Chapter 6: Discussion

This chapter discusses and reflects upon the acquisition, development and application of knowledge to the CCA. Knowledge was acquired primarily from work experience at NLW, as well as literature research, work experience at the CCA, a web design short course, the ICF 2013 and events attended by the researcher. The knowledge influenced the development of outputs that were applied to the CCA; primarily digitisation and metadata documents and practical work, as well as a presentation, workshops, equipment purchases and a grant application to further the MPhil work. Table 17 outlines how the acquired knowledge was applied to the CCA through the development of outputs.

Acquisition	Application (full details given in Appendices)
NLW work experience	- Digitisation Strategy document - Project Outline document - Digitisation Guidelines - Metadata Guidelines - Metadata Spreadsheet - Presentation and Workshops on Digitisation and Metadata - Digitisation and Metadata for approx. 260 pages of ICF programmes - Metadata for approx. 86 born-digital ICF demonstration videos - KESS equipment - Grant application
CCA work experience	- PDF Testing - Digitisation Strategy document - KESS equipment - Grant application
Conference: "Digital Preservation: What I Wish I Knew Before I Started"	- Digitisation Strategy document - Digitisation Guidelines
Web Design studies	- PDF Testing - Grant application
ICF 2013 observations	- PDF Testing - Grant application - KESS equipment
KESS workshop	Presentation and Workshops on Digitisation and Metadata

Table 17. How the acquired knowledge was applied to the CCA through the development of outputs

6.1 Digitisation Strategy and Project Outline documents

In the literature review it was discovered a successful digitisation project must have clear definitions of purpose, mission, and audience (CLIR, 2001: 14). Many institutions, such as the British Library, the Smithsonian Institution and the National Archives of Australia, include digitisation work in their strategic plans (Bülow & Ahmon. 2011: 3). Bülow & Ahmon listed project planning in stage one of their four stage model to digitisation (2011: 11). Youngs emphasised the importance of planning and managing a digitisation project and advised the consideration of the following factors: the aims and objectives of a project, the scope, risk analysis, standards, resources, the project lifecycle (beginning, middle, end), timing, task analysis (hidden tasks may be identified during the course of the project), staffing and crisis management (2012: 7). During work experience at NLW, the researcher was introduced to the institute's digitisation strategy and project outline document. These documents explain an organisation's general aims and intentions for digitisation, as well as specific plans for an individual digitisation project. In light of the literature research and work experience, the researcher developed a digitisation strategy and a project outline document and applied them to the CCA through a project digitising approx. 260 ICF programmes. The documents seemed more necessary in a large-scale institution such as the NLW in order to correctly manage a large staff and large collections of material. The CCA has a comparatively smaller staff and collection and so there is less to manage, however, the documents are useful for reference and for justification of digitisation work. The documents can also be reused as a basis for future digitisation projects and for developments in digitisation work, taking into consideration advancements in technology. In consideration of Youngs' factors in planning and managing a digitisation project, the documents produced by the researcher do not focus on risk analysis or crisis management, however, the NLW produces separate documents on these matters and these could also be replicated for the CCA.

6.2 Digitisation Guidelines

In the literature review it became clear that digitisation guidelines were widely used for instruction on digitisation work (Hughes & Green 2011, Bülow & Ahmon 2011, Youngs 2012). In particular, JISC produce numerous documents instructing on the various aspects of digitisation work (JISC Digital Media 2013a-e). The importance of digitisation guidelines was further reinforced when the researcher undertook work experience at NLW. It was observed that both the Digitisation Unit and the People's Collection of Wales used digitisation guidelines, however, the PCW's guidelines proved to be most applicable to CCA due to similarities in scope. The researcher used the PCW's digitisation guidelines to create basic guidelines for digitisation at CCA. The guidelines were implemented in a student project to digitise approx. 260 ICF programmes. Upon completion of the project the students were required to complete a questionnaire that evaluated their knowledge before and after the project. In 2/5 cases understanding of digitisation remained the same before and after, while 3/5 cases increased their understanding of digitisation. The 2/5 cases had scored themselves highly on their understanding of digitisation prior to the start of the project. No cases claimed to have decreased in understanding of digitisation after the project. In 4/5 cases understanding of how to use a scanner remained the same before and after the project and in 1/5 case the understanding increased. In all cases this understanding had been above average in the first place and 'using a scanner' came out as the easiest of tasks. The overall increase, and total lack of decrease, in knowledge of digitisation and scanning, combined with the completion of the majority of project work, could suggest the digitisation guidelines were successful. Operating a Mac computer was considered the most difficult task and this could explain why every student did not *increase* knowledge. A possible improvement of the digitisation guidelines would be the addition of images and screenshots to further instruct users, as PCW use in their guidelines.

