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Project report

Library SkillUP: Digital information skills module for students at the University of Hertfordshire

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Abstract

This project report describes the workflow model used at the University of Hertfordshire to develop and test a suite of new digital information skills materials for students. The approach taken was informed by findings from the Jisc Student Digital Experience Tracker and good practice from Jisc's NUS Benchmarking tool. Content was mapped against the digital information literacy segment of Jisc's Digital Capabilities framework and CILIP's information literacy definition. The project set out to reuse, refresh and repurpose existing online resources and identify new content where necessary to provide a set of up to date learning objects, which academics could easily embed at point of need into their programmes of study, according to the university's Guided Learner Journey principles. The project also sought to make an informed decision around which digital technology/platform to use for content creation. Due to the required functionality, Instructure's Canvas, which is already used by the university for all its courses, was chosen as a platform for the materials. The team used University College London's ABC Learning Design methodology to design the curriculum and writing teams followed a pedagogical approach to create content and interactive learning elements for the Canvas Library SkillUP module. Students were consulted and provided feedback at all stages of the project.

Keywords

ABC Learning Design; curriculum design; digital skills; digital information skills; embedding skills materials; information literacy; workflow process

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1. Introduction

This project report describes the workflow model used at the University of Hertfordshire (UH) to develop and test a suite of new digital information skills materials for students. The project (ethics approval EDU/SF/UH/03871) was funded by a UH Learning and Teaching Innovation Fund award.

The university's information skills framework, i-Spy, (Bilson, Rivers-Latham & Singer, 2007) was originally developed in 2003. Although this suite of online tutorials had since been mapped to the UH Graduate Attributes (University of Hertfordshire, n.d.) in 2014, they were still in need of updating. A further driver was that the university was seeking to migrate content from StudyNet (our in-house virtual learning environment) to a new platform. As we needed to find a new home

for our library skills materials, the project also sought to make an informed decision around which digital technology/platform to use for content creation.

Concurrently, the university had decided to adopt the Guided Learner Journey (GLJ) pedagogic principles following a series of consultative workshops with academic staff and students (Hudson & Barefoot, 2018). The GLJ principles seek to establish a consistent delivery of learning activities and resources across course modules, providing simple integrated links to journals, e-books and other external resources, at point of need, whilst giving students the ability to comment on and supplement resources. Students would also have a view of their whole Programme Landscape as they progress through their studies.

The GLJ is implemented through Instructure's Canvas online learning environment with integrated Talis reading list management software. With teaching and learning activities now being delivered via Canvas it seemed a good opportunity to repurpose our skills offering in line with this development.

Principles of digital literacy underpinned our work. We were guided in this project by the outputs from the Jisc Student Digital Experience Tracker (Jisc, 2017). This national survey of 22,000 learners showed that students value materials that they can engage with via their own devices and would appreciate more opportunities to review and update their digital skills. Digital literacy is also part of the Chartered Institute of Library and Information Professionals (CILIP) information literacy definition (CILIP, 2018) which places information literacy firmly within the context of digital literacy.

The project aimed to focus on digital information literacy as one of the six elements of the Jisc Digital Capabilities framework (Jisc, n.d.). We undertook to review our existing information skills materials in the light of the current emphasis on digital capabilities; in doing so we could position our offering to support this agenda within the university. We also wanted to draw on the good practice principles in the Jisc NUS Benchmarking tool (Jisc, 2016) to ensure materials were flexible and allowed for student progression.

The project set out to reuse, refresh and repurpose existing online materials and identify new content where necessary. The outcome would be a set of up to date online learning objects, which academics could easily embed at point of need into their programmes of study and provide students with opportunities to learn valuable transferrable digital skills.

2. Mapping and scoping

In order to scope the coverage of our new materials we first set about mapping elements from the Jisc Digital Capabilities framework (Jisc, n.d.), and the Jisc NUS Benchmarking tool (Jisc, 2016). We also looked at professional frameworks (CILIP, 2018; SCONUL, n.d). We used a spreadsheet to list all the elements in the Jisc framework and mapped these against the content of our existing i-Spy tutorials and relevant videos in our subscription to Lynda.com (now LinkedIn Learning) and materials from other UH academic support services such as the Centre for Academic Skills Enhancement (CASE). This exercise ensured we had identified and captured the full breadth of skills and concepts that we might want to cover in our new digital information literacy materials.

