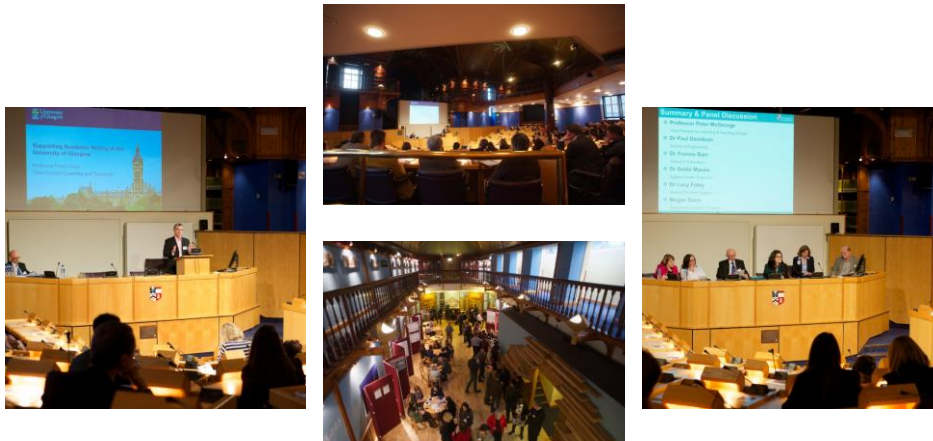


## ALTS 2014: Learning for All

Over 100 members of staff, along with colleagues from Robert Gordon University, attended the sixth Annual Learning & Teaching Symposium which took place on Wednesday 15th January 2014 with the theme '**Learning for All**'.



The Symposium provided a forum for staff to hear about current practice, and discuss issues around student background, internationalisation, transition to Higher Education, flexible delivery, distance learning and equality and diversity. There was also a [display of posters](#) relevant to the topic.

The keynote speaker this year was [Professor Frank Coton](#), Vice-Principal for Learning & Teaching at the University of Glasgow. Professor Coton is a member of the Scottish Funding Council's Access & Inclusion Committee and Chair of the West of Scotland Schools for Higher Education Programme Management Committee which coordinates widening participation activities in the West of Scotland.

The Symposium topic complements the current QAA (Scotland) Enhancement Theme, '[Developing and Supporting the Curriculum](#)'.

### Programme

Click [here](#) to download the programme as a Word Document

**Welcome & Introduction** [Professor Peter McGeorge](#), Vice-Principal for Learning & Teaching, University of Aberdeen



Click

[here](#) to listen

**Keynote: Supporting Academic Writing at the University of Glasgow**  
[Professor Frank Coton](#), Vice-Principal for Learning & Teaching, University of Glasgow *The University of Glasgow Writing Centre has its roots in staff concerns around writing skills highlighted by Quality Assurance and Enhancement processes in the years leading up to 2006. At the same time, the importance of writing skills in relation to student retention was also being recognised across the institution and, in response, academic staff were beginning to develop interventions to enhance writing skills amongst*



Click

[here](#) to listen

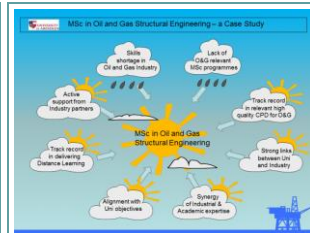
the student body. One of the primary mechanisms used to support bottom-up innovation at Glasgow is the Learning and Teaching Development Fund (LTDF) and this was used by two groups within the University to pilot different approaches to writing skills development between 2006 and 2009. The two approaches could not be more different. The Academic Writing Skills Programme, involved a direct intervention at entry to the University, initially for Arts students, and the Writing for Results project provided scalable online support, initially for Science based students, in their later years. This presentation will explore how these two strategically funded projects evolved and were ultimately supported from core funds through the formation of the University Writing Centre. In doing so, the presentation will also consider the types of intervention being used to support Academic Writing at Glasgow and their effectiveness.

### [Poster Display \(over lunch\)](#)

Click [here](#) to view the posters

### Collaboration with Industry to Develop and Deliver Postgraduate Teaching

[Dr Paul Davidson](#), School of Engineering

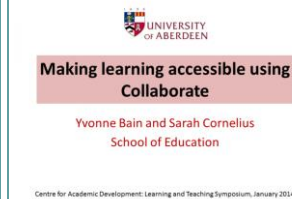


Click [here](#) to view the presentation

### Making Learning Accessible using Collaborate

[Dr Yvonne Bain](#) and [Sarah Cornelius](#), School of Education

*Collaborate web conferencing software has become widely used within the School of Education to engage learners at a distance and support new ways of working and learning. This presentation will provide some examples of the use of Collaborate to make learning accessible, support collaborative learning, and provide choice and flexibility. The examples include using Collaborate to provide interactive workshops, for research supervision and to engage distant participants in local events. It will consider the impact of live online learning on tutors and learners and discuss issues that need to be considered before using Collaborate to provide 'learning for all'.*



Click [here](#) to listen

### Parallel Discussion Sessions

#### 1. Institutional Policies on Widening Access

[Professor Peter McGeorge](#), Vice-Principal for Learning & Teaching

#### 2. Open Access and Open Educational Resources

[Dr Colin Calder](#), Centre for Academic Development

#### 3. The Global Curriculum – Widening Access for International Students

[Dr Debbi Marais](#), Applied Health Sciences

#### 4. Providing an Inclusive Learning Experience

[Janine Chalmers](#), Policy, Planning & Governance and [Dr Lucy Foley](#), Head of Student Support

Click [here](#) to view Dr Calder's presentation



Click [here](#) to view Dr Marais' presentation



**Providing an Inclusive Learning Experience**

Janine Chalmers, Equality and Diversity Adviser  
Lucy Foley, Head of Student Support

Click [here](#) to view Dr Foley & Janine Chalmers' presentation

**Summary and Panel Discussion**

Chaired by [Professor Peter McGeorge](#), Vice-Principal for Learning & Teaching

**Summary & Panel Discussion**

- ✦ **Professor Peter McGeorge**  
Vice-Principal for Learning & Teaching (Chair)
- ✦ **Dr Paul Davidson**  
School of Engineering
- ✦ **Dr Yvonne Bain**  
School of Education
- ✦ **Dr Debbi Marais**  
Applied Health Sciences
- ✦ **Dr Lucy Foley**  
Head of Student Support
- ✦ **Megan Dunn**  
Student Association President

Click [here](#) to listen

**Poster Display**

We recieved a good response to our call for posters from colleagues and displayed 15 during the lunchtime session. Please click on the poster title below to view full size.

