

Designing a capstone – a development workshop

1. Starting with the end in mind

Capstones are designed to lead students to their next life stage. For the purposes of this exercise, we can't talk to alumni, industry and each student to find out what they want to do (although you may already have an idea of this).

When we think about next steps for our students, we often think of entry-level jobs. That can be hard to imagine and not very helpful (getting coffee and doing the filing isn't quite what we want to aim for).

So let's imagine for a moment, what your students will be doing in five years.

In the box below, write in a few sentences where your students might be doing, and the pressures that might be associated with that. Your students may well have many different paths, so you may need more than one option.

Some starters:

- Freelance writer for major publications, needing to work independently to deadlines and pitch own projects.
- Running a start-up business, needing to...
- Working in a large government department as a policy analyst, needing to...
- Post graduate researchers, needing to...
- Transferring their discipline skills to a corporate environment, needing to...
- Pursuing a creative project of their own, needing to...

2. Capabilities

You've already defined some of the major capabilities students will need, based on the roles you imagine for their futures.

We'll aim for three primary capabilities and three secondary (necessary but not the main aim) capabilities.

A list of commonly used capabilities is provided, but is just a start. Add your own or edit as suits.

- *Working in a team*
- *Developing proposals/reports*
- *Working up budgets*
- *Managing clients*
- *Coordinating multi-disciplinary activities*
- *Setting own schedule*
- *Engaging with community*
- *Planning for events*
- *Following strict protocols*
- *Analysing current events*
- *Working alone*
- *'Pitching' ideas*
- *Writing up research*
- *Applying skills in unknown contexts*
- *Developing strategy*
- *Self-publishing work*
- *Selling/marketing their work*
- *Gaining government funding*
- *Investigating policy*
- *Persuading others*
- *Acting as a consultant*
- *Developing products*

Primary capabilities

1.
2.
3.

Secondary capabilities

4.
5.
6.

3a. The framework

The activities you have already listed can be the activities that students will do. So the next thing to do is look at the framework you will use. What is the most appropriate method for students to practice the capabilities you have defined? Will it be:

- A project?
- Problem-based?
- A simulation?
- In industry?

Students will develop a / engage in a...

Working in the context of...

3b. Structural details – working with, for and about

On the capstone website, you will find typologies that outline more choices you will need to make. Based on the work you have already done, can you already define whether the capstone will be:

- Team or individual or both
- Inter/cross/multi-disciplinary or not
- Clients, competitions, staff or student defined outcome

Students will work as a(n)...

They will utilise their discipline expertise by...

They will meet the requirements of...

The public element of this will be...

We will celebrate their achievement by...

4. Putting it together

You should now have the details you will need to write the aims for your capstone. Taking into consideration the ultimate destination for your students, capabilities, framework and structural details, you should now have the basis for writing your aims (and possibly a draft of learning outcomes).

Bouncing this off your program level learning outcomes, the AQF level descriptors, graduate attributes and discipline standards (if applicable) will provide a benchmark for these.

Complete these sentences (or write your own)

- This capstone subject is structured as a...

- Students will undertake...

- Through working as/on/in...

- They will develop their capabilities/be prepared for...

- The capstone will culminate in...

5. Assessment (if there is time)

In capstones, students are generally assessed on the work that they do throughout the learning experience, and the quality of their approach to it, rather than on post-hoc declarative knowledge. So what we aim to do is assess the activities you have already listed.

Common major outputs tend to fall into a small range:

- Proposals and plans
- Reports and papers
- Products and artefacts
- Presentations and events

Then there are:

- Team-based peer evaluations (contributions, behaviours)
- Self-reviews (reflections on processes and outcomes)
- Process journals (collections of work building to the final outcome)
- Job and task logs (usually for groups)
- Leadership activities (running a seminar, lecture)
- Debates, books, portfolios, forums, social media, impact assessments, evaluations, client responses...

Dissemination aspects may be public, peer or client, or a combination of all three. Think about:

- Social media groups
- Exhibitions
- Events
- Lectures

6. A few common issues and things to think about (more on the capstone website)

Teaching staff need to have a good balance of dispositions – enthusiastic and supportive but not averse to letting students solve their own problems, understanding of the level of requirement (ie not PG research), high expectations but not gatekeeping. Not all staff will take to capstones easily – some can be uncomfortable with the process.

Consider workload associated with external partners carefully. There are myriad benefits of having external partners but it can take time and require continuity, long set up times (you'll need guides and agreements for clients, staff will need to manage expectations and may find themselves navigating failed student/partner relationships).

Don't overdo supervision load – capstones can be delivered using the same frameworks as other classes, but with a gradual 'letting go'. Consider reducing didactic delivery over time and consider letting students take control of lectures and workshops, calling on staff as and when issues arise (try workshop-style classes or online discussion boards as periods when students can flag that there is a problem or they have a question).

7. Some common approaches

Developing a product (most common in design, IT, engineering)

These are often designed as two-stage project capstones (commonly, but not always over two semesters). In the first stage, students investigate a context or scenario, and develop a proposal for a product response. The second stage is commenced following approval of the first, and involves actual product development. For a one-semester version, care needs to be taken not to include reliance on external factors (eg getting information from manufacturers). Assessment may be based on team or individual processes, documentation, reports and presentations. Criteria may relate to professionalism, creative resolution of issues and the quality of outcomes more generally. The constraints on the project may be related to a particular type of product, client preferences, existing products/brand requirements with which the outcome has to align, scale and/or complexity of the product. In many cases, students must also navigate team management, legal, usability and manufacturing issues.