We used padlet.com, an online collaboration tool, because it allowed ideas and concepts identified in the mapping exercise to be grouped, sorted and organised in a more dynamic way. The example in Figure 1 below shows headings and elements that were taken from the spreadsheet, colour coded and grouped by type. The posts on the Padlet could be moved around any number of times as we identified common themes.

Figure 1: Padlet: digital information literacy skills elements

From this mapping exercise and organisation of the various concepts, four main themes emerged: Searching, Evaluating, Reading and Referencing. Three additional themes were identified: Open Access, Copyright and Data Management. It was decided to concentrate on the four main themes initially and leave scope to create content for the remaining themes at a later date.

3. Student consultation

Students were consulted throughout the project. Before we started design work, we attended a regular drop-in event organised by Library and Computing Services for student representatives across ten different academic Schools. We asked students how they would like to access skills materials. They told us they would like shorter, or 'bite-sized chunks' of content just a few minutes in length, written in a jargon-free style, with plenty of opportunities for interaction such as videos and quizzes. Students reported that they didn't mind scrolling through content lists if they could find answers to their specific questions easily, rather than working sequentially through a longer tutorial. They wanted to be able to access the materials via a laptop whilst working on an assignment, and also on the go via their own devices.

We stopped students in the Learning Resources Centre foyer and asked them to vote on the name of the online materials using Post-it notes and stickers and Library SkillUP was chosen. The name perhaps seemed logical to our students because it complements our face-to-face support programme, Library LinkUP, delivered in the Study Success Hubs in the Learning Resource Centres.

4. Platform choice

As the required functionality included the use of quizzes, we were given a Canvas module area to use to test the platform's suitability. The project established that at UH, Canvas is the best platform for these types of instructional materials, for the following reasons:

- Students and staff were already familiar with the Canvas learning environment, including page and unit structures for delivery of their taught modules;

- Canvas allows the sort of interactivity, for example incorporation of videos and quizzes, that would not be possible with the more transmissive 'Herts Hub' intranet (Microsoft SharePoint) or the 'Ask Herts' (UH in-house knowledge base) FAQ pages;
- Students can use Canvas via the app, which would ensure they could access our materials through multiple devices, both on the bus and at their desks.

5. Workflow for each theme

The project used an innovative workflow process for each theme consisting of a materials audit, learning design workshop, storyboarding, content creation, peer review and student testing. This is shown in Figure 2 and described in more detail in this section. Following this process allowed several themes to be worked on concurrently.
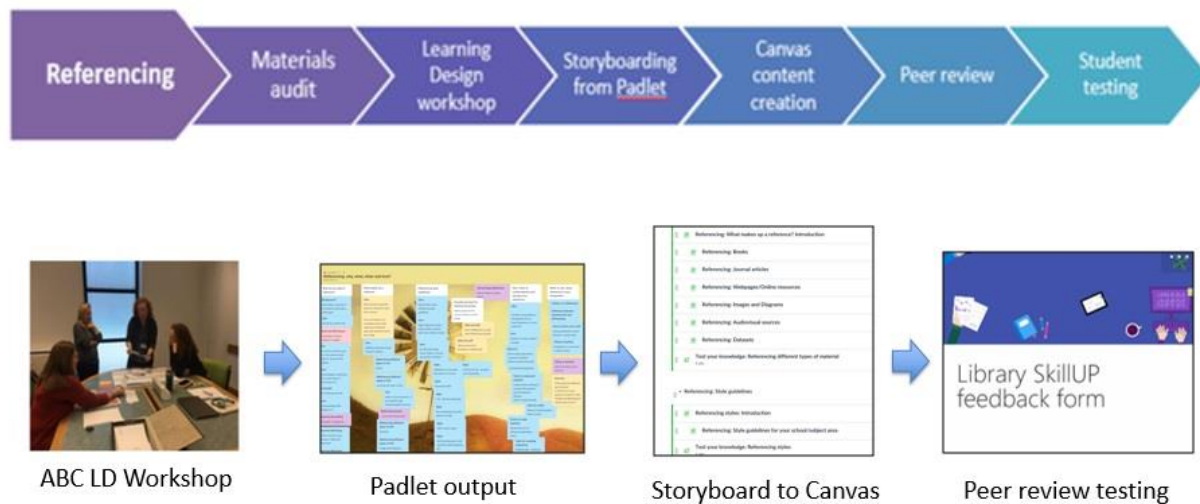
Figure 2: Workflow for each theme

