Experimental teaching

Helping students to think for themselves and develop their own informed and critical understanding of the nature of knowledge in their discipline is a key aim of a university education. To do this well we have to experiment, as there is no recipe which if followed will guarantee results. In some respects all teaching is experimental in character because we can’t be sure of the impact of particular teaching episodes on students or of our own subsequent valuations of teaching and learning.

Deliberate experimentation is the lifeblood of good teaching. Such experiments may be spontaneous and intuitive inventions or carefully designed and executed teaching plans; either way they can be an important source of knowledge about teaching. The experimental nature of good teaching was captured by one of the first professors of education at UEA, Lawrence Stenhouse. In his inaugural lecture he spoke about classrooms being laboratories and the importance of developing teaching through disciplined experimentation. He argued that we ‘shall only teach better if we learn intelligently from the experience of shortfall; both in our grasp of the knowledge we offer and of our knowledge of how to offer it.’ (Research as a Basis for Teaching, UEA, 20 February 1979).

Although it happens all around us, much of the teaching and learning that goes on in the university remains hidden. University teaching is highly individualistic; it is personal, immediate, competes for the precious resource of time with other demands, and the opportunities to learn about teaching from colleagues can be few and far between. It seems a plausible hypothesis that in many academic communities extended conversations about teaching are less likely to happen than extended conversations about research. How to create the space and commitment for sustained conversations about our experiments in teaching needs much more thought. I see Learning Highlights as a contribution to that project.

Professor Nigel Norris (VCO)
n.norris@uea.ac.uk

Last month BIO hired a local national-award winning photographer to capture the essence of teaching in BIO. In this issue are a selection of images from this photo-shoot. Photographer: www.juliacameron.co.uk

Deadline for the next issue will be 1st June 2013.

Please send contributions to harriet.jones@uea.ac.uk - standing in as editor while Sarah Yeates is on leave (see back page.)
Uhhhggg! I don’t want to do this!’

That is always my initial response when I am asked to sit down to write about my “reflective state of mind”. Not because I don’t believe in self-reflection (and changing my behavior based on that reflection), but rather for the very reason that I am a naturally reflective person. This is something I do constantly. I don’t, however, like writing it down — by doing so, it feels like I’m fixing my thoughts in stone, or forcing them to be a certain way instead of letting my reflections mutate with time as they naturally will do as new experiences come into play. It is for this reason I do not keep a personal diary. I have tried to do so in the past, but whenever I have looked back at my entries they don’t adequately fit the memory and the entries seem contrived, like I was “making them up”.

Nevertheless, I understand the value of reflecting; in fact I don’t think we could be good scientists if we didn’t constantly reflect on things — data we obtain, data others obtain, interpretations of data, etc. . . . We are continually told we need to take into consideration the needs of our individual students. Equally, I think we need to realize that not everyone reflects in the same fashion. While textual reflection may work beautifully for some, it may stymie the reflections of others. If we wish it to be a global tool for self-improvement, we need to find and incorporate multiple modes of “recording” self-reflection.

Dr Stephen Robinson (BIO)
Stephen.robinson@uea.ac.uk

Librarians let loose

During weeks 7-10, the Library’s Academic Services team have been trialling an initiative called “Librarians let loose”.

Jane Helgesen, Information Skills Librarian, explained “We wanted to increase our proactive engagement with students and staff, by getting out of the Library and supporting the information skills of those who don’t get the time to come to our Library workshops.”

During the trial, the team have been going into social spaces, Hive and Atrium Café (Bio) and the HUBs for 30 minute slots.

Carly Sharples, SSF Librarian, sums up the experience “It has been really interesting, we’ve helped with a broad range of issues from resolving e-journal access, off campus problems, Endnote synching and the library app - issues which might not be significant enough to come into the Library to resolve, but which can impact on the learning and research experience.”

The trial will be evaluated, with a view to continuing in 2013-14. To read more http://www.uea.ac.uk/is/looselibrarians or contact Jane Helgesen, j.helgesen@uea.ac.uk, 01603 592221.
Learning Highlights: Radical Dramaturgies

I’m in a galley kitchen behind the stage of the drama studio in complete darkness with six students; a voice intones the question ‘What if you knew the date and time of your own death?’ I feel hot and uneasy. Is this teaching? Is this art? Or is this just seven people in the dark in a marginal space at UEA?

