Student Research Projects: a Case Study
Streamlining allocation and assessment of traditional final year research projects
across multiple undergraduate degree programmes

Streamlining allocation and assessment of traditional final year research projects across multiple undergraduate degree programmes

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Background and rationale

The School delivers 8 on-campus undergraduate programmes, each with a 'traditional' research project module with its own module coordinator. Differences exist in the credit weighting assigned to project work (varying between 20-40 credits) and the methods employed to assess project work.

On average 120 students undertake final year research projects in any given academic year. Previously each module coordinator requested titles from staff, collated these into cohort specific lists which were then allocated via a range of methods. However, the multi-disciplinary nature of programmes offered often resulted in duplication of titles across different lists and problems arose as a result of the different allocation methods employed. It was also possible that student choice was reduced where titles, suitable for more than one cohort, were only submitted to a single list. Via module evaluation students indicated they wanted a greater choice of titles and a 'fairer' method of project allocation. On one occasion, some students did not get allocated to their project until late into semester one and this resulted in increased anxiety for these students. To overcome these issues we have:

- Developed a generic method for allocating final year research projects within the School (addressed in Part A of this case study).

- Developed generic criteria of assessment for use across different project modules (addressed in Part B of this case study).

Part A: Maximising student choice of final year project titles

In the interest of student equity a common 'central pool' of project titles has been developed, from which all students select titles using a common allocation method. This approach aims to give students a greater sense of choice by providing opportunity to select from as wide a range of project titles as possible. Project allocation is now a generic experience for all students within the School, completed over a fixed period, and reduces student anxiety associated with project allocation

How to do it

In advance of semester one, information is circulated to all staff about the differences/similarities between project modules and the requirements for project work for each of the different cohorts. Each member of staff is requested to submit up to four project titles and is asked to complete a template for each project title, which includes a short description of the proposed project (including a short background, any key references, information on the techniques involved) and the cohorts of students the project would suit.

Each project is allocated a project number and templates are hosted on our VLE (WebCT) for students to access. Students can search the entire list of project titles or cohort specific lists. All final year students have access to the WebCT project area from the start of semester one.

In week one students browse the project list and consult with project supervisors. However, no projects are allocated until the start of week two. This one week 'run-in' period is designed to encourage students to browse the project list and give due consideration to various projects.

Project allocation commences in week two and the process is conducted via email. A project is allocated when both the student and the supervisor email a 'central point' and confirm the same project number. As project titles are allocated, this is noted on the central project list with the student's registration number. In addition to confirming project allocation to a given student this also helps students identify which projects are still 'available'.

The generic allocation process is completed by the end of week two and a list of student project allocations collated and forwarded to individual project module coordinators, who check and confirm the suitability of all projects allocated.

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Advice on using this approach

- Regular updating of the central allocation list during the allocation week is crucial and acts to reduce student anxiety which invariably surrounds the process.

- Good engagement with staff has been crucial; initial requests for project titles are circulated after the May exams and again towards the end of the Summer semester.

Troubleshooting

- Despite provision of information outlining the differences between project cohorts some confusion remains as to differences between project modules, e.g. a small number of supervisors incorrectly describing their projects as suitable for 'all cohorts'. Making double-checking by individual module coordinator necessary.

- Inadequate project description information from some supervisors has been a problem. Providing exemplars may be beneficial.

- The problem of 'popular' titles remains; i.e. where many students are attracted to a small number of projects. This is difficult to address although 'popular' titles are likely to be allocated early in the process by supervisors who wish to curb the tide of student enquiries.urrently the 'central point' is 'manually' administered by two project module coordinators who 'match' student and supervisor emails and manually allocate the projects on WebCT. This is labour intensive and in future it may be possible to move to a system whereby staff confirm project titles directly via WebCT. However, the considerable lack of staff 'buy-in' to viewing the project support area on WebCT suggests that manual administration is likely to remain.

- A small number of students accept more than one project (with different supervisors) but do not confirm their title with the 'central point' (dubbed 'project tarts'!). However, application of the first-come email rule has effectively dealt with this issue although it does serve to disillusion supervisors.

- The process might dissuade students from developing their own project titles. However, the system can facilitate such projects (although students do need to identify a suitable supervisor) and indeed, such initiative on the student's part is actively encouraged!

Finally, some staff have felt that they supervise a disproportionate number of students (i.e. more than others). The central pool of project titles and the allocation process together with the adoption of 'counting' main supervisor projects only has permitted greater transparency on this issue for all concerned.

Does it work?

The central pool has now operated for three academic cycles and has become substantially streamlined and the number of students being allocated titles within the first three weeks of semester one increasing from 64% to 94%.

Some additional enhancements have also occurred as a result of the central pool approach:

- All project titles are allocated in a timely fashion and in a transparent manner across all programmes. Module evaluations suggest that feeling of student choice has increased and student anxiety has reduced.

