Bespoke Learning Design – One Course, Multiple Cohorts

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Abstract

Creating content that is relevant and appropriate for specific cohorts of students is practically impossible to do at an institutional scale. Creating content on a faculty or departmental level gives much greater scope for a bespoke programme that addresses students' needs but offers different challenges of scale and support. This paper describes how a cohort-specific course was developed and scaled up using a process whereby the bespoke elements of it could be easily modified and then combined with generic content to create a suite of courses that are easily managed, scalable, and provide tailored content to a variety of student groups.

Introduction

Attributes and Aspirations (AA) is a not-for-credit short course specifically designed for postgraduate students at Imperial College London, a science, engineering, and medicine focused institution. It is fully online, and students can self-enrol at any point throughout their programme from a month before the start of term. The course is designed to give the maximum support to students on one-year master's programmes who are typically time poor and need to make decisions about their next steps during their studies. AA was created to give such students information on career planning and transferable skills on a flexible time-frame to support their employability journey (Dallison, Stripe & Alexandrou, 2021).

A pilot version of the course was developed specifically for the needs of postgraduate biomedical science students with plans, from the beginning, to develop it for a wider offering that would work for students across the institution. This paper outlines how the course was developed for the biomedical cohort and, based on the success of the bespoke elements, further developed into a scalable offering which can be adapted for different student groups.

This has been done through a process of modularisation and careful asset management that has led to the course, at the time of writing, being offered to six separate cohorts in a variety of formats while maintaining the structure, quality, and bespoke nature of the original biomedicine version.

Timeline

The AA course is split into two sections, careers skills and transferable skills. Both are targeted towards preparing students for their next step, either in industry or further study. The careers element of the AA course was launched as a pilot to a limited group of postgraduate biomedical students in 2019. In response to the Covid-19 pandemic it was opened up to all postgraduate students in the Faculty of Medicine in mid-2020. The addition of the transferable skills modules followed in September 2020. A biomedicine Doctoral Training Programme then requested a version of the course that could be used by PhD students. Owing to the similarity of the subjects this required a limited number of changes, notably the preparation for postdoctoral research rather than a PhD.

This process highlighted the possibility of developing versions that were bespoke to other cohorts with only minor changes to the structure. To test this theory with a markedly different discipline a version of AA containing all the same modules was then developed for the Faulty of Engineering. It is pitched at generic engineering roles but there is scope for further development, using the structures that will be outlined, to make bespoke versions for specialities within Engineering.

It was not possible to create a full version for the Faculty of Natural Science, as their career pathways are too broad for some of the discipline-specific content to work. Therefore, we created skills modules that mirrored the versions for Engineering and Medicine and created a new generic career skills module. This 'skills only' version is the basis for the development of AA for undergraduates, which was launched in September 2023. it has the potential to be used for other groups that are not STEM focussed. This work has all been done in full collaboration with the Imperial College Careers Service to enhance the offering they are able to make rather than any attempt to replace it.

Designing content

The AA programme was developed to address some of the career development needs of one-year postgraduate students within constrained timetables. It provides information on recruitment windows for different industries, skills such as writing CVs and attending interviews, plus transferable skills including communication, teamworking, and problem solving. To provide this content to students when they need it the course was developed to be online, available for self-enrolment throughout their studies, and modular so they could select the modules that they needed, when they needed them. While the programme does have an introduction and a wrap up module there is no defined order to the content and no modules are pre-requisite for any others.

AA contains five components that have been designed and embedded throughout to create a course that is authentic, interactive, and most importantly relevant.

1. Online interactivity with instant feedback
2. An evidence-based approach to skills development
3. Discipline/industry specific content relating to jobs and employment
4. Inclusive digital personae which mimic peer-to-peer interaction (Stripe, Dallison, & Alexandrou., 2021)
5. A reflective career planning portfolio called Plan: Me (Dallison, 2019)

Interactive course design

The programme was designed by a multidisciplinary team and used a learning design framework developed by the team (Stripe & Simpson-Bergel, 2023) which focuses on building a logical narrative throughout the content and providing students with options for interaction, immediate feedback, and self-reflection. As an online course with no formal assessment and without instructor interaction it is important for the course to provide students with engaging interactive content. There are concept checking questions with immediate feedback throughout, prompts for reflection, and peer-to-peer interactions synthesised by the pseudo-students who narrate the course. This feature will be further discussed later. The reflective portfolio links directly to the Careers Service and the strong links between the service and the AA programme allow students to access face-to-face support if they need it. Other media such as LinkedIn Learning and TED Talks are used throughout as supplementary content and to provide a variety of delivery modes. In-person workshops offered by other services are signposted wherever relevant.

