

Research-based learning case study – School of Biological and Chemical Sciences

Lecturer: Brendan Curran Module: SBS641 'Transmission Genetics' Year: level 5, two semesters Intake 2010/2011: c.100

Module aims

The aim of this module is to provide students with the relevant knowledge base – 'how the gene paradigm has changed with time' - and develop their skills of critical and independent thinking and reasoned judgement.

Brief module description

This module employs a blended approach using a combination of lectures and electronic resources, as well as laboratory work. Along with traditional lectures, it includes a series of structured 'formative exercises' which work in the following way. Before the lecture, students listen to a pre-recorded web-cast presentation given by their lecturer, the content of which (rather than purely presenting facts) is organised around 'what if questions'¹ aiming to stimulate learning and understanding, and to promote thinking and discussion among students. On passing an MCQ² test based on the recording, students gain access to a forum where they can interact in small groups discussing the material and deciding upon a question they would like to post to the lecturer to be addressed in the following face-to-face lecture. The lecture then becomes an interactive event as, through addressing the questions posted by the students, the lecturer effectively interacts with them, making the learning process highly personalised and attuned to individual students' needs. In this way, the module encourages students to take a more active role in their learning and initiate an educational dialogue with academics, learning to ask good questions.

RBL element

In order to be able to come up with thoughtful questions for the lectures, students have to engage critically with the material, which stimulates individual research and reflection on their part. Through engaging with the content in a different, more active and questioning way, students develop skills of applying a theory to a particular scenario, extracting meaning from quantitative data, extrapolating from one system to another, asking meaningful and probing questions. They learn, in effect, to think as a geneticist / biologist / scientist.

The other research-based aspect of the module is laboratory work, in which, rather than following detailed instructions provided by the lecturer, students are given minimal information and have to plan and conduct experiments themselves, their task being to ascertain the genetic identity of mystery yeast strains. In this way, they are effectively acting as independent researchers doing their own mini-projects.

Assessment strategy

This module is assessed on the basis of the coursework (25%) and exam (75%). The coursework comprises on-line MCQ tests (5%), the practical laboratory log book (10%) and the research paper based on laboratory work (10%).

¹ Sample question on Mendel's basic laws of Genetics: 'If two genes [rather than one] coded for the inherited traits that Mendel studied what results would he have found? This requires students to think about the relationship between genes and inherited traits in a very different way thereby providing them with a discussion point'. (McDonnell E. and Curran, B. 'Teach Less – Educate More: A strategy for re-introducing dialogue into university education, thereby revolutionising the student experience'. Research report).

² MCQ - Multiple Choice Question.

Research-based learning case study – Department of Drama, School of English and Drama

Lecturer: Bridget Escolme Module: DRA323 'Madness and Theatricality' Year: level 6, one semester Maximum student intake: 15 Intake 2010/2011: 15
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Module aims

This module 'explores madness and mental illness in recent and historical performance'. Through the way it approaches the subject, the module aims to empower students intellectually by developing their critical thinking, creative problem solving and research skills, as well as skills for performing and devising critical work.

Brief module description

The module is taught through practical exploration of three case studies from the ancient Greek, English Renaissance and twentieth/twenty-first century European contexts, and students are required to produce small pieces of practice in response to the texts/performances studied throughout the course. In this way, students get equipped with a number of tools for exploring research questions through performance, which they can then apply in developing their final practical assessment piece. They also develop their critical and research skills through working on an essay based on the material covered in the module.

RBL element

This module encompasses a practice-based model of research, which is relatively unique to performance studies and is about exploring research questions through making a performance. This is one of the two main ways that research can be done in the area of performance studies (literature- vs. practice-based research), and the experience of generating one's own research questions and framing them through performance should prepare any interested students for a practice-based PhD.

What students do in this module is of direct relevance to the current research interests of the module leader – how the different 'models' of madness developed over the years are reproduced and articulated for contemporary audiences - so this module provides an opportunity for the tutor and students to co-explore the relevant themes.