5.1 Materials audit and Learning Design workshop

In order to organise our content into short interactive learning objects we adapted University College London's ABC Learning Design methodology (University College London, 2018), making use of the toolkit of materials as appropriate. ABC Learning Design is a curriculum design process which provides an open access toolkit of materials which can be printed out and used to facilitate teams in a workshop to create a visual 'storyboard' in as little as 90 minutes.

In preparation for team design workshops, we identified current teaching/instructional materials used by the Information Managers which were associated with the theme we wanted to focus on. We collated these alongside the relevant content from the i-Spy tutorials. This allowed us to review all existing content identified as 'in scope' for a theme. We then broke down the materials into simple components, i.e. a small amount of content introducing an idea or concept, and individual activities or exercises. Individual learning components could then be printed out on paper, cut into strips, shuffled around and grouped as in Figure 3 below:

What are the component parts of a reference ie what information to record

Difference between online and print citations

Finding component parts of a reference, Examples of type verso book pages, publisher websites and journal issues.
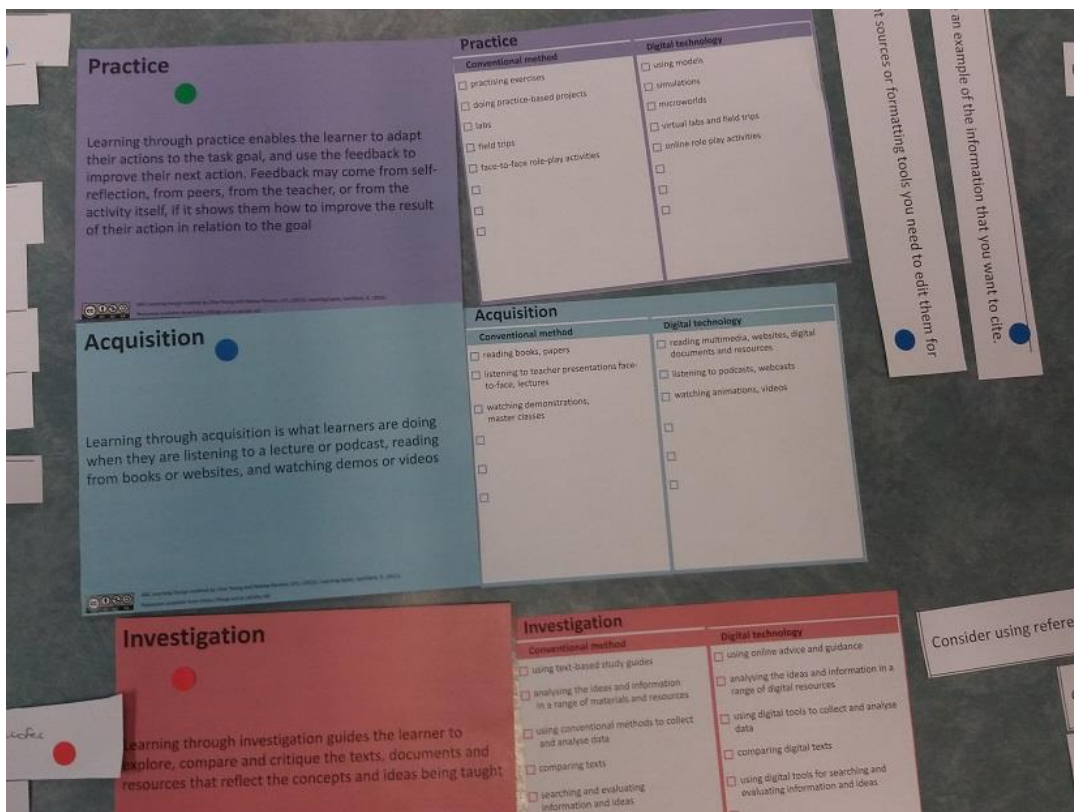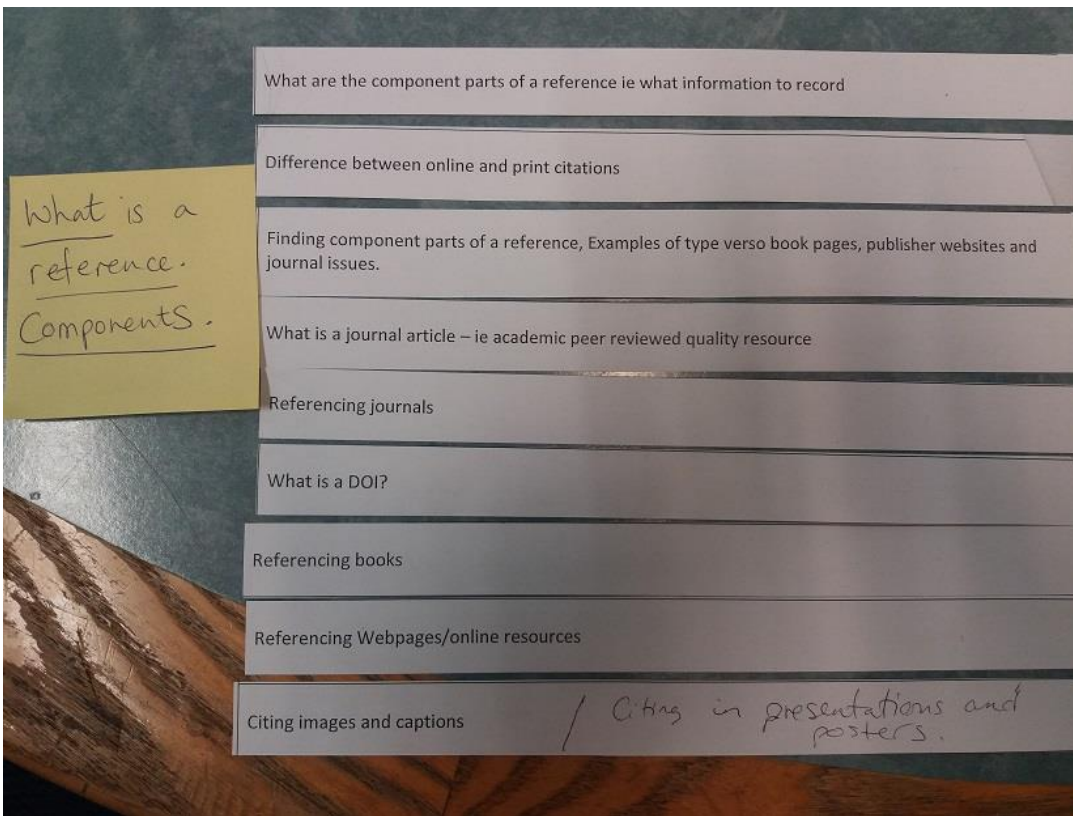
What is a journal article – ie academic peer reviewed quality resource

