Chapter 4: Acquisition of Knowledge for this Research

This chapter incorporates the different sources of knowledge of digitisation work acquired by the researcher during the research period. All of these sources are different in nature but they have all contributed towards further understanding and applications of digitisation. The primary source of knowledge is the work experience at National Library of Wales, however other sources come in the form of reports, observations, courses and notes. The majority of objectives outlined in section 1.4 regard to the acquisition of different knowledge and these objectives are fulfilled in this chapter. Chapter 5 explains how the acquired knowledge was applied to the CCA and Chapter 6 discusses and reflects upon the transfer of knowledge. The researcher chose to write this chapter in first-person narrative in order to best describe the experiences of acquiring knowledge.

4.1 Work Experience at National Library of Wales: the Digitisation, Description and Legacy Acquisitions Section (Strand A) and the People’s Collection Wales (Strand B)

Dates: November 2012 – February 2013

4.1.1 Introduction

As part of my MPhil project I undertook approximately 3-months of work experience at the National Library of Wales (NLW) in order to acquire knowledge on the fundamentals of digitisation and metadata. Encouraged by my supervisor at NLW, Professor Lorna Hughes, I considered three specific aspects of the topic while I underwent my work experience: (1) why we digitise, (2) how we digitise and (3) the impact of digitisation. It was useful to keep these three points in mind while I performed tasks and spoke with members of staff. During the work experience I always kept in mind the fact that the NLW was a large-scale institution, whilst the
Ceramic Collection & Archive (CCA) was a small-scale institution, and therefore there would be both obvious and subtle differences in scope, potential and practicality of digitisation.

During the course of my work experience at NLW it was suggested that I should undertake two strands of work. **Strand A** consisted of my work with the Digitisation, Description and Legacy Acquisitions Section, primarily the Digitisation Services Unit and the Digitisation Metadata Unit. Strand A involved learning by using equipment, observing work and talking to staff. **Strand B** consisted of my work with PCW, which involved the same tasks Strand A, as well as attending public workshops on digitisation and running my own digitisation project with Merched y Wawr Llanfarian. As shown in Tables 10 and 11, I was provided with a document that outlines my training schedule and the relevant staff involved.

<table>
<thead>
<tr>
<th>Strand A: Digitisation, Description and Legacy Acquisitions Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning</td>
</tr>
<tr>
<td>Digitisation workflow</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Benchmarking</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Material preparation &amp; conservation</td>
</tr>
<tr>
<td>Scanning</td>
</tr>
<tr>
<td>TEI Text-Encoding Initiative</td>
</tr>
<tr>
<td>Long-term Preservation</td>
</tr>
<tr>
<td>Project Management</td>
</tr>
<tr>
<td>Online Publishing</td>
</tr>
<tr>
<td>File Management</td>
</tr>
<tr>
<td>IPR and Licensing</td>
</tr>
</tbody>
</table>

*Table 10. NLW work experience schedule: Strand A*
**Strand B: People’s Collection of Wales**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to past projects</td>
<td>PCW Offices</td>
</tr>
<tr>
<td>Digitisation workshop</td>
<td>Cardigan</td>
</tr>
<tr>
<td>Digitising WW1 materials</td>
<td>PCW Offices</td>
</tr>
<tr>
<td>Introduction to metadata</td>
<td>PCW Offices</td>
</tr>
<tr>
<td>Merched y Wawr Llanfarian collection - introduction</td>
<td>NLW conference room</td>
</tr>
<tr>
<td>Digitisation workshop</td>
<td>Llangrannog Urdd</td>
</tr>
<tr>
<td>Merched y Wawr Llanfarian collection - scanning</td>
<td>PCW Offices</td>
</tr>
<tr>
<td>Digitisation workshop</td>
<td>Aberystwyth Town Library</td>
</tr>
<tr>
<td>Merched y Wawr Llanfarian collection - metadata</td>
<td>PCW Offices</td>
</tr>
<tr>
<td>Merched y Wawr Llanfarian collection - meeting</td>
<td>NLW conference room</td>
</tr>
</tbody>
</table>

Table 11. NLW work experience schedule: Strand B

### 4.1.2 Induction

I was given an induction into the NLW by the Human Resource team as part of a group of new staff members, which included another research student and library volunteers. We were given presentations on the history and aims of the NLW as well as health and safety instructions and a guided tour around the building. I was also given a staff card so I could access the building. I then met with Scott Waby (SW), Manager of the Digitisation Services Unit (DSU), who guided me around his department. We discussed my project and his plans for my work experience, however, he explained that the NLW was currently being restructured and departments were relocating and as a result there were some delays to my work schedule. Afterwards I met with Carys Morgan (CM), Project Officer at PCW, who guided me around her department. We discussed my project and her plans for my work experience. Finally I met Lyn Lewis Dafis (LLD), Head of Digital Development, who provided me with the training schedule as indicated in Tables 10 and 11.
**4.1.3 Strand A: Digitisation, Description and Legacy**

**Acquisitions Section**

**4.1.3.1 Meeting with Lyn Lewis Dafis (LLD), Head of Digital Development**

I met with LLD who introduced me to the history and the current situation of digitisation at NLW. The NLW began digitisation on a small scale without much knowledge. There were 2 small projects; one the “Campaign!” exhibition and the other an “inventory” cataloguing project. The success of these two projects would determine whether the NLW would focus their digitisation on temporary exhibitions or permanent collections. A project cataloguing framed works of art proved more successful and suitable, and so digitisation became a core function of the NLW. The NLW was one of the first institutions to mainstream digitisation as a core function of work. Typically in the UK, digitisation had occurred as a project, meaning it was temporary. The downside to running digitisation as a project is that the skills and knowledge gained by staff were lost upon completion of the project. By running digitisation as a core function, the NLW ensured the knowledge and skills of staff were fostered and improved.

There are three reasons why the NLW digitises:

1. Access of material (users are able to access material from any computer).
2. Preservation of material.
3. Income generation.

The NLW’s main reason for undergoing digitisation was for **access**. The institution was keen to modernize itself and to appear relevant. Contemporary internet users had high expectations due to the fast-developing nature of technology and programmes such as Google Books reinforced the popularity and need for digitisation. Another driver for digitisation was the government, which wanted institutions to provide e-services to citizens. On the digitisation of born-digital
material, LLD noted this is described as “re-formatting.” LLD describes the main ‘prongs’ to digitisation as:

1. Prioritisation
2. Selection
3. Significance
4. Rights/legal
5. Technical/practical

All of these prongs are subject to difficulties and challenges. For example, in the NLW, priority is for material in Welsh or about Wales, and therefore non-Welsh material, no matter how interesting, needs extra justification if it is selected at all. As previously discussed, significance and relevance can be subject to objective and subjective judgements. As for technical/practical issues, digitisation may not even be possible for certain materials, and new technology may need to be invented.

The term “mass digitisation” means that everything in a specific class is digitised, and not just a selection of items. This raises an ethical issue with the question “who is to decide what is important and what is not?” Different researchers consider different information valuable. It is the job of the NLW to provide all the information a researcher might need. If the NLW were to be selective this would not be sustainable or useful. Archive material, for example, makes more sense as a whole; if a few random pages are selected from an archive they have little meaning without the other pages. Another ethical concern is that the majority of contemporary users and buyers in the music industry, for example, automatically choose digital material over analogue material. LLD questions whether or not this will or should happen to books, journals, and similar material. Digitisation and technology such as Kindles and iPads make readable material more available in a digital format. However, as a result, the use of analogue materials may decline and libraries could become mere storage facilities. Perhaps analogue materials have the potential to become shadows to their own digital copies.

Figure 46 shows the main units relevant to my project, as described by LLD. The Digitisation Metadata Unit and the Digitisation Services Unit are the main two units
in the Collections Department; the difference between the two units being that the latter is where the scanning itself occurs. The NLW produces Digitisation Strategy documents to outline and overview its aims and intentions with digitisation and this acts as a point of reference and an instructive guide. The major plans in the NLW are decided by the Board of Trustees (directly) and by the government (indirectly). The government appoints approximately half of the trustees on the board and is the largest contributor of funds. The NLW is a registered charity and has a “2020 vision” long-term plan. The plan tries to identify the most significant factors – economic, political, social and technological – that are likely to affect the Library up to 2020 and it suggests how the library itself will develop over the same period.

Fig 46. An overview of relevant departments in the NLW
4.1.3.2 Digitisation Workflow

I met D. Rhys Davies (RD) who guided me around the Digitisation, Description and Legacy Acquisitions Section. RD introduced me to the “Welsh Experience of World War One” (WEWW1) project and the staff working on it. RD overviewed the workflow procedure for conducting digitisation work. The workflow at the NLW Digitisation Services Unit (DSU) is regulated by the specially designed database, Wombat. Wombat was initially designed by CASIS (Centre for Advanced Software and Intelligent Systems) at Aberystwyth University for NLW with further development undertaken by the NLW. Wombat is completed with the decisions made at the project benchmarking meeting. Prior to a benchmarking meeting, archival materials are removed from their permanent storage and into the intermediate storage area. This storage area acts as a halfway house between the controlled conditions of the permanent store and the warmth of the digitisation studio. The workflow (Figure 47) was followed so that each part of it was learnt completely and separately either by practical work or discussions with staff. This was so that I was clear about where each part of the workflow began and ended. My practical work experience focused on the digitisation and metadata stages of the workflow. Prior to my work experience, materials had already been gathered as part of the WEWW1 project and DSU had selected a box of materials for me to work on.
I met with RD and SW to discuss benchmarking. This is when different sections involved in the digitisation process have a meeting to look at an object or a sample of objects from a collection to decide how the digitisation work should be implemented. A sample collection is used instead of looking at every object in a collection because this saves time. For example, a hundred newspapers from the same publisher are likely to require the same work. However, some objects from a collection may be singled out for specific instructions for differing from the rest of the collection. This is noted in the Project Outline document that is completed during the benchmarking meeting.

