

# Learning by (more than) doing: developing staff capability through the collaborative creation of an eLearning module

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## **Abstract**

*This paper describes how Monash University Library created an online learning copyright resource for university staff as an artefact of an in-house blended learning course. The Copyright Module was developed through library staff collaboration and transference of skills. The team undertook continuous evaluation from multiple perspectives to inform the design, development and implementation of the module. Through this multi-dimensional approach, the team was able to create prototype activities for the module and use them to create other resources by involving the target audience in decisions about the module's improvement. This process has led to a template of design principles for future work on this module, making it a sustainable model for in-house development of other online learning resources.*

## Introduction

This paper describes the design, development and evaluation of an online learning module about copyright. This was created as an authentic artefact of a blended-learning staff development course, Design and Develop an eLearning Module (DDEM), at Monash University Library.

The paper presents the background to the DDEM course, the Copyright Module (CM) and the roles of the library team who created the CM. It explains the evaluation approach, methods and instruments used. It discusses the planning and implementation of key sections (Navigation, Using Text and Using Images) of the CM and describes how skills transfer in the team occurred through collaboration and creating while learning. In conclusion, the paper suggests a template for future development of the CM that is applicable to other online educational modules that are also developed in-house.

## Background

Since 2011, Monash University Library (the library) has offered a blended learning course (i.e. online and face to face learning) delivered through the university's Learning Management System, Moodle. It is designed to develop staff capability in eLearning design, development and understanding of teaching and learning in an increasingly blended environment. Typically, library staff participate in the course during their normal work hours and in addition to their normal duties. The main outcome of the course is to produce an eLearning module.

The course is designed around a social constructivist approach (Vygotsky 1978). Participants develop authentic artefacts through the course tasks and produce an eLearning module that can be used by the broad university community and potentially the public. The creation of the module is considered a demonstration of learning. Herrington, Reeves and Oliver (2006) referred to this approach as authentic learning.

The library manages the university's copyright website, which provides information covering a wide range of copyright topics. In the last 3 years, academic and professional staff had requested simpler, more targeted information on particular topics. They wanted a more interactive format, such as scenario based copyright examples that they could work through at their own pace. The copyright advisers had been putting together proof-of-concept drafts for an online learning resource, but had lacked confidence in their technical skills to achieve this. They began seeking learning design and development input. A new round of the DDEM course coincided with this initiative and a project team was quickly formed.

The project team consisted of two developers (librarians), two subject matter or content experts (copyright advisers) and the eLearning coordinator acting as the consultant and course facilitator. The developers were both new graduate librarians when the project began. They were familiar with the blended learning environment through their own study and had experience creating eLearning objects on a small scale using tools such as Adobe Captivate, which they learnt to use through short consultations with the library's eLearning coordinator. Both developers had also used Moodle and attended a university wide introductory workshop. However, their

understanding of the eLearning pedagogies and copyright was limited. On the other hand, the copyright advisers had only basic knowledge of web content editing software from working on the copyright website and were inexperienced in the online learning environment. It was decided that the content experts would concentrate on the selection of topics and writing the content, while the developers would focus on transforming the content into the desired format. Such a partnership required extensive consultation among the team members and a degree of crossover of duties was expected. Communication was vital in establishing the parameters of the design of the module. This will be described next.

## Design of the Copyright Module

The CM consists of six topics (see Table 1). These areas were selected by the content experts based on risk assessment and frequently asked queries.

Table 1: CM Design and Moodle activities and resources used.

Topics	Moodle activities & resources*
Using Text	Label, Lessons, Pages
Using Images	Label, Lessons, Pages
Using AV	Label, Lessons, Book
Library	Label, Quiz, Page
How do they know	Label, Page
Can I put this online?	Label, Lesson

*\*Note: for definitions of Moodle activities and resources see Moodle Docs. From this point on capitalisation will be used when referring to Moodle Activities and Resources.*

As the development processes were similar for all the topics, the discussion will focus on the Using Text and Using Images topics to distinguish between the two types of content.

The university already had a copyright website, which included PDFs, Word documents and other text heavy information. Content was mostly organised by category of users (e.g. staff, student) rather than the type of questions asked by staff (see Figure 1).