An evidence-based approach to skills development

Central to the development of the AA course are the skills that students may need, or want, to develop as they move into professional careers or further study. The initial course, and all versions developed since, have been structured around a set of twenty skills. This list of skills was developed as part of a stakeholder analysis which looked at; what major graduate employers list in their recruitment material; the skills and attributes listed as graduate outcomes by a range of higher education institutions; and the World Economic Forum reports on skills for the future (Whiting, 2021; World Economic Forum, 2018). This wide-ranging list of skills was split into themes and reduced to twenty skills that could realistically be addressed in an online course. The twenty skills, which are split into six categories, are shown in Table 1. These skills are a constant element through the whole of the AA programme and the relevant skills are listed at the start of every unit. Additionally, students have access to a skills map which allows them to search the course by skill, or to see what skills are addressed at a module and unit level. This skills map also serves the purpose of providing a course overview which allows students to plan their journey through the course.

Table 1: AA skills

Professional skills	Communication skills
Skills that will help you in your job search and in your future career. • Career skills • Networking • Professional behaviours	Skills that help you present yourself and make yourself understood. • Communication • Presentation
Cognitive skill	**Project Management skills**
Skills that help you analyse and understand the information around you. • Critical thinking • Decision making • Problem Solving	Skills that help you to develop and manage projects of all kinds. • Creativity • Prioritisation • Time-management • Goal setting
Personal skills	**Collaborative skills**
Skills that relate to yourself. They are very important in all aspects of life not just professionally. • Adaptability • Resilience • Emotional intelligence • Reflection • Self-awareness	Skills that affect how you interact with others. • Diversity • Leadership • Teamwork

Industry/discipline specific content

While the transferable skills employers from different industries may want are broadly speaking the same, a CV to apply for a PhD can be very different from an application for a graduate scheme. Throughout the design of AA, specific real-world examples are used in the form of adapted job advertisements or recruiter websites. Students are introduced to tools such as GoinGlobal (which allows research into the employment culture of different countries), and Marketline Advantage (which allows users to research industries and companies) so they can make the most of them in their job research. As a tool for networking and job searches, LinkedIn is also heavily referenced and students are encouraged to use it and interact with it in a variety of ways, again, to help derive maximum benefit from its use within their professional futures.

Personae that mimic peer-to-peer interaction

In addition to activities that explore industry tools, the course provides exemplar content in the form of CVs, personal statements, and cover letters, all of which is discipline specific. A further level of authenticity is added to the course by presenting these through a set of digital personae which represent archetypal students developed from the knowledge and experience of the programme's subject matter expert and careers specialist. These personae were initially a standard user experience design tool to make sure the course was appropriate to the audience (Babich, 2017). However, they developed into an integral part of the programme and were developed to have full biographies including enrolment on Imperial College master's programmes, education histories, and future aspirations. This process allowed an extra layer of depth to the programme as students could see the link between education history, skills development, and a CV or interview. These personae also appear throughout the course as prompts to ask students for advice, mimicking a peer-to-peer interaction that would not otherwise be available in an asynchronous course. Furthermore, these personae add a level of diversity and inclusion to the course by subtly embedding elements such as sexuality, mental health, religion, and caring responsibilities into the course and so providing a level of representation to minoritized groups (Stripe et al., 2021).

Plan: Me reflective career planning tool

Reflection is a core skill in the AA programme and is supported throughout by the use of the reflection tool Plan: Me developed by the AA subject matter expert (Dallison, 2019). This tool enables students to map out their ideas and plans for their future, create decision points, and manage timelines as they collect information for future applications. Students are prompted to reflect on their own skills, things from the use of industry tools (see above), and elements of their past that are relevant to their future. This allows students to develop agency over their own learning pathways as well as developing skills like prioritization and decision making. Plan: Me has been identified as a good practice tool for enhancing student wellbeing (Hayden, Osborn, & Costello, 2023).

Developing different versions

All the design features described so far were developed for the original version for biomedical students. The course was very well received by students particularly the discipline specific content and the use of the personae to make the course bespoke for their cohort. Student feedback showed they liked 'concrete examples', 'reading about other student journeys', using tools like LinkedIn and learning 'about the different career streams available'.

Therefore, to develop the course for other cohorts the same model would have to be used. However, to create this level of bespoke content is a significant amount of work, so a framework was developed to reuse the elements of the programme that were generic and manage the bespoke content in a way that minimised the amount of work but maintained the quality of the original course. The use of the personae meant that this aspect was relatively easy to achieve, as we could design personae for different cohorts. Similarly, the industry content could be switched for the content relevant for that discipline. It was simply a case of highlighting where the content needed to be edited and keeping track of the changes.

As the course grew, we began to introduce the personae from all the cohorts so they can be used across versions to illustrate content that is not industry specific. For example, one of the biomedicine personae uses Padlet to develop their Plan: Me. This example is used across all versions to demonstrate the use of Padlet. Far from being detrimental to the bespoke nature, this reinforces the idea that the students taking the course come from across the whole institution and that the experiences of an engineering student can still be relevant to a biomedical student and vice versa.