Assessment strategy

Students in this module are assessed on:

- Performance and a 1,000-word supporting statement - 50%;
- Essay (2,500 words) - 50%.

The group performance is based on any one of the case studies students go through in the module and should address the research question devised by the group. The aim of the supporting statement (that students produce individually) is to contextualise their performative work and clarify the relationship between their research question and the actual performance.

For the essay, students have a choice between one of the more standard generic questions offered by the tutor and negotiating a question emerging from their own practice (although it should be different from what they have explored in their final performance). Interestingly, in 2010-2011 when students were given these two options for the first time (in the past they only had to choose from a predetermined set of essay questions), every single one of them went for the second option – developing their own essay topic emerging from their own theatre practice.

Research-based learning case study – School of Electronic Engineering and Computer Science

Lecturer: Akram Alomainy

Module: ELE 794: Advanced Electrical and Electronic Studies

Year: level 7 (4th year MEng (Integrated Masters)), one semester

Minimum/maximum student intake: 10/25

Intake in 2010/2011: 14

Module aims

This module gives students an opportunity to study in a team environment without being closely directed by the tutor. It aims to cover a range of topics through developing students' research and writing skills.

Brief module description

The module is delivered through weekly tutorials and project work. During the module, students are required to work in groups and complete three tasks which involve investigations on the topics provided by the tutor. In the academic year 2010-2011, for example, the three tasks related to new technologies in medical care, the use of advanced electronics in aviation and monitoring energy usage via 'smart metering'.

Each task brief is usually followed by 2-3 targeted tutorials which focus on the development of specific skills (e.g. team-building, writing abstracts and summaries, doing a feasibility study). In addition, good examples from previous years are put on the VLE for guidance.

RBL element

The tasks students do in this module are feasibility studies for new technologies. Each task requires them to do background research by surveying the literature, synthesising information and applying the knowledge and understanding of Electronic Engineering they've developed to produce a group report based on their work. Students are supposed to act as consultants advising a client (which could be the government or a private company), so the reports they produce at the end would usually include clear recommendations for their 'client'. The tasks set for students do not have a 'right answer' and the point of these activities is to develop students' ability to locate and use resources, critically analyse the evidence and produce good technical writing. These skills, along with teamwork, are considered important when working in industry.

Assessment strategy

Assessment is done on the basis of coursework (3 group project tasks) which constitutes 50% and an extended open-book exam which constitutes the other 50%. Students receive feedback on each group project task which they are encouraged to take into account when working on the subsequent task/s.

There is also an element of peer assessment whereby group members are asked to assess each other and explain what each member has done. In addition, after getting tutor feedback for task 1, in task 2 students mark their own report based on the marking guidelines, and if their marks are within 5% of the lecturer's mark, they get the highest out of the two.

Research-based learning case study – Department of Film, SLLF

Lecturer: Eugene Doyen

Module: FLM 601 'Scriptwriting: Script Development and Genre Research Project'

Year: level 6, two semesters

Maximum student intake: 30

Intake 2010/2011: 25

Module aims

This module 'offers the opportunity for individual research and creative output and aims to develop a student's analytical understanding of a genre [the genre of Crime in this case]', which is then used to underpin and develop a piece of feature film writing and also produce a research essay. There is a strong emphasis on developing students' academic and professional writing skills on this module.

Brief module description

The module has two clear strands - academic research (1st semester) and script development (2nd semester). Week by week, students complete various exercises aimed at developing their research and scriptwriting skills, e.g. summarise an academic article that focuses on a crime genre, prepare a plot breakdown of a crime film, etc. The exercises are then submitted to the tutor who provides individual feedback via Blackboard, where students can also see sample answers, essays and film treatments³ from previous years. Students are very closely supervised throughout the module and skills-related support is provided on an individual basis where necessary (e.g. if somebody cannot write paragraphs, there will be work done on that, etc.)