**The use of QuestionMark to deliver flexible "decision-driven" learning**

S.J.Tucker  
School of Medical Sciences, College of Life Sciences and Medicine, University of Aberdeen  
s.j.tucker@abdn.ac.uk

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**Decision making processes and learning**

- Decisions form a central part of conceptual learning and drive processes that stem from learned material.
- These span disciplines and inform on student understanding and appropriate application of knowledge.
- In life sciences, such decisions are central to executing experimental procedures accurately and appropriately.
- With this in mind, the current project aimed to build a simulation of a key experimental protocol driven by a student "decision engine".

**The Western blot: a decision-driven experimental protocol**

- The Western blot is one of the most commonly used experimental procedures in the life sciences.
- It studies protein in experimental samples, and is a fundamentally important technique.
- Actual practical classes are infeasible due to costs and time constraints.
- As a complex procedure, the Western blotting protocol involves many stages, and these can be mapped as decision points.
- Each decision has a bearing on the final experimental result, and by presenting students with control of these decisions their learning can be applied, reinforced and assessed.
- Downstream of each decision there are unique consequences depending upon the precise decision made; these can be linked to each decision and presented as informative feedback.

**Figure 1:** The Western blotting procedure mapped as a series of decisions with consequences. The consequences of each decision create a series of loops and branches that realistically demonstrate how these steps will affect the outcome of the procedure (bubbles).

**Bringing the process to life with QuestionMark**

- The decision points mapped in Figure 1 were transformed into "drag and drop" questions within QuestionMark.
- This provides:
  - visual impact
  - interactivity
  - enhanced experience of protocol/apparatus
- "Brings process to life"

**Figure 2:** Transformation of decision points into "drag and drop" questions within QuestionMark. A. An original decision point within the flowchart (Figure 1). B. The decision point transformed into an interactive question.

- Following transformation, questions were intricately aligned with consequences and feedback.
- Incorrect answers link to consequences and then feedback aimed at reinforcing correct concepts. The student is then redirected to the initial question again.
- Correct answers link to reinforcing feedback and then progress through the protocol.
- Such circularity provides progressive, reflective, experiential learning of the process.

**Design and alignment of consequences, feedback and progress.**

**Figure 3:** Design and alignment of consequences, feedback and progress.

**Student feedback**

**Figure 4:** Student feedback from 2013 BT5901 laboratory skills MSc cohort (25 students).

**Outcome**

- The simulation was very well received by students and increased confidence with the protocol.
- Provides experience of the decision driven process in a safe environment and enhances understanding.
- Broadly applicable to any discipline with decision driven processes e.g. Law, Engineering, Business

[The use of QuestionMark to deliver flexible 'decision-driven' learning](#)

S Tucker, School of Medical Sciences, CLSM

## Use of student-chosen, case-based problem-solving assessments to contextualise learning in medical sciences

Dr Derek Scott ([d.scott@abdn.ac.uk](mailto:d.scott@abdn.ac.uk)), School of Medical Sciences

### Introduction

- In recent years, we have adopted case-based scenarios in assignments to help students engage with factual material they must know, but also to help them understand why it is important.
- This approach was piloted successfully as continuous assessment on one course approximately 5 years ago, but has recently been adopted by two larger courses.
- These larger courses have diverse student populations, hence finding rigorous means of assessment that they can receive timely feedback in response to is challenging.
- Previous feedback relating to case studies has been extremely positive and was one method of assessment that students consistently praised and asked for more of.

### Students allowed to practice

- Work through an example with them.
- Publish marking schemes, example model answers and other documentation in advance on MyAberdeen so they understand how it will all work and what is expected of them.

### One student's choice of assessments

- Students have a choice of two possible assignments each time a case study is scheduled.
- They are given the questions and a week to study before they must submit their handwritten answers.
- Students must complete three of the 6 possible case studies, insuring a broader range of knowledge.

### Focus on quality rather than quantity

- Make sure there is a problem to be solved and that originality can be rewarded.
- Encourage use of extra reading, rather than reliance on basic lecture material.
- Slippy questions can mean the students don't give you the "model" answers you expect, so be prepared to question your own preconceptions.
- These case studies are limited to length and focus the students' answers, twice as easy to mark and comment upon rapidly, so students receive feedback faster.

### Give effective feedback

- In addition to written comments on their submissions, model answers for all case studies are made available on MyAberdeen.
- This means that no students miss out on any material that might have been covered in depth in any one case study, plus they can use the three cases they did not opt to complete for revision purposes.
- Can add extra feedback here as to what the class did well on, common errors, tips for improving on answering a certain style of question, ideas for where to access material, alternative answers etc.

### Key Points

- In recent years, we have adopted case-based scenarios in assignments to help students engage with factual material they must know, but also to help them understand why it is important.
- Students have consistently rated case studies as an excellent and engaging means of assessment in SCEP forms over the past 5 years (n = 1150 students at Level 3 on three different courses).
- Assessment is clear, timely and transparent, and enables student choice.
- Students report that they are "tricked" into reading widely and revising throughout the course without realising it.
- Allows students to show superior understanding, wider reading and ability to sift information and recognise the key points.
- Allows students to reinforce their factual knowledge and apply it to real life situations. In their words "It is clearer why the facts are important to people".
- Case studies allow assessment of common sense, critical analysis, use of evidence and numerical skills.
- They are adaptable and easy to change each year, or to generate appropriate ones for different courses.
- Need to develop a bank of them that can be changed each year to stop repeating students recycling the cases that were used the year before.
- Case studies have now been adopted by other unrelated courses within the School of Medical Sciences due to their popularity with students and staff.