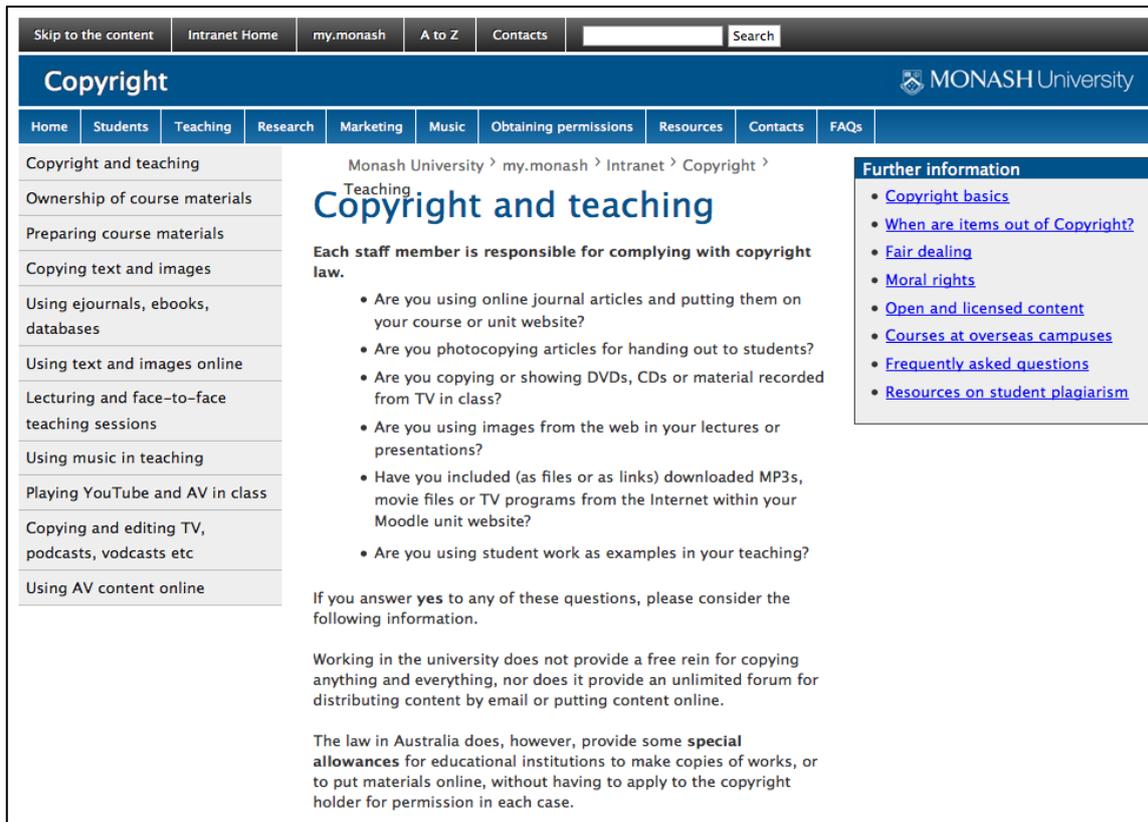


Figure 1: Screenshot of a page from the copyright website.

In contrast, the CM attempted to raise awareness of copyright through the reflective learning of information (Ryan & Ryan 2013) that is directly related to the work tasks of staff. The CM was designed to focus on the copyright questions commonly asked of the copyright advisers. For example, “I want to use this photo in my teaching” was a prompt for a learning area in the “Using Images” topic. The aim is to engage learners through specific functions that they might perform, rather than through the staff members’ roles.

Another fundamental design goal was to create content that is more visually engaging than the copyright website and encourages user interaction. For instance, videos were embedded in the topic Using AV as examples of how staff can incorporate video in their teaching. The Using Images section was presented with details from images used in the case study examples. Each substantive section has an activity to encourage interaction and active learning (Durrington, Berryhill & Swafford 2006).

The project team decided to use the university’s Learning Management System (Moodle) to host the module. The benefits are that it is a user-authenticated environment, which learners and developers are already familiar with. As the CM is not accessible to the public, more sensitive university specific copyright problems can be addressed in a secure environment. Content in the CM can be easily integrated into existing Moodle units through linking, importing and restoring of sections.

The team realised, however, that the platform choice would restrict design options; in particular the ability to create a graphically and multimedia rich and engaging

resource, as well as flexibility around navigation. Therefore, the team decided to use third party software (Adobe Captivate) to create and add graphically enhanced interactive activities and increase engagement by embedding these resources into Moodle.

As the analysis will reveal, the team refined the design through several rounds of formative evaluation. The evaluation approach and tools are described next.

## **Evaluation Approach and Structure**

The project team members used a development research methodology for the evaluation of the CM. Development research (also known as design research or educational design research) enables the evaluation and development of complex learning interventions involving multiple stakeholders (Bannan-Ritland 2003). These types of projects often have both practical and theoretical outcomes (Cobb et al. 2003). The pragmatic nature of this approach has enabled any theoretical insights and practical experiences to be translated into a design plan for future iterations of the CM.

It was important to develop smaller modular sections before investing extensive resources in developing the complete resource, which is what the formative evaluation focus of development research recommends, as well as how projects are carried out within the library. In this way, the team was able to successively refine the product towards its design goals and improve the CM's overall effectiveness.

A mixed method approach (Johnson & Onwuegbuzie 2004; Leech & Onwuegbuzie 2009) was adopted to structure the evaluation from its multiple facets, using triangulation (Johnson, Onwuegbuzie and Turner 2007) and quantitative and qualitative data, with an emphasis on qualitative feedback. The project team used evaluation instruments such as Google Forms for a staff questionnaire, an expert review rating form, emails for semi-structured peer feedback, Qualtrics (an online survey tool) for ongoing user feedback collection and Google Docs for making, collating and analysing observation notes.

Table 2 shows the participants involved in evaluation rounds and the various instruments used.

Table 2: Evaluation methods and instruments deployed.

<b>Method</b>	<b>Instrument</b>	<b>Round 1</b>	<b>Round 2</b>	<b>Round 3</b>	<b>Post launch</b>
<b>1) Observation</b>	<b>User observation</b>	Library staff		Library staff, LMS administrator, academics	
<b>2) Learner/peer feedback</b>	<b>Questionnaire</b>	Library staff			Library staff, LMS administrator, academics (on-going)
	<b>Focus group</b>		Library staff, LMS administrator, academics	Library staff, LMS administrator, academics	
	<b>Email feedback</b>	Library staff	Library staff, LMS administrator, academics		
<b>3) Expert review</b>	<b>External content expert</b>		Office of General Council	Copyright Manager	
	<b>Rating scale</b>				Educational designers
	<b>Interview</b>				Educational designer
<b>4) Collaboration</b>	<b>Internal stakeholders</b>	Copyright advisers and developers	Copyright advisers and developers	Copyright advisers and developers	

The evaluation criteria for the expert review and other evaluation protocols used in this project were originally derived from Tognazzini (2003) and Reeves and Hedberg (2003), and adapted in Yates (2007a, 2007b). These have then been further developed for use within the library and this evaluation.

Our emphasis throughout development of the CM was on learning by doing and effective collaboration. The following four sections are an illustration of how skills transfer occurred through the 'doing' of creating particular sections of the CM through a collaborative team approach. We discuss what the limitations were, what we learned through the process and what can be applied to future projects including the use of technologies.