RBL element

This research module is different from more traditional knowledge-based courses in that it is independently driven by students: while structure and support are provided by the tutor, content is largely 'created' by students themselves. More specifically, the scheduled sessions within this course (e.g. seminars, workshops, individual appointments) are very much shaped by what students bring in in terms of the material they choose to use for the module exercises and activities set by the tutor, as well as the topic they select for their individual research and, later, their original film plot. The aim here is to demystify research structures and processes for undergraduates, since research skills are seen as very important for their professional and general intellectual development. Also, students develop their writing skills both 'within a formal academic register and within the discipline of feature film writing'.

Assessment strategy

Students are assessed on the basis of a 3000-word Research Essay (40%) in the 1st semester and a 5000-word Feature Film Treatment (60%) in the 2nd semester. The research essay they produce is largely based on secondary research (e.g. research articles) carried out on the topic of their choice, primary research (e.g. working with archives) usually being done at Master's or PhD level. For the second piece of assessment, students are expected to come up with an original idea and develop it into a feature film treatment in the genre of Crime, their writing and storytelling skills being the main focus of assessment here, which is consistent with the requirements of professional feature film writing. For both pieces of assessment, students receive formative feedback on the drafts prior to formal deadlines.

³ A feature film treatment can be described as a detailed synopsis of a film told in the present tense. Treatments are often used for pitching in the film industry, and thus they constitute an example of professional writing.

Research-based learning case study – Department of French, SLLF

Lecturer: Kirsteen Anderson Module: FRE 601 'Imagining Modernity: Creative Writing' Year: level 6, one semester Minimum/Maximum student intake: 6/20 Intake 2010/2011: 9
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Module aims

This module provides an overview of the role of imagination in French literature and thought between the late-nineteenth and the mid-twentieth centuries by encouraging students to act as literary critics and creative writers. The module focuses on three significant writers from the period (Stéphane Mallarmé, Roland Barthes and Luce Irigaray) and aims to cross the 'either-or' divide between the creative (Mallarmé) and the critical (Barthes and Irigaray) by getting students to see themselves as both imaginative and theoretical thinkers.

Brief module description

By covering the three writers in turn, the module gives students a chance to 'grow their own thought' by responding to the texts they study in a variety of ways (e.g. by developing a piece of critical commentary, translating a sonnet into English, writing a pastiche of Barthes etc.). Students get formative feedback on these little creative assignments before they rework them for final submission at the end of the module in the form of a 'portfolio'. Individual skills support is provided where necessary. Students also keep a Writing Workbook in which they keep track of their experience of the course and of the development of their thinking.

By working on these various types of writing students learn to ask questions of interest to themselves, which proves useful when they come down to writing their end-of-module essay. Also, since writing is central to this course, students develop awareness of the importance of writing for their creative and critical thinking, as well as for reflection.

RBL element

There are two main aspects of student engagement in research on this module. Firstly, the Writing Workbook can be seen as a research tool in itself - through exploring their own imaginative responses to the course, through reflecting on what they do in class and on how it relates to what is going on in the world, students make 'intellectual and emotional discoveries' (rather than merely regurgitating critics) and become more engaged and critical in the subject. Secondly, through developing their own essay titles that need to be based on the material that has been covered in the module, students learn to ask questions for themselves, make links across the course and pursue their interests in the subject, all of which form part of a 'research skills set' in the study of literature.

Assessment strategy

Assessment on this module is done through a 'portfolio' which has to be submitted after the module has ended. It consists of three written assignments (30%), a Writing Workbook (20%) and a 1,500 word essay (50%). The assessment is continuous and formative in that students are required to submit the three assignments on predetermined dates during the semester for formative feedback, and they can also get tutor's feedback on their Writing Workbook during the semester, although this is not compulsory. For the essay, students develop their own title in consultation with the tutor.

