide, thus giving students a voice within their own frames of reference, whilst concurrently ensuring the data collected helped to illuminate the experiences of students within the context of the interprofessional programme. The interviews basically asked students about their experiences of their Midwifery programme. Students talked and the interviews were taped. Subsequent thematic analysis produced three major themes:

- professional identity and understanding
- socialisation and support
- making IPL relevant.

Outcomes

The findings from the interviews with students informed changes that were made to the interprofessional learning programme.

A significant discovery was that students did not find lectures very useful, and suggested that it took until Year 3 to understand why they did interprofessional learning in Year 1. In fact they valued the interaction with other health care professional students and learning what it means to be a professional and one that works in an interprofessional team. However, they wanted this to be a real engagement, not just sitting with other students in a lecture. They suggested that the Collaborative Practice module should come earlier, so they could really work with other health care professional students, learning from them, and about them, to enhance professional understanding.

Communication was recognised as very important for effective interprofessional working, but also the realisation that no one profession alone can look after someone with complex needs: surely such understanding is the starting point for effective collaboration in health care.

Another suggestion was that there should be a 'buddying' or mentoring system, not only with other Midwifery cohorts, so that the group ahead could tell them what to expect, but also across the disciplines so they could buddy with a Nursing or Mental Health student, for example. This would foster peer support and social networks. However, it is recognised that the logistics of this would be difficult.

The Programme Director had already had informal discussions with various health care professional students to help inform the revalidation process, and the research supported what those students had said, thus making it more rigorous.

There were also some very powerful findings about what it means to be a midwife and issues around professional socialisation. Students said that if they had not had certain placements they would have left the programme because they would not have been able to see what being a midwife really meant.

The discussion generated from the findings allowed four recommendations for local practice to be been drawn:

- 'Buddy' mentor students across years and pathways, thereby cultivating social bonds, subsequently fostering peer support and learning.
- Mix students using a humanistic approach to learning, incorporating the synergogy model of teaching to facilitate this.
- Use interactive learning and teaching strategies, such as storytelling, to facilitate professional understanding and assist students in developing the skills necessary for collaborative practice.
- In Year 1 be clear on the relevance of interprofessional learning – concentrate on what it means to be a professional.

Evaluation is difficult because the new programme did not begin until September 2009 and the students involved in the research have qualified and moved on.

The findings have been presented at the *Nurse Education Today* (NET) conference in the UK and at a national conference for midwives in the US, where they do not have interprofessional learning.

Enhancing RIT

The project enabled us to think about how we teach health care professional students. It is very easy and cost effective to put 300 students in a lecture theatre but if they cannot learn effectively that way, then we have to balance learning with the budget. We have to support and inspire them to learn not only in their three years here but throughout their professional lives.

Reflections and any future plans

It was a real confidence boost to have funding for the research because it means that someone thinks that what you are doing is legitimate and worthwhile. That is very powerful and motivating.

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A selection of Powerpoint slides from a conference presentation

Methodology / Methods

Heideggerian Hermenuetic Phenomenology

- **Data Collection**
  - In-depth interviews
  - Grand tour question

- **Data Analysis**
  - Thematic Analysis
  - Colaizzi's procedural interpretation

Tell me about your experience of learning to become a midwife during your midwifery programme?

– 8 students

FREC Approved

Professional Identity and Understanding

Re-affirmation

" it's made me realise that I made the right choice, I'm really glad I chose to become a midwife" (Anna)

"yeah that was quite an eye opener the Collaborative Practice, it was really good and it made me realize that, oh thank god I chose to be a midwife...... I do really admire nurses" (Kinsey)

Professional Understanding

Self - "I feel quite strongly that actually midwives need to refer more. That is one of the things I do feel very strongly about but there are....." (Beth)

Others - 'the give and take of talk' (Bruner 1996:93)

"it's good to know how they view themselves. Like midwives are always saying, we're autonomous practitioners but all the nurses felt they were as well and that isn't something that I'd ever viewed as a nurse being an autonomous practitioner....... I started to look at it from a different. Look at nursing from a slightly different perspective" (Davina)

Difficulties with Professional Socialisation

"..sometimes there is negative attitudes from different nursing staff of and why, why you shouldn't be a midwife, you have no nursing training" (Nell)

"Some people still think direct entry midwives need to be nurses first, even some midwives think that " (Sam)

"if I hadn't had the midwifery led placement, I, I'm not sure that I'd still be training to be a midwife because I think I'd have.....found it really difficult to see what the midwives role was. I think the programme is fantastic because we come back here and you know, the midwives and teachers here are so focussed on knowing their role as a midwife" (Abi)

Socialisation and Support

The Value of 'getting to know people' (Nell)

"Because you are so used to working with, you, you feel safe with friends don't you" (Anna)

"I think it's helpful from the point of view that you get to know other students around the site and that you're going to be mixing with them a lot over the three years. From an educational point of view, it's probably not so beneficial at that early stage but from a social point of view, it helps. And then further on, when you meet up again, in different groups, at least you might know somebody's name or you might know that they're a nurse" (Anna)

Pedagogic research

Creativity across the curriculum

Dr Gill Hope and Eric Parkinson
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Background

Many primary schools are moving into more cross-curricular, topic-based work and the researchers, both Design and Technology specialists, felt this presented an opportunity to consider the way(s) in which this related to other government initiatives concerned with creativity and a more active approach to children's learning.

The aim of the project was to research the opportunities presented within the primary school curriculum for the development of what might be termed 'designerly' thought and action. This was seen as vital to the needs of an information-rich, knowledge transfer society, moving into what Pink (2005) has called *The Concept Age*.

The idea was to see how schools and teachers were understanding, reacting to, and implementing the idea of design across the curriculum.

The project was intended to be a lever into a substantial bid for external funding. Co-operation had been obtained from external partners, including the National Association for Primary Education. This would hopefully lead to Masters level accreditation for teachers engaged in high level reflective practice.

Approach/methodology

The first stage of the project was intended to be exploratory, to develop research instruments which could discover and define the range of designerly opportunities offered to children in primary schools. This would facilitate initial recommendations to primary schools for developing children's designerly thought and action.

The second stage of the project involved working jointly with partnership schools to collaboratively develop strategies that could enhance children's learning.

Year 3 students visited schools and carried out structured interviews and observations and also obtained information from their placement schools. This was undertaken and written up as their own individual projects but also fed into the overall project.

Outcomes

It was clear that teachers in school thought that most designing activity took place in Design and Technology but when they were asked to think more widely they could see opportunities across the curriculum.

The shape and direction of the project meant that the students gained an insight into the research process as much as the topic of the research itself. For example, if a student set out to interview the Design and Technology co-ordinator in schools but a small school did not have a co-ordinator, that would be seen to impact upon the results because the person interviewed would be involved in many things and might have a different view to others.

The project funding supported a terminal conference. This allowed teachers from participating schools to come and listen to speakers and be involved in workshops and so develop new perspectives.

Apart from the opportunity to discuss and debate these topical issues, Year 3 students were involved in the organisation of the national conference and thus had the opportunity to develop skills to enhance their employability.

As well as the development of teachers in schools, this project has provided the opportunity for the researchers to further develop their own research interests.

A conference which looked at creativity across the curriculum was held in June 2009.

The project has led to a number of conference papers and publications, including Parkinson E (2010) 'Back to the Future: Where next in a world of cross-curricular education?', *Design and Technology: An International Journal*, 15(1) p16-23

Enhancing RIT

The students involved in the project have enhanced their research skills and had the opportunity to be involved in a major topic issue. By working and discussing the research with teachers in schools they have also been able to share information about designing in the curriculum.

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Pedagogic research

Evaluating appreciative inquiry as a teaching method within a problem-based learning curriculum

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Background

This was a collaborative study on innovation in teaching with the University of Cardiff. The participants comprised all of the Year 1 students on an Occupational Therapy BSc programme, all the teaching staff on that programme, and a sample of practice educators from the students' clinical areas.

The Occupational Therapy Department at Cardiff had just introduced appreciative inquiry (AI), a method used in organisational behaviour, as a teaching method in a problem-based learning programme. The purpose of the project was to evaluate this method of teaching and the usefulness of combining appreciative inquiry with problem-based learning, and if it works at Cardiff, to introduce this method to CCCU on the new Interprofessional Learning (IPL) programme.

Approach/methodology

Student focus groups and staff interviews focused on their experience of AI. The results were collated with the results from a questionnaire administered by the Occupational Therapy Department at Cardiff.

Following the first phase of the study, the project moved on to develop some of the ideas which had emerged from the analysis of the data, particularly that staff wanted to make changes to the way in which AI was taught and that the role of practice educators is very influential. Detailed discussions were held with the staff at Cardiff and with practice educators.

This second phase of the research was timely because the first cohort of students had been on placement again and some changes had been made to the delivery of AI with the second cohort.

Outcomes

The project was useful in enabling an evaluation of a novel teaching method, both on campus and in Occupational Therapy clinical placements. It allowed staff, students and practice educators to reflect on and consider how to develop AI for the best outcomes for their clients.

Quotations from student transcripts:
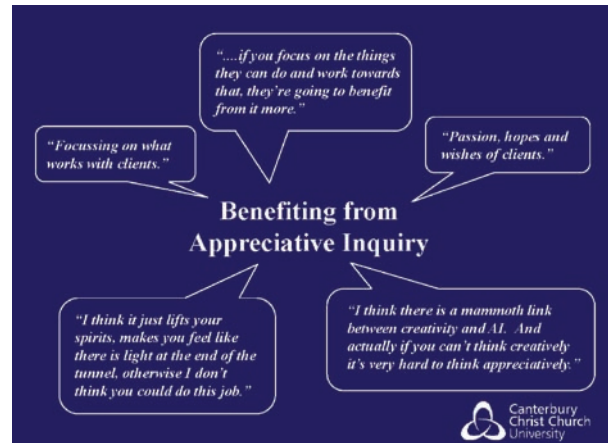
Three national conference papers have been given on this project, enhancing the reputation of CCCU and reinforcing the importance of supporting RIT.

A conversation between Rona and Rupert arising from examining the findings:

RR: Why do you think that the lecturers who participated said that introducing the AI approach was not research based, and therefore was questionable, while the practice educators on placement had no problems with this?

RK: Because in teaching we are used to using research evidence to justify what we do, whereas in health practice they carry on as usual unless there is evidence to prove they shouldn't do it.

Advice for others

Working across universities has its own challenges, but is very exciting, interesting and worthwhile. Always check their ethics committee requirements at an early stage. Also, make sure that the commitment of each university is clear, both for time and resources.

There are several websites on AI, and David Cooperrider has written copiously on the topic.

Reflections and any future plans

The new IPL programme at CCCU has introduced AI for some Occupational Therapy modules. It would be very useful to have this evaluated.

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Pedagogic research

Teacher educators and the Masters level PGCE

Dr Lynne Graham-Matheson
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Background

In 2004 the Framework for Higher Education Qualifications came into effect and, amongst other things, stipulated that courses with 'postgraduate' in the title must include work at postgraduate or Masters (M) level. The PGCE – Postgraduate Certificate in Education – was a long established route into teaching but its title suggested that the academic work was at a higher level than the work on an undergraduate degree, and for many courses this was not the case. From 2007 the PGCE has become both the Postgraduate Certificate in Education, which has M level components, and the Professional Graduate Certificate in Education, where work is at Honours level. Both routes lead to qualified teacher status (QTS) but no guidance is given beyond the requirements for QTS, so courses can vary significantly between institutions.