## **Preparation and Planning**

The DDEM course incorporates an elaborate preparation and planning process including proposals to two library committees, and both mind-mapping and storyboarding of content. These tasks helped in clarifying the developers' thinking and establishing the project scope, ensuring it was containable and manageable. It also means that a 'blueprint' of the CM existed early on in the project, which in turn provided clear guidance throughout the development. Extensive conversations with the content experts occurred at all critical stages of the planning, which ensured that all members of the team agreed with what had been proposed and were clear about the expected outcomes. Although great effort was made to contain the project with clearly defined goals, the whole exercise was highly complex and a valuable learning exercise as applied to an authentic and social learning approach of the DDEM. The activities also nurtured planning and communication skills. These general skillsets can be applied to library projects irrespective of the specific technology being used.

## **Setting up navigation**

The initial layout of the CM was simple. The Moodle unit was set up by topic, showing all sections on one page, with a navigation block (a rectangular area containing links to the main sections of the CM) made up of thumbnail images in the section header. Each topic was made up of relevant Moodle Activities and Resources and an explanatory introduction.

In early feedback, some users commented that the navigation in the CM was not particularly clear. Developers also noticed during observation that users struggled to find specific content as instructed and appeared lost.

This resulted in numerous improvements to the navigation design. The most fundamental was the use of an 'orphan block' (a workaround in Moodle that allows in-use Moodle Activities and Resources to be hidden and only accessible via a direct link. See Figure 2.).

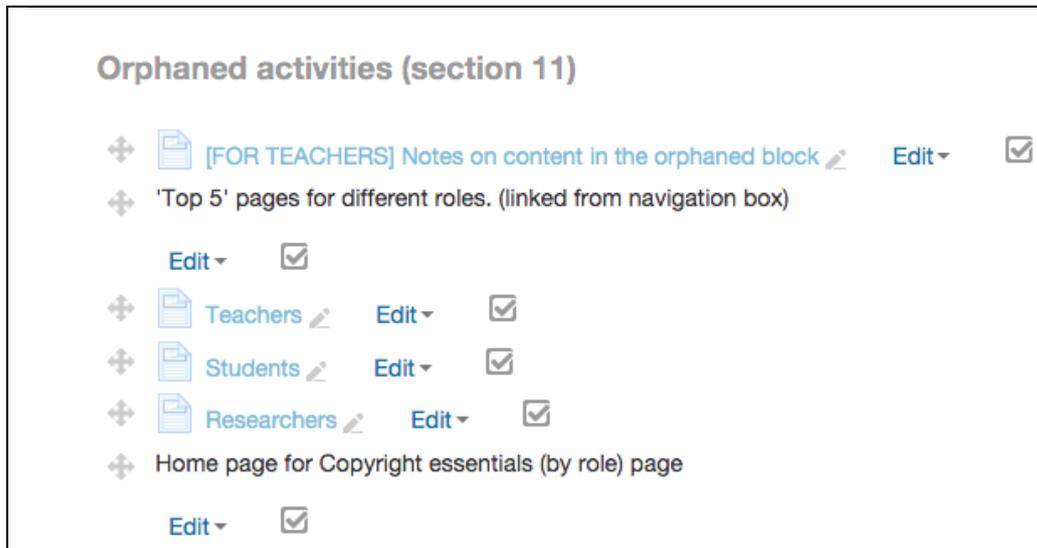


Figure 2: Example of an orphan block in Moodle, indicated by the slightly faded display.

A second level of navigation, created using Moodle Pages, was then introduced. This provided orderly access to the content now 'hidden' in the 'orphan block'. This decluttered the top (entry) level topic display and a cleaner, standardised look was achieved across topics (see Figure 3).

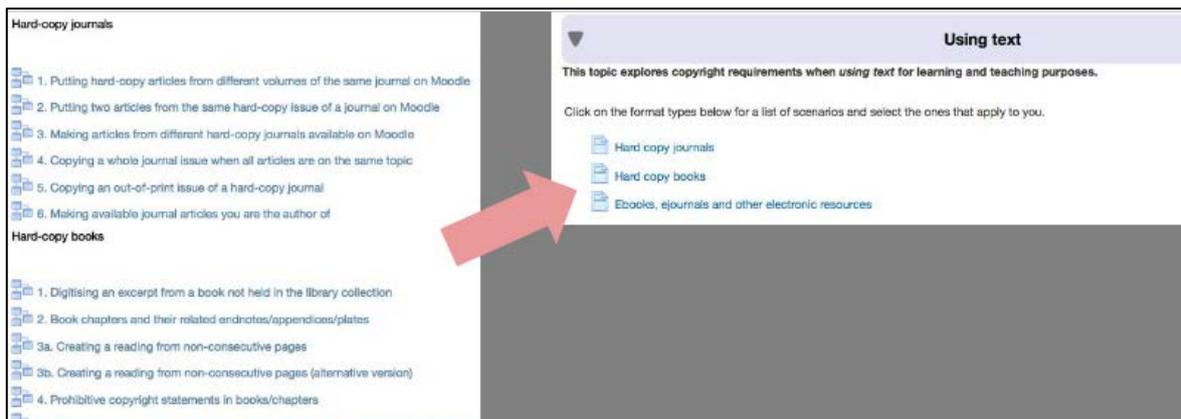


Figure 3: Example of how the second level navigation decluttered the topic display.

To further aid users, additional instructions and rollover text were added to the thumbnail images that had been used for navigation (see Figure 4) and the CM was set up so that only the topic the user had chosen was visible, decreasing cognitive load and helping the user to focus on the topic. However, a problem was identified by the subsequent focus group that when a topic was chosen it was not immediately clear that the selection had taken effect due to the set layout of Moodle. Mobile and tablet users could not see all the content within the topic, because their screens were not large enough (in both height and width) and the instructions to scroll were not obvious to them. These problems have yet to be resolved to the team's satisfaction. It is hoped that with the now regularly occurring Moodle upgrades in the university, layout may be improved gradually.

The option of implementing self-enrolling Groups (a mechanism to separate users) was also investigated. By using this in conjunction with Activities and Resources that were restricted to particular user groups, the navigation experience could be improved by revealing a customised version of the CM to each group. However, it was decided that the extra step of users enrolling themselves in a Group made this impractical, particularly as users might miss important information relevant to them. Instead, role-orientated Pages that collated relevant scenarios and sections of the CM were created. This also provided users who were unsure of what content to view, with an alternative navigation option (see Figure 4).