## Use of student-chosen, case-based problem-solving assessments to contextualise learning in Medical Sciences

D Scott, School of Medical Sciences, CLSM

### Meeting the Challenges of Curriculum for Excellence: A University/Schools Partnership



Dr Sally Middleton  
sally.middleton@abdn.ac.uk; +44 (0)1224273219; University of Aberdeen, King's College, Aberdeen, AB24 3FX

#### Introduction

Curriculum for Excellence and in particular the senior phase of secondary education provides challenges for both Schools and University's. The Flexible Science S6@Uni spin off programme was launched in 2009-10 in response to changes in the senior phase of secondary education. The Programme aims to work in partnership with Secondary schools to provide as broad a range of opportunities for students in S6 as possible and enable them to fully benefit from the "Individual Learner Journey approach".

#### The S6@Uni Programme

The S6@Uni Programme consists of:

- Core Degree level 1 science courses
- Online courses
- Lecture Streaming
- Virtual classrooms
- On campus Practical weekends

Successful completion of S6@Uni courses combined with Advanced Highers can allow direct entry into second level study for some students.

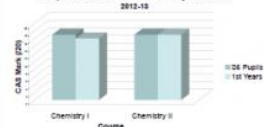
Example curricula can be seen below.

Degree Intention	Course choice 1 (Sept – Jan)	Course choice 2 (Jan – May)
Chemistry	Chemistry for the Physical Sciences I	Chemistry for the Physical Sciences 2
Computing Science	Web Application Development	Web Technology
Geology	Dynamic Planet	Portrait of a Planet
Physics	The Physical Universe A	The Physical Universe B

#### Outcomes (1): Success in course

In Chemistry, our most popular course, for academic year 2012-13 a comparison of average marks between the S6 pupils and our first year cohort demonstrates the S6 pupils achieving comparable grades to our 1<sup>st</sup> year students.

Comparison of CAS Marks for Chemistry Students in 2012-13



#### Outcomes (2): University applications

- 14 pupils successfully completed the programme in 2012-13
- 0 applied to Aberdeen University
- 6 applied to other Scottish institutions
- All pupils received an offer
- Students proceeding to study Engineering, Geology & Medicine

Within our own institution successful completion of courses contributed to the strength of a student's application and in some cases, made the difference between an offer being given and not however it is impossible to judge this for other institutions in the sector.

#### What the students think

- It's a bit different from what we get here (at school), because here (at University) they give you the freedom of doing it yourself rather than holding your hand.
- It's not essential for our university applications, we are just doing it because we are interested. So if that fails, it doesn't matter too much.
- It definitely helped doing one course before starting it made it less stressful during exam time!
- I have just received three conditional offers to Aberdeen University and I would like to say a massive thank you for helping me make this possible.

#### The Future

- University/Local Authority partnership to fund programme in 2013-14
- Increase in Local Authority areas programme offered too
- Pilot using Hub schools for face to face teaching
- Pilot offering of Arts courses
- Tailored guidance initiative for senior phase pupils



Programme Sponsor Photo

# Meeting the Challenges of Curriculum for Excellence

S Middleton, College of Physical Sciences

## EMPLOYABILITY PROGRAMME: INCORPORATING DIFFERENT CAREER INTERESTS AND LEVELS OF EXPERIENCE

Dr Amy Irwin  
School of Psychology

**EMPLOYABILITY**

Late in 2012 the School of Psychology began work on embedding employability into the Psychology curriculum. The School of Psychology has a large and diverse undergraduate population, so it was important to develop a programme that would suit all levels of ability, both across and within the year groups.

The programme consists of three key elements:

1. The development of lectures and workshops, delivered by teaching staff
2. An interactive webpage
3. Student Employability Ambassadors

**EMPLOYABILITY PROGRAMME DEVELOPMENT STAGES:**

**EMBEDDING EMPLOYABILITY IN THE CURRICULUM**

- LECTURES AT EACH LEVEL OF THE DEGREE PROGRAMME
- Workshops provided at Levels 1 and 2. Topics include: careers in Psychology, postgraduate study and reflection.
- Employability workshops provided at Level 3. Topics include: networking, CV writing and career planning (see example).

**EXAMPLE: EMPLOYABILITY WORKSHOPS (L3)**

Four workshops were developed and delivered to 13 Psychology students over a two week period.

<b>WORKSHOP 1</b> Skill assessment and career preferences (Inolland vti)	<b>WORKSHOP 2</b> Career planning (assessing job adverts, skill matrix)
<b>WORKSHOP 3</b> Creating an action plan and reflecting on past experience	<b>WORKSHOP 4</b> CV development and writing cover letters

**TEACHING APPROACH**

**INTRODUCTION**  
Each workshop is prefaced with an explanation of the topic area, the connection to enhanced employability and links to online resources are provided

**INDIVIDUAL & GROUP WORK**  
The workshops are self-paced, allowing each student to progress at their own pace through a series of individual and group tasks. This also allows students to focus on the areas that are most relevant to them.

**TUTOR INTERACTION**  
The tutor then circulates the room, interacting with each student on a one-to-one basis. This may involve providing advice, helping to locate resources or viewing the students' work.

**STUDENT APPLICATION**  
The aim of the course was to provide the students with the ability to apply what they have learned to their own development in order to enhance their employability in the future.