I sat in on a benchmarking meeting for the WEWW1 project with the Project Manager, Rob Phillips (RP), and 3 other staff from different sections. During the meeting staff discussed preservation treatments, storage, handling of archival materials, use of equipment, as well as to agree a timetable of actions for the
completion of the project. The agreed actions were recorded and circulated so that all involved in the project are aware of the commitment and processes required for completion. This meeting was useful for me to understand the current state of the WEWW1 project and I became aware of limitations and pressures, such as the time restraints on a project. Another issue was that, as the digitisation work progresses around different sections, one section couldn’t begin work until another section had completed their part of the process. RP explained to me that this was always taken into consideration and so staff were kept occupied with different projects to avoid time wasting.

RD highlighted some of the problems that can occur during benchmarking. For example, books usually have two double-sided pages and archival documents have one single-sided page. Occasionally this may be different and an archival document may have two sides. This can become a problem when the benchmarking document instructs you to specifically “scan one side of every document,” for instance. If you were to scan both sides of this archival document, the title of each file would read: “p. 33, recto” and “p. 33 verso” (for example). This would then be out of line with every other title in the collection, which would read: “p. 31, recto,” “p. 32, recto” and “p. 34 recto,” due to having only one side. However, these special circumstances are noted in the benchmarking document to instruct the digitiser to scan both sides despite the main instructions.

4.1.3.4 Material Preparation: Pagination

I was given a box of documents from the WEWW1 collection that contained a manuscript, letters, postcards and government documents. The box contained a document that outlined what was supposed to be inside. I used this to cross-reference while I worked and I noted its usefulness if an item was missing from the box. I was asked to paginate the documents in preparation for scanning. This involved lightly numbering each side of a document with a pencil and the number
needed to be in the top-right hand corner on every page. Although this seems easy, it took concentration to ensure correct numerical order. In perspective of the whole digitisation process, the pagination stage will later guide a person through scanning every page of an item. The page number translates to part of the file name of the scan and therefore the physical page and the digitised page can be cross-referenced.

As I worked I encountered some exceptions and alterations to the pagination process. One issue was that certain pages had limited free space in the top-right hand corner due to the content and in this case I was instructed to paginate as near as possible to the top-right corner. Another issue was that not every part of certain items required pagination, for example, the leather cover of the manuscript. Although the front cover (FC), inside front cover (IFC), inside back cover (IBC) and back cover (BC) are scanned, they are not paginated and instead of page numbers in the file name they are given: FC, IFC, IBC and BC, respectively.

4.1.3.5 Using “Wombat”

After paginating the materials in the box I was introduced to Wombat, the NLW’s digitisation workflow system, which involves each unit or section involved in the digitisation process to complete and sign-off their involvement in the stages of digitising each item. At the stage of post-pagination my task was to type in the URI (Uniform Resource Identifier) into Wombat for each item I had paginated. It was important to consciously enter each URI to ensure they were numerically accurate. One digital item is allocated one URI, which is a sequence of numbers and, or, letters that uniquely identifies a resource (Berners-Lee, Fielding, & Masinter, 2005: 1). The URI was a 3-letter and 5-number code significant to the WW1 project. When entering items into the workflow it is important to leave a gap between groups of file numbers as they are allocated. These gaps allow for the insertion of extra scans if, during the digitisation process, it is discovered that particular features would benefit from being scanned separately. Additionally by running a check to see where there
are gaps in the numbering highlights where scans could have been missed or, where the beginning and end of sections are. For example, the URIs for Manuscript A run from “11020” to “11083” and the URIs for Manuscript B run from “11090” to “11147.” There is a numerical gap of 7 between the end of Manuscript A and the beginning of Manuscript B.

![Fig 48. DSU’s “Wombat” workflow](image)

4.1.3.6 Scanning

I was introduced to Julia Thomas (JT), from the DSU, who gave me a tour around the different scanners. There were a dozen scanners in total and each one catered to a specific material, such as film, glass plates and maps. The scanners were all large, high-tech pieces, different to the flatbed scanner I was used to, but I was excited to use them.

I was instructed to take the manuscript I had paginated from the WEWW1 collection to use for scanning. The scanner I used was a flatbed scanner commonly used for photographs and postcards. It had a tracking overhead Charge Coupled Detector or
Device (CCD), which was essentially a large camera pointing down on the bed, with a plate of glass in between. There was also a balancing apparatus on the bed which allowed the manuscript spine to sit flat on the bed. Each page of the manuscript had to be set up individually against a neutral background and in this case the background was a uniform grey. To show that the colours represented in the scan were consistent a greyscale patch was included in each scan. These shades were used to measure the values of the colours being produced by the scanner as they appear on the monitor, before the scan is accepted. The camera head of the scanner passed over the area of the scan, then displayed it on the monitor. When it was accepted the scan was transferred to the allocated folder space without any further processing.

Firstly, I needed to scan the leather front cover of the manuscript. I always clicked “preview” before I scanned, to ensure the scan was correct. Using the computer, I opened photoshop and imported the scan from scanner. The manuscript was much smaller than the scanner so, using the scanner settings, I cropped the location of the manuscript on the scanner in order to scan the required area and to save time. Once I was happy with the preview, I scanned the front of the manuscript. The actual scanning took longer than the preview scanning, as it was higher quality. Following this, I cropped the scanned image on photoshop, allowing a small margin surrounding the manuscript. The image was saved as a .tiff file and uploaded to Wombat with a URI and the title “FC” (Front Cover).

I repeated this process for the whole manuscript, with the titles: “IFC” (Inside Front Cover), “P1, P2...” (Page 1, Page 2...), “IBC” (Inside Back Cover), “BC” (Back Cover), and “S” (Spine). Like the pagination and URI tasks, this process was repetitive but it was important to ensure I did not lose track of my process. Instead of uploading to Wombat after each scan I was advised to upload a dozen at a time to save time. Something I questioned whilst scanning the manuscript was whether or not the reverse of the spine (the page edges) would be scanned. I asked JT who informed me that the reverse spine is rarely scanned but it would be if there was potentially relevant information on it. On Wombat I “signed off” the scanning process and the
scans were sent off to the next section in the Wombat digitisation workflow. Another person carried out quality assurance of the digital objects on Wombat as they would not be as familiar as I with the manuscript as so would be more objective when noticing errors. Any corrections that were required were made by adjusting the digital image until it was satisfactory.

Training to use the scanners to the expected standard of output began with direct supervision of me adjusting the digital items sourced from the manuscript. Mistakes were pointed out and suggestions on how to make suitable corrections were made then and there so that the difference the adjustments made could be seen immediately. This method of training made use of the fact that people working in this field have strong visual skills and that what are small differences to most, appear large to them. It is also an example of student-centred learning as it acknowledges that making mistakes is part of the learning process.
4.1.3.7 Metadata

During a digitisation project metadata is used to control the workflow. The metadata collected is used to fulfill several purposes, some of these include: to complete catalogue data, to locate the digital object, to control the digital object, to control the collection, and to preserve the digital objects. Metadata writing was learned by analyzing a metadata spreadsheet, completing a tracking sheet and discussing the work with staff. Feedback was given on the mistakes I made and how to avoid them in future. On reflection I observed that the key to successfully carrying out metadata writing is being methodical to ensure that all the fields on the MARC forms are completed accurately.

In the NLW the catalogue records are written using AACR2 (Anglo-American Cataloguing Rules 2) rules in MARC records. MARC records provide a standardised layout of information. Main entry forms for each format of material are created with as much information as possible. Digital objects are added to the relevant main entry via an added entry form, which translates to catalogue entry on the website. AACR2 is a standard for writing catalogues. It controls specific details such as whether to place a full stop after the word ‘Mrs’. These rules offer consistency of entries and make it easier for a user to scan the detail in a catalogue. It also enables precise automated searching for specified entries because machines cannot ‘see’ variation (Rowley & Hartley, 2008: 72).

In order to conduct some metadata writing I was provided with a new box of materials from the WEWW1 collection, which contained military photographs. I did not continue working with the manuscript at this stage because staff wanted me to experience handling a different type of material (photographs).

Each photograph already had an Accession Number (AN) written on the reverse with a soft pencil, e.g. “PZ5185/21.” The AN is an alphanumeric code that associates a photograph with a certain group of other related photographs. Many photographs
had writing on the back which would also need to be scanned and so the AN was carefully written in the top-right hand corner. The metadata spreadsheet listed a photograph’s AN, as well as information such as box number, title, description, date and **LCN (Library Catalogue Number)**. When users search for something the LCN links the library catalogue to the metadata spreadsheet. Figure 50 shows the LCN as “vtls...”

I created a tracking sheet which contained the AN, the LCN and a new **Individual Identifier (ID)**. The ID was made up of 3 letters and 5 numbers specific to the project. The 3 letter code can be taken from the title initials of the collection, but it needs to be unique. For my photographs the 3 letter code was “ARJ” followed by 5 numbers ascending from 00001 (Figure 50). A list of the 3 letter codes used in projects should be kept and updated each time a project is started in order to avoid reuse.

