

JISC

# Digitisation and OER

Synthesis Report

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JISC

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## EXECUTIVE SUMMARY

This report provides a synthesis of findings from [Digitisation for Open Educational Resources](#), a strand of work which built on previous Jisc eContent Programme activities around digitisation within the UK Higher Education community. The nine funded projects were led by Higher Education institutions (HEIs) and included a wide range of partners from other HEIs and sectors, including commercial organisations, archive services and museums and private individual collections. These diverse partners brought different challenges and led to some exciting collaborations. The collections of primary sources were made available as raw assets as well as being embedded into a variety of educational contexts as Open Educational Resources (OER), which resulted in the collections being widely accessible in a range of different formats and with different levels of contextual and pedagogical information. This was a significant strength of the programme which merged digitisation expertise of special collections with learning and teaching needs.

High level motivations of the programme were to integrate primary collections into learning and teaching as well as increasing the corpus of OER to support sharing and accessibility of publically funded resources. Project partners also brought their own motivations for being involved which included widely acknowledged benefits such as cost efficiencies, specific pedagogic requirements, opening access to knowledge and reputation building (*see section 2. Why OER?*).

A fascinating range of primary sources held in national, private, commercial and institutional collections were digitised, ranging from slides, fashion garments, historical artefacts, images, architectural plans, interviews and museum specimens. Different kinds of sources bring their own digitisation challenges; from technical issues around large raw file sizes for photographs to the complexity of digitising 3d objects (*see section 3.1 Digitisation processes*). As with all digitisation projects issues around ownership, permissions and licences can cause problems, particularly where the ultimate intention is to include the raw assets in OER (*see section 3.2 Transforming digital assets into OER*). Projects had to make a range of technical choices to ensure that the resulting work was accessible, discoverable and usable in a variety of contexts. One of the notable aspects of this programme was the need for projects to consider how to store, manage and make accessible the raw assets and also how to best incorporate these into learning and teaching materials, resulting in projects having to consider very different hosting options (*see section 3.3 Embedding OER and digital collections into learning and teaching*).

By bringing together skills and expertise in archiving, teaching, research, digitisation and open education projects enjoyed rich collaborative partnerships which they generally anticipate will be taken forward into other areas of work. Of particular interest was the imaginative ways projects involved students as partners. Students were offered opportunities to feed into digitisation activities, evaluation activities and also in the creation of OER during learning and teaching activities. (*see section 3.3 New partnerships and approaches*).

The impacts of the programme are wide reaching for a range of different stakeholders (*see section 4 What we achieved*) and can be summarised as:

- increased access to many rare collections, including some designated by HEFCE as 'strategically important and vulnerable subjects'
- all projects released raw assets of relevance to a wide range of related disciplines making research data and collections usable across a wider number of institutions and countries
- expanded understanding of both digitisation and OER across several partners that will impact on future work

- preserving non digital practices - highlighting the value of traditional craft processes and making these more widely appreciated
- use of assets and OER outside the HE sector - local community groups and schools accessing content
- international interest in the digital collections
- interest from other HE institutions in the UK
- improvements in efficiency for several agencies through some of the technical developments or through shared generic resources

A range of factors have contributed to the success of the projects which may also be of value and relevance to other institutions and organisations wishing to incorporate primary sources into learning and teaching or releasing OER (see section 5 Success factors).

1. Stimulating and supporting change in practice
  - Through engagement and awareness raising
  - By challenging and changing perceptions
  - By changing pedagogic approaches and practice
2. Encouraging and supporting institutional change
  - Through appropriate technical infrastructure for OER release
  - Through changes to institutional processes
  - Through partnership/collaborative approaches
3. Adopting sustainable approaches
  - By linking to existing institutional systems, policies and strategies
  - By developing sustainable digital assets and OER
  - By supporting new open educational practices
  - By nurturing new and existing partnerships

Engaging with OER has the potential to change practice. Participants in the project all reported that their professional practice had been changed by working on the project, either in the active implementation of new pedagogical techniques and approaches to content delivery; their understanding of how students can be producers of content and active co-creators of knowledge, or their understanding of how content and language teaching (which is usually taught separately) can be integrated by using original research data in language classes. (OpenLIVES Project)

## 1. BACKGROUND

In 2011, the Jisc eContent Programme began a new strand of activity, [Digitisation for Open Educational Resources](#), which followed on from previous activities focused on building digitisation expertise within the UK Higher Education community. The aim of this strand was to digitise, and openly release, archival and special collections of primary sources (and to a lesser degree, secondary sources), create Open Educational Resources (OER) that incorporate the digitised material, and embed such resources within teaching and learning as a way of enhancing the student experience and fostering innovative pedagogies.