**LEARNING FOR ALL: INTERACTIVE WEBPAGE**  
In order to ensure the workshops were suitable for all levels of experience an interactive webpage was developed for use during the workshops, using Moodle as a base. This allowed information that was suitable for various skill level experience levels to be provided.

**INTERACTIVE WEBPAGE**

**GRADUATE & POSTGRADUATE PROFILES (n = 46)**

- Profiles detailing the career paths and postgraduate study programmes completed by University of Aberdeen Psychology graduates.

**WORK EXPERIENCE & VOLUNTEERING INFORMATION**

- Pamphlets providing links to potential work experience and volunteering opportunities.

**FAQs**

- Answers to frequently asked questions about career paths related to Psychology, completed by individuals currently in position.

**CV & COVER LETTER ADVICE**

- Example CV and cover letters plus advice on how to improve both.

**STUDENT FEEDBACK**

"I would just like to say how helpful the employability workshops have been"

"I am excited for what the future holds for me in Psychology"

"The workshops have been really useful"

**FUTURE DIRECTIONS**

- Networking event for the L4 students.
- Workshops on interview skills
- Career talks & workshops
- Work placements

**CONTACT DETAILS**

Dr Amy Irwin: [a.irwin@abdn.ac.uk](mailto:a.irwin@abdn.ac.uk)  
Director of Teaching & Learning: Dr Paul Bishop [p.bishop@abdn.ac.uk](mailto:p.bishop@abdn.ac.uk)  
William Guild Building, School of Psychology

## Employability programme: incorporating different career interests and levels of experience

A Irwin, School of Psychology, CLSM

## Student projects: guidance for students and new supervisors

Doig CA, Bate E, Cleland J



University of Aberdeen, Division of Medical and Dental Education

**Background:** Student projects are a key constituent of many degree qualifications. Such projects provide students with opportunities to delve into a subject of interest. Increasingly, students and tutors are being given the opportunity to organize their own projects; promoting the development of professional and organizational skills in addition to diversity of student interest. Flexibility in terms of topic, organization and delivery is required to facilitate this.

**Take the initiative**  
Choose a topic of interest that is not already offered. Self-directed projects increase diversity and the exposure to current issues, and have been linked to closer alignment of learning with learning outcomes<sup>1</sup>.

**Plan learning outcomes**  
Create specific, achievable and assessable learning outcomes using Maier's key three components<sup>2</sup>:  
Performance: State the knowledge or skill to be acquired  
Conditions: Describe the conditions under which a task must be performed  
Criteria: Clarify the standard of achievement expected

**Decide on the best teaching strategy**  
Tailor the project so that a variety of teaching strategies are used, to suit a number of individuals' 'dominant intelligences'<sup>3</sup>.  
Think: 'What teaching strategies are best for each learning outcomes?'

**Identifying support**  
Self-directed projects provide the unique opportunity to source your own supervisors or co-supervisors, and support network - remember a shared enthusiasm is advantageous<sup>4</sup>.

**Desirable qualities in a Supervisor/Co-supervisor**  
- Good teacher  
- Problem solving skills  
- Able to provide prompt information and advice (feedback)  
- Organized (and not too busy)

**Managing the project**  
Self-directed learning and good time management are critical to success. Stick to internal deadlines and communicate with your team often. Consider creating a Gantt chart to help you to manage your time.

**Consider whether the project could be presented or published**  
If your project provides a new perspective on a current issue it may be suitable for conference presentation or as a journal article. Identify conference opportunities early on as abstracts usually need to be submitted six months before a meeting. This also gives time to seek out funding to attend.

**Consider the method of assessment**  
Multiple choice questions, written reports, presentations and continuous multi-source feedback can be used in isolation or simultaneously, to provide a full picture of the student's performance.

**Reflect throughout**  
Reflection helps active learning and continuous self assessment. Evaluating both positive and negative experiences promotes continuous development. Gibb's Learning Cycle can help with this process<sup>5</sup>.

**Conclusions**  
Developing a student project can help to develop invaluable professional expertise, including management and leadership skills. These tips, developed from the authors' experiences of developing Student Selected Components as students and faculty members and a literature review, are designed to help students and supervisors develop and manage successful student projects.

**References:**

- Maier DL (2004) Student selection process for student selected components and associated student career development in a liberal arts and science institution. *Medical Teacher* 26:484-487
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- Carroll M et al (2004) 2004. *Effective teaching in a clinical practice setting* 4th edn. London: Elsevier
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## Student projects: guidance for students and new supervisors

E Bate, C Doig, J Cleland, Medical & Dental Education, CLSM

**Developing an interactive support database for pharmacokinetics teaching**  
 S. Barnett, S.J. Tucker and H.M. Wallace  
 School of Medical Sciences, College of Life Sciences and Medicine, University of Aberdeen

**Pharmacokinetics**

- Pharmacokinetics describe the interaction between an organism and drugs administered to it – i.e. what the body does to the drug
- It involves graphical representation of drug data and the use of complex mathematical expressions.
- The mathematical nature of the subject matter often means that clinical and pharmacological meaning is lost and student feedback suggests a lack of understanding.
- In pharmacology (clinical and basic), pharmacokinetics is a key aspect of the curriculum in terms of drug development, design and administration.
- The aim of this QAA enhancement theme: developing and supporting the curriculum handed project was to develop a database of interactive, intuitive and innovative resources to support student learning in this area.
- The grant was used to employ a student intern with recent pharmacokinetic experience (Sheby Barnett) to develop these resources.