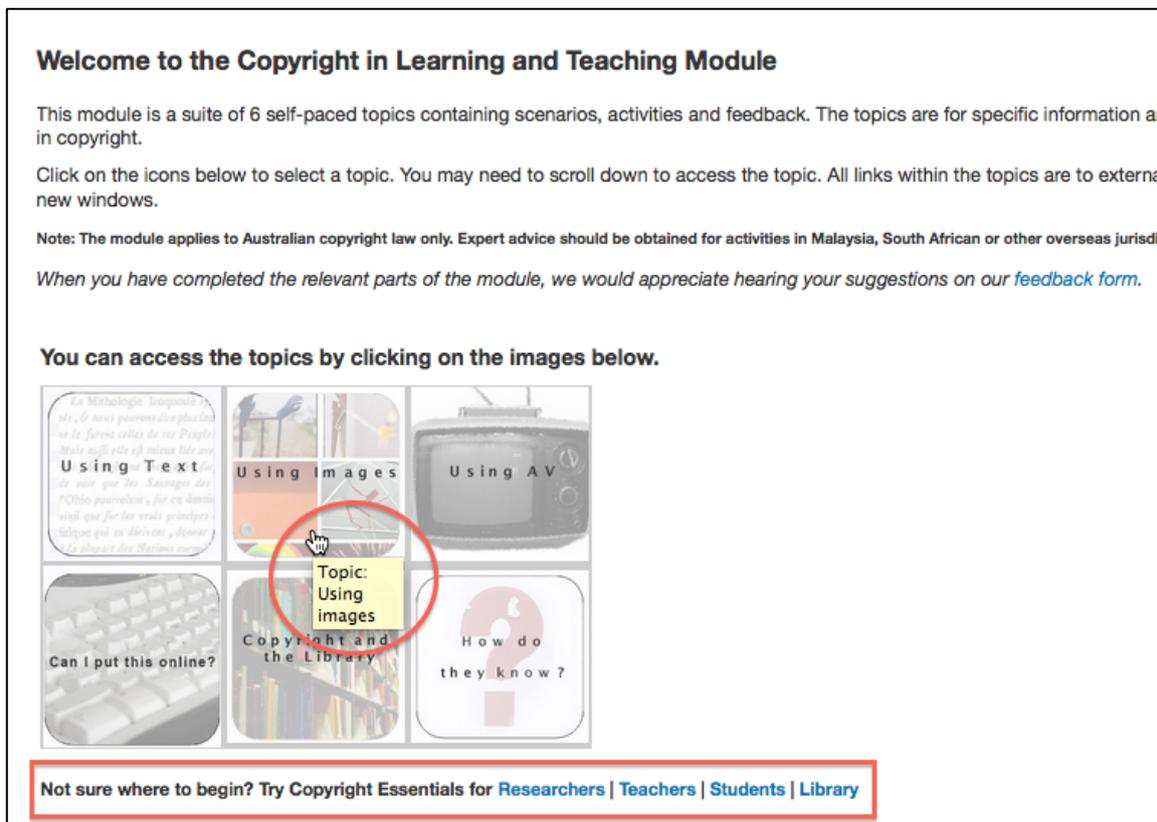


Figure 4: Screenshot of CM main navigation section containing an image thumbnails grid and a "Copyright Essentials" section arranged by user roles. Further text explanation of the topic displays when the user hovers the cursor over the thumbnail images.

Other issues with navigation were less easy to solve. Users in every round of evaluation mentioned difficulties with following the pathway of the CM. This was still an issue in the final iteration of the CM. Out of 17 detailed responses, including free text comments, 14% of responses disagreed or strongly disagreed with the statement that the CM was clear and easy to read. Forty percent felt that the instructions included in each topic did not provide sufficient guidance (see Figure 5). On the other hand, some respondents insisted that the introductory information was distracting and confusing when the text within the activities was more useful:

“A mix of no instructions or too many.”

“I do find sometimes that when reading a piece of text with numerous embedded links can divert my attention.”

These responses could indicate that for some users the introductory readings shifted the focus away from the scenario-based activities, while others preferred the background information before attempting activities. The uncertainty about the amount of information provided in the CM (too much or not enough) has been consistent through the rounds of evaluation. It seems a critical aspect that requires continuous adjusting, redesigning, and refining. For example, over time the standardised look of the topics evolved until each consisted of an 'Information' and 'Activity' section, both labelled with clear headings. This design in turn became part of the template for future topic development.

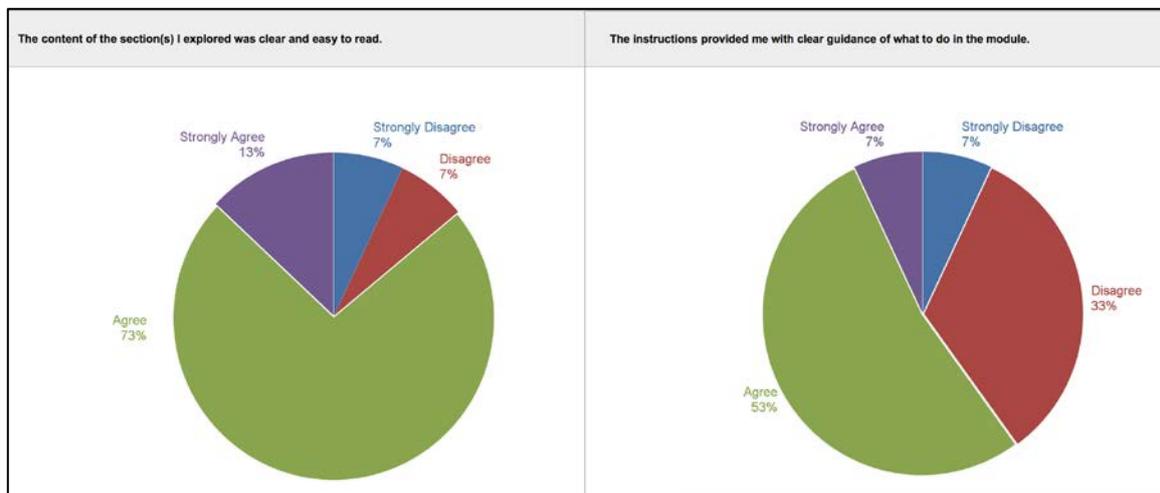


Figure 5: Pie charts showing user rating on navigation and content presentation collected during the post-implementation survey.