Interviewees in an article in *The Independent* (Hackett, 2008) suggested that teacher educators were in favour of M level qualifications but with some reservations. A Masters qualification for teachers must not be too inflexible or undermine the range of existing Masters degrees, and the content should not be too prescribed or too related to practice – this would not be concerned with deep learning and reflection on practice and, if school-based, would be taught by teachers who do not have a Masters degree themselves. Encouraging teachers to do more studying was seen as a positive move in view of the difficulty of packing so much into a one year PGCE, although a concern raised by Edwards and Pope (2006) is that the PGCE does not give trainees the experience of research methodologies that might be encountered on a traditional Masters course, nor are PGCE students engaging with the same level of academic and research literature.

Although the change to the PGCE came about through correcting an anomaly following the Bologna Declaration, it fits in with government plans for teaching to become a Masters level profession, and pleases those who want a move away from standards and competencies in teacher education. Teaching on the PGCE with Masters level components raises a number of issues for teacher educators, not least because a significant number do not themselves have a Masters degree, having been recruited for their skills and experience as teachers and headteachers in schools. Although the response of tutors to the change was generally positive, there were a number of concerns about how best to support students with the Masters level components of the PGCE.

Approach/methodology

There were three strands to the research – a discussion group of PGCE tutors, a questionnaire survey and interviews with a sample of respondents. The different strands of the research took place over several months.

Outcomes

Most of the discussion in the discussion groups centred around the issue of criticality and the impact of M level. Irrespective of M level the role of the university part of the course is about questioning and being critical, which differs from what students do in school – it is important to have students engaging at Masters level even if they do not want the credits because it is the critical analysis which is important. But then there were questions about critical analysis - how to define it, whether it is transferable, whether you have to be disposed towards it and what does it mean to read critically - how to encourage students to write about their writing, and think about their thinking. This was a serious concern for a number of tutors – how could they support students at M level when they did not have experience of M level work themselves. To deal with this we produced a brief guide for students on critical reading and writing, which would support students who were inexperienced at this kind of work and be a resource for tutors. Intended for the Department of Postgraduate Initial Teacher Education (POINTED) this has now been widely used throughout the Faculty of Education.

In the questionnaire survey 26 questionnaires were returned, covering a range of tutor experience, role and programmes. Generally respondents were feeling more positive and 10 respondents said they were excited by the challenge, although eight were a little apprehensive and seven felt they were in need of more training. Areas which were causing particular concern were students' critical reading and writing, ensuring consistency in marking assessments and tutor expertise in research methodology and analysing data. There were also seen to be issues about how M level learning could be integrated into the PGCE, a taught course where a significant amount of time is spent in schools on placement.

It was noticeable that the interviewees gave different views from the questionnaire survey – they were more positive and more reflective. It is unclear whether this was to do with the timing – the interviews came after the survey – or the people interviewed, who were all experienced programme leaders with Masters degrees. Although there were some negatives, the interviewees felt that M level was a good thing, particularly for primary students, who were under a lot of pressure and needed the confidence and skills to question government policies. In terms of schools, it was felt that many were still not clear about the difference between the two PGCEs. There was a perceived gap between theory and practice, and a dilemma as different knowledge is prized at school and at university. Some school mentors were not supportive of the change – they could not see the point, and could not support students at M level having not studied at this level themselves, so there was a problem when students wanted to discuss readings etc with their school mentor. Some schools were very supportive eg if a student's research fits with school improvement plans, others say they need to concentrate on becoming a newly qualified teacher (NQT) and school work. Overall it was felt to be a very positive change, which had led to a great deal of discussion and debate, and to tutors themselves being more reflective.

Asked whether they thought the M level work added value to students' work and their development as beginning teachers, one tutor thought it probably did but it was too early to say, while others said definitely yes – "before there has been a sort of anti intellectualism" and it was helping to develop students' criticality, reflection, research skills and ability to question.

Enhancing RIT

The findings of the research were discussed at POINTED departmental meetings and presented at an ESCalate[1] conference in May 2009.

The project gave teacher educators the opportunity to express their views and hear from others. The research itself informed their teaching, but also provided a resource for them to support the work of trainee teachers, and thus inform their teaching.

Reflections and any future plans

The initial funding application set out plans for tutors and trainees to work together on research projects, and to provide a resource bank of 'things that work' in terms of supporting students' Masters level work, but it soon became clear that a number of tutors would not be confident to do this, hence the shift in emphasis. There are currently no plans for any further work on this project but it would be useful to revisit the original project when tutors have more experience of M level work.

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1. ESCalate is the Higher Education Academy subject centre for education

Pedagogic research

Developing processes to evaluate research mindedness in practice placements of students on the MA Social Work programme

Esther Coren, Jemela Hutchfield, Janet Wiseman, Bob Cecil, Anne Kelly
Department of Social Work, Community and Mental Health

Background

Research mindedness and capacity building for research-informed social work and social care practice are currently priorities within the Department of Health (Platt, 2007), the Social Care Institute for Excellence (Fisher and March, 2005 and Fisher, Francis and Fischer, 2007) and the Joint Universities Council for Social Work Education Committee (Bywaters et al, 2006). Research mindedness in social work practice has been defined as:

> *a faculty for critical reflection informed by knowledge and research; an ability to use research to inform practice which counters unfair discrimination, racism, poverty, disadvantage and injustice, consistent with core social work values; an understanding of the process of research and the use of research to theorise from practice (www.resmind.swap.ac.uk)*

One of the issues for social workers is that there is a gap between research and practice, and research does not always filter into practice. The idea behind the project was to see to what extent our teaching is helping students to become social workers who behave in a more research minded way in their professional practice. Doctors do not give evidence in court without referring to research but social workers do, so the idea is to develop a workforce that sees itself more connected with research.

Pilot sessions were held with MA Social Work students and with qualified social workers on the post qualifying child care award during 2006/7.

MA Social Work students would receive specific input on evidence informed practice and research mindedness within the module Developing a Research Proposal and in dissertation supervision.

To evaluate the impact of this on research mindedness work was undertaken with student supervisors and practice teachers to develop processes to evaluate research mindedness within practice placements.

Approach/methodology

Planning and development of processes and tools included input from Faculty staff, practice teachers and representatives from the student body.

Capacity building among staff within the Department to support students in these processes and evaluate their progress.

Capacity building among practice teachers to support students in practice in relation to research mindedness and to use the processes and tools developed to evaluate student progress.

Processes and tools developed within the project were used to inform the development of research mindedness teaching and also to assess potential for a wider range of research mindedness within the qualifying Social Work programmes at CCCU.

A scale based on a nationally recognised definition of research mindedness was developed to evaluate final year MA students' assignments according to the national definition. This took the form of a questionnaire with seven questions and a five point Likert scale.

Outcomes

Total research mindedness scores (as rated by members of the project team using the project specific data collection tool) ranged from 10 to 33 out of a possible total of 43, (mean = 20.25, SD = 7.53).

The implications of this finding raise questions for the teaching programme, and also for the definition itself, which are being addressed within the team.

One of the issues is whether the project methodology is appropriate for and can be rolled out to other programmes, eg the BA.

Knowing what students understand by concepts of research mindedness means that different elements of the definition can be further developed in teaching. Closer links with research should also improve employability.

As with other research, the self selecting nature of the consent process meant that students who consented were a subset of the whole group and possibly not representative.

For staff, an outcome from the project was the opportunity to develop teaching programmes with more attention to relationships between practice, theory and research.

Enhancing RIT

Ongoing process to identify mechanisms to improve teaching and learning based on the results of the project.

Reflections and any future plans

Continue to work on the implications of the research for the teaching programme.

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Research to support learning

Enhancing the learning experience of MSc Computing students in grid computing

Dr Abhaya Induruwa
Department of Computing

Background

Grid computing is arguably the most exciting development in the area of massively distributed computing in recent times and there are a number of UK and European initiatives. The researcher had worked for two years with a grid computing group in Trieste, Italy. He had also been the director of a two day workshop in Sri Lanka and had received an approach to undertake collaborative work with Birkbeck University. The project aimed to extend the collaboration by inviting colleagues from the Democritos Project in Italy (http://www.democritos.it) to work more closely with the Department of Computing at CCCU.

The grid is used to carry out computations that are too large to do on a normal computer – currently the grid is distributed in every continent, across millions of computers. The users of grids are not necessarily scientists or computational mathematicians. For example, social scientists are using the grid for large scale geodemographic modelling and historians to carry out text analysis and data mining using centuries old documents.

Although the researcher had been teaching the theory underpinning grid computing, lack of infrastructure within CCCU had prevented him from properly integrating this important topic into the teaching of MSc Computing students within the University and students had not been able to undertake Masters level project work in this area. Colleagues in the Department of Geography and Life Sciences had a number of research areas that needed a grid computing platform. Staff and students from other faculties and departments will also benefit from the resource.

Approach/methodology

A computing platform with specialist software is being built to enhance the engagement of students undertaking laboratory work in grid computing.

The Technical Director of the UK National Grid Service (NGS) (http://www.ngs.ac.uk) and the Director for Cyberinfrastructure Development, Centre for Computation and Technology (CCT) of the Louisiana State University, USA were invited to give seminars and workshops on porting scientific applications onto computational grids and installing a grid computing node at CCCU using software supported by the NGS. These were attended by the MSc Computing students.

Agreement was reached with Computing Services to access the UK National Grid service, which is the UK e-Science programme mandatory grid service for the UK, because traditionally CCCU has not allowed external access to any of its systems, for very good reasons. Computing Services have now mapped out the way this could be done without affecting the rest of the University network and the software installation in the grid node is currently underway. Testing is about to begin.

Outcomes

- Canterbury Christ Church University became a Registration Authority (RA) for the UK Certification Authority. Dr Abhaya Induruwa functions as the RA Manager for Canterbury.
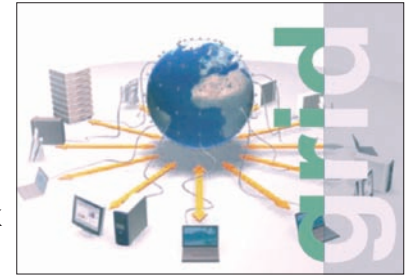
- Dr Induruwa is a funded member of the UK National e-Science Programme.
- Dr Induruwa has been invited as the UK NGS Campus Grid Champion for Canterbury.
- An NGS Roadshow and Grid Training event was held at CCC on 25 February 2010 and was attended by grid enthusiasts external to the University. The presentation material is available at: http://www.ngs.ac.uk/canterbury-roadshow.
- MSc Computing students who attended the NGS Roadshow and Grid Training were given a chance to experiment with submitting and running jobs on the NGS grid platform.
- Researchers in the Departments of Computing and Law and Criminal Justice of the University will collaborate with the University of Leeds in the area of prediction of crime using census and crime data. Research will be carried out using a simulation model developed by the University of Leeds and run on the NGS. If successful this will be further expanded and incorporated into the PhD project work of one of the CCCU researchers.

Enhancing RIT

Too early to comment. This will be known probably later in 2010.