6.3 Metadata Guidelines and Metadata Spreadsheet

Literature research into metadata revealed there are many different metadata standards, such as Dublin Core, MARC, XML and EAD, but an XML metadata schema was simple to understand and easily transferrable (Carini & Shepherd 2004, Mugridge 2006, Andressen 2004). This was an important factor for the CCA because staff do not have expert training in metadata and digitisation. The use of XML was reinforced during the researcher's work experience at NLW, where staff used ALTO (Analyzed Layout and Text Object), an XML schema. PCW staff create XML spreadsheets for metadata and this was seen as a viable option for CCA staff who were familiar with XML spreadsheets. The researcher built upon the PCW's spreadsheet to develop a metadata spreadsheet for the CCA and this was used on the student digitisation project as well as the researcher's metadata writing for the approx. 86 demonstration videos. Upon completion of the project the students were required to complete a questionnaire that evaluated their knowledge before and after the project. In 4/5 cases the understanding and application of metadata increased, with 2/4 cases increasing significantly. The remaining 1/5 case maintained the same level of knowledge prior to the project. 2/5 cases increased their knowledge of using Microsoft Excel to create the XML metadata spreadsheet. The other 3/5 cases maintained their previous knowledge, all of which were above average. The overall increase, and total lack of decrease, in knowledge of metadata and XML, combined with the completion of the majority of project work, could suggest the metadata guidelines were successful. Understanding metadata was voted the second most difficult task behind using a Mac computer; which, as with digitisation, could explain why every student did not *increase* knowledge. During the project work the researcher observed metadata to be difficult to understand for both students and CCA staff and so a possible development for the metadata guidelines could be the addition of images and screenshots for guidance. It is likely the familiarity of Excel contributed to the general completion of the metadata work and had students been required to learn new software the metadata may not have been as successful.

<u>6.4</u> Presentation and Workshops on Digitisation and Metadata

The presentation and workshops conducted by the researcher for students and CCA staff were a support to the guidelines and were developed through work experience at NLW, particularly with PCW. The presentation was also an opportunity to directly transfer digitisation and metadata knowledge to staff at CCA who attended. During work experience the researcher observed PCW staff running workshops on digitisation and metadata where they gave presentations and practical demonstrations in addition to providing attendees with guidelines. In this way it was hoped attendees would have more help and would be more engaged in the subject by learning through both reading, seeing and listening. During work experience members of staff at NLW guided the researcher through learning and therefore this seemed an appropriate method to teach the subject to students and staff. The results of the questionnaire completed by the students showed the majority believed they had gained useful skills through the project and all had either maintained or increased their previous knowledge, with no students feeling more confused after the project. The questionnaire attempted to reveal the easiest and most difficult of the tasks, however, there was no standout result. This could suggest all areas were sufficiently covered in the presentation and workshops and the results were down to individual differences amongst students. However, 3/5 students found using a Mac computer to be the most difficult task and although this is not a significant number it could be relevant in light of the fact that the presentation did not cover basic usage of a Mac computer. Most students pointed out that they were more familiar with a Windows computer and therefore a potential development of the presentation could be an introduction to using a Mac computer.

6.5 Digitisation and Metadata for approx. 260 pages of ICF Programmes

The literature research revealed that selection of materials for digitisation required careful consideration and there were different options for selection based on an organisation's resources (Ooghe & Moreels 2009, Hughes & Green 2003, Hadžić 2004). The CCA's ICF collection was selected prior to the start of the project and, after conversations with CCA staff, the researcher decided the ICF programmes would be digitised. This decision was made because the programmes were easily accessible and the collection of programmes was complete, as well as because the paper-based material reflected the researcher's work on manuscripts and photographs during work experience at NLW. The researcher's digitisation workflow was based on the PCW's workflow and these both matched the fundamentals of the guidelines from the literature review. These fundamentals were: scanning the object, edit/optimize the scan, save as .tiff for storage and save as .jpeg for use. (JISC Digital Media 2013c, Bülow & Ahmon 2011, Youngs 2012, Note 2011).

The quality and quantity of digitisation and metadata work was varied, with some students having completed everything to a good standard, while a few students had done little work. At the end of the project the students were required to give their scans and metadata to the researcher for storage on the KESS Macbook. The researcher assisted Professor Moira Vincentelli in grading the work. As is typical with educational work, students produced scans and metadata of varying quality due to differences in skill and motivation. For example, the student allocated the programme from ICF 1993 failed to turn up to any lectures or workshops. Therefore, the target of approx. 260 pages was not achieved, however the majority of scanning and metadata writing was done. This suggests that students require considerable supervision or they are arguably not reliable to work on a professional digitisation project due to a lack of dedication that would not be an issue for a project employee.