Research-based learning case study – School of Geography

Lecturer: Jane Wills
Module: GEG5103 'Geographical Research in Practice'
Year: level 5, two semesters (compulsory)
Intake 2010/2011: 70

Module aims

The aim of this module is to 'introduce students to research practice and to prepare them for the completion of an Independent Geographical Study (IGS)⁴ during the final year of their degree'. In addition, through involving students in real world research, this module seeks to 'highlight the politics of the research process and the way in which research might be used as part of a campaign'.

Brief module description

This is a research methods module which is compulsory for all 2nd year human geography students. It builds on the 1st year research methods modules by teaching 'research skills through practice'. Along with regular lectures and tutorial sessions that introduce students to the research process, research ethics, various research methods and provide some input on a number of skills such as teamwork and library search skills, students work in teams on an actual research project commissioned by London Citizens(LC)⁵, which then feeds into one of the campaigns LC are running. In the process of collaborating with LC, students learn about this organisation, their campaigning, some of the social issues facing Londoners and take part in the LC assembly.

RBL element

Student involvement in real world research which has immediate practical significance and may potentially influence policy decisions is what distinguishes this module from more traditional theory-based research methods courses. Students learn by doing and by making contribution to knowledge by collecting original empirical data. This academic year, for example, students contributed to the LC 'London 2012 Olympics' campaign by going to two local schools and delivering sessions to year 8 students about the Olympics, as well as carrying out a questionnaire survey among those students regarding their views on the Olympics.

The research report students produce at the end of their project is framed as a research consultancy report, rather than an academic document.

Assessment strategy

Assessment on this course covers the applied research work students do for LC and more theoretical work they do in preparation for their IGS in the final year. Students are assessed on the basis of:

- 1) *Research report* (40%) based on the research they have carried out for London Citizens;
- 2) *Research group presentation* (10%) based on their research findings and attended by London Citizens representatives;
- 3) *Survey of your field* (20%) – a literature review in preparation for their IGS;
- 4) *IGS proposal* – a research proposal on their IGS topic;
- 5) *Participation* in the group project work (5%) and in the tutorial programme (5%).

⁴ This is a Geography equivalent of a final year dissertation. Geography students are expected to collect original data for their IGS.

⁵ London Citizens (LC) is the UK biggest community alliance that includes over 160 members such as schools, colleges, charities, trade unions, community groups, faith groups and so on. London Citizens runs a number of major campaigns aimed at improving life of Londoners, e.g. Living Wage Campaign, Strangers into Citizens, London 2012 Olympics.

Research-based learning case study – School of History

Lecturer: Joanna Cohen

Module: HST5339 'The Creation of American Capitalism, 1776-1917'

Year: level 5, one semester

Minimum/maximum student intake: 10/30

Intake 2010/2011: 28

Module aims

This new module aims to develop students' understanding of the topical content, familiarise them with relevant scholarly debates and develop 'the skills needed to identify and intervene in scholarly debates, work closely with primary sources and plan a research project'.

Brief module description

Students have weekly lectures and seminars where they are encouraged to engage in debates around the themes and readings of the week. There is also a class blogspot (which can be accessed via a dedicated password-protected module website) – an additional space for students to explore and engage with ideas, as well as bond together as a group. No special sessions are dedicated to generic skills development, but specific areas are addressed in the context of reading and seminar discussions (e.g. what makes a good research question). Students can also have a one-to-one tutorial to discuss their research proposal topic.

The module represents both research-informed teaching and teaching-informed research. In terms of the former, students get acquainted with established research and debates in the field, as well as locate, read and discuss primary and secondary sources. As for the latter, since the module topic is also the lecturer's specific area of research, she frames the whole process, from the very beginning, as a collaborative learning experience: '...students certainly push you to question your own definitions and your own working assumptions when they ask questions or seek further explanation. This kind of sustain[ed] and indepth discussion helps me to think and write more clearly when I come to writing up my own research'.