I’m a playwright who joined LDC from my previous post at the University of Birmingham in 2011. The experience recounted above arose from the first module I have added to the repertoire we offer at PG level, ‘Radical Dramaturgies’ (or in its UEA translation LDCDM004); specifically in response to an exploration of an increasing common practice in contemporary theatre, so-called ‘site-specific theatre’. This session exemplifies what I find exciting and illuminating about exploring writing in the context of Higher Education.

All the student needs to create something thrilling and unique is an eye and ear for the spaces of the campus itself, and a sense of how to place their audience within it and thereby tell some sort of story or shape an experience. The previous session in temperatures close to zero we watched performances by the Broad, we stood in isolated cubes of concrete opposite the library reaching for outreached hands, we contemplated events in the Vietnam war whilst gazing at the rather sorry-looking tree that clings to the wall of the catering building.

The joy of the course and of teaching the course is it is all about experimentation; and whilst in my so-called professional writing life I am associated with so-called ‘conventional’ playwriting, here I can adopt a different persona. Having taught seminars on the ‘solo-theatre’ pioneered by American writer/performers such as Spalding Gray and Wallace Shawn I feel the pull of writing in a way that’s closer to lived experience and less concerned to invent; examining the sources of so-called ‘verbatim’ theatre which draws on real testimony and documents I feel the pull of the theatre of fact; and looking closely at the ideas advanced by German theatre theorist Hans Thies-Lehmann on ‘post-dramatic theatre’ I dabble with heretically brief and fragmentary scenes that don’t add up to a linear narrative.

Equally the community this course creates bringing together directors studying on the MA in Text and Performance with writers studying on MA in Scriptwriting serves as an exhilarating sounding-board. Each week they outbid each other, quarrel, set scepticism against passion and most importantly of all speak through their work. Reading, writing, arguing and making: this module has confirmed my deep conviction that Higher Education has little to do with power-point and ‘the poverty of theory’ and has everything to do with community and exploration. I can’t wait for the next cohort; I only hope the sites they take me to are slightly more congenial.

Steve Waters (LDC)

Steven.Waters@uea.ac.uk
The traditional lecture format is as old as civilisation. The purpose of a raked lecture theatre would be immediately obvious to an ancient Greek philosopher. How then has the lecture survived the advent of the printing press, video and now the internet? The huge investment in physical infrastructure by the University would seem to suggest that as an institution we believe in the lecture. After all, the lecture worked for us, didn’t it?

At UEA we are committed to a brave new academic model which raises the expectation for engagement and invests in formative effort for summative rewards. We observe the correlation between attendance and performance and respond by making it compulsory. But can you compel someone to learn? If all we do in a lecture is convey information isn’t there now a better way to achieve that aim? How much learning takes place in the lecture theatre? Are you sure your students go away after a lecture and ponder until revelation occurs?

The School of Chemistry is an early adopter of educational technologies. The majority of our first year lectures have been recorded in screencast format (presentation slides synchronised with audio) and provided on Blackboard to complement the lecture notes. Quite independently, several faculty have explored the use of audience response handsets (clickers) to enhance interactivity and gauge understanding.

Interaction takes time. In disciplines wedded to content this presents tough decisions: Do we sacrifice content to make way for interaction? If students don’t react the way we wish, do we plough on regardless or revise our approach?

The flipped teaching model promises a solution to this quandary. The term is normally attributed to Bergman and Sams. The flipped classroom / lecture theatre is not a particular set of practices but a philosophy that places the student and not the lecturer at the centre of the learning process. There is no one way to flip teaching and the notion that students should do some preparation before a timetabled session will hardly come as a novelty in many disciplines.

In chemistry we were not immune to the excitement surrounding flipped teaching and with an archive of screencasts and experience with student polling technologies we felt ideally placed to try lecture flipping. The initial trial took place in the 2011/12 academic year on a second year module. Students were required to watch screencasts of three lectures recorded during the previous year. The timetabled sessions were then replaced by the flipped experience.

A series of multiple choice and multiple response questions were presented to the students using the Powerpoint add-in Turning Point and individual handsets. The answers were polled anonymously (for an example see Figure 1). Where the vast majority of students showed clear understanding, the session progressed to the next topic. In the event of confusion or misconception being revealed, the staff member could further discuss the area, taking a complementary approach to that presented in the original screencast.

![What is an Organometallic?](image)
1. A compound with both metal and carbon atoms.
2. A coordination complex in which one of the ligands contains carbon.
3. A large musical instrument constructed from tin pipes.
5. An organic molecule with a metal in it somewhere.