Advice for others

Although the technology could be ready and available, administrative and bureaucratic delays could mean missing targets that seriously affect progress.

Reflections and any future plans

Almost after two years, the project is nearly ready for use. Grid computing resources will be used to teach MSc Computing and Year 3 Bioinformatics students in the Department of Geography and Life Sciences. CCCU has a very large concentration of active applied social science researchers who can benefit from the availability of high throughput computational capability offered by the grid. The project is expected to not only give benefits to the Computing staff and students but the expertise developed within the Department is useful to other staff and students in the University.

Seminars and workshops will be organised with the support of NGS and other grid collaborators to showcase the application of grid computing in the areas of humanities, art and social science research. The Department of Computing will have in-house technical expertise to help researchers in other disciplines to exploit the opportunities offered by grid computing to enhance their teaching/research capability and to expand into areas hitherto considered impossible for reasons of lack of on-campus large scale computing resources.

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Research to support learning

Interprofessional practice

Dr Hazel Bryan and Dr Kathleen Goouch
Department of Professional Development

Background

The policy initiative *Every Child Matters* has set the context within which schools operate today and will develop in the future. Extended schools are the vehicle through which this policy initiative will be realised. At the heart of the concept of the extended school is multi-agency working and interprofessional practice. There is a patchwork of interprofessional practice across the country – some schools are fully operational and others are in the early stages of development. All participants on programmes within the Department of Professional Development (Foundation degrees, MA programmes and the EdD) work within this relatively new multi-agency, interprofessional context.

The concept and construct of interprofessional practice is therefore one which must inform the future development of all programmes within the Department if programmes are to relate to, and meet the needs of, participants. In order to be in a position to inform current programmes and shape the development of new programmes we need to develop an expertise in this field. Funding was sought to help us to be better informed to develop new MA modules in curriculum innovation and multi-agency working in schools. The expertise developed will also enable the Department to rethink pedagogical practices in line with multi-agency work.

Approach/methodology

Information was gathered from:

- a systematic literature review of national and international interprofessional practice
- critical engagement with policy documentation and policy makers to determine the government's position on inter-professional practice
- interviews and observations with education-related professionals in multi-agency settings.

Material developed from the research will be made available to participants (students) during taught sessions, individual readings and reading groups and through the new Faculty *Journal of Research into Professional Development*.

Outcomes

As already noted, this is a highly complex area of research, focusing as it does on professional identities, personal lives, individual perspectives and ambitions and, for many people, their life's work. It seems clear from the empirical data gathered from this small scale study that simply legislating for change is not a guarantee of success. Indeed, change in working practices and professional identities demands a process that will need investments of time and commitment to be made to the new construction of practices. Service targets, professional resources and budgetary concerns remain constraints in many areas. However, the key concerns from this project's data appear to be that of the successful development of cross-professional relationships and management of some very complicated new structures. The development of more effective systems of communication, both formal and informal, need also to be constructed.

From existing literature in the field it seems that there is currently an oversimplification of the issues and therefore oversimplified solutions are being proposed. The first is in the criticisms of professional mistrust and tension between agencies often made by those misunderstanding the complexity of professional roles undertaken in new political and policy landscapes. The second is that the suggestion of a simple creation of a new layer of professionals trained across professional boundaries would serve only to dilute professional expertise, alienate professional colleagues and ill serve the individuals, families and communities in need.

Instead, from the literature and research in the field, three core changes seem to emerge:

The first is for a conceptual change to enable professionals to engage in working practices that take responsibility 'holistically' for children and their families. This would minimise the existing problem of families seeming to 'ping-pong' between services.

Secondly, the suggestion has been made that a skilled 'systems minder' might negate communications problems as well as reducing the difficulties faced by key workers forming unsustainable relationships with children and their families.

The third centres on the need for training. While keeping professional identities intact, training could be focused on the development of reflexive and communicative practices rather than the rebranding of professionals. Such training would need to keep issues of language, culture and attitudes firmly at the centre.

This project has pointed to the need for further research and study and has clearly identified how subtly complex such research is. This of course mirrors the complexity of work in the field where relationships are often seen by many to be the key to successful working, particularly with vulnerable children and families. Others find that carefully constructed systems clarify and objectify the work. It is always possible to find aspects of the service that appear successful, or small teams that operate effectively for a variety of reasons. However, some of the literature reviewed pointed to the absolute need for reflective capacity to be built into working structures. While this is perennially challenging in terms of time and financial commitment, it would seem that an inclusive Masters level study programme is one way of simply facilitating this. It would also enable those professionals currently working in interprofessional services to engage in research to inform, critique and perhaps to challenge existing practice. The project has indicated that enabling 'insiders' to research their own world and develop their own professional voice is not only an attractive way forward but possibly the only effective way to develop the field.

Students who engage in study emerging from work on this project will benefit from opportunities to work with other professional colleagues in critically examining their work, the policies and politics that direct it and the research that informs and underpins it. In addition, they will be supported in developing their own theories of practice and in creating research projects of their own in which to test ideas and develop implications for practice. Their work will be supported by tutors who are themselves engaged in these critical endeavours and who have developed ways to critically engage with research, policy and practice literature in the field.

Tutors working in this field are at the forefront of new professional practice. There are opportunities to collaborate in many ways – across traditional professional boundaries, with students who are engaged in their own professional enquiries, and across local and national boundaries, as this is a universal issue currently being examined by colleagues across the world.

Enhancing RIT

From the perspective of the learner, the MA modules developed will present a range of contemporary national and international 'best practice' in this complex field and will enable a careful critique to be made of them. Participants will be encouraged to articulate existing knowledge and expertise in terms of practices and supported in their development. In addition, they will be challenged to critically examine contentious issues and complexities surrounding this new policy arena. The principles of inter-professional practice underpin many related areas (such as interprofessional coaching and mentoring) and will serve as a theoretical basis for further applied areas of study.

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Collaborative creative work investigating the roles of traditional and contemporary technologies for the creation of media projects in practical research and their application to and dissemination in teaching

Bryan Hawkins and Tim Long
Department of Media

Background

The rationale underpinning this collaborative research was a wish to improve insights into how technology impacts on creative production in practical research and then apply the findings to enhancing teaching. The project co-ordinators wished to eliminate false barriers separating teacher and student, and creative practice and research, as there are aspects of each of these elements in all these processes – a co-creative and fluid learning process could then emerge. As practising artists they were interested in aligning traditional art practice with computer technology, to increase confidence and understanding of how those technologies impact upon creative making and teaching creativity. The project also set out to deploy digital media for promoting research to students. Inquiry, innovation, discourse, experimentation, specialisation, creativity, and the development of new knowledge, in the form of practice related research, have underpinned the RIT project.

A particular focus for Tim Long is his research into the grotesque image and imagination. The way computer technology is now employed is ubiquitous in developed countries, but the hybridisation of human and machine has important and as yet unknown implications for human action. By assuming that the hybrid of human and machine, the cyborg, is an alarming and problematic thing, he seeks to examine the human/computer relationships with drawing machines and other physical computing devices.

Approach/methodology

The project co-ordinators teach practical production in the Department of Media and have a background in Fine Art practice that is applied to practical production and related theory. Through questioning the properties of their backgrounds and resulting teaching approaches, they reasoned that increased contact with their idiosyncratic creative approaches would facilitate engaging students with their own creative practices. This process required the identification of qualitative values derived from the individual, combined with an increased knowledge of the research techniques of others. These techniques in the project combined creative experiments with varied emergent outcomes, with emphasis upon questioning how and why digital media influences and changes those practices.

It was agreed that certain key issues were central to the research:

- An emphasis on interrogating the exchange between traditional practices and rapidly shifting digital technologies.

- An emphasis on the current creative practices of the participants, who would seek to monitor and critically engage with the 'creative potential' represented by these practices.

- An emphasis on the 'open-endedness' of creative practices of teaching staff and students.

- A belief that the creative practices of staff and students represent a vital educational resource that can be overlooked.

- An emphasis on RIT as not 'one way' or 'linear' but a relay of constant learning and exchange.

There was no formal quantitative data collection, as this was considered antithetical to the methodology and intent of the project. Students were involved formally during lectures, presentations and seminars, and informally during visits to galleries and in discussion with tutors outside lectures. Asking students to complete questionnaires and fill in more forms did not seem to accord with the ethos adopted for examining and promoting independent thinking and its relation to creativity.

We employed traditional and new technologies for disseminating research, which informed students not only of the content of research, but attempted to open up some of the problems and issues raised by the research. The variety of methods for sharing and creating content is especially important in the digital age, so debate around the appropriate use of media distribution methods and their histories informs our teaching. Part of the funding was used for two computer display kiosks, which allows for promotion of research via a computer screen so people can see the work and appreciate how online resources can become part of learning. This then influences the students' practice and insight into the variety of ways computers can facilitate research.

Outcomes

Research has been disseminated through:

- the *Ghosts and Grotesques* exhibition at Sidney Cooper Gallery, accompanied by an exhibition catalogue

- community contexts (Margate Limbo Arts)

- environmental interventions with the construction of booths at the Broadstairs and Canterbury campuses, displaying students' and staff work together on specialised kiosks

- *Nothing Happens* conference funded by the RIT initiative and involving practice related papers, February 2009

- Eddie McMillan's *Con-trails* exhibition at the Canterbury campus, following an exhibition of work funded through the RIT initiative

- a research blog outlining the project's progress.

The impact of practice-related research into teaching has been cascaded into module and programme design in: Film, Radio and Television Studies, Digital Culture, Arts and Media, Digital Media, Photography and MA Fine Art.

Students are involved in sharing the experience of research by applying methods and models demonstrated by the RIT initiative. Knowledge of types and forms of research assists students' ownership of the research process, appropriate to their level of learning. For example, two student-run competitions, sponsored by the RIT funds, require students to create and upload videos to YouTube for judging by students and staff. This process replicates the structure of taught modules, and permits students to experience the process of creating a theme-based creative outcome from inception to assessment.

Staff benefited from the ability to take forward research projects rapidly because of the RIT funding. They gained confidence, evidenced by increased contribution to research participation at conferences in the UK and abroad.

Qualitative evidence, gathered during lectures, seminars, tutorials and forums, shows that students consider staff research a vital aspect of their process of learning. Students have stated that seeing staff research in creative fields stimulates their own thinking and ambition to achieve success. The enhancement to student learning is also measured by overall student satisfaction, evidenced by formative and summative feedback gathered during 2007 and 2008.

Enhancing RIT

In the Department of Media, emphasis is placed upon practice-related research that seeks to establish a methodology recognising the significance of emergent outcomes – in other words, creativity and problem solving are an integral part of the entire research process. The identification and deployment of this methodology constitutes an important outcome for the RIT work. Through the dissemination of research (as above), students have gained insight into the content of staff research, and the methods and practices they engage with in this process are influencing the quality of their learning and learning outcomes.

The RIT initiative has raised the profile of practice-based research in relation to the status and Research Excellence Framework (REF) potential of the Department, contributing to a dynamic shift in the profile of creative practice and its relevance to teaching and research.

Advice for others

Make a good plan, but be prepared to change and adapt it.

Break down barriers and structures in academia that separate research from teaching, and theory from practice.

Creativity requires intuition and the ability to work from a point of doubt and scepticism. Don't accept that anything is absolute, and challenge those who do.