The slightly peculiar navigation paths of Moodle were also widely commented on by the focus group. Some members felt there were not enough options for returning to previous sections, while others complained the links were not taking them to places they had expected. Although these were Moodle limitations, the team decided to adjust the design further to improve navigation for learners. A page containing links to common sections of the CM was added to the end of an Activity whenever possible to facilitate navigation (see Figure 6).

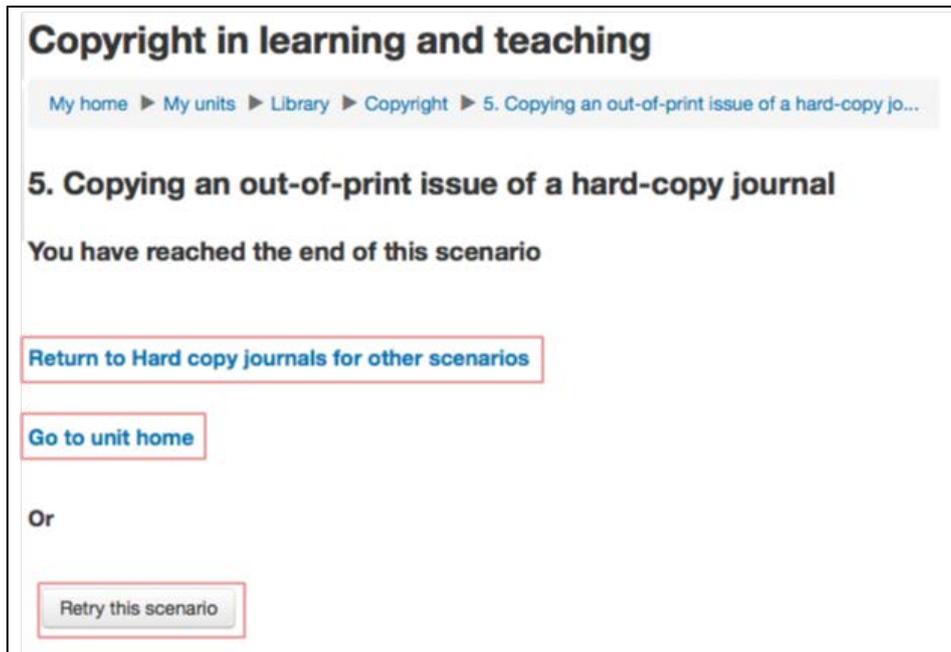


Figure 6: Screenshot of an end Activity page.

Expert reviewers identified a need for further instructions for users unfamiliar with Moodle in their feedback. One educational designer suggested that increasing the instructions would result in improved navigation, whereas the team had been focusing on reducing the amount of on screen text to avoid extensive scrolling.

A number of respondents suggested that making the module completely self-paced may be unhelpful to users unfamiliar with copyright. They might prefer a more defined structure with a clear learning path. This point was reiterated by one of the expert reviewers. Earlier comments from users about lack of navigation might reflect the need for more guidance. More evidence is required before a decision can be made on whether major modification to the CM is necessary.

## Developing the Using Text topic

The content experts had already adapted content from one of the FAQ sections on the copyright website into scenarios. The developers decided to put these straight into a Moodle Quiz as the activity for the Using Text section. As Moodle 'locks' a Quiz once any user has completed it, a question bank was created so that questions could continue to be added, removed, and edited.

During the peer preview session, DDEM course participants suggested that the Quiz, which consisted of 20 questions, was too long for such complicated questions. Their feedback was that users should complete only questions relevant to them. In response, the developers split the scenarios and made them available separately by creating a Quiz for each and giving it a meaningful scenario name e.g. 'Putting hard copy articles from different volumes of the same journal on Moodle'.

However, the Quiz activity included screens such as the 'Summary of attempt screen' that could not be removed. An important factor to consider was that the aim of the activity was not to grade participants but allow them to try different choices. This long page of choices and marks carried no meaning in the context of the activity

and were confusing users. The developers had used the Lesson Activity (which can be used to guide users through non-linear paths) for a short topic 'Can I put this online' and thought the Lesson format would be a better fit. Each of the 20 scenarios was placed in a separate Lesson, which resulted in a much cleaner, simpler user experience. Once the navigation was simplified at the top level and changed to incorporate Pages, these scenarios were split into categories and each category given its own Page (see Figure 7).

## **Hard copy journals**

Each of the following scenarios will ask you questions to help you understand the copyright issues

- [Scenario 1](#) - Putting hard copy articles from different volumes of the same journal on Moodle
- [Scenario 2](#) - Putting two articles from the same hard copy issue of a journal on Moodle
- [Scenario 3](#) - Making articles from different hard copy journals available on Moodle
- [Scenario 4](#) - Copying a whole journal issue when all articles are on the same topic
- [Scenario 5](#) - Copying an out-of-print issue of a hard copy journal
- [Scenario 6](#) - Making available journal articles of which you are the author
- [Scenario 7](#) - Making a journal article available from a personal journal subscription

**Continue to [Hard copy books](#)**

**OR**

**[return to the Using Text topic](#)**

Figure 7: Screenshot of one of the category Pages grouping scenarios for the Using Text topic.