The nine funded projects in the Digitisation for OER strand were led by Higher Education institutions (HEIs) but the majority of these included partners from other HEIs and a range of organizations from other sectors:

- [Histology and histopathology](#): virtual microscopy online - The Open University
- [OpenLIVES: Learning Insights from the Voices of Emigrés from Spain](#) - University of Southampton
- [Manufacturing pasts](#): industrial change in 20th Century Britain- University of Leicester
- [UKVM: United Kingdom Virtual Microscope](#) - The Open University
- [CCC-EED](#): Context, Culture and Creativity: Enriching e-Learning in Dance - University of Surrey
- [Observing the 1980s](#) - University of Sussex
- [Zandra Rhodes Digital Study Collection](#) - University of the Creative Arts
- [OBL4HE: Object Based Learning for Higher Education](#) - University College London
- [ArchitectUS: Architecturally Useful Scholarly Resources](#) - Birmingham City University

These activities ran alongside two other strands around digitisation which also included projects that used open Creative Commons licences for raw individual assets and for packaged materials:

- [Mass Digitisation](#) of collections that meet primarily the needs of Higher Education in the UK
- [Clustering Digital Content](#) maximise the use of digital content by bringing together existing online resources for the benefit of, primarily, the Higher Education sector

At the same time the JISC eLearning programme was halfway through the [JISC/HE Academy UK OER \(Open Educational Resources\) Programme \(UKOER\) of activities](#). The UKOER programme had established a solid support mechanism for the programme when it began in 2009, including advice and support from [Jisc CETIS](#), [Jisc Legal](#), [Web2Rights](#), [Jisc Techdis](#), the Open University [Support Centre for Online Resources in Education \(SCORE\)](#) and an [Evaluation and Synthesis Team](#) led by Glasgow Caledonian University. Early UKOER projects and the support teams had produced a wide range of guides and toolkits to support those new to OER which were made available through the [OER infoKit](#). These support mechanisms and resources and were also made available to the digitisation projects with a view to sharing new knowledge and understanding around releasing open learning materials.

Most institutions and many individuals that were new to the concept of OER required significant engagement and awareness raising to understand the potential benefits and possible challenges. The time period of the UKOER programme included many challenges and constraints for the Higher Education sector and many changes. The UKOER/SCORE OER Review study<sup>1</sup> carried out a cumulative evaluation and synthesis of the UKOER Programme and SCORE initiative and highlighted some of these wider changes which included technical, legal, economic and cultural aspects. During 2012 we saw a change in focus from OER to Open Educational Practice (OEP) and also the rise of the MOOC ((Massive Open Online Courses).

Although the Digitisation for OER Programme had a much clearer focus on digitisation of archival and special collections the parallel activities around creating and releasing OER meant that there was a considerable amount of crossover between the outcomes of the two programmes. Indeed two of the projects included team members which had been involved in UKOER, and who brought a fairly sophisticated understanding around models of OER release and around articulating benefits during awareness raising activities. What is unique to the Digitisation for OER Programme was the types of content that were being digitised and released, making previously inaccessible collections available to enhance learning and teaching within the institutions involved and more widely in a range of educational contexts.

## 2. WHY OER?

This strand of the eContent Capital Programme distinguished between original 'raw' resources from archival and special collections (digital objects) and 'cooked' resources (OER) which were to be embedded within a variety of educational contexts. The Call illustrated the high level motivations of Jisc, which could be described as:

- the effective integration of primary collections in learning and teaching contexts to address specific pedagogic needs
- to increase the corpus of OER in different subject areas to encourage sharing and re-use of publicly funded resources
- to provide opportunities for innovation and investigation into OER development, release, discoverability and use

Motivations to develop and release OER are often complex<sup>2</sup>, particularly where multiple partners from different sectors come together with radically different cultural practices and strategic visions. Motivations often reflect the anticipated benefits for different stakeholders. The UKOER/SCORE Review report noted 5 broad categories which had emerged from the UKOER Programme, which can also be applied to this programme.