Ask how play and research are related.

Reflections and any future plans

The project developed new paths and initiatives that changed from the original plan. We recognised that creative work proposes starting points, and creative practices require contingent elements to influence the completed outcome.

The project did work, especially in its capacity to increase awareness, for staff and students, of the importance of creative experimentation. The ways that new technologies impact on research and the dissemination of research was a key concern of the project. It is clear at the end of the project that some technologies require individual design and customisation – working with software out of the box, as it is designed to be used, does not always offer the creative practitioner the capacity to adapt and individualise creative strategies.

If we were to do it again we would concentrate on a series of events taking place after a period of study leave, as our teaching load prevented some initiatives from being developed as far as they might have been.

Bryan Hawkins' research

The production of creative work has been in relation to three identified broad themes, each having built from previous research. Landscape work (exhibited at the University of Kent), *Ghost Ships* (exhibited at CCCU and Margate) and *The Sleep of Albion* – work in progress. Current research is developing an engagement with archaeology, history and the shared characteristics of these forms within the visual arts and film-making. This work is leading to a trans-disciplinary work titled Common Wealth and Landscape Project, involving the Powell Research Group, Canterbury Archaeological Trust, Folkestone History Group, and Limbo Arts. Additionally research in relation to ideologies of creativity, personal creative process and creative strategies in traditional and new media technologies have emerged.

Papers - *Zombie Creativity* and *The Tyger Behind the Screen* have been presented at CCCU and are in development for publication.

Module design - Visual Research Digital Media, MA Fine Art

Curatorial and community based projects - Links with Limbo Arts and CCCU and new projects.

Learning through others' research

Tim Long (2009) Return, a mirror box assembly, d18 x h18 x w23cm

Tim Long's research

Tim has made progress with his part-time PhD studies at the Slade School of Art, UCL, London.

A multimedia exhibition entitled *Notations*, integrating drawing and sound production held in London during 2007 at UCL was attended by students from the Department of Media, subsidised from RIT funding.

- Tim's artistic practice employing physical computing has been used as a case study in a paper presented at The Association of American Geographers 2009 Annual Meeting in Las Vegas.
- Tim also presented his work at the *Digital Resources in the Arts and Humanities* conference in Cambridge during 2008.
- His work was selected for exhibition at the Royal Academy Summer Exhibition 2008.

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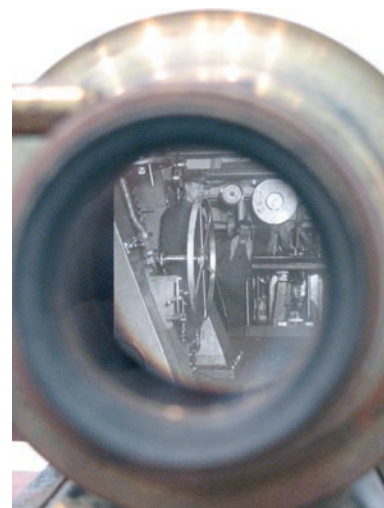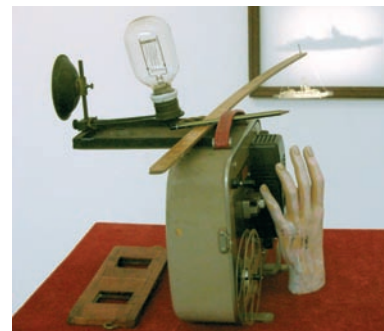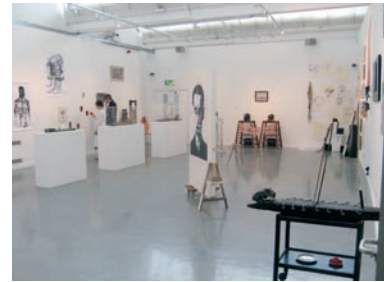*Images from the Ghosts and Grotesques exhibition catalogue*

Tim Long's drawing machine exhibited at the Notations event at the Slade School of Art, UCL, on 12 December 2008. This event was attended by students from Canterbury Christ Church University with support from RIT funding.

Developing the student as a researcher through the curriculum

Professor Alan Jenkins and Professor Mick Healey

The student as researcher

Introduction

Our argument can be simply stated: all undergraduate students in all higher education institutions should experience learning through and about research. This should be a central and structured aspect of their formal and informal co-curricula. While recognising that there are other goals the curriculum should support (eg student employability, civic engagement), students learning in 'research mode' should be *central* to the curriculum. We need to move 'undergraduate research' from a marginal, privileged role for a few students to make it a significant structured curriculum experience for all students.

Origins

Our argument in part grows out of a long standing interest in bringing together teaching and discipline-based research (Jenkins and Healey, 2005; Jenkins et al, 2007) and certainly reflects the experience of working in the British system where the Research Assessment (RAE) has devalued the importance of teaching and effectively moved many undergraduate students and academic staff out of the worlds of research (eg Lucas, 2006; McNay, 1999). Similar pressures are at work in other national systems, including Australia, Canada, New Zealand and the United States.

In the US the influential Boyer Commission (1998) in its review of the 'research intensive' universities concluded:

The research universities have often failed, and continue to fail, their undergraduate populations. Thousands of students graduate without seeing the world-famous professors or tasting genuine research (Boyer Commission, 1998, p3).

The Commission called for ten changes in the undergraduate curriculum; four of which call for bringing students more clearly into research:

1: Make research-based learning the standard Learning is based on discovery based on mentoring.

2: Construct an inquiry-based Freshman year The first year of a university experience needs to provide new stimulation for intellectual growth and firm grounding in inquiry-based learning and communication of information and ideas.

3: Build on the Freshman foundation The freshman experience must be consolidated by extending its principles into the following years. Inquiry-based learning, collaborative experience, writing and speaking expectations need to characterize the whole of a research university education.

7: Culminate with a capstone experience The final semester should focus on a major project and utilize to the full the research and communication skills learned in the previous years.

What is undergraduate research?

As with the practice of 'research' by university staff (Brew, 2001), there are contested meanings of the word 'research' at undergraduate level. In the US much practice and policy sees 'undergraduate research' as students producing 'original' knowledge, suitable for publication in external refereed journals. This is particularly the case in the sciences, where through national financial support by organisations such as the Howard Hughes Institute and the National Science Foundation, undergraduate research is more established than in the humanities and social sciences. Others, however, define or conceive undergraduate research as students learning through courses which are designed to be as close as possible to the research processes in their discipline. The focus then is on student learning and on being assessed in ways that mimic how research is conducted in the discipline. In these cases, what is produced and learned may not be new knowledge *per se*; but it is new to the student and, perhaps more significantly, transforms their understanding of knowledge and research.

In terms of our collective international understandings of teaching-research relations (eg Griffiths, 2004; Robertson, 2007; Trowler and Wareham, 2007) this approach to curriculum design, while clearly valuing students learning about research through staff lecturing about their and others' research, puts the focus on them learning as participants in research and on the curriculum supporting their understanding of the processes and practices of research in their discipline or professional area. In terms of Fig 1 the emphasis is on student learning in 'research-based' and 'research-orientated' modes; though it is important to note that the nature of undergraduate research varies in different institutional contexts (Table 1).

Fig 1 Curriculum design and the research-teaching nexus

Source: Healey (2005, p70)

The student as researcher

Table 1 Dimensions of undergraduate research

Student, process-centred	Outcome, product-centred
Student initiated	Faculty initiated
Honours students	All students
Curriculum-based	Co-curricular fellowships
Collaborative	Individual
Original to the student	Original to the discipline
Multi-or interdisciplinary	Discipline-based
Campus/community audience	Professional audience
Capstone/final year	Starting year one
Pervades the curriculum	Focused

(Source: Adapted from Beckham and Hensel, 2007)

Is undergraduate research for all students?

For some, undergraduate research is something that is effectively for few students – generally the academic high fliers, and those with the motivations to pursue this interest into postgraduate study and future research careers. Selectivity is also called for by the financial and organisational pressures of delivering 'mass higher education' and the different resource base, including numbers of 'research active' staff, of different types of higher education institutions. In addition the fact that some of the national funders, including research bodies, are more likely to support academically successful students in the sciences, reflects and supports the perspective that undergraduate research is only for selected students.

We recognise these pressures, and indeed consider that institutional curricula design policies will and should recognise the needs of highly academically motivated students. However, we also note that amongst the impressive US-based programmes we have visited were some, such as the University of Michigan, that targeted 'minority' students and transfer students from community colleges. Here selected 'at risk' students were placed in year one and two undergraduate research programmes to better ensure that they succeeded in mainstream curricula. The research evidence suggests this strategy is effective in terms of student retention and academic grades (University of Michigan, nd).

Effectively the argument as to whether undergraduate research is for all or selected students is in part a political question - to whom and for what, do national systems and institutions allocate resources, in particular staff time?. But for us it is largely an educational and/or philosophical question as to the nature of *higher* education. We are persuaded by the arguments of those such as Ron Barnett, that what distinguishes *higher* education is the emphasis on helping students to live in a supercomplex world and that the curricula task is for "lecturers (to) adopt teaching approaches that are likely to foster student experiences that mirror the lecturers' experiences as researchers" (Barnett, 2000, p163).

The research evidence

There is growing international research on teaching and discipline-based research relations. In brief this shows that the asserted close interconnection between research and the curriculum is professed more than it is delivered, and in Brew's (2006, p52) powerful phrase too often undergraduate students are "at arms length" from the worlds of university research. For example, research at a variety of institutions indicates that undergraduates feel excluded from direct involvement in research as stakeholders (Healey et al, forthcoming; Lindsay et al, 2002; Turner et al, 2008).

Particularly important to our argument here is the research of Baxter Magolda (see also Jenkins, 2008a). Based on a detailed interview-based study of students' intellectual development during and post university, Baxter Magolda has argued that university curricula need to support student and citizen development from "*absolute knowing* (where) students view knowledge as certain; their role is to obtain it from authorities (to) *contextual knowing* (where) students believe that knowledge is constructed in a context based on judgement of evidence; their role is to exchange and compare perspectives, think through problems, and integrate and apply knowledge" (Baxter Magolda, 1992, p75). However, too often curricula "frame learning as the passive acquisition of knowledge" (Baxter Magolda, 2008).

Drawing on the work of Baxter Magolda, Miami University Ohio has mapped the student developmental journey (Table 2). While students will go through these stages at different 'rates' and many will not reach 'self authorship' by the end of their undergraduate course, this schema gives a framework for course teams to shape their curricula.

Table 2 The developmental journey of the student

Developmental level	Student traits
Reliance on external references [*Foundations*]	Knowledge viewed as certain
	Reliance on authorities (e.g., professors, parents) as source of knowledge
	Externally defined value system and identity
	Act in relationships to acquire approval
At the crossroads [*Intermediate Learning*]	Evolving awareness of multiple perspectives and uncertainty
	Evolving awareness of own values and identity and of limitations of dependent relationships
Self-authorship [*Capstone*]	Awareness of knowledge as contextual
	Development of internal belief system and sense of self capacity to engage in authentic, interdependent relationships

Source: Hodge et al (2008)

It is from these and other research perspectives [see the full article] that we argue that students learning in research mode should be central to the curricula they experience – and we *believe* that this can be achieved though reinventing university curricula to make undergraduate research the distinguishing feature of higher education. Readers will, of course, have noticed the italicised word 'believe' and expect us to evidence that it can both be achieved and have the impacts we desire.