![Example metadata spreadsheet at DSU featuring the ID, the AN and the LCN](image)

Whereas the **AN** and **LCN** were concerned with the whole object, the **ID** was concerned with **all sides/parts** of an object. Therefore, each side/part received its own ID, for example, the front and back of a photograph. In the majority of cases where both the front and back of a photograph were scanned, the AN in the tracking sheet was altered to read, for example, “PZ5185/21: front” and “PZ5185/21: back.” However, in cases where the back of a photograph was deemed unnecessary to
scan, only one ID was made and without adding “front” or “back” to the AN (See row 77 in Figure 51). After this was done for every photograph the tracking sheet was uploaded to the Wombat workflow and the box of photographs sent off to the scanning team. The tracking sheet in Wombat instructed the digitiser in what he or she should scan per object.

Fig 51. Metadata spreadsheet at DSU showing a lack of need for a “front” or “back” for the AN

The definitions of the Accession Number, Individual Identifier and Library Catalogue Number are provided in Table 12.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>(AN) Accession Number</td>
<td>A code linking an analogue object to a metadata spreadsheet.</td>
<td>Used to cross-reference an analogue object with its metadata.</td>
</tr>
<tr>
<td>(ID) Individual Identifier</td>
<td>A code (3 letters and 5 numbers) linking all sides/parts of an analogue object with a digitisation workflow.</td>
<td>Used in a tracking sheet to guide digitisers on what sides/parts of an analogue object require scanning.</td>
</tr>
<tr>
<td>LCN (Library Catalogue Number)</td>
<td>A code linking a metadata spreadsheet with a library catalogue.</td>
<td>Used to help library users find items.</td>
</tr>
</tbody>
</table>

Table 12. Definitions of AN, ID and LCN
Figure 52 outlines the metadata workflow at DSU.

Figure 53 shows the metadata spreadsheet with which I was provided. Column A is the number of the box that contains the photographs, in this case box 988 from the WEWW1 collection. Column B is the AN that was written on the back of the photographs in pencil. Column G is the LCN, which is an identifier given to each item to link it to the NLW’s catalogue. Figure 54 shows the tracking spreadsheet I had to complete. Column A is the ID made up of 3 letters and 5 numbers specific to the project. Column B is the AN written on the back of the photograph, along with the specified “front” and “back” (unless only the front of the photograph was to be scanned). In column C, the LCN identifier was still retained to each object, and not each side.
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Uyfr Ffot</td>
<td>Rhif Derbyn</td>
<td>Dangosyddion</td>
<td>Teitl Saesneg</td>
<td>Teitl Cymraeg</td>
<td>Dyddiad</td>
</tr>
<tr>
<td></td>
<td>988</td>
<td>PE2778</td>
<td>0 + 0</td>
<td>Rhys Prothero R.F.C., 1917, and other men in military uniform</td>
<td>Rhys Prothero R.F.C., 1917, a dynion eraill mewn gwsg filwrol</td>
<td>1917</td>
</tr>
<tr>
<td>143</td>
<td>988</td>
<td>PE2779</td>
<td>0 + 0</td>
<td>German postguard I found in a dugout, c.1916</td>
<td>Cerdyn post Almeing a ddarganfuwyd mewn ffos ymochel, c.1916</td>
<td>c.1916</td>
</tr>
<tr>
<td>144</td>
<td>988</td>
<td>PE4763</td>
<td>0 + 0</td>
<td>Sargeant David John Hughes, Glanaman, c.1916</td>
<td>Sarsiant David John Hughes, Glanaman, c.1916</td>
<td>c.1916</td>
</tr>
<tr>
<td>145</td>
<td>988</td>
<td>PE4764</td>
<td>0 + 0</td>
<td>Cardiff boys, 267 Brigade, A Battery, 4th Welsh, Egypt c.1917</td>
<td>Bechgyn Caerdydd, Brigad 267, Magnelfa A, 4ydd Bataliwn y Catrawd Cymreig, yr Aifft c.1917</td>
<td>c.1917</td>
</tr>
<tr>
<td>146</td>
<td>988</td>
<td>PE4765</td>
<td>2 + 0</td>
<td>A Battery, 267 Brigade, 4th Welsh in Egypt, c.1917</td>
<td>Magnelfa A, Brigad 267, 4ydd Bataliwn y Catrawd Cymreig ynr yr Aifft, c.1917</td>
<td>c.1917</td>
</tr>
<tr>
<td>147</td>
<td>988</td>
<td>PE4775</td>
<td>0 + 0</td>
<td>4th Bataliwn The Welsh Regiment, 1915</td>
<td>4ydd Bataliwn y Catrawd Cymreig, 1915</td>
<td>1915</td>
</tr>
<tr>
<td>148</td>
<td>988</td>
<td>PE4776</td>
<td>2 + 0</td>
<td>A Co. 4th Welsh at Biggleswade, May 1915</td>
<td>Cwmni o 4ydd Bataliwn y Catrawd Cymreig yn Biggleswade, Mai 1915</td>
<td>1915</td>
</tr>
<tr>
<td>149</td>
<td>988</td>
<td>PE4777</td>
<td>0 + 0</td>
<td>B. Co. 4th Welsh at Biggleswade, May 1915</td>
<td>Cwmni B-4ydd Bataliwn y Catrawd Cymreig yn Biggleswade, Mai 1915</td>
<td>1915</td>
</tr>
<tr>
<td>150</td>
<td>988</td>
<td>PE5250</td>
<td>0 + 0</td>
<td>Bugle Band, 5th Battalion, Durham Light Infantry</td>
<td>Band Biwgl, 5ed Bataliwn y Durham Light Infantry</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>B</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----</td>
<td>-----------</td>
<td>-----------------------------</td>
<td>-----------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>arj00055</td>
<td>PG5304: front</td>
<td>vtl0006329944</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>arj00056</td>
<td>PG5304: back</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>arj00057</td>
<td>PG3417/1: front</td>
<td>vtl0006329939</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>arj00058</td>
<td>PG3417/1: back</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>arj00059</td>
<td>PG3417/4: front</td>
<td>vtl0006329942</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>arj00060</td>
<td>PG3417/4: back</td>
<td></td>
<td></td>
<td></td>
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I met with Morfudd Nia Jones (MNJ) from the Digitisation Metadata Unit to discuss the use of TEI (Text Encoding Initiative) at the NLW. MNJ defined TEI as the structure of text online in XML format. According to its website, TEI is a consortium which collectively develops and maintains a standard for the representation of texts in digital form. Its chief deliverable is a set of guidelines which specify encoding methods for machine-readable texts, chiefly in the humanities, social sciences and linguistics. Since 1994, the TEI Guidelines have been widely used by libraries, museums, publishers, and individual scholars to present texts for online research, teaching, and preservation (TEI 2013). The TEI’s guidelines (Figure 55) make recommendations about suitable ways of representing the features of textual resources which need to be identified in order to facilitate processing by computer programs. In particular, they specify a set of markers (also known as tags), which may be inserted in the electronic representation of the text, in order to mark the text structure and other features of interest. Many, or most, computer programs depend on the presence of such explicit markers for their functionality, since without them a digitised text appears to be nothing but a sequence of undifferentiated bits.

At NLW the TEI guidelines started on version 3 for the Welsh Biography Online (Figure 56) project but are now on version 5 with more detail and relevancy. MNJ commented that one must tag as much as possible but that tagging in both English and Welsh was not a practical system and it needed to be changed because there are place name terminology standards, for example, which differ from English to Welsh. Every person in the TEI dictionary/biography has a unique ID, which can be tagged when relevant. It is also advisable to tag related information, such as family members.

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MNJ also introduced me to the TILE (Text-Image Linking Environment) tool, which is described as a web-based tool for creating and editing image-based electronic editions and digital archives of humanities texts. TILE features tools for importing and exporting transcript lines and images of text, an image markup tool, a semi-automated line recognizer that tags regions of text within an image, and plugin architecture to extend the functionality of the software (TILE: 2011).

Fig 55. A screenshot of the TEI guidelines for the use of names (TEI, 2013b)

Fig 56. Two screenshots from the Welsh Biography Online showing the web-face and the TEI.
4.1.3.8 Online Publishing and File Management

I met with Dylan Wyn Jones (DWJ) to discuss online publishing and file management, particularly the use of XSLT (Extensible Stylesheet Language for Transformations). XSLT is an official recommendation of the World Wide Web Consortium. It provides a flexible, powerful language for transforming XML documents into something else, such as an HTML document, another XML document or a PDF file. An XSLT stylesheet is written to define the rules for transforming the XML document and the XSLT processor does the work (Tidwell, 2008: 1). XSLT is how the NLW apply XML documents, such as metadata spreadsheets, on to online metadata fields, such as those that accompany an online image. DWJ said that the XSLT process is currently manual but the NLW are looking into making it automatic.

I also met with Owain Pritchard who gave me a tour around the NLW’s IT storage facilities. There are 2 separate, self-contained server rooms. Each server backs-up different aspects of work at NLW, such as permanent tasks or on-going/incomplete tasks. Servers are cooled with a fanning system to avoid overheating and fires. Digital content at NLW is stored in 2 main ways: (1) a Digital Archive (a server and tape library, an archival copy of the material in VITAL, and other digital materials collected and copied from original media) and (2) VITAL², a digital asset management system, based on Fedora.³

For the CCA and ICF, storage is managed by Aberystwyth University Information Services (IS) and XSLT is managed by Web Services. The servers hosted by IS benefit from centralized and off-site backup, maintenance by trained and experienced staff and being in an environmentally controlled server rooms with secure physical access. As this work is carried out sufficiently and externally for the CCA it is not a key issue that requires resolving in a project such as this MPhil.