Referencing journals

What is a DOI?

Referencing books

Referencing Webpages/online resources

Citing images and captions

What is a reference. Components.

Citing in presentations and posters.

Practice

Learning through practice enables the learner to adapt their actions to the task goal, and use the feedback to improve their next action. Feedback may come from self-reflection, from peers, from the teacher, or from the activity itself, if it shows them how to improve the result of their action in relation to the goal

Practice	
Conventional method	Digital technology
☐ practising exercises	☐ using models
☐ doing practice-based projects	☐ simulations
☐ labs	☐ microworlds
☐ field trips	☐ virtual labs and field trips
☐ face-to-face role-play activities	☐ online role play activities
☐	☐
☐	☐
☐	

Acquisition

Learning through acquisition is what learners are doing when they are listening to a lecture or podcast, reading from books or websites, and watching demos or videos

Acquisition	
Conventional method	Digital technology
☐ reading books, papers	☐ reading multimedia, websites, digital documents and resources
☐ listening to teacher presentations face-to-face, lectures	☐ listening to podcasts, webcasts
☐ watching demonstrations, master classes	☐ watching animations, videos
☐	☐
☐	☐
☐	☐

Investigation

Learning through investigation guides the learner to explore, compare and critique the texts, documents and resources that reflect the concepts and ideas being taught

Investigation	
Conventional method	Digital technology
☐ using text-based study guides	☐ using online advice and guidance
☐ analysing the ideas and information in a range of materials and resources	☐ analysing the ideas and information in a range of digital resources
☐ using conventional methods to collect and analyse data	☐ using digital tools to collect and analyse data
☐ comparing texts	☐ comparing digital texts
☐ searching and evaluating information and ideas	☐ using digital tools for searching and evaluating information and ideas

t sources or formatting tools you need to edit them for

an example of the information that you want to cite.