Principles for curriculum design

We now suggest how interventions designed to bring students into the worlds of research can be structured by course teams, departments and institutions (see also Jenkins and Healey, 2007a; Jenkins, 2008a, 2008b).

Define what you mean by undergraduate research: Colleagues and students need to discuss what they mean by undergraduate research. This may well result in institutional and disciplinary variations, but they will then be owned by those who have to implement practice. Some may choose to widen what counts as 'research' by students. For example, the University of Gloucestershire adopts a broad definition of the undergraduate as researcher to describe student engagement at all levels in research and inquiry into disciplinary, professional and community-based problems and issues whether individually or in groups and in collaboration with or independently of staff (Childs et al, 2007). Others may consider that this dilutes what is real research.

Offer undergraduate research as a pervasive and early – not a localised and late – element of the curriculum: The UK dissertation is something traditionally undertaken in the final year. Undergraduate research is potentially something that can culminate not only in a capstone course, but also start on entry.

Link undergraduate research to student employability: If the concept of a 'knowledge economy' has any validity then undergraduate education for all has to include some understanding of and ability to do or use research. Calling this 'undergraduate research' and making explicit to students the fact that this may well aid their employability, can both help them to appreciate better the role of research in the university and support their future employability.

Ensure assessment practices and policies support students as researchers: Build research opportunities into the formative processes and summative outcomes of course assessment for students in ways that retrace how staff develop and disseminate their research and learning in their own discipline or professional area, for example, through undergraduate research journals and student research conferences and exhibitions (Jenkins, 2008b).

Include all and be selective: While clearly involving all students in some form of research, course teams may also choose to offer special undergraduate opportunities to 'selected students'. For example, the Department of Mathematics at Ithaca College, New York, redesigned its programme to make research with students a distinguishing characteristic of the course. There is a blend of inquiry and research for all students, including non majors, and an elective research focus for those interested. Thus in the junior year two research-based modules support those students who wish to take a research thesis in their final year and education majors with mathematics as a minor who wish to take this research focus forward into their role as teachers (Brown and Yürekli, 2007).

Challenge 'internal and external firewalls' between teaching and research: One of the conclusions of the research on departmental and institutional policies is the effective policy separation between teaching and research (Jenkins, 2004). Undergraduate research in name and in substance challenges these policy disconnections at department, institutional and national levels. Undergraduate research offers possibilities for making claims on the research budgets of institutional and national systems to support undergraduate research, albeit selectively. The example of the US National Science Foundation's support for undergraduate research is one factor prompting the UK research councils to demonstrate their interest in undergraduate research (Lyne, 2007; Jenkins and Healey, 2007b).

Make selected targeted interventions: Realistically it may be appropriate to target undergraduate research opportunities to selected areas of the curriculum. Based on the US research on 'high impact activities', including undergraduate research and first year seminars, Kuh (2008, p19-20) argues that institutions and departments should "make it possible for every student to participate in *at least two high-impact activities* during his or her undergraduate program, one in the first year, and one taken later in relation to the major field. … Ideally, institutions would structure the curriculum and other learning opportunities so that *one high-impact activity is available to every student every year*." At Miami University Ohio they have instituted a Top 25 project in which over a four-year period the largest recruiting courses mainly at first year level, are being supported to convert to inquiry-based learning (Hodge et al, 2008).

Scale-up: Realistically many institutions may start undergraduate research in selected programmes for selected students. The challenge then is to 'scale up' (Coburn, 2003) so that dimensions of 'undergraduate research are embedded in the way courses are taught and assessed and are central to the department and institutional cultures. For example, undergraduate research journals for selected students are a feature of many US institutions. GEOverse is a new collaborative e-journal between four UK institutions. This selective journal also supports the embedding of research publication for all students in the geography programme at Oxford Brookes through a set of linked interventions. In year one all students write up the findings of a group fieldwork project as a journal article. In the second year all students undertake field-based research in a range of venues; while a third year compulsory course has students writing an article from the data collected in the second year fieldwork. Selected articles from this work may then be submitted to the department e–journal or the national journal (Walkington and Jenkins, 2008).

The student as researcher

Structure it through the curriculum and the department and institution: We echo the perspectives of Angela Brew (2007, p7) that,

> For the students who are the professionals of the future, developing the ability to investigate problems, make judgments on the basis of sound evidence, take decisions on a rational basis, and understand what they are doing and why is vital. Research and inquiry is not just for those who choose to pursue an academic career. It is central to professional life in the twenty-first century.

In other words, as David Hodge, President of Miami University, says, "undergraduate research should … be at the center (sic) of the undergraduate experience … not only each research project, but also each course, is viewed as an integrated, and integrating, part of the student experience." (Hodge, 2007, p1).

In conclusion: researching these interventions

Since they started in 1993, ISL symposia have brought together the insights of research to improve practice and in particular student learning. Our call here to ensure all undergraduate students in all higher education institutions should experience learning through research is firmly based on what many profess to be the purposes of higher education – and the research evidence that many undergraduates experience being at 'arms length' from research.

We have also demonstrated the range of international 'interesting' curricula interventions that explicitly attempt to ensure that all or many undergraduates learn in 'research mode' and are explicitly brought into the worlds of university research (Healey and Jenkins, 2008).

But to complete the circle we need to ask and answer what does research indicate as to the impact of these curricula designs? In short the evidence is as yet partial and tentative. We can point to the growing evidence of the positive impacts on student learning of the increasing number of US selective undergraduate research programmes. For example, an ethnographic study of summer undergraduate research (UR) experiences at four liberal arts colleges, where faculty and students work on collaborative projects found that:

> Comparison of the perspectives of faculty and their students revealed considerable agreement on the nature, range, and extent of students' UR gains. Specific student gains relating to the process of 'becoming a scientist' were described and illustrated by both groups. Faculty framed these gains as part of professional socialization into the sciences. In contrast, students emphasized their personal and intellectual development, with little awareness of their socialization into professional practice. (Hunter et al, 2007, p36).

But such research also points to the difficulties of whether staff are rewarded for such work. More significantly to our argument while they have pioneered research methodologies to judge the impact of such programmes – they leave open the extent to which they can be scaled up with the desired impact on many or all students. We can point to the research on the impact of a large scale institutional change programme. At McMaster University, Canada, there has been an institutional policy to ensure all students in year one have the option of taking a structured inter-disciplinary inquiry-based course relevant to their disciplinary focus. An analysis of five years of data comparing social science students, who took the Inquiry course, with comparable students, who did not, shows that it has had a significant impact on how well students perform during their academic careers (Justice et al, 2007). But this is only one study of one programme.

Relatedly, while internationally there is growing evidence of the interest in and positive impact of various forms of undergraduate research, inquiry-based, problem-based learning (eg Spronken-Smith et al, 2008) we now need to clarify conceptually the commonalities and differences between these forms of student inquiry and research, and investigate in what institutional contexts they have the impacts we desire. But this work, and we hope this paper, helps set a direction and provides suggestions for institutional curricula policies and practice, and also indicates agendas for future research as to their impacts.

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Scholarship of Teaching & Learning

Resolving ambiguity: a way forward for relating scholarship, teaching and research in HE academic practice

Phil Poole

In the previous paper Professors Healey and Jenkins explored the dimensions of research informed teaching (RIT) which relate particularly to the students' engagement with research. This paper seeks to explore the experience of staff and its impact on their professional development, gained through engagement with RIT.

Professional inquiring into teaching and learning

Griffiths' (2004) typology of research informed teaching proved useful to the CCCU RIT project as a description of its possible dimensions (see Section 1):

- teaching can be research-led
- teaching can be research-oriented
- teaching can be research-based
- teaching can be research-informed.

The last of these dimensions Griffiths describes as:

> "**Teaching can be research-informed** in the sense that it draws consciously on systematic inquiry into the teaching and learning process itself."

Jenkins & Healey (2005) cite Bradford's alternative formulation which adapts this dimension of RIT to:

> **Pedagogic research** – enquiring and reflecting on learning.

The **research-informed** dimension of RIT has increasingly become synonymous with what is termed **pedagogic research**. The case studies in the Pedagogic Research section of this publication illustrate a range of activities, subsumed under this banner, which are *not specifically* aimed at developing students' experience of research but illustrate how professionals seek to understand their practice. The Pedagogic Research section of this publication includes:

- evaluating the quality of the students' learning experience
- academics evaluating the effectiveness of existing aspects of programmes
- innovation within the curriculum
- developing the teaching practice of individuals or teams.

Despite the term 'pedagogic research' being used extensively within the sector there is a lack of clarity about its nature and the significance of systematic inquiry within HE academics' practice. For example, Cousin (2009) in a book entitled *'Researching learning in higher education'* makes no mention of the term. However, Norton (2009) entitles her book *'Action research in teaching and learning: a practical guide to conducting pedagogic research in universities'*, although throughout, the word 'action' is inextricably linked as 'pedagogical *action* research'.

A more inclusive construction of the relationship between scholarship and pedagogic research is offered by the *scholarship of teaching and learning* (SoTL) movement which takes academic practice surrounding learning and teaching beyond pedagogic research and even systematic inquiry, to attempt a description of how academics develop their practice in this area of professional knowledge. The SoTL concept is also the subject of critical discourse with the profession (Boyer, 1990; Elton, 1992; Healey, 2000;

Kreber, 2002) and is itself a source of uncertainty for many academic colleagues (O'Brien, 2008).

In the context of evaluating the CCCU exploration of the RIT concept, this paper draws on the literature surrounding SoTL and the role of systematic enquiry and pedagogic research within it. Additionally it uses the voices of colleagues gathered from two research studies conducted at CCCU during the lifetime of the project. These studies employed loosely structured interviews undertaken with RIT project participants and other academics as their source of primary data.

Colleagues talking about research, scholarship and teaching

Research and evaluation surrounding the RIT project at CCCU highlighted the diversity of colleagues' individual interpretations of the terms 'research' and 'scholarship', with many seeing a continuum between them:

> In everybody's head where research stops and scholarly activity starts and vice versa is a very moot point really. (HoD)

An area of uncertainty was the extent to which 'reading around the content' in preparation for teaching can be conceived as scholarly activity, rather than engagement in 'research' activity:

> I think that 'reading around the subject' is a scholarly activity necessary in order to keep your teaching up to date. It is not a research activity. It is a preparation for teaching. Research is knowledge acquisition, which is about gaining knowledge and an understanding that is more adequate than we have had before. It is also about generating knowledge, which is to add new knowledge to the existing body of knowledge in a certain discipline.

Here the opposing view is presented:

> Reading around the topic you are going to teach is of course research. If anything you are trying to learn about a particular topic I would call it research. If you are exploring an area and trying to understand it and by that it could be by an experimental point of view but also from a teaching point of view, where you are going to a number of different articles to find out what they said and what they found out, is research.

The first is concerned not to confuse research for teaching with the 'real thing', the second makes a direct link to teaching. This tension was visible in many responses. However, many academics appeared to have adopted a working definition, at least at a personal level.

> If you only see research as an externally funded data gathering exercise for an external body, or simply generating a paper for peer review journals, that is a too narrow view. It is a type of research. Research is much wider than that. When you are preparing for a lecture, you read journal articles or books. Some people call this scholarship, but it is a type of research.