RBL element

The module can be seen as research-based in that students work closely with primary and secondary sources in preparation for seminar discussions and assessed coursework. Also, by completing the different parts of assessment, students get acquainted with the building blocks of a research process and are encouraged to think about how to advance the field of knowledge through planning a research project on a topic of their choice. The latter task is supposed to prepare students for their 3rd year dissertation (which may become compulsory for everybody after the current curriculum review), and its introduction was a reaction to what previous dissertation students seemed to struggle with - identifying a good research question when approaching a dissertation.

Assessment strategy

Assessment is done via coursework only, which is spread throughout the module to give students an opportunity to incorporate tutor's feedback into the subsequent pieces of assessment. The 4 assessed assignments are: 1) a short literature review, 2) a gobbet exercise, 3) a research proposal and bibliography and 4) a research essay. Each task has been designed to develop a set of relevant subject-specific skills which would also be useful for students in their life after university (e.g. summing up an argument, assessing strong and weak points, extracting meaning from detail, asking the right questions, de-constructing a final product to engage with evidence properly, etc.).

**Research-based learning case study – Department of Linguistics,
School of Languages, Linguistics and Film**

Lecturer: Colleen Cotter Module: LIN 307 Language and Life in London Year: level 6, one semester Minimum/Maximum student intake: 4/24 Intake 2010/2011: 12
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Module aims

The aim of this module is to develop students' understanding of ethnographic linguistic research by providing them with an opportunity to experience fieldwork and subsequently write about it, synthesising a mix of voices 'from the field' and applying relevant theoretical frameworks and tools of linguistic analysis to get insights from, and make sense of, their data, relating it to a wider socio-cultural context.

Brief module description

The module requires students to apply the knowledge and skills they have developed in the pre-requisite 'Ethnography of Communication' module to fieldwork activities and projects in the local community. Students develop skills of doing ethnographic research (e.g. collecting data through observations and interviews) through completing a series of fieldwork exercises and writing them up as 'yellow papers' – pieces of continuous assessment throughout the semester. In the course of the module, students use the classroom as a 'safe place' to engage in discussions about the process of doing ethnographic research and the challenges it brings. On the basis of the fieldwork and class discussions students learn to look at the world like linguists, 'problematizing the everyday' and identifying and conceptualising patterns in language use in specific contexts.

RBL element

In this module, students engage in real-life empirical research through completing a set of fieldwork exercises and working on a topic of their choice for the final paper.

Data is at the heart of most linguistic research, and, by engaging with it, students develop their skills as researchers, thinking, among other things, about what counts as data, what frameworks they can draw on in their data analysis and what can be investigated further. By pursuing their curiosity and formulating and investigating the question they want to answer, they begin to make steps towards joining the linguistic 'community of practice'.

Assessment strategy

In the course of the module, students are expected to complete 4 pieces of assessment.

1) *Fieldwork exercises* (30%) – the so-called 'yellow papers' (3 in total), aimed at relating the fieldwork experiences to theory and reflecting on the processes of research. These exercises give students an opportunity to get formative feedback from each other and from their tutor throughout the module.

2) *Field journal* (30%) – a notebook where students make descriptive notes during the process of their research and also perform primary analysis of their data.

3) *Class presentation* (10%) - at the end of the module, students prepare posters based on their research and present them to fellow students and the wider department. By doing this, they learn to 'communicate' in a specific academic genre – poster presentations.

4) *Final paper* (30%) – an essay synthesising their theoretical and empirical explorations during *the* module through developing and sustaining an argument and adhering to the norms of academic style and expression.

Research-based learning case study – School of Mathematical Sciences

Lecturer: Matthew Fayers
Module: MTH6124 'Mathematical Problem Solving'
Year: level 6, one semester
Minimum/maximum student intake: 5/20
Intake 2010/2011: 8

Module aims

The main aim of this module is to give students an opportunity to practise independent study and research through solving a range of mathematical problems.