Consider using referen

Figure 3: Organising content in the design workshop

At the workshops, each learning component was then colour coded (using stickers) according to the activity types defined in the ABC Learning Design toolkit (University College London, 2018). In Figure 3, above, red represents learning through investigation, i.e. exercises and activities, and blue represents learning through acquisition, i.e. reading or listening. Colour coding made it easy to group content and appropriate exercises together into 'learning objects' and we could quickly identify gaps where new exercises or activities needed to be devised. We transferred the paper outputs to a Padlet at the end of the workshop. This enabled us to share the output easily with the wider team and allow for subsequent minor reorganisation and regrouping of content as we developed our materials.

5.2 Storyboarding from Padlet: content creation

Small teams of Information Managers worked on different themes to produce detailed storyboards based on the Padlet for each theme. We then transferred the storyboard content to Canvas, creating a suite of pages, according to our own house style and including images, videos and quizzes. The project team exercised editorial control over all the pages and adapted them to the house style and created the Powtoon videos.

5.2.1 House style

A house style guide was created to maintain consistency throughout the themes. The main principles ensured that each page contained:

- A sub-heading using a specified typeface, consistent colour and font sizes;
- An image, activity, video or diagram to break up text and engage the user;
- Similar page layouts and image sizing to facilitate browsing and reading on both laptop and mobile phone screens;
- A footer, made up of an image featured on the home page, with links to the alternate themes (Figure 4), represented by the icons from the logo (Figure 5).

A branded slide was used for the first frame for videos created in-house. This enabled the Library SkillUP brand to be reinforced and made the videos created by our team easily identifiable on the Library SkillUP playlist in our YouTube channel.

It was important to consider how the page would look if viewed on a mobile phone or via accessibility software. Therefore, we limited the use of tables and purposefully kept the pages uncluttered, using white space to frame the contents of a page.

Attribution of images used, whether in-house or found externally, was consistent and clearly set out in the house style guide.

A short Powtoon animated video was created for each theme, embedded in the relevant introduction page. Graphics and animations used within each Powtoon followed the same style to ensure a consistent look and feel.

Reading: Speed reading

You can change the speed of your reading depending on the purpose.

This Photo by Unknown Author is licensed under CC BY

For example you will read more quickly when you scan or skim a text for information.

However when you need to be more active and engaged in reading your speed will need to be slower.

 Try for yourself

Find out your reading speed with this activity in LinkedIn Learning.

Download the document in Exercise files. Set a timer and see how much of the text you can read in one minute.

A full Speed reading course ↗ (1 hour) is available in LinkedIn Learning.

 This page is from Library SkillUP

Figure 4: Example page from Reading theme

5.2.2 Logo design

Project funding allowed us to commission Sahar Khajeh, a graphic designer and Student Technology Mentor at UH (Clarkson & Bamwo, 2018), to design icons that were grouped into a logo on the landing page (Figure 5):

Figure 5: Library SkillUP logo

The logo is modular and icons for the outstanding themes of Copyright, Open Access and Data Management are ready to add in once content is available. An educational technologist in the University's Learning and Teaching Institute helped us add 'hotspot' links to the icons to guide students to the relevant theme.

5.3 Pedagogy

With help from the 'critical friend' consulted for each theme, a pedagogically sound framework was put in place. Critical friends were colleagues from outside the Information Manager team who were involved in delivering skills materials (for example Academic Skills Support Tutor, Educational Technologist). This gave us an opportunity to foster partnership working and helped to raise awareness of Library SkillUP across the University.

Each theme (or Canvas unit) is designed to stand alone and starts with an introductory Powtoon video, followed by a quiz 'What do I want to learn'. Feedback from the initial quiz directs students to specific pages within the theme/unit as an alternative to progressing through all the content sequentially.