1. *Building individuals' or institutions' or community's' reputation*
2. *Improving efficiency, cost and quality of production*
3. *Opening access to knowledge*
4. *Enhancing pedagogy through the creation and reuse of OER,*

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<sup>1</sup> McGill, L., Falconer, I., Dempster, J.A., Littlejohn, A. and Beetham, H. Journeys to Open Educational Practice: UKOER/SCORE Review Final Report. JISC, 2013 <https://oersynth.pbworks.com/w/page/60338879/HEFCE-OER-Review-Final-Report>

<sup>2</sup> Falconer, I, Littlejohn, A., McGill, L., and Beetham, H. (2013) 'Motives and tensions in the release of Open Educational Resources: the JISC UKOER programme' in preparation for submission to Learning, Media and Technology special issue on Critical Approaches to Open Education. Draft available at <http://bit.ly/motivespaper>

## 5. *Building technological momentum*

*(HEFCE OER Review Report, May 2013 )*

A key motivation for the Digitisation for OER strand of activities was to increase access to unique primary sources and collections which falls into category 3 above - 'Opening access to knowledge'. Number 4 in the list, 'Enhancing pedagogy through the creation and use of OER' is also a significant motivator for this programme. Whilst 3 and 5 are perhaps the most obvious motivations at a programme level, the other motivations did emerge as important for some of the project teams and partners.

It is useful to consider the motivations of project teams, and their different partners, as these can impact on development models and approaches adopted, licence and hosting choices and on the kinds of OER released and how they are presented. For example, OER released for a specific student cohort or course may require 'built-in' pedagogic guidance that might make them less usable in a broader context. The projects included a very wide range of partners which undoubtedly added a richness to project experiences and the resulting content, but which added layers of complexity that were sometimes challenging to manage. Often the lead partner will have been through the process of motivating other partners at the stage of bid preparation, through the articulation of anticipated benefits.

At an institutional level motive ii around 'improving efficiency' can be a significant factor for initial engagement, but actual benefits around efficiencies are not always immediately forthcoming due to the extra resource needed to make content open, particularly if existing materials need existing Copyright restrictions clearing. Whilst cost savings may become evident over time there are clear benefits to making generic materials open and available across a range of courses, with a view to reducing duplication of materials and consolidating core knowledge areas. The Architectus project were motivated to share materials between Architecture and Built Environment departments and several other projects expressed intentions for the materials to be utilised across several courses and subject areas.

One of the most interesting aspects of this programme is that projects had input from academics, learning technologists, librarians, archivists, students and content originators, all bringing a range of different skills, knowledge and understanding and motivations. It is interesting to consider who led the projects and how far this impacted on project team motivations. Of course all teams incorporated the programme's primary intentions.

Projects led by academics included CCC:EED, Histology and histopathology, Zandra Rhodes Collection and UKVM. Although often inspired by the actual special collections and content, these projects tended to have very specific pedagogic intentions that were aiming to fulfill a teaching and learning need. Both the UKVM and the Histology and histopathology projects were responding to the impact of increasing costs of maintaining microscopes and slide collections. Students were often restricted to using small collections held within their own institutions and were having limited experience of microscopy. The projects aimed to address these issues through the provision of a virtual microscope and an open collection of virtual slides in their respective subject areas. In addition, a move within the biomedical sciences of using virtual microscopes meant that students needed to learn skills in utilising these for their future professional practice. CCC:EED were aiming to enhance student-centred learning, and maximize the use of enriched digital resources and collections in the Dance education sector and the Zandra Rhodes Collection intended to consolidate their existing relationship with the renowned fashion designer to make her processes and products accessible to their students.

Projects led by Librarians/Archivists were Manufacturing Pasts and Observing the 1980s. Both of these projects intended to make existing collections accessible to learning and teaching so

Manufacturing Pasts focused on historical sources with a specific focus on Leicester's industrial past and Observing the 1980s focused on the Mass Observation Collections and the British Library Oral History Collections. Both projects worked closely with academic teams to integrate this digital content into existing courses aiming to enhance learning and teaching and also make these collections more widely available outside the institutions.