I don't think there is any need to distinguish between research and scholarly activities. You can also conduct research based on your own teaching. That is another type of research.

These accounts illustrate the different approaches to the research-teaching nexus (Neumann, 1994) within academic life. A number of writers have maintained that the nexus is a major factor in academic identity which determines not only approaches to disciplinary research but also stances on learning and teaching (Fanghanel, 2007; Clegg, 2008; Land, 2004). Colleagues' descriptions of feeling 'challenged' by their identity were usually centered on their own perceived lack of 'research output'; the reasons given were usually down to teaching and administration of programmes, which dictated their allocation of time and effort.

I don't quite know why I struggle. I still have this thing when they say that I am an academic, but I say no, I am a [discipline practitioner] who is in academia.

.. predominantly a teacher, but the majority of my activity is focused on students' learning practice, so I see myself as a teacher, not as an academic if you like, but more than a lecturer.

... the reason why I am in academia, although I love research I don't like to do only research. I knew when I got the job as a lecturer that teaching would be very important, you are a teacher, you are a researcher and for me that is not a conflict.

Colleagues responses correlate with Barnett's (1999, p.172) assertion that the supercomplex university "is one in turmoil where the basic assumptions as to one's self-identity as researcher, scholar and teacher are kept perpetually in the air".

Professional knowledge

Conceptual tensions arise within the research-teaching nexus when attempting a description of what constitutes academics' professional knowledge. The primary allegiance for most HE academic staff would be acknowledged to be their subject or profession (Jenkins, 1996). Knowledge of their discipline is fundamental to individuals' professional standing, usually recognised through research and publication (Macfarlane, 2004; Gibbs, 2002). Additionally, the requirement to develop the next generation of professionals also forms part of HE's approach to professionalism, e.g. research supervision (Pearson & Brew, 2002; Knight & Trowler, 2001). It is teaching's relationship with research and scholarship which forms the focus of a critical discourse surrounding professional knowledge.

In an attempt to resolve a growing tension between teaching and research in professional practice in the USA, Boyer (1990, p.xvi) offered a re-categorisation of HE professional knowledge:

"The time has come to move beyond the tired old teaching versus research debate and give the familiar and honorable term scholarship a broader and more capacious meaning, one that brings legitimacy to the full scope of academic work".

Boyer went on to identify four 'scholarships': the scholarship of discovery; the scholarship of integration; the scholarship of application and the scholarship of teaching. For Boyer, engaging with the 'scholarship of teaching' requires that the 'teachers' "take a professional approach to teaching, in the same way as they would take a professional approach to their disciplinary-based research. In other words excellence in teaching requires a reflective, scholarly, evidence based approach to helping students learn".

In the UK Elton (1992) saw a further rationale for widening the traditional descriptions of what constitutes academics' professional knowledge:

"As a consequence of widening participation and student expectations, there has, since the early 1990s, been a growing awareness that to be equipped for professional life in 21st century, lecturers will have to include in their professional knowledge an understanding of how they teach, how students learn, and the role of assessment strategies in curriculum design"

Elton goes on to argue that the 'scholarship of teaching and learning' (SoTL) is a distinct category of professional activity which needs recognition and resources. The educational development movement in the UK was led by Elton's passion and energy and he continues to press for recognition of SoTL within HE. Elton's contention that university teaching is a researchable subject and consequently it should be treated and developed as such has begun to gain ground over the last 20 years, i.e. pedagogic research should be recognized and resourced alongside traditional research. "To be scholarly teachers, academics need to use the same kind of thought processes in their teaching that they apply to their research" (Elton, 1992).

Boyer and Elton's appeal for recognition of a scholarship of teaching have subsequently been extended and critiqued within the sector. For Martin (1999), SoTL involves a further set of activities than simply engagement in pedagogic research:

- Engagement with the scholarship of others on L&T
- Reflection on one's own teaching and student's learning
- Communication and dissemination of aspects of practice and theoretical idea about L&T

In their response to Boyer's original work, Kreber & Cranton (2000) identify ambiguity in the meaning of SoTL and offer an alternative typology which identifies three different, but equally important, domains of teaching scholarship:

- Instructional: What actions do I take in teaching? – a basis for the strategies used
- Pedagogical: How can I foster students' learning? – knowledge of how students learn
- Curricular Knowledge: Why do I teach this way? – purposes goals and rationale.

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Kreber & Cranton (p.492) also offer a number of indicators through which academics could identify and evaluate engagement with SoTL, as one could for traditional research. These include:

1. Discipline-expertise which includes the discipline of teaching

2. .Innovation in pedagogic and curricular development

3. Outcomes that are trustworthy and replicable by others

4. Documentation of one's own teaching and students' learning

5. Peer review of activities which demonstrates and validates learning

6. The impact of the work evidenced through evaluation, sharing and dissemination

These indicators of scholarship all involve reflection on both experience-based and research-based knowledge on teaching. The case studies in this publication demonstrate many of these indicators and could therefore be seen as evidence of the contributors' engagement with SoTL.

SoTL and pedagogic research

Boyer saw research as the cornerstone of the scholarship of teaching: "The improvement of learning and teaching is dependent upon the development of scholarship and research in teaching" (Prosser & Trigwell, 1999b, p.8). This was also supported by Martin et al. (1998) who argue that subjecting teaching to the research process is necessary to elevate its status: "If teaching is to be valued equally with research then, like research, teaching must open itself to the scrutiny of theoretical perspectives, methods, evidence and results".

However, Trigwell (2003), in a conference presentation, resists fully equating pedagogic research with the scholarship of teaching:

- *"Research on teaching is neither a necessary nor a sufficient component of the scholarship of teaching*

- *Investigation / enquiry / evaluation of one's teaching, or teaching context is an essential part of the scholarship of teaching*

- *If the scholarship of teaching is to enhance learning and the status of teaching, then that scholarship must apply to the act of teaching, not something that is essentially about research."*

Academics engaged in the SoTL movement identified that a 'discipline' focus for scholarship was one of its significant features (Healey, 2000; Kreber, 2002; Lucas, *et al* 2007). Their argument was that the advancement of knowledge about teaching and learning in the discipline and the importance of pedagogical content knowledge requires pedagogic research to be conducted by academics within their own discipline and not necessarily seen as an activity undertaken on their behalf by specialist educational researchers (Kreber, 2002, p.160-161). For example the

'Curricular Knowledge' element of SoTL, postulated by Kreber, requires discipline specific knowledge applied by experts in the subject.

'Disciplinarity' within SoTL and pedagogic action research (Norton, 2009) could be seen as synergistic as the epistemology of action research is founded on being 'inside' the research frame, not acting as a dispassionate researcher. Discipline specialists will therefore bring their own subjectivities to generating and understanding the issues in question (Cousin, 2009). Action research offers an accessible paradigm for individual academics to examine their practice and better understand the context in which it is enacted. McKernan (1996, p.4) offers a definition of action research which offers a rationale for adopting it as a paradigm for researching HE teaching and learning:

> *"Action research is carried out by practitioners seeking to improve their understanding of events, situations and problems so as to increase the effectiveness of their practice."*

For Elliott (1991, p.49) "the fundamental aim of action research is to improve practice, rather than produce theory". Somekh (1995) further elaborates on its power for improvement describing it moving through cycles of action and reflection as an iterative process of *investigation - change - investigation* "through which influence is achieved and new knowledge created".

The projects recorded in this publication are focused on academics' *own* professional practice. Whilst new knowledge was arguably being generated within the activities, their primary focus was developing or improving practice, and as such represent a body of systematic and scholarly engagement with teaching and learning. Whether RIT projects were undertaking 'pedagogic research', which had an indirect relationship with students' learning experiences, or were directly exploring students' engagement in or with research, all to an extent could be said to be working within the broad descriptions of the scholarship of teaching (Kreber, 2003). Pedagogic action research, by and for individuals, which informs systematic inquiry into pedagogy can therefore be a force for change, both in terms of its contribution to curriculum development and to the development of academics' professional knowledge.

Professional development and SoTL

Kreber (2003), in an exploration of differences between 'expert' teachers and 'regular' staff, identifies four alternative views of scholarship of teaching, of which pedagogic research was only one component. Based on an exploratory study of the role of self-regulated learning in university instructors' growth as teachers, Kreber et al. (2005, p.79) conclude:

> *"Next to their declarative and procedural knowledge, individuals pursuing 'expert careers' also hold important forms of implicit knowledge that distinguish them from non-experts, one of them being their self-regulatory knowledge... self-regulated learning about teaching, can make a contribution to what we presently know about how academic staff grow as teachers."*

Interviews with colleagues appear to support the contention that academics are self-regulatory learners who develop their practice through a variety of mechanisms, most of which involve non-formal CPD activities which directly relate to their teaching:

> I've just done this pedagogic study which has been fascinating, how I went about teaching it [topic] in the first year but it wasn't very effective, and then tried something different in year 2, and this year when I've done it, so its tracking the development of teaching skills over this 3 year period and how very differently I did it this time as to the first time, so I think in answer to your question, the first thing is the trigger and thinking creatively about how that can be put across which is not in this very didactic way which felt safe when I started, and then taking that trigger and things that happen. One of the biggest most significant things that happened was when I got to the feedback at the end of the period of teaching…..and we [colleague] had this discussion about what they were saying… and it opened up this whole new way, new perspective of looking at things. So I think the way I learn is through these triggers, things coming up, that you can then take somewhere and discuss with somebody who is going to ask you the right questions. A lot of people can ask you questions or tell you what to do but the skill I think, and the real learning, comes with people who can facilitate.

This colleague is sceptical about the value of 'formal' CPD to inform how they teach:

> When people ask "'what have you done L&T wise?", a lot of people would say that they have been to this seminar, and in this department it is encouraged that we do that. We do all this staff development thing, but sometimes it just doesn't help with my teaching. It is nice that they are put on and sometimes are interesting, but if someone says that they have been to all these seminars, does it mean that they are the better teachers?

Sharpe (2004, p.142) observes that "their [professionals] learning and development mostly takes place in non-formal learning situations within communities of practice (Lave and Wenger, 1991)". Knight et al. (2006, p.320) describes CPD as occurring as a consequence of "situated local practices" where learning occurs through participation in everyday contexts.

> Mostly I think it comes from peers, and that's facilitated by the University because within my department or at least within this part of the department, because we're a small group as you know, we cross refer ideas a lot.

Colleagues' responses to prompts about where their professional development and learning originates, mainly started from the interface of engagement with students in learning contexts. Some described informal or formal pedagogic (action) research which has recently been incentivised through the RIT initiative. The interface with teaching and the students' responses to creative approaches to L&T had an immediacy which Schön (1984) described as 'reflection in action'. This is characterised in the following comment:

> Unless you are engaging with the students… as I am positioning myself as a pedagogical researcher, unless I am involved in some way with the students it is meaningless isn't it? I don't know, I enjoy being with the students as they are the ones that inspire me, they are fantastic teachers, students, they let you know very quickly if what you are doing is useful or not. I think the process of reading assignments is one of the most useful interesting and useful CPD opportunities, my perspective on it is that how well the students cope with the assignment is a reflection on how well I have taught the module.