In keeping with the student feedback we divided the main content within the theme/unit into short pages, with jargon-free self-explanatory titles, and a quiz at the end of each short section to reinforce learning. By dividing the content into shorter Canvas pages students could find the information they needed quickly, and we could also facilitate one of the original project aims, to enable contextual embedding of our materials into taught modules, either at the page or unit/theme level. In so doing we could support the Guided Learner Journey approach to module delivery (Hudson & Barefoot, 2018).

Each theme ends with a 'What did I learn' quiz, whereby the feedback directs students to revisit appropriate pages as necessary. Each theme also concludes with signposts to 'What's next?' and a Talis reading list for more in-depth references as shown in Figure 6.

Theme introduction

Example pages

Theme review

Figure 6: Extract from Searching theme

5.4 Peer review and student testing

To ensure quality and consistency, the Canvas units were evaluated by a 'critical friend' and peer reviewed by Information Managers before being tested by students. Feedback was taken into account at this stage and content amended accordingly, before recruiting students.
The student testers were a group of School Community Officers, one from each academic school. This gave us a small pool of 8 students from a diverse range of disciplines. Feedback from students was predominantly positive. They also suggested changes, for example to the layout of quizzes and use of tables, which we were able to implement in order to enhance usability.

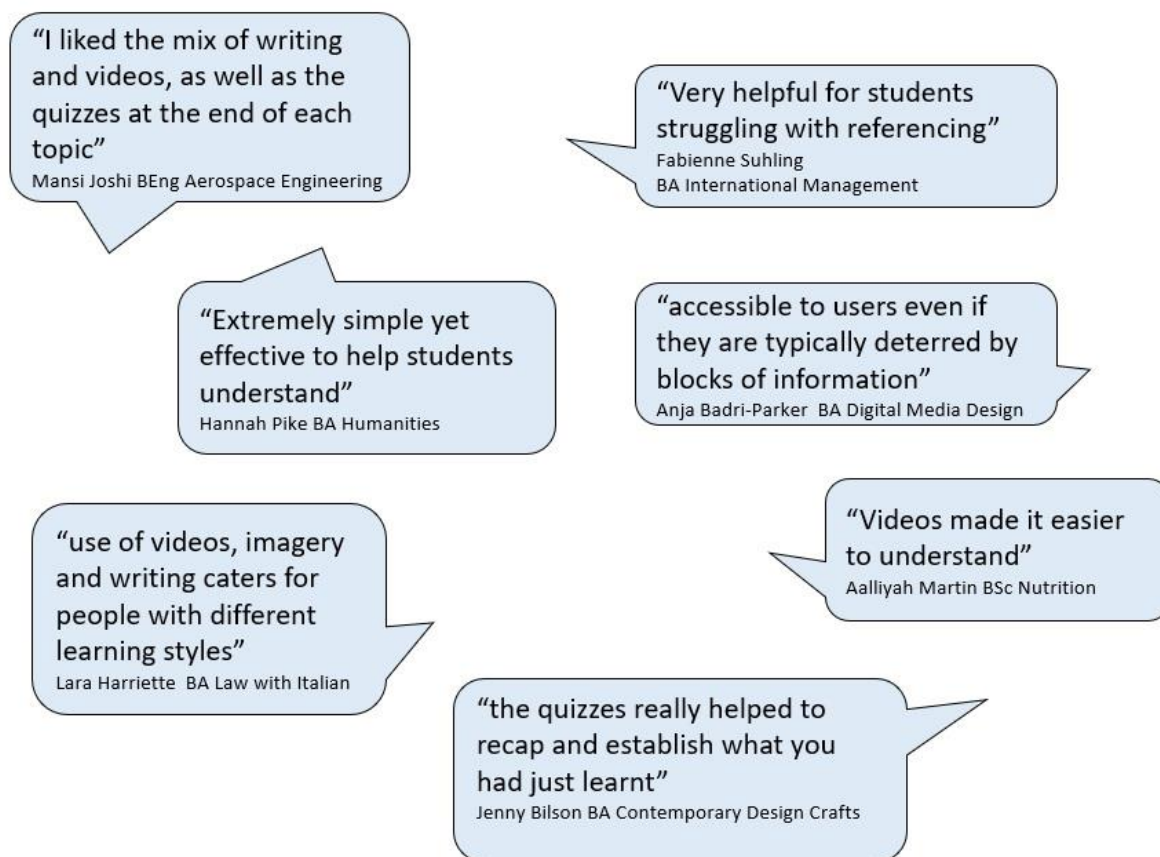Some student comments are shown in Figure 7 below:

Figure 7: Student feedback

6. Communication and publicity

The first opportunity to communicate the project to staff was at the University's Annual Learning and Teaching Conference 2019 as shown in Figure 8 below:
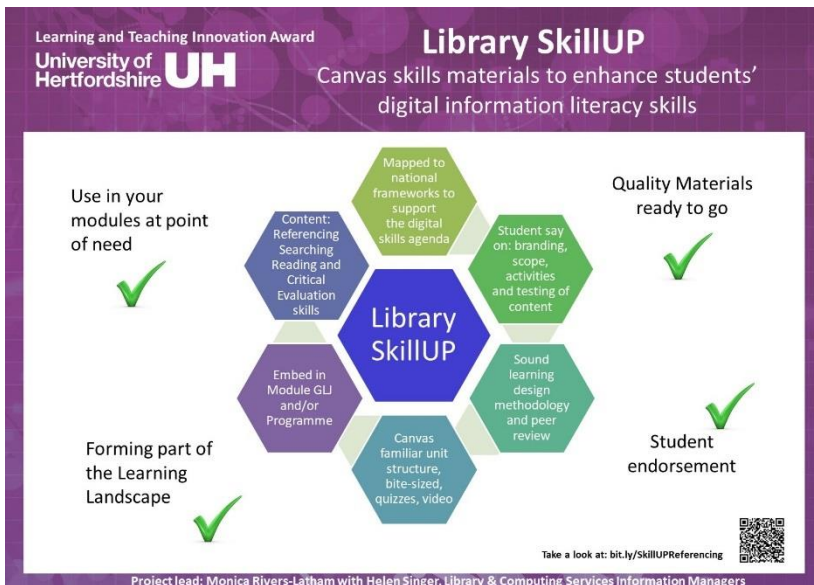
Figure 8: Key features presented to UH staff

The materials were finished and ready to be used early in Semester B 2020, so the next stage was to establish a communications plan which was developed with the Library and Computing Services Marketing Officer.

We put together key messages for staff (Figure 9) to ensure consistency, promoting Library SkillUP at strategic level first by targeting the Pro-Vice Chancellor Learning and Teaching, the Director/Deputy Director of the Learning and Teaching Institute and Associate Deans Learning and Teaching. This approach resulted in useful endorsements at senior level.
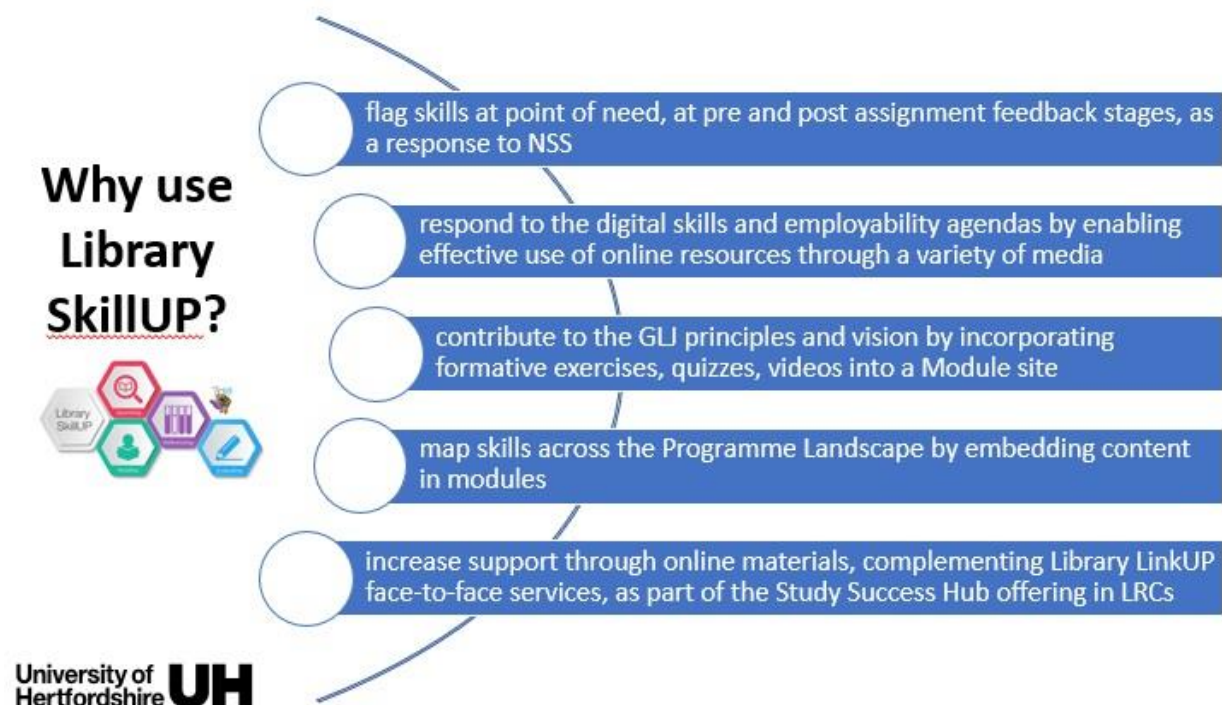