Projects led by Learning technologists and/or Educational Developers were Architectus, OBL4HE and OpenLIVES. The projects generally intended to broaden the pedagogic approaches to using digitised collections and technologies. OpenLIVES, for example had previous experience of using OER and Open Educational Practice to enhance language teaching, the OBL4HE team had a commitment to encouraging the use of Object based Learning across a range of disciplines. The Architectus Project was responding to a need expressed by academic colleagues around the lack of high quality primary sources of drawings and plans for architecture and the built environment.

All of these different motivations led to a wide range of content and collections being made available as raw assets and packaged into OER. The different approaches adopted by project teams reflect the motivations, the skill-sets and the decisions they made as they progressed through the process. As usual with JISC funded projects, these processes and decisions are as important as the outputs themselves.

## 3. DIGITISATION AND OER

### 3.1 PRIMARY SOURCES AND COLLECTIONS

Since most OER development tends to emerge from module content, this project differed in that the use of archival images (particularly in Ballet and Labanotation) specifically affected the material being developed for classroom use, discussion and eventual OER development. Tasks were designed to have students look at the digitised content both in the packages created and via the DDA [Digital Dance Archive] website. Not only did this enhance the pedagogical experience, but the students then discover the relevance of their studies to an archived legacy of dance forms and analysis. CCC:EED Project

A fascinating range of primary sources held in national, private, commercial and institutional collections were digitised as part of this strand of activities ranging from slides, fashion garments, historical artefacts, images, architectural plans, interviews and museum specimens. Different kinds of sources bring their own digitisation challenges, from technical issues around large raw file sizes for photographs, to the complexity of digitising 3d objects. As with all digitisation projects issues around ownership, permissions and licences can cause problems, particularly where the ultimate intention is to include the raw assets in OER. There are a range of technical choices that need to be made to ensure that the resulting work is accessible, discoverable and usable in a variety of contexts. One of the notable aspects of this programme was the need for projects to consider how to store, manage and make accessible the raw assets and also how to best incorporate these into learning and teaching materials, resulting in projects having to consider very different hosting options. These aspects are discussed in more detail below.

#### 3.1A DIGITISATION PROCESSES

Previous work of the eContent Programme had led to an increased understanding within the sector around digitisation processes and had built capacity within the UK around management of digital collections. Efforts were made to raise the profile of the value of digital content to educational, public and government sectors to encourage investment in a sustainable national collection. These activities

focused on articulating the benefits and impact of digital resources to inspire research and scholarship, bestow economic benefits and connecting people and communities in a 'Digital Britain'<sup>3</sup>. The work of the Digitisation for OER strand of activities builds on this, as well as adding to the corpus of the national collection. Projects, therefore, had a wealth of prior experience to draw on around technical and legal aspects of digitising collections<sup>4</sup>.

Digitisation activities often require collaborative working and a range of skills that may not reside in one place. Different kinds of workflow may be appropriate within each context so some institutions or bodies may adopt centralised approaches whilst others may favour a distributed approach. Even within one project different partners may have very specific practices and procedures affecting workflow and approaches to digitisation. Working with a range of partners can intensify these challenges and there is a clear need for some kind of central management to co-ordinate the separate elements of the workflow and ensure that these come together at the right time.

*Another aspect of the staffing of the project related to digitisation and this area required careful planning in terms of work flow. Interestingly, this worked quite differently at the different sites and whilst Reading completed all their digitisation with the same team, UCL had a more diversified approach to achieving the digitisation required. (OBL4HE)*

Technical aspects of digitisation related to the kinds of challenges that have also emerged from previous work, such as issues for specific formats, as well as management of digital collections and technologies to support these activities. What has been different for several of these projects is the involvement of students in the digitisation processes and in the preparation of collections for digitisation. The Zandra Rhodes and the OBL4HE projects both involved students in preparing materials for digitisation, providing opportunities for them to develop knowledge around archives, collection management and the digitisation process for different kinds of materials. The Observing the 1980s project involved students in both creating metadata and dealing with licences. Other differences for these projects included the need to engage with wider issues around open licensing for digitised content and hosting these on the open web to enhance discoverability and accessibility. They highlighted the value of using familiar formats and sites that people already use which can be less challenging and encourage use. Projects also encountered some challenges around technological accessibility, highlighting some of the dangers of adopting technology that may become obsolete. For example the Histology and Histopathology project started using Flash but moved to html 5 as this improved accessibility, particularly for mobile devices.