After the student digitisation project, one aspect that changed upon review was the file-naming conventions. To take one example, the programme pages were initially named IFPG93001 (IF = IcF, PG = ProGramme, 93 = 1993, 001 = start number). This was loosely based on NLW's rule of 3-letters followed by 5-numbers. However, it was realised this would lead to files being organised by type of material, and not by year, for example, all of the IFPGs 1993-2011 followed by all of the IFPHs (PHotographs) 1993-2011, etc. By changing the file name to IF93PG001, the files would be organised by year, e.g. IF93PG… IF93PH… IF93RV… (ReViews). Furthermore, it was agreed between the researcher and CCA staff that '**c**eramics' was the key word and so the 'F' was replaced with a 'C' in the file name: I**C**93PG001. This process of trial and error was reinforced in the literature review as a common occurrence (Hughes & Green 2003, Kao & Tsai 2008).

6.6 **Metadata for approx. 86 born-digital ICF Demonstration Videos**

During the work experience at NLW the researcher worked on a manuscript and photographs for digitisation and metadata work. This led to the development of a metadata spreadsheet for students to use on the ICF programmes project. However, the CCA holds a large amount of video material and requested for metadata to be written for some of the ICF demonstration videos. The researcher initially used the same metadata spreadsheet used for the programmes, however, after discussions with CCA staff, it became evident the video material required further information and so three more fields were added. It could be argued the three new fields – file type, file duration (in minutes) and file size – are not essential in light of the fact that PCW considers the following to be essential: title, creator, subject, description, date, rights, identifier and coverage. However, given that the addition of the fields was a specific request by the CCA, with legitimate reasoning, the fields can be considered necessary. The issue of what to include and what to exclude in metadata is debatable and the decision seems to

come down to individual requirements and capabilities. However, the literature research emphasised that metadata was extremely important and needed to exist in some consistent form (Eden 2004, Note 2011, Orna & Pettitt 1980). In light of the alteration of the metadata spreadsheet for video material, it may be necessary to alter the spreadsheet for other different materials, such as audio. If several metadata spreadsheets are created, each one must be labeled correctly and used with the appropriate material.

The CCA requested the researcher note any errors or discrepancies while viewing the demonstration videos and writing the metadata. A common issue was the camera being left to film while the stage was cleaned up after a demonstration. Before the videos could be published online the cleaning up would need to be cut out of the video. The inclusion of the cleaning up causes the videos to be longer in duration and bigger in size, meaning they will take longer to upload and they will also appear somewhat unfinished and unprofessional. When the videos are appropriately cut, edited and published, the metadata spreadsheet, entitled "IC11VD," can be used to provide users with more information.[1]

6.7 PDF Testing

The CCA makes a few of its materials available to download from its website in PDF form and aims to continue this process. Websites such as JISC, the DPC and the DCC also allow users to download documents. The student digitisation project did not require the students to convert their scans into a PDF document and this detail was later added to the digitisation guidelines. The CCA was interested in how the digitised programmes could be used on the website in PDF format in collaboration with the metadata spreadsheet. The researcher selected the 1999 programme, which had received the most thorough digitisation and metadata work, and converted it into a PDF using Adobe

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[1] IC11VD refers to the .xml file for metadata (section 5.8)

Bridge. Then, three design prototypes were drawn up as suggestions for how the PDF can be used on the CCA website with the metadata. The main two points are that (1) the metadata supports the PDF download link, so users know what they are downloading, and that (2) the metadata works with the website's search facility so users can find the PDF. The issue with using metadata as supportive information to the download is how much information to include from the metadata spreadsheet. There is some information the majority of users will be uninterested in. When thinking about the different types of metadata outlined by Note (2011) and Deegan & Tanner (2002), 'descriptive' metadata is arguably most relevant to users, while 'administrative' and 'structural' metadata are of more use to staff members. These different types of metadata can be kept in mind when deciding what to include and exclude. It is possible that the use of metadata increases the sense of authenticity for users, who may be hesitant to download items on to their computer through fear of viruses. Each metadata spreadsheet comes with a list of tags and these tags need to be linked with the website so that when a user searches a tagged word it will reveal the PDF programme as a result. An issue that arose during discussions prior to the student digitisation project was how much to tag. The benefit of tagging as much as possible means that more keyword search results will be produced, however, the downside to this is that there will potentially be more irrelevant results for a user to read through in order to find what they are looking for. Each programme could potentially generate hundreds of tags. The CCA decided a 'common sense' approach to tagging would be best: prominent, featured words in the programmes would be tagged (such as ceramicist's profiles) and tedious links would be avoided. The success of the level of tagging can be evaluated by viewing the number of search enquiries, the number of downloads and by any email enquiries/complaints.