This modification involved repetitive work of making small modifications across 20 objects, which was time consuming and left room for errors. The importance of prototyping - creating one object and perfecting it, then replicating it, became apparent. It was a lesson that had great influence in later evaluation and implementation. However, the slow evolution of the Using Text content did allow developers to learn more about Moodle, its possibilities and its limitations. The hours spent formatting Quiz feedback to improve clarity, experimenting with different Lesson page types, and checking Lesson settings' impact on appearance were not entirely wasted as in-depth knowledge of the Activities was acquired. Advanced skills were acquired from the learning by doing experience.

One recurring theme from feedback was the density of the content in the CM. The Readings & Reserve Quiz consisted of the Using Text scenarios retained in the original Quiz form, and was used specifically for library reserve staff. During a user observation session where reserve staff completed the Readings & Reserve Quiz, it was noted that although the relevant copyright guidelines and scenarios were familiar to this group, they struggled with the activity, taking a long time to complete it

and making errors. One staff member commented in the post-evaluation interview on the time taken to complete the activity despite her expertise in the area:

“It took me a solid 30 minutes even though I knew all the answers. It just took a long time to work through.”

The developers were concerned that if learners with previous knowledge had such difficulties, users unfamiliar with the topic might find the activities overly daunting and be discouraged from completing them. It became clear that the scenarios, which had been written at a much earlier date and not specifically for the web environment (Eshet-Alkalai, Geri 2010) were overly complicated and lengthy, with complex syntax, even though the issue with complexity was implicit in the nature of copyright as a subject, which is intricate and specialised. The terminology also tended to be inconsistent across scenarios, which caused confusion.

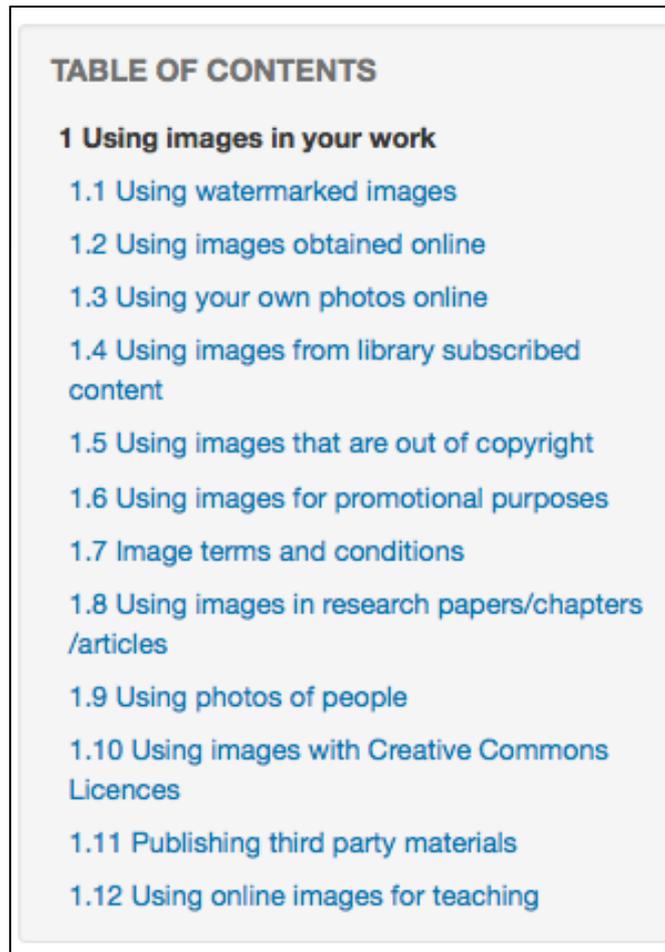
As a result, the developers and content experts worked in collaboration, simplifying the language and sentence structure across all 20 scenarios, removing unnecessary details and standardising terminology. Scenario feedback was shortened but links directing users to relevant sections of the copyright website were added, maintaining access to detailed information if required.

## **Developing the Using Images topic**

Content from the images FAQ section of the copyright website had also already been adapted into case study scripts and these were quickly identified as suitable for conversion into interactive content. These became the Using Images section of the CM. The developers already had extensive experience with Adobe Captivate software. Captivate workshops were also part of the DDEM course, so developers could discuss any anticipated issues with other course participants. The developers decided this was the most appropriate way to convert the case studies, with each resulting in a separate Captivate object that would then be embedded into Moodle. An added advantage was that these objects could also be used elsewhere as stand-alone eLearning resources outside of Moodle.

Twelve Captivate objects were created from the scripts. A document describing design elements such as font and colours was created to ensure consistency. The biggest challenge with the development was simplifying the case studies and language sufficiently so that they worked in the Captivate context while ensuring that the content retained the intended legal meaning. This is because the text had to be concise enough to fit within a restricted screen size in Captivate. The simplification was achieved through continuous collaboration between the developers and the content experts. It was in these kinds of intensive interactions that skills transfer occurred, demonstrating the effectiveness of the learning design of the DDEM. The content experts began to understand the requirements of writing content for online learning and the peculiarities of Moodle while the developers began to grasp the subtleties of copyright.

The Captivate objects were each embedded into a chapter of a Moodle Book, providing a simple navigational summary (see Figure 8).

The image shows a screenshot of a Moodle Book navigation menu. At the top, the title "TABLE OF CONTENTS" is displayed in bold black text. Below it, the main section "1 Using images in your work" is listed in bold black text. Underneath this section, twelve sub-items are listed in blue text, each representing a chapter or sub-section: 1.1 Using watermarked images, 1.2 Using images obtained online, 1.3 Using your own photos online, 1.4 Using images from library subscribed content, 1.5 Using images that are out of copyright, 1.6 Using images for promotional purposes, 1.7 Image terms and conditions, 1.8 Using images in research papers/chapters/articles, 1.9 Using photos of people, 1.10 Using images with Creative Commons Licences, 1.11 Publishing third party materials, and 1.12 Using online images for teaching.