³ [http://fedoraproject.org/](http://fedoraproject.org/)
4.1.3.9 Long-term Preservation

I met with Glen Robson (GR) and staff at the Systems Unit to discuss aspects of long-term preservation. The NLW has a Digital Preservation Strategy, now on its second edition of 2012-2015 (NLW, 2012) which built upon the lessons learned from the 2008 strategy. The NLW uses Archivemattica⁴, a free and open-source digital preservation system that is designed to maintain standards-based, long-term access to collections of digital objects. The NLW also uses the VITAL and VIRTUA⁵ systems. VITAL is for digital libraries and repositories with automatic metadata capture, superior searching capabilities, standards-based protocols and open source Fedora at the core. The NLW uses the Fedora operating system, a free to download Linux-run operating system that is an alternative to Microsoft Windows or Mac OS X. VIRTUA is a feature-rich integrated library system (ILS) with a depth and range of capabilities, including multilingual user interfaces and support for Unicode⁶ and FRBR (Functional Requirements for Bibliographic Records).

The NLW uses ALTO (Analyzed Layout and Text Object), an XML Schema that details technical metadata for describing the layout and content of physical text resources, such as pages of a book or a newspaper. ALTO knows the coordinates of every word on a webpage. It most commonly serves as an extension schema used within the METS administrative metadata section (The Library of Congress, 2013). GR noted that there is currently no Welsh Dictionary for OCR (Optical Character Recognition), which is a key concern for a national institution in Wales such as NLW. The NLW currently runs the DigiDo (Figure 57) digitisation project⁷ to support small to medium creative businesses within the convergence areas of Wales. The aim of the project is “to encourage innovative Welsh businesses and give them the tools to be able to compete both locally and globally” and to provide “an opportunity for businesses to exploit and re-use” the large repository that exists within the NLW (The National

⁴ https://www.archivematica.org/wiki/Main_Page
⁵ http://www.vtls.com/products/virtua
⁶ A computing industry standard for the consistent encoding, representation and handling of text expressed in most of the world’s writing systems
⁷ http://www.llgc.org.uk/index.php?id=6021
The project has resulted in the digitisation of manuscripts, archives, printed material, sound and video, pictures, exhibitions, maps and photographs that have been uploaded to the NLW’s Digital Mirror.

4.1.3.10 Project Management

I met with Rob Phillips (RP), the Project Manager for the WEWW1 project, to discuss aspects of project management and digitisation. RP explained that before embarking on a project there is a great deal of planning to do, without which the project is unlikely to succeed. The NLW has many forms that need to be completed prior to a project, some of which include:
- **Project roles and structure** (sets out the roles of individuals, groups and organisations within the project management structure as well as the various groups within the project generally or specific work packages).

- **Risk management strategy** (defines how the Project will identify, analyse, prioritise, monitor, communicate and appropriately manage its exposure to potential risks).

- **Communications management strategy** (identifies all parties involved with and interested in the business of the project and defines the nature, method and frequency of communications to enable the appropriate and timely bi-directional transmission of essential information about the project).

- **Selection of content** (outlines the scope of the workpackage including products, timescales, dependencies, responsibilities, tolerances and acceptance criteria).

As Project Manager, RP meets regularly with Team Leaders from each unit involved in the project (Figure 58) to ensure the workflow is correctly implemented to the predicted pace. There are “tolerances” with any project: all projects have strict guidelines and plans; however, it is reasonable and realistic that these guidelines cannot be followed religiously. RP reviews the progress of each team or team member and if they stray over 5% from the guidelines then it is RP’s job to get them back on track. For example, a member of the scanning team may be scanning 100 items per week instead of the required 130. This also applies if someone is working faster than expected, in which case a task needs to be lined up for when they are finished.

Team members can be working on multiple tasks or projects at once. Time management and prioritisation are important in ensuring a member of staff is not left without a job to do. Some parts of the process take longer than others, which should be considered and planned for. There may be different institutions or groups involved in a project, some of whom may need results faster than others.
For further information on project management, RP recommended PRINCE 2 (PRojects IN Controlled Environments), a de facto process-based method for effective project management. On the official website, PRINCE2 explains its purpose:

"Used extensively by the UK Government, PRINCE2 is also widely recognised and used in the private sector, both in the UK and internationally. The PRINCE2 method is in the public domain, and offers non-proprietorial best practice guidance on project management."

The key features of PRINCE2 are: a focus on business justification, defined organisation structure for the project management team, product-based planning approach, emphasis on dividing the project into manageable and controllable stages and flexibility that can be applied at a level appropriate to the project (PRINCE2, 2013).

4.1.3.11 Intellectual Property Rights

I met with Dafydd Tudur (DT) to discuss copyright issues with digitisation and metadata. DT recommended “Digital Opportunity: A Review of Intellectual Property Growth,” by Professor Ian Hargreaves, which was commissioned by the UK government. It makes 10 recommendations designed to ensure that the UK has an IP
framework best suited to supporting innovation and promoting economic growth in the digital age. One recommendation is the creation of a "Digital Copyright Exchange" to simplify the process of licensing, making it easier to license "orphaned works", where the copyright holder can't be identified. Duncan Geere from Wired.co.uk commented that the Digital Copyright Exchange permits parody, legalises CD ripping and abandons website-blocking proposals and that “it could have a bigger impact on the British creative industries, as well as the wider economy, than any other proposal in the government's re-think of intellectual property” (Geere, 2011).

Some main points I gathered from my meeting with DT were:

- 70 years after the death of the creator, an item loses its copyright.
- 90% of people are happy to give credit.
- [http://www.tineye.com/](http://www.tineye.com/) is an image search to find out if an uploaded image exists online.
- The NLW does not use watermarks on images.
- If NLW is the rights holder they use the Creative Commons License.
- The NLW has no intellectual copyright property policy yet but the plans in place will be a significant departure and more open to the rights in the collection.
- Institutions need to maintain a balance between free access and income generation. Some institutions have a retrieval fee and a rights fee in order to generate income.
- The British Library is more business-oriented, the National Portrait Gallery has a decent balance between access and income, and the V&A is “best” at income generation.
- An issue with Hargreaves’s reports is that they are based on EU law with an EU directive.
- Digitisation is a means to an end.
- As technology is developing at a rapid speed, it is putting pressure on rights, which need to be re-evaluated in parallel.
JISC Legal published a document titled “3D Digitisation and Intellectual Property Rights” which may be of some relevance to digitisation of ceramics. The guidance is intended for staff in colleges and universities and related organisations involved in 3D digitisation projects and focuses on the IPR issues.

4.1.4 Strand B: People’s Collection Wales

4.1.4.1 Digitisation Workshops

PCW Project Officer Carys Morgan (CM) invited me to attend a digitisation workshop in Cardigan, Wales, which was to be run by 3 staff members from the PCW instructing members of the public on digitisation work. Workshops such as this are held frequently around Wales in order to encourage usage of PCW website and services, to expand digitisation knowledge and to ensure digital preservation of valuable materials around Wales. PCW encourages many smaller local organisations and groups, such as historical societies, to attend the workshops, as well as interested individuals. After attending the Cardigan workshop I attended two other workshops in Llangrannog and Aberystwyth during the course of my work experience. By attending these workshops it was hoped I would learn how to digitise, why digitisation is done and the impact digitisation could have, as well as equip me with skills to pass on digitisation knowledge.

Prior to the start of a workshop I aided staff in preparation, which involved setting-up PCW’s ‘digitisation kits’ to be used by attendees. One kit contained a laptop, an Epson Expression 10000 XL flatbed scanner, a computer mouse and a greyscale patch. The equipment from a single kit fitted comfortably on an average-sized desk. It was useful to set-up the equipment with the staff as it gave me an idea of what

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8 JISC Legal: http://www.jisclegal.ac.uk/ManageContent/ViewDetail/ID/2863/3D-Digitisation-and-Intellectual-Property-Rights.aspx

9 PCW hires out their digitisation kits for periods of 4-6 weeks to encourage others to digitise.
equipment was needed, how it connected together and how it should be arranged. After a meet and greet with the attendees, staff began the workshop with powerpoint presentations that introduced PCW, digitisation, metadata and copyright. One note of interest regarding copyright was that anything uploaded to the PCW website belongs to the owner, unlike other websites such as Facebook where uploaded images belong to everyone. These presentations were incredibly useful because they were designed for beginners and so it was very easy to understand the digitisation and metadata processes. I observed how staff avoided confusing attendees by using clear diagrams and pictures and avoiding technical jargon where possible. This later aided me when passing on digitisation knowledge to students and staff at CCA.

After a lunch break, the attendees broke into small groups and began using the laptops and scanners themselves. Many attendees brought photographs and paper documents with them to use in the digitisation activity. Staff provided attendees with a set of digitisation guidelines on paper and the attendees were encouraged to go through the steps on their own although staff were always nearby to assist. The majority of attendees were over 60 years-old and I observed an overall hesitancy of using computers. For example, when I joined in with a group on the activity, my group members encouraged me to operate the equipment while they observed me and read the guidelines. However, I generally observed that attendees seem to understand the concepts best when they eventually had a go themselves. The guidelines were very easy to follow and each step was accompanied with a screenshot to reassure readers they were digitising correctly. The guidelines went through the whole process of preparing the scanner, scanning the object, benchmarking, preparing photoshop, saving the file as .tiff (for storage), cropping the image, saving the file as .jpeg (for using), uploading the .jpeg to the PCW website and completing the metadata.

Figures 59-61 are photographs of the PCW staff undertaking digitisation work.
Fig 59. PCW staff digitising © PCW

Fig 60. PCW staff digitising © PCW
Going through the guidelines was very useful in helping me to understand the digitisation process. The hardest part of the process was in preparing the scanner because you need to ensure the colour levels are accurate by using the greyscale patch in the scanner as a guide. By doing this you are ensuring the image on the screen correctly represents colour values of the actual object. My group had to do this process a few times because the colours often came out inaccurately.