**Resource design**

- A simple design involving a hierarchy of interlinking spreadsheets within Excel was chosen as this would be most flexible, accessible and compatible with the aim.
- By interlinking a variety of spreadsheet types (see below), an innovative and effective learning package was created:

**The database**

- The main pharmacokinetic topics relevant for UG and PG students are covered in detailed sections:

Section 1: Basic Linear Pharmacokinetics	02/08/2013 15:41	File folder
Section 2: Intravenous Infusion	02/08/2013 15:42	File folder
Section 3: Intravenous Intermittent Infusion	02/08/2013 15:43	File folder
Section 4: Multiple Oral Doses	02/08/2013 15:43	File folder
Section 5: Two compartment models	02/08/2013 15:42	File folder
Section 6: Non Linear Dose/Response	02/08/2013 15:43	File folder

- Concepts are covered thoroughly, with full explanation of graphs, formulae, provision of worked examples, links to other topics and reminders against common errors all evident in the example below:

- Precise relationships between parameters are summarised in clinical context using accessible and intuitive diagrams to enhance learning:

**Key definitions and equations are provided along with reference to practical clinical meaning:**

**Students can check progress with interactive tests, provided to complement each topic area:**

**Currently available through University classroom PC access, work is underway to launch it through MyAberdeen.**

**One of the original aims was to provide workbooks for students and the simplicity of the design means selected sections can be provided as a hard copy exercises as required.**

**Conclusion**

- Feedback from the level 3 cohort given access suggest this is an invaluable resource.
- Overall, these interactive, student designed resources provide flexible, effective and independent support for pharmacokinetic students.

[Developing an interactive support database for pharmacokinetics teaching](#)

S Tucker, H Wallace, S Barnett, School of Medical Sciences, CLSM

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[Development of interactive online resources to support and enhance numerical skills among Medical Science students](#)

S Tucker, V Psalmon, A Jenkinson, M Richard, D Shewan, School of Medical Sciences, CLSM

## Written assessments in Year 2 MBChB – 8 steps to an inclusive exam

Venkatesh A. Bate E, Denison A, Parker F, Gerrie D, Sutherland E  
University of Aberdeen, Division of Medical and Dental Education

### INTRODUCTION

For an assessment to be inclusive it requires to be objective, reliable, defensible and fair. Reasonable adjustments need to be made in order for all learners to be given equal opportunity to demonstrate what they know, or can do. Our students undergo a range of assessments which they need to pass in order to progress. These include the written exams, an Objective Structured Practical Anatomy exam (OSPE) and an Objective Structured Clinical Exam (OSCE) for Clinical Skills, and the Community Course exam. We look at the process of producing and analysing the written exams in Year 2 MBChB to demonstrate inclusivity in assessment.

### CONTEXT

Benchmarks while designing assessments for MBChB students include the GMC's Tomorrow's Doctors 2009, GMC's Gateways to the Professions and The Equality Act (2010). Based on these, a series of guidelines have been drawn up within the Division of Medical and Dental Education to support staff leading assessments. The course is examined by two written examinations, each of which lasts 2 hours. The papers comprise 50 single best answer (SBA) and 6 short answer question (SAQ) format items. The following loop has been developed to produce, deliver and analyse the written papers.

#### Step 1: The Question Bank

Teaching staff produce questions on specific areas of the curriculum that they have been involved in teaching. Questions are modified by assessment lead so that 'house style' of items is adhered to (e.g. consistency of tense, correct grammar, UK spelling, no item flaws). These are placed in a Question Bank.

#### Step 2: Exam Briefing for students

Students are briefed regarding exam content and made aware of exam blueprint. Such a blueprint ensures adequate coverage and makes the exam more transparent to all students. Table 1 shows a typical blueprint. Topics A has been taught for 5 weeks, B for 2 weeks and topics C for 3 weeks. The blueprint is weighted accordingly.

#### Step 3: The Question Paper(s)

Exam coordinator chooses questions from the question bank based on the blueprint.

#### Step 4: Standard Setting

The papers are standard set by a panel comprising between 4-8 judges including clinicians and basic science tutors at a standard setting meeting using the Modified Angoff method. Standard setting ensures reliability and fairness.

#### Step 5: Disability Provision during exams

The University has a duty to ensure that reasonable adjustments are in place to enable a disabled student or a student in special circumstances to achieve the requirements as set out by Tomorrow's Doctors 2009.

#### Step 6: Marking

Exam paper marking: SBA answers scripts are marked by computer. SAQs are hand marked. Answer scripts are anonymised. Since provisions are put in place to allow a disabled student to undertake the tasks within examination paper, marking of exam scripts remains consistent for all students and no extra or reduced marking regimes are provided for students with disabilities provisions.

#### Step 7: Post exam stats analysis of SBAs

This ensures reliability and defensibility of the exams. 4 checks are carried out:

- KR 20 value** - Kruder-Richardson (KR20) – tests internal consistency of the exam. We aim for a value > 0.74
- Point biserial coefficient** - Measures how well that question predicts a candidate's overall performance in the exam. All items with a point biserial coefficient of < 0.2 are to be reviewed.
- Facility** - Number of students obtaining correct answer for each question. If unusually low, the question may be ambiguous/ incorrect/ misleading if the content may not have been taught. All items with a facility of < 40% are reviewed and eliminated or amended.
- Twenty percentiles histogram**: This shows the proportion of candidates in each twenty percentile score band who answered an item correctly. 1 is the highest and 5 the lowest. The histograms should show a stepwise progression with the highest marks on the left and the lowest on the right. Figure 1 shows a question that performed well while Figure 2 shows another that had a low point biserial and facility with an abnormal histogram and needed reviewing.

#### Step 8: Review

Questions are sent back to experts to review/ amend/ eliminate if necessary. It may be that the question tests core concepts and does not need alteration. Changes are then incorporated into the Question Bank.

#### CONCLUSIONS

Inclusive practices are embedded into our written assessment. Standard operating procedures drawn up within the Division serve as guidelines to ensure that written exams test students' knowledge and capability in an objective, reliable and defensible manner.