Generic content

Key to maximising productivity and maintaining quality was identifying the generic elements and creating a process to maintain the integrity of those elements as new versions were developed. This generic content falls into two categories:

- whole modules or units which are relevant to all cohorts without changes, and
- specific content within bespoke units that needs to be maintained across all versions.

There are four modules in the AA programme that are generic and used by all versions which means that any exemplar content or use of personae within them is illustrative of a general point rather than a discipline specific point. Those modules are:

- Interviews
- Assessment centres
- Communication and teamwork
- Problem solving

Additionally, within other modules there are some units, such as 'Evaluating Information' which sits within the 'Critical Thinking and Decision Making' module, that are generic and used by all versions. It was not a conscious decision to make these generic it is just what happened when following the design process.

In the initial version several slides of one unit in Communication and Teamwork contained bespoke elements. When scaling this up to four versions a practical decision was taken to modify this unit slightly to make it appropriate for all students. The benefits of that small number of slides being bespoke were greatly outweighed by the time cost of creating multiple versions of the whole module.

Presentation of content to students

Students access their content through the self-enrol feature of their virtual learning environment which is set up using institutional hierarchies so students are only presented with the content that is relevant to them. This means that while an administrator on the system may see three versions of the introductory module:

- AA for Medicine Introduction
- AA for Engineering Introduction
- AA for Natural Sciences Introduction

a student will only see the one relevant to the faculty in which they are studying.

Students are also provided with a skills map to allow an overview of all modules, the units within them, and the skills addressed in each unit so they can make informed choices about how they spend their time. Communications are also driven through specific master's programmes so that students are reminded of relevant content at specific times. An example is highlighting the 'Presentations' unit prior to an assessed presentation or suggesting the teamworking units are done prior to a group work assignment. The modular structure of the course also allows modules to be embedded into syllabi as a way of complementing a course. The Critical Thinking unit is widely used to supplement research skills teaching.

Building the course

The AA programme is built using three main tools: PowerPoint, Articulate Storyline, and Blackboard Learn. Blackboard is used only as the presentation method and the content was designed so it could be delivered through any virtual learning environment. PowerPoint is used for the working documents and for editing. In the initial version, these PowerPoint slides were fully developed with images and buttons to highlight where interactive content would sit so that a) the development of the content could be more easily visualised by the whole team and b) the content could be easily transferred into Articulate Storyline. Now the content has been written and receives only minor adaptations in the annual review process, those slide decks are stripped to simple text so that students can access the content through Blackboard ALLY, an accessibility tool that provides content in multiple formats where necessary.

Each of the three tools has a template version from which final delivery versions are made for each year and while there may need to be multiple PowerPoint or Storyline outputs for each unit (one for each version) the template versions are kept as a single file. This means that within each unit, slides that are generic are never repeated, making quality control much easier. Throughout the template versions, each slide is marked with a logo to represent the version it belongs to (or if it is generic). This allows for a second quality check after content has been removed (checking that the correct logos are present) and allows for new slides to be added as more versions are developed.

Storyline content is published as SCORM (a set of technical standards that allow eLearning content and LMSs to work together) and embedded into Blackboard where templates are used in a similar way so that the template course for a given module contains all versions. When the final courses are produced it is a simple job of removing unnecessary content. This approach means that generic content only has to be checked once to maintain consistency and quality.

For example, in one module there are two units which are generic and one which is bespoke per faculty. Each unit has one template file which is copied for each faculty version where needed, the redundant slides are then removed, and quality checks made. Then all the online versions are uploaded to a single Blackboard template which is then copied for each faculty version and the redundant content is removed leaving the Blackboard courses which will be made available to the students.

Quality processes
Alpha and beta testing is done at several points by different people as well as checking spelling, grammar, that weblinks still work, and that all the redundant content has been removed. The original content from the pilot version was tested for tone and content by a range of students before it was released, and we collect evaluation material on all versions

to highlight any changes that need to be made in the yearly cycle. The most recent round of testing and proofreading confirmed that there is no duplication of generic material and that all bespoke content has the same level of accuracy across each version. This means for future iterations any changes or upgrades that need to be done based on student feedback will be much easier to make.

What next

The success of the course, in particular the pre-sessional aspect which provides an induction to the institution and the use of the personae for inclusive practice, led to a request for an undergraduate version to be developed to help address the needs of incoming students, particularly those from widening participation groups. This version was released in September 2023 with a pilot cohort.

Since the writing of the version for undergraduates, there are a total of 164 separate units across 18 modules for six different cohorts. There are 24 personae used within the courses with 76 exemplar documents including CVs, job application documents, and example reflective portfolios. 94 multimedia objects including bespoke video, modified job adverts, and content from TED and LinkedIn Learning supplement skills content and interactive exercises.

These items can all now be used as generic content or templates for new bespoke content so new additions to the course can be made without major works on the structure. In this way, courses can be built for as many cohorts as want them.

Acknowledgements

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Author bio

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