After this activity the staff introduced the attendees to flip-cameras, which are small devices that allow for video and image recording and are particularly useful for interviews. They were very easy to use due to their simplicity and ergonomic design. I made note of the flip-cameras for the CCA as it has a collection of oral history and the curator regularly conducts interviews.
I attended a second workshop in Llangrannog, which was slightly different to the workshop in Cardigan. The workshop was implemented as a private demonstration to staff at the Urdd, which is an organisation that provides recreational activities for young people through the medium of Welsh. One challenging aspect of this visit was that it was done all through the medium of Welsh language. I do not speak Welsh but the others were happy to translate for me. However, despite not understanding the language, I found that I still understood what PCW staff were instructing because I had become familiar with the digitisation process from working with PCW. I thought it was a testament to PCW’s skills in instructing and presenting that I was able to follow without understanding the language and I took these teaching skills on board. It was useful to see the digitisation process repeated and I left feeling more confident in my digitisation knowledge.

The final workshop I attended was held at Aberystwyth Town Library for members of the public. It ran to a similar structure as the first workshop I attended with presentations followed by practical sessions. I invited my supervisor, and CCA curator, Prof. Moira Vincentelli (MV) to attend this workshop because I found the other workshops very informative and I thought it would be an opportunity to directly transfer digitisation knowledge from NLW to CCA. Prior to the workshop I had informed MV about the PCW’s use of flip-cameras and I suggested the benefit the equipment could have for the CCA’s oral history collection. PCW staff instructed MV in the use of the flip-cameras during the Aberystwyth workshop. I agreed with MV that a flip-camera would be purchased using the KESS budget.

By attending these three workshops I acquired knowledge on how to digitise and write metadata, what equipment was involved in the process and how the knowledge could be effectively transferred to others.
4.1.4.2 Digitisation Workflow at PCW

PCW Project Officer Carys Morgan (CM) informed me that I would work with the Merched y Wawr Llanfarian group on a digitisation project as part of the WEWW1 project. However, before I could do this I needed to learn how digitisation was done at PCW. I was given a political satire magazine from WW1 to digitise. It was owned by a member of staff at PCW and would be uploaded to the PCW website as part of the NLW’s WEWW1 project. CM provided me with the same digitisation guidelines (Figure 62) the PCW give to attendees of the digitisation workshops they host around Wales. I immediately noticed that at the PCW I would do all the stages of digitisation myself, unlike at the Digitisation Unit where the process was passed around different sections.

Since the materials had been selected and the copyright had been checked I proceeded to set up the equipment at my desk. This consisted of a laptop, an Epson Expression 10000 XL flatbed scanner, a computer mouse and a greyscale patch. The scanner required calibrating to ensure the resolution was at 300 dpi (dots per inch) and the colour depth was at 24-bit so that the scan would be accurate and high quality. The software used was Adobe Photoshop 7.0 and the greyscale patch was used to adjust the colour levels in Photoshop. After a preview scan was done, I used the eye-dropper tool to ensure the colour was accurate against the greyscale patch. Following this a real scan was done, which took longer than a preview, and this was saved as a .tiff file for storage. The scan was then cropped, straightened and saved as a .jpeg file to be uploaded on the internet. This was because the .tiff file is a large format which is perfect for storage but not good for online publishing as the images would take too long to upload. By saving the images as .jpegs the size and resolution were decreased but still acceptable for use and appreciation.
PCW advises to keep file names short but meaningful and unique. When numbers are used in file names they should always be at least two digits instead of one digit to maintain numeric order (e.g. 01 instead of 1). Copies of the scans should be made on servers, trustworthy online vaults or on removable media such as external drives, CDs or DVDs. PCW enter metadata at different stages of the digitisation process. When two staff members work with a group on digitisation, one person scans the materials while the other person talks to the group to get basic information on the materials for the metadata spreadsheet (Figure 63). They do this to take advantage of the knowledge the owner has of the materials. Metadata is later completed by assessment of the materials, conducting research and using any information provided by the owners. PCW consider the file name, title, creator, subject, description, date, rights, identifier number and location to be the essential information required for metadata. The PCW’s metadata guidelines are shown in Figure 64.
The PCW’s use of a “Parent ID” for linking together two or more sides/parts of one object is similar to the DSU’s use of an LCN because both are used to signify a whole object and all its parts. I felt the PCW’s digitisation workflow was a slightly simplified version of the DSU’s workflow. I saw this as a positive aspect because the workflow was easier to understand and achieve. This was a crucial factor since the digitisation
knowledge was to be transferred to the CCA; an institution with limited digitisation knowledge and facilities. By completing all the stages of digitisation myself while sat at the same desk, I felt more knowledgeable about the history of each item’s digitisation and more in control of the process. There was more responsibility here in that different people did not check off the digitisation stages and so there was a higher chance of an error going unnoticed. To sum up: the DSU’s digitisation workflow was catered to digitisation professionals, whereas the PCW’s digitisation workflow was designed so anyone could digitise with relative ease.

4.1.4.3 Merched y Wawr Llanfarian (MyWL) Project

PCW staff informed me that they had been in contact with the Merched y Wawr group from Llanfarian, who were interested in digitising their collection of photographs. It was decided this would be a good project for me to work on to see the digitisation process from start to finish. Prior to a meeting with MyWL, the group sent some photographic material to PCW and I aided staff in the digitisation and metadata process outlined previously. This was done in order to show the MyWL what was done with their materials at the meeting. With the support of PCW staff I set up the equipment and met with two women from the MyWL who brought in a further portfolio of approx. 280 photographs. It became evident the material MyWL had previously sent PCW had been digitised not only to show the work but also so it could be returned back to MyWL during the meeting. As the two women preferred to speak in Welsh during the meeting, a PCW staff member discussed as many of the 280 photographs as possible with them in order to get metadata information. Whilst this happened I used the Epson Expression 10000 XL scanner to scan each photograph after they were done talking about it. This system was speedy and practical. It allowed us to utilise the knowledge of MyWL while it was available and allowed them to retain as many photographs as possible.
After the meeting the rest of the 280 photographs were scanned in the PCW office. Metadata was written based on notes from the meeting and from analysing the photographs. Most photographs had dates, names and other descriptive information on the back. However, the backs of the photographs were not to be scanned. This was a key difference between the PCW and the DSU. I had several more meetings with MyWL throughout the course of my MPhil to discuss the photographs with them in order to acquire substantial and accurate metadata. After all the photographs were scanned and returned I began preparing them to be ready for online publication. This involved cropping and rotating each photograph and re-saving the .tiff file to a .jpeg. Towards the end of my work experience I created an account for MyWL on the PCW website, uploaded 14 photographs as prototypes and I input the metadata in the fields provided on the website (Figure 65).

Fig 65. Screenshot of MyWL’s page on the PCW website
4.1.5 Summary of Work Experience at NLW

My time at NLW was split into two strands. Strand A involved working with the DSU and Strand B involved working with the People's Collection Wales. There were many differences between these two strands, most notably in how they each implemented digitisation. The PCW, as a small-scale operation like the CCA, became something of a useful model in helping me think about how digitisation could be done in the CCA due to their similar scope. The DSU was seen as more of an “ideal” model for digitisation due to being more meticulous and more technologically advanced, however, the methods were largely unrealistic for the CCA. It became clear that I would need to initially employ the digitisation methods of the PCW as a fundamental/base and then edit the method where suitable using the digitisation methods of the Units (always keeping in mind the capabilities of the CCA).

Certain training sessions from my work experience, such as on-line publishing, server management and IPR, were less applicable than others, despite being interesting. This is because these aspects of digitisation are carried out externally for the CCA by Aberystwyth University and, as such, are unlikely to be affected by my research project. For example, I will not be constructing a new website and so will not need to be proficient in html language. However, it was still useful for me to understand the basics of these aspects in order to gain a more comprehensive overview of the subject.

Despite being confident in my IT skills, I embarked on my work experience as an Art History graduate with little knowledge about digitisation and metadata. Thanks to the training sessions I received from staff at NLW, within the first couple of weeks of my work experience I felt much more knowledgeable and capable with digitisation and metadata. It was both useful and interesting to see “behind the scenes” of an extensive national library and I felt very privileged. I left my work experience feeling more confident in my ability to undertake my MPhil project.
4.2 Work Experience at CCA

Dates: July 2012 – September 2012

Prior to the official start of this MPhil project in October 2012, I undertook work experience at the CCA for 3-months in order to familiarise myself with the organisation. I acquired knowledge on some of the CCA’s administrative tasks, specifically those tasks related to digitisation and the CCA website, and I gathered a sense of the organisation’s potential capabilities for digitisation work. This knowledge contributed to the outputs I produced for the MPhil project (Chapter 5).

My main tasks were as follows.

4.2.1 Quality Assurance of CCA Website

The CCA website contains information about all the ceramic artists and their work in the collection, including photographs of the work. The artists, potters and pottery companies are listed on the website both alphabetically by name and alphabetically by country (Figure 66). I was assigned with the task of going through the list of artists and to make a note of spelling or grammatical errors, out of date information, missing information, missing or poor quality photographs, and formatting inaccuracies. Any errors or inaccuracies were documented on a spreadsheet designed by the CCA (Figure 67). This task was very time consuming, however it was necessary to ensure information was accurate and up-to-date. When reviewing the quality of the photographs I realised digitisation was not a finite task and that, due to advancements in technology, the acceptable standard for digital replicas was ever increasing. The photographs of ceramics were considered above average 5-10 years ago, however, in 2013, particularly in light of the capabilities of 3D-digitisation, the CCA now considers them behind the times and capable of improvement.
Fig 66. Screenshot - A-Z list of makers on CCA website

Fig 67. Screenshot - using a spreadsheet for quality assurance of CCA website
4.2.2 Checking Files

The CCA office has a number of filing cabinets that contain paper files with information on all artists or “makers” in the collection. Each file contains a contents list that states what should be inside the file and this contents list is replicated on the computer in an .xml spreadsheet. My task was to go through the files and complete the instructions listed in figure 68.