Figure 1: An audience response question.
Student comments:

The flipped-lectures are a definite step in the right direction, away from archaic lectures with little or no mental stimulus, towards a more interactive learning experience that maximises learning outcome.

Chemistry is a very visual subject, students need to be able to represent their answers in the form of diagrams or balanced chemical equations. This is a skill that doesn’t lend itself to keypads and MCQs. We therefore employed a low tech solution: personal whiteboards (Figure 2). By asking the students to hold their boards up facing the ‘lecturer’, the liberating anonymity can be preserved.

Having always been in the vanguard of teaching innovation, we are used to the positive reception of novel approaches. However, it is not just the positivity of students towards lecture flipping that is striking but their willingness to present explanations of what it is about the process that appeals.

Buoyed by this initial success, we applied to the Annual Fund for support to increase the extent of flipping in the form of further whiteboards, handsets and licences for the Turning Point smartphone app. The generosity of UEA’s alumni in supporting a three-year programme ensures that flipping will continue to spread and evolve in Chemistry.

During this second year of refining the process we have had revelatory success with a simple technique that has its roots in peer-assisted learning. In the event that students show a range of answers to a question in which you expect a single correct response, instead of rushing to correct, invite the students to find someone they disagree with and exchange explanations and then simply poll again. The effect is invariably positive and sometimes extraordinarily so.

The model of lecture flipping practised in chemistry does not reduce contact hours. It could not be described as an easy option for staff, who need to have pre-prepared material (screencasts) and then prepare a set of outline questions for a flipped session. It requires the teaching facilitator to relinquish the control held by a lecturer and be prepared to go in whatever direction the student answers lead. However, it is invigorating for the faculty member, engaging for the students and promises a legitimate role for the teaching spaces we have built ourselves in what ought to be a digital age.

Dr Simon Lancaster (CHE)
S.Lancaster@uea.ac.uk

J. Bergmann A. Sams, Flip Your Classroom: Reach Every Student in Every Class Every Day, ISTE, 2012

It is purely intentional that the author is trying to avoid the use of the word ‘lecturer’ and description of these sessions as ‘lectures’.
Academic Skills Q & A

The Learning Enhancement Team (LET) in the Dean of Students’ Office is trialling a weekly drop-in hour on Wednesdays, 4-5pm in the Library Conference Room.

Head of the LET, Dr Jeremy Schildt, explained, “Our regular drop-in hours are offered in the Dean of Students’ Office. Our aim with the weekly Academic Skills Q & A is to take that service into the spaces where students are working.”

In these weekly sessions Learning Enhancement Tutors will be available to answer academic queries on topics such as planning and writing assignments, reading and researching, referencing, preparing presentations, organising workload, revision and exam technique. No appointment is necessary.

The final Academic Skills Q & A of this semester will be on Wednesday 20 March, 4-5pm. The sessions will resume after the Easter break.

If you would like more details, including posters or flyers, please contact Dr Schildt (01603 591836 or J.Schildt@uea.ac.uk). For more information about the LET you can visit www.uea.ac.uk/dos/let and follow them on @uea_let.

The use of Audio Feedback – A step forward in quality?

In the last two years I have experimented with the use of audio feedback. It was a bit tricky getting started, but now that I have tried it I am converted. One of the aspects of quality teaching and learning that I value is the relationship between student and lecturer. That relationship can get a bit strained in the marking and feedback process – particularly if the students have to wait a long time for their feedback, and with anonymous marking – when the personal link (the investment in getting to know the students) comes under pressure. Let me say a bit about how I have used audio feedback (probably no surprise) is the choice of audio software. I learned the hard way. When I initially started, I downloaded an app for my I-pad, only to discover that it was not compatible with the university system. Then I found that my audio recorder on my smart phone was compatible – and remarkably easy to use. Now, as soon as I have finished marking an essay (which may include comments in the text), I make a 2-5 minute audio recording. The recording can then be sent by e-mail either to my UEA account and then forwarded to the student, or sent directly to the student. As long as it is in an accessible format, the student can access it on their PC or smart phone.