Many colleagues also identified the powerful contribution from peer interactions (for those with access to close colleagues who shared their area of practice, e.g. sharing teaching of a module or an office).

> There is no conversation I have with him that doesn't end up with me feeling that I have advanced my thinking.

The significance of tacit knowledge operating within professional learning, which has been acknowledged by a number of writers (Knight & Trowler, 2001; Eraut, 2000), includes the norms, discourse and value sets associated with a research culture and teaching and learning, encountered through daily work processes. Groups and teams are pivotal in exchanging tacit knowledge and even making it more explicit.

> We have got a good team here. We talk about all the issues concerning our discipline and teaching methods. That is a kind of staff development in itself.

With an increase in specialisation within disciplines and the growth of inter-disciplinarity, traditional discipline boundaries are dissolving. Supporting peers in developing their practice or through working on joint ventures was also a recurring theme in the interviews.

This RIT participant found collaboration with a colleague very rewarding, contributing to their own professional development:

> The pedagogy research informed teaching project that I've been doing with [colleague] for the last 2 years now, I think it's helped quite a lot in that regard, because obviously [colleague] is much further down the scholarly [pedagogy] line. We have merged our interests and we're putting a first draft of an academic paper that we want to get published in a refereed journal… we've started up a new module… and we had our one day conference… which was a great success. We are going to try to follow up with the people who participated in the study on the kind of impact it has had on their work.

For Elton (2009) professional development ".. should arise from academics' practice and be problematised, as in other forms of research and it would therefore be self-initiated and autonomous". The RIT projects as a whole were not self-initiated but the areas under scrutiny drew on interests and in some case professional passions. Generally the ideas were already in the mind of participants and simply needed the incentive of some funding or recognition to prompt their realisation.

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In many ways we construct our own set of values about the research we undertake, and the motivation and will to continue is driven from within. But institutional recognition helps. The timely availability of funding for our project enabled us to reach into a research area that was emerging and changing at the same time. The RIT initiative was the right form of vehicle to enable us to penetrate this arena at the right time. The involvement of students was of central importance.

Breslow *et al.* (2004) suggests that one of the key ways to engage colleagues in their development as critical and reflective teachers, that goes beyond the hints and tips they may need at the beginning of their teaching careers, is to stimulate their intellectual curiosity. "The asking of questions is at the heart of intellectual curiosity and engaging staff in the scholarship of teaching and learning (SoTL)."

Engagement with SoTL activities, such as those illustrated in these case studies, has had a significant impact on the professional development of most of the participants. Pages 2- 3 record just some of their comments about engagement in the project and support the contention that educational and professional development are well served by systematic inquiry contributing to SoTL.

Reward and recognition: a key to a future for SoTL

Ramsden & Martin (1996) believe there is "no substitute for action to promote good teachers if universities want their staff to accept that good teaching is properly recognised". The CCCU staff interviewed within this study were unequivocally committed to providing the best possible learning experience for students through their teaching and other contributions to students' learning. They would hold that they are scholarly about their practice but many felt that the effort they put into L&T often goes unrecognised, beyond the responses of students.

Yes, especially in this institution like this one it praises itself for excellent teaching and for dedication to students, you can be an excellent lecturer i.e. improving your practice and have something to prove this not just say it, perhaps not taking it from a research point of view but from a more scholarship one. I don't think you would get a promotion for that.

The majority of colleagues interviewed would welcome a signal that their contributions to L&T, as well as research and administration, were acknowledged. They felt that engagement with CPD for L&T was undertaken within the constraints of the values of CCCU as manifest through its reward and recognition structures.

The reality is we don't have to produce evidence of developing our practice, we are not measured on our output in terms of teaching and learning practice, we are measured on did we write a scholarly paper or not, or did we present at conference, which could have been on anything? So the reality is we call ourselves a teaching institution but we don't measure ourselves on it at all.

However, this colleague's response appears to indicate that their contribution to teaching at CCCU is recognised as important, in contrast with their experience in a previous university:

Where I worked before, teaching was not regarded well at all, it was necessary. But that was why I lost my previous job because the only way up was research and once you are stuck with teaching you are at the bottom. When I came here I felt 'I am doing exactly what is expected of me', I teach, and I do the research on the side.

The competing pressures and filters (influences) which act to determine academics' stance on developing L&T are categorised by Fanghanel (2007) who sees them operating at three levels within universities:

- Macro: the institutional or external factors, e.g. the research-teaching nexus within UK HE
- Meso: the departmental (or equivalent) and the discipline
- Micro: internal factors affecting the individual lecturer.

At the micro level, academic identity appears to play a significant role in the way colleagues made decisions about their professional development providing a rationale for their CPD choices.

At a meso level, faculties and departments, working within institutional structures, can provide incentives, make opportunities and facilitate formal and non-formal CPD opportunities for academics. Gibbs (2002) provides an organisational model for what he terms 'practice-based research' but makes the point that equally important is the departmental ethos with regard to recognition of educational development. The broader perspectives of professional development need to be overtly recognised at a departmental level to support engagement with CPD for L&T, alongside other aspects of academic practice e.g. research and curriculum leadership.

At the macro level, an institutional ethos which encourages and recognises individuals' contributions to the quality of L&T through its reward and recognition structures will be: "The most significant of the processes for enhancing quality is the reward for teaching excellence, for both individuals and departments." (Gibbs, 1995). The RIT Project Illustrates how the University can give due acknowledgement to engagement in non-formal CPD opportunities.

These RIT participants argue for small amounts of funding, targeted on supporting development of new pedagogic approaches:

I really do think that things like the RIT money and some kind of pot that we can go to, I know its kind of hard times, but…. it's cheap professional development. It's probably cheaper than putting them on one of the staff development events.

I was really lucky and got this RIT grant and think that was a really good way…. When I saw the others at the RIT conference I thought I don't fit in with my stuff as theirs was all about pedagogic, but I got in and

that was when I felt that it was appreciated that I had put in the effort. I have got this idea and want to do it, therefore you show your initiative, and then to be rewarded to be able to do it from the University, which always comes down to money, was really good.

CCCU has supported 'Development Leave', as a component of resourcing educational and professional development, for a number of years and reports from its recipients have generally been very positive about the importance of resources and recognition to engage with aspects of curriculum development in addition to disciplinary research. The indications from the project are that some resource should continue to be available to encourage and embed SoTL.

For SoTL to be appropriately recognised and rewarded with respect to the other forms of scholarship, teachers in HE need to be encouraged to adopt a scholarly approach to teaching and collect and present rigorous evidence of their effectiveness as teachers (Palmer & Collins, 2006). As Healey (2000) argues "Good teaching needs to be better understood, more open to scrutiny, and better communicated".

This publication illustrates how an institution can support and encourage staff to undertake scholarly activities which can both improve the quality of teaching and learning and enhance professional profiles.

Conclusion

An opportunity for a critically reflective dialogue about professional identity, progression, L&T and research can make a significant contribution to eliciting an understanding of professional development for the individual. Conversely, narrow definitions of research, scholarship and what constitutes academic professional development can lead to a lack of recognition and support for the ways that experienced practitioners develop their teaching.

Whilst the relationship between scholarship and research is problematic for colleagues the meaning of the scholarship of teaching and learning is even less clear. Engaging actively with the concept of SoTL requires the majority of colleagues to, as Boyer (1990) recommended, "… reconceptualise what it means to be an academic". In offering a guide to SoTL O'Brien (2008) cites Shulman's original conception of scholarship, in which he invites us to consider ourselves as "members of active communities: communities of conversation, communities of evaluation, communities in which we gather with others in our invisible colleges to exchange our findings, our methods, and our excuses" (Shulman, 1993, p6).

This publication describes a communal endeavour to produce collective knowledge that provides the basis for a transformation of teaching and learning at CCCU. The RIT project has demonstrated that encouraging engagement with the scholarship of teaching through and around research activity has, at the very least, acted as a powerful developmental experience for the participants, staff and students.

"Higher education will benefit if those who teach enquire into the effects of their activities on their students' learning"

(Ramsden, 1992, p. 5).

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Research mindedness

Research mindedness: a curriculum approach to RIT at CCCU

Phil Poole

Experiences from the RIT initiative at CCCU have illustrated the potential of developing students' experience of research to enhance their progression in HE and also to contribute to their employability. Students increasingly expect the approach to learning in higher education to be flexible and the learning opportunities and support to facilitate a non-linear experience which is available 24/7. CCCU is committed to enhancing the student learning experience through the provision of a flexible learning environment which integrates academic, physical, virtual and support resources. Academic services, libraries, learning technology, student study support and academics are working to bring about transformations which will develop active learners. Working within next-generation learning spaces, which integrate physical and virtual environments, and learning through inquiry-based approaches will underpin a stimulating and professionally rewarding education.

Because the relationship between research and undergraduate education in higher education has long been problematic, at undergraduate level terms such as 'inquiry-based', 'problem-based' and 'learning in research mode', are often used interchangeably to describe active learning approaches which encourage students to address a broad range of skills which can ultimately contribute to pure research capability but for many will describe skills which are transferable to a range of contexts within and beyond HE:

> The word research is used to cover a whole range of activities including very high level, professional focused research … right through to a quick online search for references ... and everything in between.
>
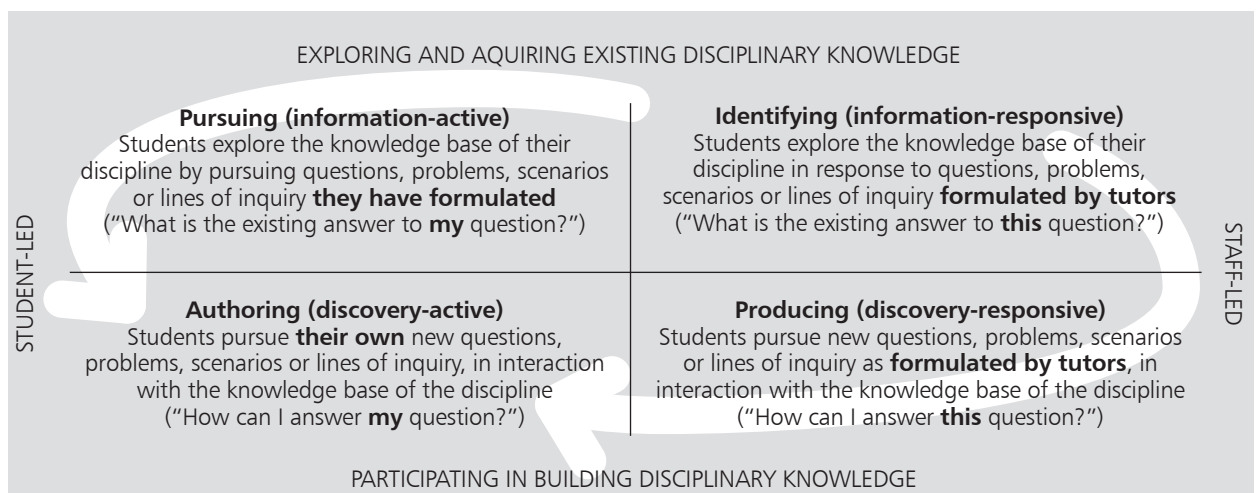> (Johnstone, cited in Lane, 2006, p23).