- Generic project related materials are also hosted on the WebCT project support area and include: what to look for in a research project, how to keep a laboratory notebook, how to prepare a poster presentation, plagiarism and how to avoid it, generic health and safety information, key features of level 3 work.

- Early-allocation has improved administration of other project-related activities; e.g. Health and Safety Induction Sessions and specific sessions for those undertaking specialised work (e.g. blood work, tissue-culture work, etc.) on a School-wide rather than cohort-specific basis.

In tandem with the development of the central pool approach we have also developed common criteria of assessment for common elements of project work across different programmes within the School (see Part B).

Part B: Ensuring common elements of final year research project work are assessed in a comparable manner across different programmes

Because of the multi-disciplinary nature of the programmes delivered within the School, many staff contribute to more than one programme, and therefore are required to assess project work across these different programmes. Early in the process of addressing project allocation, a further issue was identified; the need to develop common criteria of assessment for common elements of project work.

Student Research Projects: a Case Study
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The solution

A common set of assessment criteria, in the format of assessment proforma were developed for the assessment of common elements of project work, namely oral/poster presentations, final project report, and the supervisors report on project work.

Module coordinators (for each programme) have adopted a generic marking scheme for project marking and the majority of projects now include a project report and poster presentation. For the project report most programmes now use a scientific paper format drafted for submission to a named journal. Five cohorts come together to have a joint 'poster presentation event' which is structured as an oral communications session to a Scientific Conference. The poster presentation typically accounts for a small percentage of total module marks (5-10%) but as it precedes submission of the final report it provides opportunity for formative feedback (and summative assessment).

Module coordinators have agreed that project reports and presentations are marked by two independent assessors (i.e. without involvement of the supervisor) and that supervisors contribute to the overall project module mark via a 'supervisors report on project work' which relates to student effort and initiative etc taken by the student during their project work.

However, given the different credit weights of the various modules and the slight differences in continual assessment the development of a generic project module taken by all programmes has been resisted and is not likely to be developed.

How to do it

Firstly we undertook an audit of the methods of assessment employed and the criteria used to assess project work assess across the different programmes. A wide variety of methods were employed including various combinations/weightings of planning presentations/reports, literature review, thesis style report, oral presentations, poster presentations, preparation of scientific paper, and use of a lab-book (assessed/unassessed).

From this audit a working group of project module coordinators developed a generic set of assessment criteria for common elements, which following agreement at programme and School level were adopted.

In an effort to reinforce equity of assessment across different programmes, marking sheets are now accompanied by a common set of guidelines for all assessors which includes 'key features of level 3 work'

and 'generic level 3 criteria of assessment'. Students also have access to the generic marking schemes and guidelines provided to assessors via the WebCT project support area.

All students now submit a lab-book (for the majority of programmes this is unassessed) and increasingly we use Turnitin (plagiarism check) for project submissions.

Advice on using this approach

- At the earliest stage (project allocation) students are made aware of the criteria against which their project work will be assessed. Equally we continually remind staff to refer to the common set of guidelines for assessors when marking project work.

- We aim to engage all staff in the process! To ensure a high turnout for the poster presentation event we circulate dates of the event as early as possible and for continuity we try to align the same markers for as many components of project work as possible.

- During the poster event students are encouraged to find out about the project work undertaken by their peers. The poster event culminates in a prize-giving ceremony

Does it work?

- Similar assessment sheets assist consistency of assessment across different cohorts. Students access early the criteria against which they will be assessed and it is hoped that the generic project information available will enhance the project experience.

- The use of a scientific paper format for the project report forces students to write concisely and gives them the experience of preparing research work for submission. This move has been commended by a number of our External Examiners.

- Students report favourably on the joint poster presentation event and can see the value of the exercise as they prepare for their final write-up.

Further developments

We plan to encourage students from other years of programmes within the School to attend the poster event. This would further enhance the 'atmosphere'
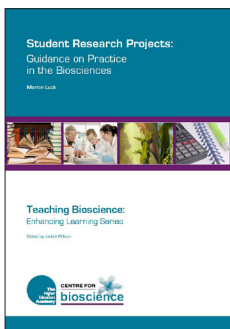
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at this session but may also excite students early on about ongoing research activities and how they might get involved in these during their final year projects and beyond.

Accompanying materials

This case study was written to accompany the Teaching Bioscience: Enhancing Learning guide entitled Student Research Projects: Guidance on Practice in the Biosciences, written by Martin Luck and published by the Centre for Bioscience. The associated website (www.bioscience. heacademy.ac.uk/resources/ TeachingGuides/) contains a downloadable version of this case study and the following additional material:

- Template used to collect information on potential student projects from supervisors
- Generic descriptors for level 3 assessment
- Samples of generic assessment sheets (used to assess level 3 project work)

It is not possible to provide general access to our WebCT project support area but if you are interested in other materials hosted on our WebCT project support area please contact the first author directly.

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