Brief module description

Rather than being a lecture-based module where students learn new material about a particular area of mathematics, this module is different in that it requires students to solve tricky problems covering different areas of mathematics. As such it is essentially a PBL (problem-based learning) module. Each student is given twelve problems to solve and they work on these tasks independently during the whole semester. The problems are selected to cover a variety of topics and all have different 'difficulty ratings'. Solutions may be up to several pages long and for most of them students are required to write proofs and explain their reasoning. Students have a weekly class where they can get clarification regarding their problem, but they are not given hints to how to solve it.

RBL element

This module can be seen as research-based 'in the sense that the activities involved are similar to the activities involved in doing original research: thinking, experimenting, reading etc'. In the process of working independently on solving their problems, students are free to use resources such as the library and the Internet, and to take part in various subject-specific forums to get an idea of the relevant problem-solving techniques or to find out how people approach problems in the same area – these activities partly model the kind of independent work that goes on in real mathematical research. In terms of the level of the problems and the material involved, however, these tasks get 'nowhere near the actual unsolved problems that mathematicians work on'.

Although there is a noticeable gap between the tasks students get at this level and the problems addressed in real mathematical research (which is more likely to happen at a PhD stage and above), they are still practising techniques necessary for doing independent research, and this module is particularly beneficial for stronger students who may wish to pursue PhD study later on.

Assessment strategy

Students are assessed on the basis of their solutions to the twelve problems at the end of the module. They also have an oral 'exam' which is not really an exam *per se*, but a sort of a mini-viva to check whether the solutions are the students' own work. There is no detailed feedback given during the course, but students would get an indication from the tutor if they have made a key error in their solution/s – they are allowed to send replacement solutions up until the start of the exam term.

Research-based learning case study – Department of Politics, School of Politics and International relations

Lecturer: Lee Jones
Module: POL 105 Political Analysis
Year: level 4, two semesters
Intake 2010/2011: c.120

Module aims

This introductory module aims to bridge A-level and degree level requirements by equipping students with skills they will need to be able to think about politics in an analytical and critical way. Students acquire these skills through engaging with content (exploring some classic texts and debates in political science), with the following three guiding questions as main themes: 'What is politics?', 'What is power?' and 'What is the state?'.

Brief module description

Students explore the module themes through reading and responding to a variety of political texts. They learn to look at the central political concepts from different angles by 'deconstructing and critiquing scholarly arguments'. A distinctive feature of the module is a variety of short writing tasks which have been structured into the seminars to help students develop their thinking through writing, as well as practise articulating ideas clearly and concisely.

The module is co-taught by a team of academics (lectures), teaching assistants (seminars), and personal advisors whose role is to mark and provide feedback on most of students' work. Skills support is also embedded into the module in the form of writing and research skills workshops, an 'essay clinic', as well as individual guidance from students' personal advisors where necessary.

RBL element

The module adopts a scaffolded approach to developing students' research skills by gradually equipping them with theory and tools to be able to ask and explore political questions. They begin to learn that applying a particular theoretical apparatus to a question, exploring different kinds of primary and secondary data and looking at an issue from different perspectives are all essential attributes of being a political theorist. Students also get an opportunity to develop their research skills by exploring a topic of their interest for a final essay on the theme of 'power in Britain today', for which they need to independently research and locate relevant sources and construct an argument, backing it up with relevant theories and data.

Assessment strategy

This module is assessed in the following ways:

- 1) Review Essay: What is Politics? (15%);
- 2) Critical Analysis of Research (15%);
- 3) Research Bibliography (10%);
- 4) Quantitative Data Analysis (15%);
- 5) Essay: 'Power in Britain' (20%);
- 6) Examination (25%).

These pieces of assessment have to be submitted at different points during the year, thus ensuring continuous assessment of students and an opportunity for tutors to provide both summative and formative feedback to students throughout both semesters.