These projects also had the added element of having to package the digitised materials for use as OER in a variety of pedagogic contexts. This resulted in them dealing with some complex questions around granularity of materials impacting on future re-versioning and on different kinds of metadata which related to learning materials. It also meant that a very different skill-set was required within the digitisation teams, which included a need to engage with learning technologies.

## 3.2 TRANSFORMING DIGITAL ASSETS INTO OER

A range of technologies were utilised across the programme as appropriate for the different collections or sources and these were often combined to provide engaging and effective teaching and learning materials. For example the Zandra Rhodes Collection developed the online style bibles with turning pages to preserve the original feel of the item as a book and to increase engagement. Projects

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<sup>3</sup> Simon Tanner (2011) Inspiring Research, Inspiring Scholarship, <http://madepossible.jisc.ac.uk/content/digibenefits.html>

<sup>4</sup> Jisc Digital Media Services and Resources <http://www.jiscdigitalmedia.ac.uk/>

combined different assets in a number of imaginative ways to reflect the pedagogic requirements of the course or teachers or even by responding to student feedback.

*The core of the project was determining how we wanted to use the primary sources in teaching and then developing the learning resources to address these needs. Not surprisingly, perhaps, this was one of our most significant challenges and led to the most discussion and debate at meetings and focus groups. (Manufacturing pasts)*

Choices around how the primary sources would be integrated into OER raises an interesting tension. Although all projects had a motivation to create OER for re-use in a wide sense, they often developed them with a specific student cohort or course in mind which could actually limit their re-usability in other contexts. However, this kind of approach can really encourage reflection and conversations between people with different roles and strategic motivations, bringing a richness to the process that far outweighs the end products. The UKOER programme synthesis reports highlighted that engaging with OER often led to a radical reconsideration of existing teaching practice<sup>5</sup>, mainly due to those increased conversations within the institution or even with other partner institutions.

This has been replicated within the Digitisation for OER programme with several projects highlighting substantial changes in practice and course content. Sometimes these changes in practice stem from engaging with new technologies. The CCC:EED Project, in particular had, in effect, two parallel stories happening at the same time as they encountered radical changes in their curricula through the adoption of new technologies, as well as introducing the rich new content from the digitisation activities. Due to these changes they experienced a significant positive impact on the student learning experience and on staff perceptions around how to use technologies for dance education.

### 3.2A ACCESSIBILITY

For OER to be re-used and/or re-purposed they need to be easily discoverable, technically accessible, pedagogically accessible and carrying appropriate open licences. Not least people need the appropriate digital literacies to be able to access and use or adapt them within their own context.

*Technical challenges enabled the Faculty staff to see what type of infrastructural support was necessary to provide strong digital literacy skills, for both students and staff, especially in a creative arts subject. Access to PCs, Macs or computers with the most updated software proved to be a necessity and compatibility between platforms needs to be assessed. For instance, some students were unable to access some videos on the VLE from computers if they did not have a recent version of Explorer which allowed for the most recent version of Flash Player to work. The integration of mobile smartphone technology emerged as something to think about when planning modules; even having students record responses and post them on the VLE would use their already acquired digital skills for the purposes of discussion, particularly appealing to those students who do not feel comfortable speaking up in lectures. Institutional support is crucial for development of digital literacy. This includes a user-friendly VLE, training at all levels of student and staff, and availability of resources. (CCC:EED)*

The need for OER to be made available in formats that were accessible and could be used on portable devices (laptops, smartphones, iPads or other tablet devices) was apparent to most projects and they invested time investigating the potential of ebooks/ibooks as well as ensuring that their OER formats were generally accessible to students and other potential users remotely. An imaginative range of formats and technologies were utilised to increase accessibility to the OER. Manufacturing pasts used powerpoint, prezzi, timelines, videos, and audio interviews whilst Observing the 1980s used histogram

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<sup>5</sup> <https://oersynth.pbworks.com/w/page/64076615/HEFCE-Review-Impact>

visualizations. These approaches mitigate to some extent the fact that they were produced for specific pedagogic contexts as they enabled the materials to be accessed in several different ways.