<b>TABLE OF CONTENTS</b>
<b>1 Using images in your work</b>
1.1 Using watermarked images
1.2 Using images obtained online
1.3 Using your own photos online
1.4 Using images from library subscribed content
1.5 Using images that are out of copyright
1.6 Using images for promotional purposes
1.7 Image terms and conditions
1.8 Using images in research papers/chapters/articles
1.9 Using photos of people
1.10 Using images with Creative Commons Licences
1.11 Publishing third party materials
1.12 Using online images for teaching

Figure 8: Moodle Book navigation for Using Images case studies.

Most users preferred the more visual and interactive format of the Using Images section to Using Text and this feedback was consistent throughout the rounds of evaluation:

“These (Using Images) activities were much more attractively and effectively designed than the Using Text ones. The latter were visually dull in comparison.”

Although the Adobe Captivate sections were more appealing, the software lacked the functionality for targeted feedback for certain question types, without complex customised coding. In order to ensure that the CM was sustainable after the developers left the project and also with an awareness of the time it would take to code across all 12 Captivate objects the team decided to find another solution to the way questions and feedback were presented. As some case studies had been written with multiple incorrect choices and specific feedback for each, the team agreed to streamline the answers. This was achieved by giving the learner generic clarifying information if they selected an incorrect answer and simply telling them to ‘try again’ if they selected a second incorrect answer.

Settings were also adjusted so that users were “forced” to reach a correct choice before proceeding, receiving the full explanation. The notion of forcing a learner through a path is not standard practice within library created eLearning material, but being a legal topic, the team felt it would benefit the target audience. Only allowing

progressing after the user had answered correctly was intended to reinforce learning, but proved to be a shortcoming for the usability and the appeal, which resulted in some significant design updates.

Some participants found having activities in formats that were not native to Moodle confusing and disliked the inconsistency. There were also issues in the way the Captivate object was displayed within the Moodle Books, because Captivate files are published in a fixed size in the Adobe Flash format. In some cases, it was necessary to scroll sideways to see the Captivate object in its entirety, which is frustrating for learners and contributed to their confusion. Properly addressing this would have been time consuming, resource intensive and Moodle did not have a suitable alternative at the time. Therefore, the team decided instead to make refinements to the Adobe Captivate tutorials so that they would resemble the other activities in the CM. However, later focus groups identified the Captivate objects as a recurring problem.

When Moodle was upgraded later in the project, it became simpler to replicate the Captivate interactivity within Moodle as the Lesson Activity design and settings were improved. The team decided that a complete conversion of the Using Images topic from embedded Captivate tutorials to native Moodle Lessons was feasible. An added advantage was that it would be easier to manage content from within one system (see Figure 9) and would be far more sustainable for content experts to maintain the resource later, as Moodle is less sophisticated and easier to use than Captivate.

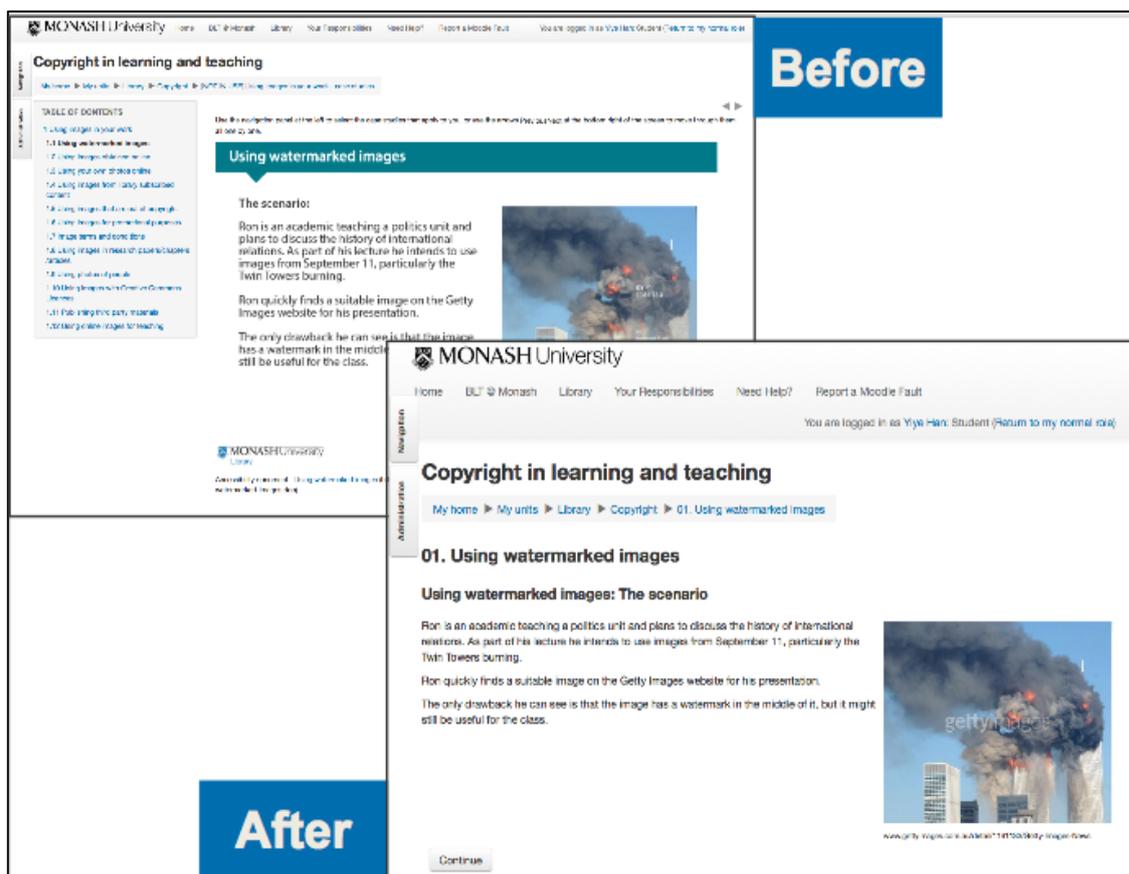


Figure 9: Screenshots comparing activities in the Using Images topic before and after the conversion from Adobe Captivate to native Lesson activity.