Like the quality assurance of the website, this was also a time consuming task but it was necessary to ensure information was up-to-date and accurate. While working I was conscious of the dual use of the computer and paper as a means of documenting the contents of the archive. This seemed to be done for practical use so the files could be checked without turning on the computer, as well as for backing-up the information in case either version was lost. Staples were removed and replaced with paper clips for conservation means, as staples were prone to rusting. The removable of plastic folders and duplicate items seemed to be driven by a need to save space.
Use the contents list at the back of the file to cross reference items in the file.

Check each item corresponds with its numbered listing.

Check each item has a number in pencil on the front of the document.

For conservation purposes, remove all staples and replace with paper clips, as staples are prone to rusting.

Do not attach paper clips to the file itself as they will catch, leave items loose.

Remove all plastic folders.

Remove all duplicates and dispose.

Leave all photographs as they are, as they require special chemically stable envelopes. Please mark if a file contains photographs on the spreadsheet.

If an item is missing mark it missing with the current date e.g. ‘missing 28/7/2012’.

Number of sheets—In this column record the document length as there has been discrepancies here e.g. 4 x A4, or 8 pages x 4, A4 or 1 part A4.

Record any changes in pencil on the sheet and then transfer them to the word document on the computer.

Use the computer opposite the door. Go to .xml spreadsheet contents list and find the makers name.

Make the changes, save and print.

Replace only the contents lists you have made the changes to—i.e. in a big file there is no need to print out a 15 page list when there are only changes to the last page.

In the contents list there is also a separate spreadsheet entitled “Artists’ Files Queries” for inputting any queries that need checking by CCA staff.

Fig 68. Instructions for checking files in CCA
4.2.3 Social Media

I did some work on social media marketing, which was a fairly new initiative in the CCA. I worked with Archive Assistant Louise Chennell (LC) to set up web pages for the CCA on Facebook, Twitter and Wikipedia. These websites were selected due to their popularity and it was hoped this would raise the publicity of the CCA. I learned that digitisation and social media are closely linked in that the digitised material can be used for promotional work. Therefore, it was important digital materials were of high-quality in order to appeal to the public and exhibit professionalism.

4.2.4 Scanning

I did some work scanning the Ceramic Archive Bulletin, published in both English and Welsh, using the Epson flat bed scanner and iMac in the School of Art’s Mac Suite. The purpose of scanning the bulletins was to create.pdfs of them to publish on the CCA website. LC provided me with scanning instructions, as outlined in Figure 69.

![Diagram of scanning instructions]

Fig 69. CCA’s original scanning instructions
In the instructions there was no specification to save the scan as a .tiff file for storage, however, this was only because the purpose of the digitisation was for public access to the bulletin, and not for preservation. There was no instruction regarding file naming conventions for the .pdfs (Figure 70) and I was encouraged to invent my own. To take the example “CB199701E,” CB refers to Ceramic Bulletin, 1997 refers to the year, 01 refers to the edition and E refers to the language being English. “CB199701C” refers to the same edition published in Cymraeg (Welsh). I decided to use a 4-character year (“1997”) instead of 2-characters (“97”) in order to maintain numerical progression. If “01” had been used instead of “2001,” this file would be organised at the top of the list, above “97.” Upon reflection the edition number may have been more suitably placed before the year, e.g. “CB011997E,” in order to start from the number “01.” This practice work had an impact on my later work scanning programmes from the ICF and used my experience to influence my decisions. The digitised copies of the Ceramic Archive Bulletin are now available on the CCA website (Figure 71).

Date: 24th January 2013

Location: University College of London (UCL)

Website: www.dpconline.org/events/details/50-StudentConference2013?xref=53

With support from the KESS budget I attended a conference at UCL that discussed the challenges of digital collections management and digital preservation. The following bullet points summarise the points made by the various speakers that I considered most relevant to this project. Footnotes are also provided with web links to view the speaker’s presentation, where available.
What’s the Problem with Digital Preservation? – William Kilbride

- JISC projects bleakly say they will last ‘in perpetuity’ or ‘indefinitely’ which is not good because we need to know where the data will be at the end of the project.
- Digital data is an asset. It holds much value and potential and can create new opportunities. Its use has direct and indirect outcomes.
- Deployment depends on software, hardware and people, all of which change.
- Loss of data is insignificant if nothing is done with the data in the first place.
- Good records management proves ownership and avoids lawsuits.
- Digital preservation is not just about data or access or risk, it’s about people and opportunities.
- 3 basic approaches to long-term (and short-term) preservation:
  1. Migration. Change the file format to ensure the information content is readable.
  2. Emulation. Intervening at operating system or software level to ensure information content is readable. Emulation is the main topic of research over the next decade.
  3. Hardware preservation. Maintain access to data and processes by manipulating physical computing.
- Challenges:
  - Technology creates conditions for obsolescence.
  - Digital preservation systems are subject to the same obsolescence as the objects they safeguard – a paradox.
  - Digital resources are intolerant of gaps in preservation. Resources can be corrupted/tampered without trace.
- Challenges can be faced by different groups and institutions working together.

10 [www.dpconline.org/component/docman/doc_download/821-wiwik2013kilbride](http://www.dpconline.org/component/docman/doc_download/821-wiwik2013kilbride)
Web Archiving at the British Library – Helen Hockx-Yu

- Talked about her job as Head of Web Archiving at the British Library and watched a video about her job.
- A non-print legal deposit was established in the British Library on the 5th April 2013. It is estimated to crawl 4-5 million UK websites at least once a year.

Digital Curator at the Wellcome Library - Dave Thompson

- The Wellcome library uses the Goobi workflow tracking system to manage digitisation.
- Streamline and simplify processes - keep them simple.
- More social problems than technical problems. Data needs to have meaning and context and it needs to be useable. E.g. Hillsborough documents are to be archived.

Digital Archivist at University of London Computer Centre – Patricia Sleeman

- Context is a universal truth, regardless of technology.
- An object without information is meaningless.
- Learn coding and learn project management.
- Money hurts but money matters – learn budgets for economic sustainability.
- DAIS (Digital Archiving Information System) is a good model for digital preservation.
- Project failures are useful in learning from mistakes.

The conference proved to be a useful opportunity for me to experience the contemporary climate of digital preservation direct from professionals in the field. Overall I observed that there are many ways to organise and use digital data but the data is reliant on other factors, such as back-up and metadata, for preservation.

11 www.dpconline.org/component/docman/doc_download/823-wiwik2013thompson
13 www.dpconline.org/component/docman/doc_download/822-wiwik2013sleeman
14 http://dais.cah.ucf.edu/).
4.4 Web Design

Understanding how websites work is a key part of my project because the digitised material ends up on a website as an interacting platform for users. Sections 4.4.1 and 4.4.2 overview knowledge I have acquired on websites, with section 4.4.3 summarising this acquired knowledge.

4.4.1 Website Review and Comparison: CCA and the Craft Study Centre

Having used the CCA’s website in my work experience with the organisation, I wanted to understand the state of the website in comparison to a similar website. I felt it was important for me to know the potential of a ceramics website if I was to research digitisation and how digital material could be used. In order to do this I reviewed and compared the CCA website (Figure 72) with the Craft Study Centre’s (CSC) website (Figure 73) so as to understand the pros and cons of website creation. Each website is critiqued under the three main categories of (1) structure, (2) navigation and (3) design. The two websites under evaluation are:

![Screen shot of CCA website home page](image)
4.4.1.1 Structure

Both websites are structured in a similar fashion with the main or “home” page roughly divided into 4 sections (Figure 74):

1. Both websites have a banner at the top of the page, a common feature of website design, which features the logo and title of the organisation as well as a close-up image of an artefact. The CCA provides hyperlinks to different pages in its banner.

2. Both websites have a navigation bar on the left-hand side of the page which features hyperlinks so users can reach different pages of the website. The Craft Studies Centre (CSC) has more hyperlinks here than the CCA.

3. There is a main body of text/images in the centre of both home pages. Both organisations use this space to introduce the website/organisation.

4. There is a footer at the bottom of each home page which features hyperlinks and copyright information. The CCA’s footer features exactly the same hyperlinks from its banner. However, the CSC’s footer provides hyperlinks purely of a communicative nature (Figure 75).
4.4.1.2 Navigation

Both the CSC and the CCA are fairly easy to navigate around as they use the typical navigational medium of hyperlinked text. The 3 main categories of information on the websites are:

1. Content (history and information on the content of the collection as well as the database itself).
2. Current and ongoing projects (new acquisitions, research and learning).
3. Communication (contact details, location, access, etc.).
The two websites differ in how the content database is provided to users:

The **CCA** provides an A-Z list of the makers and countries in the collection (Figure 76). Each maker has their own page which features biographical information and images of their work (along with archival information of the work). Users can also enter a search query. The CCA’s database is simple yet sufficient though it could make use of an “advanced search” feature.

The **CSC** does not have a database within its own website but instead it redirects users to two different websites (Figure 77):

1. **VADS** ([http://www.vads.ac.uk/collections/CSC.html](http://www.vads.ac.uk/collections/CSC.html)), a database for the entire University of the Creative Arts. The CSC has its own page with VADS and users can enter a search query or browse within specific materials, such as textiles.