Pros – easy to manage (without clients), space for students to ‘grow into’ the process, scope for student autonomy, can be anything, students generally enjoy them

Cons – challenging to manage (with clients), need careful structuring for quality, some students can get lost

See for example:

Swinburne software development project -

<http://www.international.swinburne.edu.au/units/Software-Team-Project-HIT3061/international>

A research project (most common in humanities, sciences)

As for product development capstones, these are often, but not always, carried out over two semesters. This is generally to accommodate ethical approvals and a degree of complexity/multiple strands in empirical research (data collection, analysis, lit review, write up). Where they are in one semester, they generally do not include primary data collection, but instead focus on investigating a data set or undertaking purely desktop research with a literature review and/or critical piece. Students should have scope to select a topic of interest, and make a proposal regarding its study. In the case of purely critical studies or essays, these need to drawn on more than one strand of knowledge and look to the application of findings in a particular context (ie rationale and implications). These capstones often include application of key analysis methods, although care needs to be taken not to recreate a methods course in order to bring students up to speed. Assessments are based on similar criteria to other research courses.

Pros – easy to manage, follow classic research project approaches, prep students for hons or doing industry-based research

Cons - ethics and ethical risks, staff can end up doing close supervision, students may not have sufficient methods knowledge, may not be relevant to all students

See for example:

Indigenous studies research at UWS -

<http://handbook.uws.edu.au/HBOOK/unit.aspx?unit=101862.3>

History book projects at Virginia Tech - Jones, K. W., Barrow, M. V., Stephens, R. P., & O'Hara, S. (2012). Romancing the capstone: National trends, local practice, and student motivation in the history curriculum. *Journal of American History*, 98(4), 1095-1113.

Simulations (most common in business, creative disciplines)

Simulations are intensive replications of industry contexts. The most common and cost-effective (but not free) are online simulations (business). In the creative arts they tend to be on-site – radio stations, design studios – although they can be just as effective in an online context as social media campaigns, programs, blogs, or online newspapers. The key aspect of these that is shared is that students work toward production with all of the risks and challenges of an external context. They see the consequences of their decisions played out in public or through cascading problems. Assessment is generally based on professional behaviours, meeting deadlines, overall outcomes and responses to challenges.

Pros – gets pretty close to being ‘real’, highly motivating and engaging for students, great for profiling the course

Cons – can fall over easily, staff workload and feasibility/cost need to be managed, assessment can be a challenge

See for example:

Television production at CSU - <http://www.csu.edu.au/csu-live/key-study-areas/communication-and-creative-industries/videos/csu-television-students-live-stream-newtons-nation-at-bathurst-2013#.U0IAv8ekXt4>

Consultancies (most common in design, business, PR and marketing, engineering)

Consultancies are in-house activities that go one step further than simulations – they have actual clients. Most commonly organised as projects, students work with a client to understand an issue and develop a proposal/advice in a comprehensive report. Clients may or may not pay for this advice. Students are often given an office to work from, so that there is a phone and computer. They may also require a meeting space to which they can bring clients. Some care needs to be taken with the ‘no-competition’ clause in the university context – covered by engaging with clients who might not normally be able to hire a professional consultancy.

Pros – as real as it comes for industry engagement, students get a real taste of working with a client, engaging and concrete outcomes

Cons – Difficult when a job falls over or students aren’t ready, clients need to be managed, legal implications

See for example:

Swinburne business consultancy -

<http://www.future.swinburne.edu.au/units/Industry-Consulting-Project-BUS30009-/local>

International engineering project at Rose Hulman institute - Aidoo, J. et al. (2012, 30 May - 1 June). International design project experiences: Assessing the long-term impact on students. Paper presented at the Capstone Design Conference, Champaign-Urbana, Illinois.

Other ideas from the field

Competitions – local, national, international

HealthFusion Challenge - <http://www.healthfusionteamchallenge.com/>

International tours

International dance tour at QUT -

http://www.qut.edu.au/?a=16559&residency=dom&unit-id=51451&study-level=&SQ_DESIGN_NAME=content&fromajax=true

Dialogic/debates

History at USC - <http://www.usc.edu.au/course-outlines/his300-course-outline-semester-2-2013.pdf>

Writing projects

Creative writing at UQ -

http://www.courses.uq.edu.au/student_section_loader.php?section=1&profileId=61359

Placements with additional activities

Social work at RMIT - <http://www.rmit.edu.au/courses/012092>

8. Additional resources

The capstone network website www.capstonecurriculum.com.au

Including typologies, case studies and links to relevant projects, discipline standards.

Business capstones and practice guide - <http://businesscapstones.edu.au/>

Capstone principles from the law project -

<https://wiki.qut.edu.au/display/capstone/Home>

Rethinking Final Year Projects and Dissertations (UK) -

<http://www.mickhealey.co.uk/resources>

Final project report and book:

http://www.heacademy.ac.uk/projects/detail/ntfs/ntfsproject_Gloucestershire10

A couple of the relevant discipline standards

History

http://www.olt.gov.au/system/files/resources/altc_standards_HISTORY_080211_v2.pdf

Creative & Performing Arts

http://www.olt.gov.au/system/files/resources/altc_standards_CREATIVE%20ARTS_080211_v2.pdf