Assuming that OER are discoverable and accessible in technical and legal terms, pedagogic accessibility can present challenges. Where OER have been released for very specific groups or for a particular context they are not always accessible or easily adapted for re-use. Examples of the ways on which this can affect use and re-use include:

- OER to support specific courses which reflect course structures and are difficult to re-use in other contexts
- OER which include references to specific laws or regulations that are not relevant in other countries
- OER which include specific pedagogic approaches or language that might not be relevant in other context
- OER primarily developed for use within one institution but made open more widely may be less usable in other contexts than anticipated

The approach adopted by this strand of activities - releasing both the 'raw' assets and the 'cooked' OER under open CC licences, meant that the materials can be used in a wider variety of educational contexts and are therefore highly likely to be used more widely. Raw resources can be incorporated into different pedagogic contexts as appropriate, which counterbalance the more specific nature of some of the packaged OER. In many ways we could argue that this two-pronged approach presents an **ideal outcome** for the wider learning communities both in other educational institutions but also in non-formal contexts as well, and this does reflect what the more experienced UKOER projects did to ensure accessibility and re-usability. Like the UKOER programme the Digitisation for OER projects reported a desire from students for some kind of guidance or context incorporated into the OER and felt that other teachers would prefer to use/re-use the raw assets within their own teaching contexts.

*Questions remain over the transferability of more processed OERs between institutions or even between teachers. This is owing to factors such as course syllabi and the ways in which university teaching staff work (for example, courses reflect expertise, pedagogical approaches and interests of individual staff and do not follow cross-institutional curricula, as is the case with schools). It is perhaps more likely that OERs are consulted for ideas and adapted as necessary, thereby contributing to a generally positive climate as regards teaching material development.*

*Nevertheless, there is a strong imperative to embed OERs in curricula, however institution-specific they may be, because as our Reading-based research indicated - students are much more likely to use OERs if they form a core part of their learning. (OBL4HE)*

Transforming the raw digitised primary sources into OER provided an opportunity to provide interactive elements and this was seen as an important way to make the content more engaging for students and other potential users outside the Higher Education sector. Incorporating social features was seen as a particularly useful way to do this, which also has the potential to encourage use of the OER and offer ways to track and evidence use.

*This 'In Time-In Place-In Focus' feature includes a map with each location marked, allowing users to explore rocks around the UK, a timeline allowing users to explore rocks by their age, and finally a full text based search facility allowing users to find rocks containing specific minerals, or any association mentioned in the accompanying text... The website also includes a set of social features including the ability to post your favourite rock on social networking sites such as facebook or to tweet your favourite rock on twitter. The capability to send key observations via email or to repost them as links is also enabled using a share button that*

*appears on the microscope for each sample. We hope that this will prove to be one of the important features in promoting re-use and re-purposing of our content as OERs. (UKVM)*

Accessibility can be enhanced by an understanding of the wider context affecting the way academic staff relate to open educational practice generally. The Manufacturing Pasts project described their materials as learning resources rather than as OER, pointing out that the terminology can be a barrier to access. The two projects based at the Open University (Histology and histopathology project and the UKVM project) felt that new approaches (particularly the recent interest in Open Courses) might serve to increase accessibility for their OER.

*the Open University is producing its first set of Massive Open On-line Courses (MOOCs) and one of the first will be 'Moons: An Introduction' which will feature a set of virtual microscope slides of moon rocks to allow anyone with internet access to explore samples returned to Earth by the Apollo astronauts. (UKVM)*

### 3.2B LICENSING

Legal aspects of open raw assets and OER can be complex and are linked to wider issues of institutional policy, risk management and ownership. Open licences are critical to the notion of OER as they encourage and enable use, reuse, redistribution and modification with minimal restrictions. Many of the complications around open licensing relate to issues around people have varying levels of understanding of basic [Intellectual Property Rights \(IPR\)](#), and in particular, Copyright. Within an educational institution the IPR expertise may not include an understanding of this in relation to OER. There is no doubt that widespread use of [Creative Commons Licences](#) has made choices easier to some extent although there are a range of open licences that could be applied to OER.