6.8 KESS Budget

Table 18 summarises how the KESS budget was received and used, with further details provided in Appendix L. The largest expenditure on the project came from the equipment budget through the purchase of the Macbook Pro and the flip-camera, which will remain with the CCA for future use. This expenditure exceeded the equipment budget by £60.86; however, this amount was taken from the consumables budget, which was unused. Upon conversations with other KESS students it became clear they had used the consumables budget to purchase items such as petri dishes and materials for testing (such as chemicals), however, for this project the materials (videos and photographs) already existed. The £6.00 consumables expenditure was for postage of equipment. Upon reflection, more expenditure would ideally have been made in travel and training, however, as the project was only 1-year long, the priority was completion of the work experience and project work during the time available.

	Budget	Expenditure	Budget remaining
Stipend	£9,835.00	£9,835.00	£ -
Equipment	£1,000.00	£1,060.86	-£60.86
Consumables	£2,000.00	£6.00	£1,994.00
Travel	£1,000.00	£124.50	£875.50
Training	£500.00	£70.00	£430.00
Academic Travel	£200.00	£0.00	£200.00

Table 18. Summary of KESS budget expenditure

6.9 Grant Application

The CCA receives funding support from organisations such as Arts Council Wales and CyMAL and this requires grant applications to be written. It is an important task in order to secure the survival of the CCA in the difficult economic climate of 2013. The CCA was awarded a £5,000 audience development grant in 2013 to redesign its website but aside

from this no funding has been applied for with technology issues in mind. The NESTA grant applied for in collaboration with the researcher and Aberystwyth Arts Centre was an opportunity to win funding for a digital project in the CCA. Throughout the researcher's work experience at NLW and through literature research it became clear that digitisation is an expensive process and cannot be achieved successfully with insufficient resources. The CCA should maintain an awareness of potential sources of funding if it is to ensure successful long-term digitisation work.

6.10 Culture Colony Blog

On social media and sharing websites such as Facebook and Twitter, users can only see content they have opted to see by adding friends and liking pages. Culture Colony, on the other hand, permits users to see everything posted by all other users. The benefit of this is that it creates more of a public community where content is more accessible, however the drawback to this is a lack of privacy and personalisation. Culture Colony links its Twitter posts with its own website in an effort to encourage interaction and traffic between the websites. The researcher's individual blog posts and the CCA's blog posts did not receive comments from other users, with the exception of the researcher's first post, which received 3 comments. However, this lack of activity was not unusual as the typical activity by users was observed as 1 post every few days and the same frequent users mainly did this. A reason for this could be explained by the fact that Culture Colony requires a paid subscription, while popular websites such as Facebook and Twitter are free to use. The 'platform' on Culture Colony with significantly the most members was "'Pitch' on Radio Cardiff," with over one hundred members, while the CCA had six, Aberystwyth Arts Centre had fifteen and Ceredigion Museum had three. 'Pitch,' a weekly arts and culture radio programme, claimed to use Culture Colony as a place to archive their broadcasts in video format. The CCA currently has no video material uploaded and, in light of Pitch's high membership rate, it may be useful for the CCA to upload some material to its platform to gain more members on Culture Colony.

While it is generally beneficial for the CCA to have a presence on Culture Colony, the website should not be its main or sole platform for publishing material online and the CCA should use its own website for complete control of materials.

6.11 Chapter Summary

This chapter discussed the transfer of knowledge to the CCA, taking into consideration the literature review, the acquisition of knowledge and the production of outputs. A Digitisation Strategy and a Project Outline were useful documents for organising digitisation work and they can be reused on a long-term basis, however, they must be updated with advancements in technology. Digitisation Guidelines were vital for undertaking digitisation work and proved to be useful in helping students understand digitisation work. Metadata was considered a difficult task but most students increased their understanding through the use of the Metadata Guidelines. Both the Digitisation Guidelines and the Metadata Guidelines could be improved with visual aids, such as pictures and diagrams, as used by PCW. The presentation on digitisation and metadata introduced students and CCA staff to the topic and the workshops provided the researcher with an opportunity to observe and assist where necessary. For future work it may be beneficial to include an introduction to using Mac computers in the presentation. The majority of digitisation and metadata work for the ICF programmes was completed and file-naming conventions changed in light of developments in project work. Metadata was created for approx. 86 born-digital demonstration videos and errors were noted in order to prepare the videos for publishing. At the request of the CCA, the researcher suggested how a digitised programme could be published on the website in PDF format. The KESS budget was used throughout the research to support the researcher's work. The researcher worked on a collaborative grant application to receive funding on a digital project to expand this research. The researcher kept a blog on Culture Colony with updates on the research throughout its duration.