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100. [http://www.gmc-uk.org/assessments/undergraduate\\_medical\\_education/td09/td09main.pdf](http://www.gmc-uk.org/assessments/undergraduate_medical_education/td09/td09main.pdf)
- GMC. Gateway Guidance. [http://www.gmc-uk.org/assessments/undergraduate\\_medical\\_education/gateway.asp](http://www.gmc-uk.org/assessments/undergraduate_medical_education/gateway.asp)

[Written assessments in Year 2 MBChB – 8 steps to an inclusive exam](#)

A Venkatesh, E Bate, A Denison, F Parker, D Gerrie, E Sutherland, Medical & Dental Education, CLSM

## Students 4 Students Transitional Mentoring for New Undergraduates

Dr John Barrow  
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**1. Becoming a S4S Mentor**

Mentor Application Advertisements are made to current students from 2nd, 3rd and 4th Year during the second half-session. Students apply online.

**2. Mentor Selection/Training**

All selected students are put through training to equip them with the necessary skills required for their role as a S4S Mentor.

**3. Mentor/Mentee Meetings**

Regular meetings occur from Freshers' Week. Monthly feedback forms are fed back to each School Coordinator. Mentors are supported via guidance from their School S4S Coordinator.

**4. What's in it for a S4S Mentor?**

S4S allows Mentors to be eligible for a Silver STAR (5 students Taking Active Roles) Award. Enhances employability and contributes to the development of their Graduate Attributes.

**5. Starting University**

This is a hugely anxious time for students. S4S provides an extra level of support to new students from their peers within the same School and often degree discipline. Support is confidential and not related to staff.

**6. Early First Half-Session Support**

Regular meetings are scheduled for Freshers' Week to welcome new students and continue through the first weeks of term, then it is up to the students to establish the frequency of subsequent meetings.

**7. Ongoing Support**

The support from Mentors is there following the early weeks of term, but is on an 'as and when required' basis, which allows new students to develop their own support networks and find their feet.

**Supporting our Students...**

All new students will have concerns and anxieties about starting their university education. S4S was created to ease this transition by providing support for incoming students that runs in parallel with the Personal Tutor System, but is driven by the students for the students.

**Why have a S4S Mentor?**

**Fully Integrated Students**

This is the main goal of the scheme, to create university savvy students who have the skills to get the absolute most out of their time in Aberdeen, and possibly become a S4S Mentor in the future.

[Students 4 Students: Transitional Mentoring for New Undergraduates](#)

J Barrow, Medical Sciences, CLSM

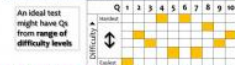
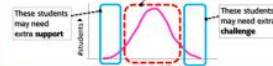
# Adaptive testing —a response to student diversity?

Martin Barker | School of Biological Sciences  
Sara Preston | Centre for Academic Development



## 1. Students are unique

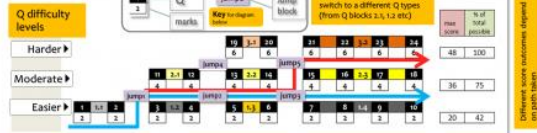
Academic diversity is increasing among the student intake. We need to respond to this in teaching and learning, not just 'aiming for the middle' by default



2. Assessments should be appropriate  
Adaptive tests give students a series of questions, at a suitable difficulty level, based on the student's cumulative performance in the test

## Questionmark Perception

3. Anatomy of an adaptive test  
Students are 'jumped' to different levels as they gain/lose marks



## 4. Example: part of an adaptive test

Questions are based on critical thinking, problem solving in biological and environmental sciences

**Q1.1** 2 marks  
A water lily plant is growing in the middle of a pond on Day 1. The plant doubles in area every day. The pond is completely covered on Day 30. On which day is the pond half-covered?

**Q2.1** 4 marks  
Five enzymes were part of a biochemical pathway. Enzyme K occurred before Enzyme Q but after H. Enzyme L occurred before Enzyme H but after Enzyme N. What is the order of enzymes in the pathway?

**Q3.1** 6 marks  
A group of 10 browsers consumes all the leaves on a tree in 20 days. On a very similar tree, 15 browsers do so in 10 days. How many days will 25 browsers take to consume all the leaves on another very similar tree?

**Q1.2** 2 marks  
An adult shrew is four times as old as its offspring. In 20 weeks, it will be twice as old. How old will adult and offspring be then?

**Q1.3** 2 marks  
The array shows plants within a field. Each letter represents a different treatment. What is the missing treatment, based on the existing pattern?

Students access different mark combinations. This partly depends on their performance in the first Q bank

5. Results In a pilot study most (94%) students shifted to a different 'difficulty level' of Qs once (61%) or twice (6%). Compared with control group, students were more likely ( $\chi^2$   $P < 0.001$ ) to answer 'suitable' Qs

6. Conclusion Adaptive testing can provide an appropriate challenge up to, not below or beyond, a student's academic capacity. This is fairer to students and more informative for teaching staff

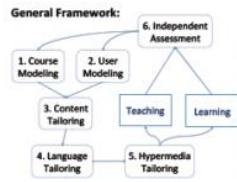
## Adaptive testing: a response to student diversity?

M Barker, Biological Sciences, CLSM

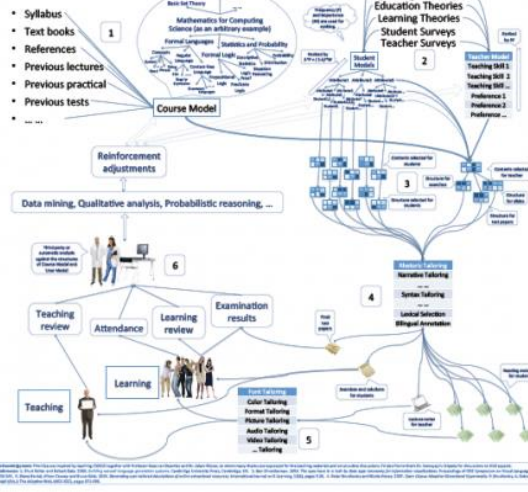
## Generating User-tailored Teaching Materials

Xiwei Han  
Department of Computing Sciences, University of Aberdeen  
Email: xiwei.han@abdn.ac.uk

**Abstract:** It is common sense that teacher teach differently and students learn differently. Actually even the same teacher or student may vary a lot in their teaching or learning ways within given education contexts. Therefore, teaching materials should be tailored accordingly to achieve better education performances. Based on the methodology and techniques of Natural Language Generation, this initial idea proposes a possible framework for generating user-tailored teaching materials, which consists of six modules, namely Course Modeling, User Modeling, Content Tailoring, Language Tailoring, Hypermedia Tailoring, and Independent Assessment, and then gives detailed procedures.