Converting the tutorials also gave the team the opportunity to incorporate other suggestions received through evaluation, which meant that the material was further refined. Focus group participants had consistently preferred the style of quiz where sufficient feedback was provided after a choice was made and the quiz moved on regardless of whether the choice was correct. They felt that repetition of the question and answer risked alienating or patronising the user, even if it did reinforce learning. The 'forced correct choice' mechanism in the original design of the activity was removed and the user experience improved. The feedback to the questions was also rewritten to ensure that learners only had to answer each question once because all responses included sufficient information to explain the issue thoroughly.

The previous four sections have described the process of development, from conceptualization, planning to implementation and evaluation. During this process, the developers and the content experts were learning technological skills and copyright principles while building and modifying the CM. They were practising communication and planning skills, and reinforcing design principles, such as prototyping, as each topic was created and changed. This is consistent with the overarching learning by doing pedagogy that informed the DDEM course and the library technology strategy as exemplified in the library plan. The way in which this skills transfer and collaboration ensures the CM's sustainability is described next.

## **Sustainability through collaboration and skills transfer**

The learning by doing pedagogical approach used in the DDEM, as informed by social constructivism and authentic learning, facilitated skills transfer in a number of areas. Creating the CM as part of the DDEM course provided the opportunity to practice technology skills as they were being taught. Other essential skills such as communication, collaboration, planning and project management were also developed. These skills are not dependent on particular technology, but can be applied more generally. This makes the investment in time and resources for the DDEM course and long-term projects like the CM sustainable, because the skills learnt can be, and have been, applied to other projects.

Working on an in-house team project, with a practical outcome like the CM, encouraged collaboration and skills transfer. The content experts, with fewer technical skills, were coached on the relevant technology during the project. The developers increased their understanding of copyright as they analysed the content for the purposes of technical implementation. In addition, all team members learnt to communicate, plan and collaborate more effectively, which led to a successful completion of the development project, leaving the CM at a sustainable level, where the content owners maintain it independently.

Prototyping and templates were also essential to the sustainability of the CM. Consistent design across topics means there is an established pathway for future development. With template Lessons set up by the developers, the content experts can draw on these to create new content or change existing material. This ensures the long-term future of the CM. It will allow the content experts to take advantage of the now annually scheduled Moodle upgrades, which sees a continuing improvement to the system. This may allow issues that are technically unresolvable at the moment to be gradually overcome. The CM will, in this sense, evolve with Moodle and can be maintained in a sustainable way.

The learning by doing pedagogy fosters close professional relationships and collaboration that continues when the specific project ends. For example, if new content for the CM does not fit the existing templates, it can be created in another round of in-house collaborations between the content experts and new developers from future DDEM courses and the original developers can still be consulted.

Future development of the CM and other similar projects will involve the following principles:

- Conduct the DDEM with projects that foster authenticity
- Engage and involve stakeholders across various discipline areas
- Design learning content using templates and planning documentation
- Develop prototypes in Moodle which can later be used as templates for future development of the module
- Modify and improve content through formative evaluation
- Work together with a view for module owners to be able to maintain and further develop the module. This results in skills transfer and a sustainable model.
- Use technology suitable for collaboration during planning and evaluation activities

The experience of using Moodle, Captivate and evaluation tools like Qualtrics to develop the CM, as well as the storyboarding and prototyping principles practised during the development, has also proved useful in other projects, such as other large Moodle units (see Figure 10) and citing and referencing and academic integrity online tutorials. Although Captivate was not used in the final version of the CM, it encouraged a more interactive style of writing which was more appropriate for online communication. This is applicable to future projects, such as redesigning sections of the copyright website to improve usability.

*Continued next page*

Figure 10: Monash College iLearn Moodle course.

The varying knowledge and skills of the developers, matured through the DDEM course, not only saw the realisation of the CM, but the learning opportunities the course and the CM provided have enriched their career experience. The two developers have since both taken on more senior library roles that required the skilled employment of advanced eLearning knowledge.

Successful skills development and transfer also requires a positive staff attitude to continuous learning. In focusing on a project with a clear practical outcome, in this case the CM, developers in the course were not undertaking a theoretical exercise, but creating something new and useful. This stimulated positive attitudes to ongoing learning. As the CM took shape, the content experts could see the potential and wanted to acquire technological skills to assist the developers in achieving this goal. They felt comfortable asking for help because they were learning as the developers were learning and could contribute copyright expertise in return. This was a collaboration of peers, as the social constructivist learning approach encourages the “guide on the side” approach as opposed to the didactic approach. Working on the CM fostered a positive attitude towards sharing knowledge and acquiring new skills in the team. This is promoted in the library’s eLearning agenda and reinforced in

professional development opportunities like the DDEM course and a variety of workshops and projects. This has been successful and is recognised in other parts of the university, which have begun to consult the library about implementing eLearning and training for their staff.

## **Conclusion**

This paper started with an introduction to the DDEM course, which was designed around a social constructivist and authentic learning approach, followed by a description of the background to the CM project. Then the scenario-based approach to the design of the CM was explained. Development research was used to carry out the evaluation, with formative evaluation activities informing decision-making throughout the project lifespan, and continuing to inform its future development.

The social constructivist and authentic learning approaches underpinning the DDEM course have resulted in a highly beneficial staff development experience through the significant increase of knowledge, positive attitudes and skills of participants, increased value of collaboration across different work areas, and the creation of effective authentic eLearning resources of broad application. The success of the CM project is a testimony to its effectiveness and sustainability.

Learning is the theme that binds the project together, as the project team learned from their experience developing the CM, learned from user feedback during evaluation and learned from each other. This positive experience of continuous learning, applicable to different and emerging technology will inform the future development of the CM.

The principles and process described in the CM development story are applicable to other projects that require similar extensive levels of collaboration and broad university-wide application and illustrate a viable model of developing an in-house eLearning resource.

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