2. **The Archives Hub**[^15] ([http://archiveshub.ac.uk/](http://archiveshub.ac.uk/)), maintained at Manchester and Liverpool, describes itself as “a gateway to thousands of the UK’s richest archives.” The website features archival contributions from nearly 200 institutions, including Aberystwyth University[^16]. The Archives Hub offers search, browse and help facilities.

[^15]: The CSC website directs users to The Archive Hub by writing: “Collection-level descriptions of many of our archives may be found on the Archives Hub”

[^16]: However, the CCA is not featured in The Archives Hub. Most Aberystwyth University contributions are academic papers.
On the main CSC website there are small lists of artists and makers featured within the different ‘materials’ pages (ceramics, furniture & wood, etc.) but, when clicked, these hyperlinks direct users to VADS. The fact that the CSC does not have a database within its own website could be considered a drawback because it could seem disjointed to users. Also, users may find it frustrating and confusing to be redirected to two different websites. This ‘convenience’ factor is where the CCA exceeds the CSC. However, both VADS and the Archives Hub are of a high quality structure and design and the search facilities surpass those of the CCA.

### 4.4.1.3 Design

The CSC utilises a pallet of neutral greys and white, which could be interpreted as either professional or unexciting. The close-up image on the banner is similarly grey and simple. When contrasted to the attractive and modern University for the Creative Arts (UCA) website (Figure 78), the CSC is somewhat subdued. However, it could be argued that the UCA website ([http://www.ucreative.ac.uk/](http://www.ucreative.ac.uk/)) needs to appear innovative and fashionable in order to appeal to prospective students, whereas the CSC is mainly a resource and therefore its practicality is its chief concern. Nevertheless, colour could give it more vibrancy.
The CCA, in contrast to the CSC, utilises a pallet of blue and purple with white, making it slightly bolder. Similarly to the CSC, the CCA falls behind its university parent in its aesthetic appeal and innovation for navigation (Figure 79). It could be argued that if the CCA and the CSC adopted the newer designs they would be more integrated with the university community and would reach a wider audience.

Both the CSC and the CCA have appropriately consistent typeface, layout and visual design which fit with the web design norms. However, the CSC and the CCA must keep up to date with the experience their users have of the websites. This could involve the use of a “feedback” section, pop-up questionnaires, email questionnaires or evaluation workshops.
4.4.2 “Web Design with Dreamweaver” Short Course

*Date: July 2013*

I attended a week-long training course on web design using Adobe Dreamweaver software in order to expand my understanding of websites. The course was run by Aberystwyth University Lifelong Learning department. One task for the course was to create my own prototype website and I decided to create an archival website for material from the International Ceramics Festival. In a sense this section (4.4.2) can be treated as both an acquisition of knowledge and an application of knowledge because the work produced on the course is of use to the CCA as an example of how material can be used.

4.4.2.1 Website Commission

Prior to starting the course I wrote a list of requirements for my ICF Archive website as one would provide to a commissioned web designer. This was useful for me to understand what I needed to put on my prototype website before I created it. The main requirements I identified were as follows.

- Capable of displaying high-quality archival materials
  - Documents. Page scans – view individual pages in sequence by either clicking, scrolling, flipping, etc. PDF documents – view online and/or download. Features such as “zoom in.”
  - Photographs. Thumbnails/small scale and high-resolution scans and born-digital images.
  - Videos of varying lengths. Either published on this website or published on a separate website and linked/embedded. Simple play/stop/pause/search buttons.
  - Audio material of varying lengths. Simple play/stop/pause/search buttons.
  - Lectures in the form of audio-accompanied slideshows.
• Each item can be commented on and “shared” by users and visitors.

- Material uploaded to archive is both official and amateur
  - Official material: ICF, Ceramic Archive, etc.
  - Amateur material: users.
  - Amateur material is submitted for review before it is published online.

- Search facilities
  - General website search
  - Entire archive search
  - Specific materials search (documents, photographs, etc.)
  - Advanced search feature

- Account user feature
  - Login, password, create account. “Forgot login/password” tool.
  - User accounts. Personal information/details, profile picture.
  - Users able to interact with material. Users can upload own material following a set of instructions. Users can comment on, “favourite,” and “share” other material.
  - Users able to interact with other users. Befriend users and communicate with publically and privately.
  - Users able to personalise their account settings, e.g. alerts, password change.

- The design of the website fits with ICF brand

A potential structure of the ICF Archive website is highlighted in Figure 80. This website encompasses the requirements outlined above.
Fig 80. Potential structure of ICF Archive website
4.4.2.2 Web Design with Dreamweaver Visual Diary

As part of my assessment for the course I had to produce a diary reflecting on the ICF Archive website I had created. It has been included in this chapter as a reflection on how digitised material from the ICF can be used either on its own website or on an existing website.

Please refer to Appendix M for the visual diary, which features screenshots of the website developed by the researcher.

4.4.3 Summary of Web Design

This section summarises the lessons learned from the website review and comparison and the web design course.

Technology is rapidly evolving, which has both positive and negative consequences for websites. For example, a website may spend a lot of money on a modern redesign only to discover a year later that the design has become somewhat obsolete in favour of another new “modern” design. The CCA will continue to be tied to Aberystwyth University (AU) and although this provides the CCA with a number of services and resources, AU could potentially attempt a blanket redesign of all associated websites under a new brand image. As a result, the CCA website could drastically change and its individuality lost. A positive aspect of the CCA website is that users interact with content on a single website, unlike the CSC where users are redirected to VADS. The School of Art Gallery & Museum website directs users to the CCA when they search for ceramics in the collection, however, any information needs to be accurately mirrored on both websites.

The ICF Archive is potentially a place where users can interact with a range of materials related to the ICF in a social environment. The creation of an archival website for the CCA’s ICF material can be handled in several different ways with
many implications. It could be extended as a branch of the main ICF website, as a branch of the CCA website, or as its own website. Either way the website could be a valuable link between the CCA and the ICF and could potential increase access to both organisations.

As of 2013 the CCA staff are working with a web designer to plan a redesign of the CCA website. The website is suitable for web browsing on a computer but it is not efficiently designed for use on mobile web browsing because it uses old codes and old versions of flash. The use of mobile web browsing is considered essential by the CCA for marketing and access purposes. The web designer observed there are some dead hyperlinks that have no purpose and components such as this slow down the website. The website requires a site map and a better search engine visibility. The proposed new website structure is shown in Table 13. According to the web designer, new content on the website is not being as highlighted as well as it could be, but the issue is not just how to market content but how also how to encourage users to participate. Queries made to the CCA could be published on the website to encourage others to make queries. However, one problem with increased user participation is the need to supervise the comments made. The CCA could better utilise its social media presence by linking published comments from all website profiles, such as Facebook and Twitter. Aberystwyth University brought in a content management system in 2010 and insisted that all departmental websites use the same format, however, the CCA has always maintained an independent hosting system to avoid being constrained by the university model, which would not fit well. The web designer commented that it was becoming increasingly difficult to future-proof a website but current and future technological developments can be prepared for.
Table 13. Proposed new website structure for CCA, 2013
4.5 International Ceramics Festival 2013

*Dates: 28th June – 1st July 2013*

The digital material for my project is centred on the International Ceramics Festival (ICF). In light of this, my supervisors and I deemed it beneficial for me to attend and participate in the 2013 festival in order to observe how material is made, why it is selected and any errors or difficulties that occur. An opportunity arose for me to work with 3 Film students who were going to working on a project filming the festival.

4.5.1 ICF 2013 28th June

The day before the festival I met with 3 Film students from Aberystwyth University who filmed someone interviewing people at the ICF. We discussed what we would be doing over the weekend. I was essentially observing how the audiovisual material from the festival was created. I would spend some time with the interviewer and the students and then I would observe the rest of the festival on my own. After our discussion we went around the festival and filmed its preparation. It was interesting to discover the many difficulties that arise during filming and it became clear that you could not just start filming straight away. You need to consider:

- The physical space, the distance, perspective, noise and lighting
- Which camera to use (hand held or on a tripod)
- The practicality of getting footage (you could film the interview and then return later to film shots of the work)
- Permission. When we started to film Stephanie Quayle constructing a clay rhinoceros, a member of staff asked us if we had Stephanie’s permission to film.
- Health, safety and risk. Although there were 4-5 of us in the team the camera equipment was still bulky and valuable and so needed to be watched
carefully. In some of the gallery spaces there were ceramics sat atop plinths and so we had to be careful we did not damage anything.

4.5.2 ICF 2013 29th June

This was the day the festival opened to the visitors. We had a list of who and what to film and this was colour-coded by prioritization: red meant that we should definitely film, blue meant that we should try to film and green meant that we should only film if we had spare time. Before any filming took place, the interviewer approached each interviewee and asked if she could have a quick interview. Upon participation in the festival, all demonstrators were required to sign a contract giving their permission to be filmed.

- It took a few minutes to set up the camera, particularly with the tripod.
- The film crew rotated filming roles: one or two would operate the camera while the other listened to the audio using headphones.
- The interviewer was not required to be in the shot. The crew focused the camera on the interviewee but would occasionally pan/zoom the camera to include the ceramic/pottery work.
- The interviewer would begin by saying, for example, “Steve Dixon, thanks for talking to us today,” in order to introduce the video.
- Interviews lasted 5-10 minutes each.
- There is no designated director and each crewmember filmed using instinct. However everyone offered feedback and suggestions.
- The tripod camera has an adjustable height and its stability offers a smooth, still shot.
- On several occasions we had to wait for the demonstrators to finish working or talking to visitors before we could conduct interviews. The interviews were not scheduled, however, this would have been impractical as the demonstrators were very busy and we only needed 5-10 minutes of their time.
• There was a lot of background noise at the festival from talking visitors, burning kilns and forming clay, however this had little impact on the audio quality of the interviews.
• Takeshi Yasuda worked at his throwing wheel while the interviewer conducted the interview at some distance. While this provided a good visual shot, the audio quality was not perfect.