With audio feedback the students can get their audio report before receiving their essay back from the hub. If the feedback is qualitative (and does not include the mark), there is no need to wait until the marks have been moderated and processed by the HUB. That cuts the waiting time for the student considerably. Other important benefits are that the student can get more feedback and better quality feedback (it would take a long time to write the equivalent or 5 minutes of text) and hear it from their lecturer without it being mediated by rather formal and anonymous reporting formats and deciphering hand writing. Even though you don’t know the students name in anonymous marking – there is a feeling of communicating in person with the student. I am converted to it and will not be returning to written feedback any time soon.

Bryan Maddox, (DEV)
B.maddox@uea.ac.uk
Last month I attended an OCR consultative forum on post-16 maths. The delegates were from a range of disciplines, mostly from HEIs, with maths, science and social science backgrounds, but also from learned societies and the HEA. The central area for discussion was a maths qualification for sixth form pupils in addition to their three A levels. It would be worth a fraction of a normal A-level and would cover a range of numerical, mathematical and statistical skills which higher education courses felt were important to develop prior to HE study.

The current focus is felt to be on the GCSE which, for many students, is the last maths they do before going on to a higher education course which requires competency in a range of mathematical skills. Work from Mathematics in Education and Industry (MEI) was presented showing a gap between the number of people who need mathematics and those who study it post-16. They also said that students are not aware of the need for mathematics for subjects they may wish to go on to study. It is worth noting that many HE courses, which assume mathematical competency, will admit students with a C at GCSE. However, these students would, in most cases, not be allowed to do AS maths in the sixth form. So there is no option at the moment, within the school qualification system, for these students to improve their general mathematical skills.

There was a surprising amount of unanimity about the content of the proposed course, with a feeling that just studying maths through the sixth form was the key benefit, overriding minor changes in syllabus content. Many at the meeting felt that the qualification should be compulsory.

With the loss of coursework and field work from many A level syllabuses, maths and statistics have become divorced from the teaching of each subject. The result of this is that it is less obvious how maths is important to many of the subjects. It was commented that universities should be more transparent about the maths their courses include, but I feel that this is simply a reflection of the problems with the A levels; if the A levels included maths in the study of science and social science subjects there would be no issue about maths content of university courses in those subjects.

There is a general and growing concern about post-16 maths, and the popularity of this event reflected this.

Dr Harriet Jones (BIO)

Harriet.jones@uea.ac.uk
Higher Education Academy (HEA) Conference Season

Storyville: Exploring narratives of learning and teaching, the 2nd annual HEA Arts and Humanities conference, 2013
- Date: 29 May 2013 - 30 May 2013
- Start Time: 10:00 am
- Location/venue: Thistle Brighton-on, King's Road, Brighton, England, BN1 2GS

Innovation in Health & Social Care Learning and Teaching: HEA Health & Social Care 2013 Annual Conference
- Date: 5 Jun 2013 - 6 Jun 2013
- Location/venue: The Queen's Hotel City Square Leeds, LS1 1PJ

The focus of the conference is ‘Innovation in Health & Social Care Learning & Teaching’, and will showcase and celebrate the innovative approaches that the sector is embracing to deliver all aspects of Health & Social Care education both in the UK and internationally.

HEA Social Sciences Annual Conference - Teaching research methods: Developing a pedagogical culture in the Social Sciences
- Date: 23 May 2013 - 24 May 2013
- Start Time: 01:00 pm
- Location/venue: Crowne Plaza Hotel, St. Nicholas Place, Princess Dock, Pier Head, Liverpool, L3 1QW

The focus for this year's HEA Social Sciences conference builds on the work of the Social Sciences cluster teaching and learning summit, held in June 2012, and develops further the themes for the teaching and learning projects we will be funding through our strategic project.

HEA STEM: Annual Learning and Teaching Conference 2013: Where practice and pedagogy meet
- Date: 17 Apr 2013 - 18 Apr 2013
- Location/venue: University of Birmingham

The Higher Education Academy’s second annual learning and teaching STEM meeting.

The Editor of ‘Learning Highlights’, Sarah Yeates, is currently away, having been involved in a nine month project, the outcome of which was a member of the next generation. The product (see Fig 1) of this project will have considerable measurable impact. On completion of the project plans are to carry out extensive evaluation of the product. This will initially be an internally-run evaluation on a daily basis by Sarah herself but also external evaluation will occur throughout the lifetime of the product of this project: health visitors initially, but then the school system will provide continual annual feedback. We would like to offer Sarah our congratulations on the successful completion of her project. No external funding was sought, but costs will be considerable.

Figure 1. Sarah displaying the product of the