### Detailed Procedures:





[Generating user tailored teaching materials](#)

X Han, Computing Science, CoPS

**David R. Green ■ Jason Hagon ■ Edward Cogliano**  
 AICSM ■ Department of Geography & Environment ■ School of Geosciences  
 www.abdn.ac.uk/aicasm ■ Facebook ■ Twitter

Annual Learning and Teaching Symposium  
 Wednesday 15th January 2014 - 12.30 - 4.30 pm - King's College Conference Centre

**Learning for All**

8m Euro Interreg IVB EU-Funded Project - Climate Change Adaptation Strategies for coastal communities in NWE

Stakeholder Engagement → Using Workshops → To Raise Awareness, Educate & Capacity Build → Prepare → Climate Change Adaptation Strategy

MR3015 Integrated Coastal Management → Organise → ½ Day Stakeholder Workshop → Present → Combination of Lectures, Videos, Posters & Practical Activities → Facilitate → Community Capacity Building

Assess → Using Academic Content, Presentation & Involvement + Delegate Feedback + Video → Provide → Student Feedback

**Coastal Communities & Adaptation to Climate Change: Student-Led Workshops for Capacity Building**

UNIVERSITY OF ABERDEEN

[Coastal Communities & Adaptation to Climate Change: Student-led workshops for capacity building](#)

D Green, J Hagon, E Cogliano, Geography & Environment, CoPS

**Collaborating & Assessing Online in the Flexible Archaeology Programme**  
 Caroline Wickham-Jones, Archaeology, School of Geosciences  
 Sara Preston, Centre for Academic Development

**Course & Programme Design**  
 Wide range of pedagogical approaches – greater freedom (less constraints)  
 Some approaches illustrated include:

- Dialogue and collaboration through live online learning
- Detailed online feedback through MyAberdeen
- Building a community using social media (Facebook)

**Reflections ...**

- No constraints of time, distance, physical space – can choose educational strategy that works best
- Flexibility broadens the student base – age, experience, location
- Internet connection and a headset is all that is required – taught from remote hotel in the Highlands and in Oslo, Norway

**Enabling dialogue and fostering collaboration**

Flexible location, Motivating learners, Flexible time, Building a wide-learning community, Encouraging dialogue & collaboration, Fostering a community

**Feedback through MyAberdeen**

**Community of peers**

Typical timetable

*"The biggest obstacle to innovation is thinking it could be done the old way." – Jim Wetherbe, Texas Tech, 1990*

UNIVERSITY OF ABERDEEN

[Archaeology online? How MyAberdeen and Collaborate were used to provide engaging online courses](#)

C Wickham-Jones, S Preston, Archaeology & Centre for Academic Development, CoPS

## Flexible Summative Assessment: Different Routes, Same Learning Outcomes

Dr Darren Comber  
Dr Joy Perkins  
Mr Phil Marston



### Introduction

This poster describes two innovative approaches to the traditional end-of-course assessment, offering alternative assessment pathways to learners while maintaining the same intended learning outcomes. In both of these scenarios, the aim of the assessment was to encourage learners to engage with and apply the content of reflective practice in their learning. Two taught programmes are highlighted, both aimed at teaching staff at

different levels from across the University, and which are offered by the Centre for Academic Development.

In order to engage effectively with a conceptually "troublesome" topic such as reflective practice in education (Mayer & Land, 2008), the Course Team has adopted a flexible method to support individuals as they approach, and hopefully cross, this conceptual threshold. As noted by Perreault (1995), learners tend to learn what they think they will be assessed on, rather than

what is in the curriculum or what has been covered in class. As such, we built on the notion of self-determination theory (Deci & Ryan, 2008), designing and introducing a system of assessment options that motivates learners to engage with the course intended learning outcomes, a goal which is critical if teaching is to achieve both the immediate and long-term goals intended for our learners.

### Case Study 1

One of the key outcomes of this course is for participants to be able to reflect on their progress as an individual in it. Identifying how early information and motivation have affected the way that they learn now. However, producing a reflective narrative written in the first person is traditionally difficult, particularly when most participants are more accustomed to writing in formal academic prose.

In order to help participants to achieve the learning outcome, they are provided with a choice of media through which their reflective "story" could be communicated. Participants are offered the choice of:

- A written piece
- An audio file
- A video recording or film
- A comic strip

• An annotated photograph

Equivalence of experience is addressed by offering a measure of time equivalence for each medium, based around the relative rates of speaking vs. writing. In addition, ensuring that the assessment criteria focus on the information required, and are not overly biased by the production quality of the selected medium, ensure equity between participants.

Positive feedback from this element of the course highlights the novelty of the relative freedom that the options allow.

### Case Study 2

As part of the assessment diet for this short programme, participants are required to demonstrate that they can map their current teaching activities against those included in Description 1 of the UK Professional Standards Framework for Teaching in HE. Having run this course on seven occasions, it was becoming clear that supporting participants through this process required an extensive multiple iterations of submission, feedback and dialogue. This was effective but time-consuming for both the participants and the delivery team.

Viewing this iterative process as an asynchronous dialogue between participant and marker, it became clear that by offering participants the option of a face-to-face dialogue or a written submission, using the same assessment criteria for both, then feedback could be quicker, more immediately focused on areas of potential improvement, and provide a choice of assessment that could be more closely aligned with their own learning preference.