As part of their academic work, the film students produced a short promotional film using some of the footage. The researcher has not seen this film but the festival co-ordinator decided not to use it for official promotional work.

The trade tent at the ICF housed a number of stalls run by various organisations associated with ceramics. I judged this to be a good opportunity to talk with some of the organisations in order to gauge understanding and interest in digitisation.

**Ceramics Ireland**\(^\text{17}\)

I spoke to Tina Byrne from Ceramics Ireland about the organization’s digitisation. They had a paper newsletter which acted as a platform to promote Irish ceramics as well as review Irish and international ceramics. Ceramics Ireland also had a DVD that contained audiovisual footage of potters at work, interviews and clips of Ceramics Ireland’s activities. While these publications provided some financial profit, the primary purpose was for promotion and access. Ceramics Ireland does no in-house digitization however they are aware of its value and importance and would like to pursue it if they had more money, time and knowledge. NIVAL (The National Irish Visual Arts Library) provides Ceramics Ireland with outsourced digitization services. Ceramics Ireland frequently fill an envelope with material they wish to be digitized and send it to NIVAL. Ceramic Ireland also does not engage in back up of material, archiving or social media although they have a strong desire to do this. They appreciate and worry about material preservation.

\(^\text{17}\) [http://www.ceramicsireland.org](http://www.ceramicsireland.org)
The Oxford Ceramics Gallery \(^{18}\)

The Oxford Ceramics Gallery does not undertake frequent digitisation activities, however they have produced some videos. They are “in two minds” as to whether they should make the videos open source or for profit.

Wolverhampton University \(^{19}\)

Wolverhampton University provide some digitized material online for students at the university through a virtual learning environment called WOLF (Wolverhampton Online Learning Framework). The university has worked with IFERICA (International Foundation for Experimentation Research and Innovation in the Ceramic Arts, [www.iferica.com](http://www.iferica.com)), however, its website is incomplete with very little information.

4.5.3 ICF 2013 1\(^{st}\) July

The day after the official end of the ICF 2013 I attended and presented at a symposium, held at the School of Art Aberystwyth, which focused on the topics of Filming, Recording, Digitising and Archiving, mostly in relation to ceramics. My presentation was primarily an introduction to digitisation and metadata and is available to view in Appendix B. As outlined in Table 14, the symposium featured varied talks by presenters from different institutions. Not all talks were relevant to this research but there was lively discussion about the general issues surrounding the topics and it was a good occasion to promote this KESS project.

\(^{18}\) [http://www.oxfordceramics.com](http://www.oxfordceramics.com)

\(^{19}\) [http://www.wlv.ac.uk/default.aspx?page=24995](http://www.wlv.ac.uk/default.aspx?page=24995)
<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.30</td>
<td>Coffee and setting up</td>
<td></td>
</tr>
<tr>
<td>11.00</td>
<td>Introduction</td>
<td>Professor Moira Vincentelli, CCA.</td>
</tr>
<tr>
<td>11.15</td>
<td>“Filming Indian Potters”</td>
<td>Jane Perryman, artist and writer.</td>
</tr>
<tr>
<td>11.45</td>
<td>“Blasting History into the Present: Performing utopian images of the past, present and future in a Welsh landscape.”</td>
<td>Reuben Knutson, PhD student, Television and Theatre Studies, Aberystwyth University</td>
</tr>
<tr>
<td>12.15</td>
<td>“Digitising Bill Ismay’s collection”</td>
<td>Curator at York Museum and PhD student</td>
</tr>
<tr>
<td>12.45</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>1.30</td>
<td>“Taiwanese Women Potters”</td>
<td>Vicky Chen, PhD student, Bath Spa University</td>
</tr>
<tr>
<td>2.00</td>
<td>“Filming Potters at Work”</td>
<td>Leah McLaughlin, PhD student, Cardiff Metropolitan</td>
</tr>
<tr>
<td>2.30</td>
<td>“Digitising and Working with Archive Film”</td>
<td>Ben Partridge, MA student, School of Art, Aberystwyth University</td>
</tr>
<tr>
<td>3.00</td>
<td>“Digitising the International Ceramics Festival”</td>
<td>Jack Snow, MPhil student, School of Art, Aberystwyth University</td>
</tr>
<tr>
<td>3.30</td>
<td>Closing discussion</td>
<td></td>
</tr>
</tbody>
</table>

Table 14. Schedule for ICF 2013 symposium on Filming, Recording, Digitising and Archiving

### 4.6 KESS workshop

*Dates: 9<sup>th</sup> – 10<sup>th</sup> May 2013*

I attended a 2-day KESS workshop in May 2013 as part of my MPhil project. I gave a presentation on the progress of my work and attended several workshops to enhance skills in: working as part of a team, project management, learning, teaching, organisation, problem-solving and communication. The following are some notes from the workshop that I considered most relevant to my MPhil project.

The **sustainability** of a project must be considered. This includes environmental, social and financial sustainability. In regards to my project, it could be argued the use of digital materials as opposed to paper is environmentally sustainable. The digitisation of archival materials will provide continued access to the collection (social sustainability) and from this financial benefit could be drawn.
The four stages of competence, or the "conscious competence" learning model, relates to the psychological states involved in the process of progressing from incompetence to competence in a skill. A diagram is shown in Figure 81. Unconscious incompetence means being unaware of what you don’t know. Conscious incompetence means being aware of what you don’t know; however you are still unable to do it. Conscious competence means knowing how to do something but only with focus and energy. Unconscious competence is the effortless ability to do something. This theory has been applied to the understanding of digitisation (Figure 82).

Fig 81. The four stages of competence diagram © Focus Pocus: The Magic of Inquiry and Intent

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unconscious Incompetence (1)</td>
<td>Not knowing what digitisation is or how it works.</td>
</tr>
<tr>
<td>Conscious Incompetence (2)</td>
<td>Knowing what digitisation is but unable to do it.</td>
</tr>
<tr>
<td>Conscious Competence (3)</td>
<td>Knowing what digitisation is and able to do it with effort, e.g. by following instructions.</td>
</tr>
<tr>
<td>Unconscious Competence (4)</td>
<td>Effortlessly and successfully doing digitisation work, e.g. from memory.</td>
</tr>
</tbody>
</table>

Fig 82. The four stages of competence applied to digitisation knowledge
In the KESS workshop I also discovered some useful websites and applications that could be of use to the CCA. Academia.edu (www.academia.edu) is a platform for academics to share research papers in order to accelerate the world's research. Mendeley (www.mendeley.com) is a free reference manager and academic social network to help with organising research, collaborating with others online, and discovering the latest research. The CCA could use Mendeley and Academia.edu to promote its research work. Google Keep (drive.google.com/keep) lets you quickly take and save notes, photos, voice memos, and checklists to Google Drive, and then access them again on any other web-connected device you use. It is useful for quick note-taking on the go. The CCA could use Google Keep for capturing and sharing information whilst travelling to exhibitions and meetings. Camscanner (www.camscanner.net) is an application for mobile phones that allows users to scan/digitise analogue materials using the camera in their phone and edit and convert the pictures to .pdf files. Camscanner can be synced with other devices and is a useful tool for instant digitisation. Whilst Camscanner is not suitable for detailed digitisation work, it could be used by the CCA to share documents amongst staff. Slideshare (www.slideshare.net) is an internet community used primarily for sharing presentations, as well as documents, .pdfs, videos and webinars. The presentations gave at the ICF could be shared on Slideshare in order to expand the festival audience.

4.7 “Digital Information: Discovery to Delivery” Audited Module

As outlined in section 1.5, it was recognised when the scholarship was granted that there would be gaps in background knowledge in one or more project areas of the chosen candidate. In light of this, supervisor Lucy Tedd advised the researcher take a module she ran at Aberystwyth University, which was titled, “Digital Information: Discovery to Delivery.” This took place before the official start of the research and the researcher was not assessed for the module. The researcher read through the module guidebook in order to increase knowledge on digitisation and to become
familiar with references prior to the start of research. The module covered the different types of digital information, the management and evaluation of digital information sources, how and why digitisation is undertaken, access to digital information and the standards, interoperability and metadata for digital information. This guided the researcher in selecting references and subjects for the literature review and in becoming familiar with key terms in the field. The module required the researcher to do several activities, such as comparing the readability and navigation of two different e-books.

4.8 Chapter Summary

Knowledge on digitisation work was acquired from a variety of sources, chiefly the 3-month work experience placement at the National Library of Wales. The work experience consisted of two strands of work: Strand A involved the researcher learning from the Digitisation, Description and Legacy Acquisitions Section and Strand B involved the researcher working with the People’s Collection Wales. The two strands performed digitisation work at different scales using different methods and the PCW method was deemed most applicable to the Ceramic Collection & Archive.

Work experience at CCA provided the researcher with an understanding of the organisation’s capabilities and current operations in terms of digitisation. The researcher undertook a web design course in order to understand how websites can be used, specifically an “International Ceramics Festival Archive” website to publish the CCA’s ICF collection. The researcher attended the ICF 2013 and acquired knowledge on how digital material is generated at the festival, and as well as this the researcher discussed digitisation work with 3 ceramics organisations. A conference on digital preservation provided the researcher with an insight into the contemporary situation of the field. By participating in a KESS workshop the researcher acquired project management skills and knowledge on useful websites and technology. The “Digital Information: Discovery to Delivery” module enlightened the researcher on the topic in a similar way as with the literature review.