A useful framework for representing students' experiences of engagement with inquiry-based learning originates in qualitative research carried out at Sheffield by the Centre for Inquiry-based Learning in the Arts and Social Sciences (CILASS) (Levy and Petrulis, 2007). From students' accounts of their experience of research and inquiry, two 'frames' emerged; the *information frame*, describing the exploration and acquisition of existing disciplinary knowledge, and the *discovery frame* where they participated in building on and contesting existing knowledge. In Fig 1 these two frames are represented by the vertical axis and a further dimension, classifying students' experiences according to the extent to which their accounts emphasised student or teacher-led processes, is represented by the horizontal axis (Healey and Jenkins, 2009). The term 'student-led' refers principally to the framing of the inquiry, and secondarily to the framing of the inquiry process, by the student. Similarly, 'teacher-led' refers principally to the framing of the inquiry, and secondarily to the framing of the inquiry process, by the teacher. The four sectors of the matrix thus formed differentiate accordingly between 'active' and 'responsive' modes of both information- and discovery-oriented inquiry, corresponding to four broadly differing experiences of student inquiry, characterised as: 1) identifying, 2) pursuing, 3) producing, 4) authoring.

Progression in identifying and formulating questions, and producing and authoring new knowledge, should be acquired over the course of an undergraduate degree. Inquiry-based learning designs can combine differing approaches. For example, during the course of a given inquiry task the dynamic of students' activity may well encompass both exploration of existing knowledge (the familiar experience of finding out about and understanding existing theory, perspectives) and building upon this to create new knowledge (new to them, or to the discipline at large) through analysis, experimentation, etc. Through an extended engagement with the inquiry process, students may move from initially a more teacher-led experience to a more strongly student-led one in later stages of a programme.

The *Research Skills Development Framework* (RSD), developed at the University of Adelaide, (Fig 2) provides a useful model for describing progression in the development of 'research mindedness' at all levels and across all discipline areas (available online at *www.adelaide. edu.au/clpd/rsd/framework*).

Figure 1: Inquiry-based learning: conceptions and approaches

EXPLORING AND AQUIRING EXISTING DISCIPLINARY KNOWLEDGE

STUDENT-LED

Pursuing (information-active)
Students explore the knowledge base of their discipline by pursuing questions, problems, scenarios or lines of inquiry **they have formulated**
("What is the existing answer to **my** question?")

Identifying (information-responsive)
Students explore the knowledge base of their discipline in response to questions, problems, scenarios or lines of inquiry **formulated by tutors**
("What is the existing answer to **this** question?")

Authoring (discovery-active)
Students pursue **their own** new questions, problems, scenarios or lines of inquiry, in interaction with the knowledge base of the discipline
("How can I answer **my** question?")

Producing (discovery-responsive)
Students pursue new questions, problems, scenarios or lines of inquiry as **formulated by tutors**, in interaction with the knowledge base of the discipline
("How can I answer **this** question?")

STAFF-LED

PARTICIPATING IN BUILDING DISCIPLINARY KNOWLEDGE

Based on Levy (2009)

Research mindedness

Figure 2: Research Skills Development Framework (Adapted from RSD)

Autonomy / Facet of inquiry	Level 4 Students research at the level of a closed inquiry* and require some structure/ guidance	Level 5 Students research independently at the level of a closed inquiry*	Level 6 Students research at the level of an open inquiry* within structured guidelines	Level 7 Students research at the level of an open inquiry* within self-determined guidelines in accordance with the discipline
1. Students embark on inquiry and so determine a need for knowledge/ understanding	Respond to questions/ tasks required by and implicit in a closed inquiry	Respond to questions/ tasks generated from a closed inquiry	Generate questions/ aims/ hypotheses framed within structured guidelines	Generate questions/ aims/ hypotheses based on experience, expertise and literature
2. Students find/ generate needed information/data using appropriate methodology	Collect and record required information/ data and using a prescribed methodology from prescribed source/s in which the information/ data is not clearly evident	Collect and record required information/ data from self-selected sources using one of several prescribed methodologies	Collect and record self-determined information/ data from self-selected sources, choosing an appropriate methodology based on structured guidelines.	Collect and record self-determined information/data from self-selected sources, choosing or devising an appropriate methodology with self-structured guidelines
3. Students critically evaluate information/data and the process to find/generate that information/data	Evaluate information/ data and the inquiry process using prescribed criteria	Evaluate information/ data and inquiry process using criteria related to the aims of the inquiry	Evaluate information/ data and the inquiry process comprehensively using self-determined criteria developed within structured guidelines	Evaluate information/ data and inquiry process rigorously using self-generated criteria based on experience, expertise and the literature
4. Students organise information collected/generated	Organise information/ data using a recommended structure and process	Organise information/ data using recommended structures and self-determined processes	Organise information/ data using structures and processes suggested by the guidelines	Organise information/ data using self-determined structures and processes
5. Students synthesise and analyse and apply new knowledge	Synthesise and analyse information/data to reorganize existing knowledge in standard formats. Ask relevant, researchable questions.	Synthesise and analyse information/data to construct emergent knowledge. Ask rigorous, researchable questions based on new understandings.	Synthesise and analyse information/data to fill recognised knowledge gaps.	Synthesise, analyse and apply information/ data to fill self-identified gaps or extend knowledge
6. Students communicate knowledge, understanding and the process used to generate it, with an awareness of ethical, social and cultural issues	Uses some discipline-specific language and prescribed genre to demonstrate self-selected knowledge and understanding from a stated perspective and for a specified audience.	Use mostly discipline-specific language and appropriate genre to demonstrate knowledge and understanding within a field from a scholarly perspective for a specified audience	Use the language of the discipline and appropriate genre to address knowledge and understanding gaps from several perspectives for a self-selected audience	Use the language of the discipline, choosing appropriate genre to extend knowledge and understanding, from diverse perspectives for a range of audiences.

The contribution of research mindedness to graduate skills and employability

The CCCU Learning and Teaching Strategy (2010) identifies a range of graduate skills which are already mapped to students' experience within undergraduate programmes.

The CCCU Graduate Skills identify those values, attitudes, knowledge and skills, developed as part of an undergraduate experience, which support learning and study and contribute to employability and the profile of a CCCU graduate. These skills can be viewed through a variety of 'lenses' through which the student, or prospective recruiter, can evaluate the generic outcomes of a graduate's education. Graduates' ability to conduct inquiries and research is one such lens.

A possible implementation strategy:

- Undertake an audit of existing programmes against the progression suggested by Fig 2 *The RSD Framework*. This can be undertaken by programme directors and programme teams.

- Where students are not currently offered opportunities to progress across levels, the team review the curriculum, teaching and learning and assessment strategies.

- If minor modifications are required these can be planned into the quality cycle.

- Module outlines identify for students the research skills they will need, reinforced by tutors and feedback on achievement of the skills from assessment, set against the framework of progression provided.

- At Level 6 'capstone projects', dissertations and inquiry-based assignments provide summative feedback on achievement of the skills, within an authentic context.

- Progression and monitoring of students' experience of research will be reported through annual quality monitoring reports.

- Learning and Teaching Co-ordinators will facilitate sharing of developing practice at hosted LTEU meetings.

- Consultancy will be available from the LTEU.

- The study of the impact of these developments on student learning behaviours and outcomes are a feature of pedagogic research within departments.

Reflections

Reflecting on RIT

The academic staff who carried out the RIT projects were asked to reflect on the experience. This is a selection of their comments:

The RIT project fitted in with our research aspirations at a time of change. Our students have placements in schools as part of their education and training. Through the RIT project we were able to capture some of the ideas concerning the views of our students in schools and their class teachers as the current curriculum in primary schools begins to change. This is a time of transformation when the practices of the last twenty years are challenged and new ideas, organisational modes, values and attitudes to the curriculum take hold. The timing of the RIT opportunity was everything. We could go out and capture the moment.

The funding has facilitated and advanced my practical and theoretical research and helped me to become more confident in presenting research outcomes at conferences.

Allowed me to return to a research area which had been put on hold for a period due to other responsibilities.

I have a better understanding of the how and why teaching impacts on research and vice versa.

I am interested in how my motives as an artist and active researcher relate to and impact upon teaching. The project enabled me to establish new knowledge in this area.

To organise and lead a residential field course added to my professional skill set. I gained a deeper insight into the backgrounds of our students and the specific problems many face.

I have seen the benefits of RIT for students throughout my teaching career. Especially practical work done away from campus, in the real world, equips them with skills they need in their future employment. It also opens the separating door between the teacher and the learner as the students become co-workers. In a traditional teaching situation the roles and responsibilities are clearly defined and separated - in a research project where students and lecturer work together, at the same task, everybody becomes equal. The benefits for the students become immediately obvious, especially in those who have never experienced anything like this. They start taking responsibility, put more effort into their work and see how it might be relevant to them.

The RIT project was a really good initiative and I am grateful for the support that was offered. As is the case with most academics I find it difficult to balance the demands of teaching and administration with the time that is needed to develop and write up a possible journal article or other research output.

"In many ways we construct our own set of values about the research we undertake, and the motivation and will to continue is driven from within. But institutional recognition helps. The timely availability of funding for our project enabled us to reach into a research area that was emerging and changing at the same time. The RIT initiative was the right form of vehicle to enable us to penetrate this arena at the right time. The involvement of students was of central importance."

"RIT support was excellent and the conference was particularly beneficial in facilitating the sharing of work being conducted in the University."

"Making small grants available is a good way of encouraging colleagues to make a start [with research]."

"The RIT initiative should be continued as it has fostered debate and encouraged inquiry, which have both led to enrichment of the research and teaching culture at Christ Church."

"We need to be active in our respective research fields if we are to remain fresh and relevant as teachers. We should not just teach about theoretical views within our research domains, but be creators of these theories too. We need to be part of the fabric of both research and teaching."

"The project forged a collaborative approach between academic colleagues within which the individual and very different approaches were brought together and appreciated on their own terms. The response to the project gave confidence to all those involved, both staff and students, in the quality of the work produced."

"I gave a short presentation of my work at a conference – something I never dreamt I could do before!"

"The RIT initiative was an excellent means by which to engage students directly in the research activities of those teaching them. Through the project students gained new insight into their subject and the professional expectations which will be required of them."

"Opportunity to work with students in an exciting research based context."

"I just want to say thank you so much for giving me the opportunity to participate in the project. It has helped me a lot in many aspects."

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Abbreviations

Abbreviations and acronyms used

CBL	computer based learning
CCCU	Canterbury Christ Church University
CLE	clinical legal education
EBL	enquiry based learning
EFL	English as a foreign language
ELT	English language teaching
GIS	geographic information systems
HE	higher education
HEFCE	Higher Education Funding Council for England
HEI	higher education institution
IPL	interprofessional learning
M level	Masters level
NOS	national occupational standards
OCN	Open College Network
PDP	personal development planning
PGCE	postgraduate certificate or professional certificate in education
QAA	Quality Assurance Agency
QR	quality-related research (funding from HEFCE)
QTS	qualified teacher status
RAE	Research Assessment Exercise
REF	Research Excellence Framework
RIT	research informed teaching
SD	standard deviation
TESOL	teaching English to speakers of other languages
VARK	visual, aural, read/write, kinaesthetic
VLE	virtual learning environment

Research Informed Teaching:

exploring the concept

Canterbury
Christ Church
University