With 50% of participants opting for the dialogue route to assessment, the impact on markers' time was not to reduce the overall total, but to effectively block teaching time and reduce residual query time which was impacting on time management.

### Implications

- Providing revealed all assessment methods enabled participants to reflect critically upon their own professional practice and their own role in the learning process.
- Setting assessment criteria are important to judge participants against to ensure assessment reliability and validity.
- Providing assessment choice encourages greater motivation and deeper learning as participants' interest are often stimulated through their selected assessment method.

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Centre for Academic Development, King's College, Aberdeen, AB24 3FX

## [Flexible Summative Assessment: Different Routes, Same Learning Outcomes](#)

P Marston, D Comber, J Perkins, Centre for Academic Development

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## Speaker Biographies

### Professor Frank Coton, Vice-Principal for Learning & Teaching, University of Glasgow



*Frank Coton is currently Vice-Principal (Learning and Teaching) and Professor of Low Speed Aerodynamics at the University of Glasgow where, until December 2009, he was Dean of the Faculty of Engineering. He is a past Chair of both the Scottish Deans of Science and Engineering and the Applied Aerodynamics Committee of the American Institute of Aeronautics and Astronautics. He is also currently a member of the West Regional Advisory Board of Scottish Enterprise.*

*He is a member of the University of Glasgow Senior Management Group and has responsibility for the development of educational policy and strategy and all teaching quality processes. He has direct line-management responsibility for the Director of the Learning and Teaching Centre which supports academic development, technology enhanced learning and teaching and student learning. He is also a member of the SFC Access and Inclusion Committee and is Chair of the West of Scotland Schools for Higher Education Programme*

*Management Committee which coordinates widening participation activities in the West of Scotland.*

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**Professor Peter McGeorge, Vice-Principal for Learning & Teaching, University of Aberdeen**



*Professor Peter McGeorge is Vice Principal for Learning & Teaching, with responsibility for leading the University's commitment to continually improving the quality of academic experience for our students, achieving the benefits of our curriculum reform project, and widening access and participation.*

*Professor McGeorge studied Behavioural Sciences (Psychology/Zoology) at the University of Nottingham before completing his PhD in Experimental Psychology. He moved to the University of Aberdeen in 1990 to become a post-doctoral research fellow and subsequently a lecturer in the School of Psychology. In 2004 he became the Head of School of Psychology within the College of Life Sciences and Medicine and in 2010 was appointed Vice-Principal for Learning and Teaching.*

*Peter McGeorge has a broad range of research interests and publications covering the area of visual attention in both healthy and clinical populations.*

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**Dr Paul Davidson, School of Engineering**



*Dr Paul Davidson is the Director of Undergraduate Teaching of the School of Engineering, and the Programme Coordinator for the Distance Learning MSc in Oil and Gas Structural Engineering. His presentation will be about this MSc programme, which has been developed out of his extensive contacts with Industry, through delivering CPD courses, carrying out Engineering Consultancy, and acting as an Expert Witness.*

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**Dr Yvonne Bain, School of Education**



*Yvonne is a Lecturer in education, with responsibilities as Depute Head of School (Strategic Planning) and Teaching Qualification in Further Education (TQFE) Programme management. Her professional teaching career started as a teacher of Physics and Computing in Secondary schools and now focuses on professional development and learning of teachers and lecturers in FE and HE settings. Her research interests draw from her long held interest in the use of ICT for learning and teaching, and online learning in particular. Yvonne has facilitated online learning for many years within online and blended learning courses for both distance learning and campus-based student groups.*

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**Sarah Cornelius, School of Education**



*Sarah is a Senior Lecturer in the School of Education. She uses Collaborate to engage learners undertaking teaching qualifications for Further and Higher Education, and to support researchers, including those undertaking Masters level work based projects/dissertations and PhDs. Sarah's research interests are in distance and online learning and the outputs of several research projects into teaching and learning with web conferencing have informed a co-authored book 'Live online learning: strategies for the web conferencing classroom' which will be published by Palgrave MacMillan in 2014.*

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**Dr Colin Calder, Centre for Academic Development**



*Colin is a Senior Adviser in the Centre for Academic Development. He has over twenty years of experience supporting learning and teaching in Higher Education, with a longstanding interest in digital resources and their impact on student experience. He is a fellow of the Higher Education Academy and course co-ordinator for the University of Aberdeen PgCert eLearning in Higher Education.*

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#### **Dr Debbi Marais, Applied Health Sciences**



*Dr Debbi Marais is a qualified Dietitian with extensive academic experience at Stellenbosch University in South Africa and the University of Aberdeen. She is a Fellow of the UK Higher Education Academy with expertise in teaching and assessment at under- and postgraduate levels; programme and course coordination; quality assurance, curriculum development and reform; student recruitment & selection and pastoral care. Debbi is committed to supporting and promoting innovative teaching, reflective practice and enhancing the student experience and was awarded the Stellenbosch University Rector's award for Teaching Excellence in 2007. She is the Division of Applied Health Sciences Postgraduate Coordinator and a member of the University Postgraduate committee, MyAberdeen Steering Group, Online course delivery working group and College Graduate School postgraduate advisory groups. She is a post-doctoral researcher with a focus on Public Health Nutrition (food security, infant and young child feeding, nutrition education, international nutrition especially developing countries, nutritional status assessment) and Educational (employability, teaching international students, e-learning and distance education) research.*

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#### **Dr Lucy Foley, Head of Student Support**



*Lucy Foley has been Head of Student Support at the University since January 2010. Prior to that, she had been the University's Senior Disability Adviser and Student Support Adviser for a number of years and had a secondment as Assistant Director of the Scottish Disability Team from 2002-2006. She sits on the Disabled Student Advisory Group at the Scottish Government, where she represents the Association of Managers of Student Services in Higher Education (Scotland)*

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