Figure 9: Strategic level messages shown to Associate Deans, Learning and Teaching

Our team of Information Managers are presenting on Library SkillUP at School level. Programme Leaders are being encouraged to see where Library SkillUP can be mapped across their Programme Landscapes.

Library SkillUP has been created in a Canvas module; consequently staff are able to link at modular level to particular Library SkillUP sections when setting assignments, or refer students to specific sections when giving assignment feedback. In addition, Library SkillUP can also be linked to from new Canvas Programme sites.

We created a guide and videos with instructions for linking to Library SkillUP at different points in modules, including pre- and post-assessment. The guide and videos are linked to from the instructional Canvas Guided Learner Journey module which is used to encourage staff to adopt GLJ good practice principles.

Consistent messages were put together for students with a short URL for ease of access with associated merchandise in the form of postcards, business cards, banners, posters and a video showing student endorsements.

7. Evaluation and next steps

The project exceeded the initial proposal which sought merely to pilot materials, and establish which platform we would use, whereas we now have a live Canvas module which students can join and see in their Canvas dashboards.

The most difficult part of the project was political, in that the non-credit-bearing Canvas module could be seen as a precedent for other support teams engaged with skills materials who would like to use the same platform. Expectations need to be managed but the robust pedagogical approach we adopted gave a strong rationale for our choice of platform and demonstrated good practice that could be adopted by other teams.

Looking at the project proposal, we stated that the project will be deemed successful if the following are achieved:

- Students engage with the materials and provide positive feedback;
- Staff use and embed the materials into their modules.

We can tell via the regular Canvas notifications we receive as 'Module Leaders' that students are enrolling themselves on the module every day with over 520 enrolled to date. At this stage we are confident that students are engaging with the materials and they have already provided some positive feedback.

Each programme of study can adopt a template for their Canvas Programme site which includes a link to Library SkillUP. Information Managers now need to work with identified academic partners to more consistently embed Library SkillUP content at programme or modular level. This will ensure that Library SkillUP will be contributing to the GLJ principles where skills are mapped across the Programme Landscape at point of need.

We can access data analytics in the Canvas module to see how students have used the materials. These include page views, time spent and quiz question responses, down to the individual students. We will be using the Canvas link checker to ensure that all the links still work and build in a regular review process to ensure the materials remain up to date.

When we started the project, we did not know that we would be using the ABC Learning Design Toolkit but were grateful to our colleague Paul Hudson, User Experience Development

Manager, who suggested using it. We found the ABC methodology a really helpful way to develop content. The workflow process which we developed around these materials allowed us to work on several themes at once. Using writing teams was an effective way of engaging our colleagues, fostering ownership of Library SkillUP and increasing capacity for support going forward.

Next steps include developing the Copyright, Open Access and Data Management themes, using the adapted ABC Learning Design methodology.

We are very grateful to the university for funding this project which has involved many of our team members and improved our own digital skills. We hope it will do the same for our students.

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