The original funding call for Digitisation for OER stipulated that the digitised collections and the OER produced should be licenced under a suitable Creative Commons (CC) or equivalent licence and offered support in the form of the [OER IPR Support Project](#) that had been established for the UKOER Programme. This project had developed some excellent guidance and support materials to help projects make appropriately informed licensing choices. Whilst the majority of the projects adopted a [CC-BY-NC-SA licence](#) (Creative commons, attribution, non-commercial, share alike) a few chose to use the [CC-BY-NC licence](#). The Manufacturing Pasts and Zandra Rhodes projects both chose not to insist on the 'share alike' element as they felt it may restrict re-use, and the OpenLIVES project chose to use the SA element for the OER (but not their original raw assets) in order to encourage others to contribute adapted resources back into the pool.

*We judged that 'non-commercial' would make it easier to obtain permissions for re-use and indeed this proved to be the case. We also chose not to use the Share-Alike option, as it was felt that many people were not clear exactly what this means, and as a result might not use the resources. For instance, using the SA option would mean that the resources could not be placed on a password protected virtual learning environment such as Blackboard, as the resources would not be openly and freely available for re-use, only to those with passwords. (Manufacturing pasts)*

The OpenLIVES project experienced some rather unusual and very sensitive issues around obtaining permissions for oral testimony, that led to unique risk evaluation and risk management approaches for these sources.

*The most significant challenge which the project faced was the issue of permissions. At the time the original interviews were made, interviewees signed a permissions form which allowed their voice and words to be used for 'educational purposes,' but no further permissions were obtained for materials to be put online or made available as open content.*

*It was felt by the project management team that for OpenLIVES to go forward, further permissions would be needed for the testimonies to be made available as open content. However, other team members strongly disagreed with the proposal to ask interviewees to sign a second permissions form, as it was felt that this would be confusing and unhelpful to a group of people who would be in advanced age; come from a cultural background more inclined to openness and less-rule bound, and who had experienced suffering and discrimination under an authoritarian regime (and would see a formal permissions form as a repressive instrument). After a long period of discussion and debate, it was decided that an informal letter would be sent out to interviewees, informing them of our intentions and offering the opportunity for them to decline permission for their testimony to be used in the project. At the same time, the team devised robust plans to contextualise the content to be released within the HumBox repository and ensure that licence information was attached to original resources. (OpenLIVES)*

Decisions around risk management affected the Manufacturing Past project who decided to proceed with digitisation before obtaining permissions to keep momentum going. This experienced team (previously involved in the UKOER programme) adopted a 'best efforts' policy to enable use of resources containing 'orphan works', where the original Copyright owner could not be contacted, ensuring that robust procedures are in place to record efforts to locate provenance with a view to removing any items (take-down policy) if questioned. The sophisticated understanding of this team around licensing<sup>6</sup> was also illustrated by their decision to assign a [CC 'Zero' licence](#) for the metadata to allow harvesting and re-use, and to incorporate it into the metadata. Open licensing of metadata is an important aspect of OER release that has only recently emerged.

Challenges around legal aspects often lead to compromises, sometimes over what resources are digitised. Several projects reported selecting materials that were less challenging in order to progress the project. The following approaches were taken by projects to address legal and/or licensing issues:

- Observing the 1980's used content from people still writing for the Mass Observation Archive as they were easily contactable
- Both Observing the 1980s and Manufacturing Pasts had to track orphan works and adopt a 'best efforts approach'
- Observing the 1980s used letters to writers with clear explanation of what they were asking as some of their writers were not highly digitally literate
- Licensing modern art works proved challenging for the OBL4HE project and led to sections of some collections being avoided for the duration of the project although the conversations were informative for future reference
- Histology and histopathology made it clear to all contributors that they were loaning the microscope slides, that the OU owned the resulting images and these would be made available on a creative commons license.

### 3.2C HOSTING AND DISCOVERABILITY

Although deposit in [Jorum](#), the national repository for learning and teaching materials, was mandated by the call a wide range of existing services were also used to host both the 'raw' assets and the 'cooked' OER. Using existing services has several advantages:

- significant impact on long term sustainability as services are likely to be maintained
- appropriate curational and content management skills of existing staff for different kinds of collections

<sup>6</sup> The Manufacturing Pasts project was featured as a case study and includes their experiences around licensing <http://guidance.discovery.ac.uk/archives/casestudies/manufacturing-pasts>

- strong communities of practice already utilising services
- support dissemination of project outcomes and outputs
- likely to be utilising effective SEO (Search Engine Optimisation) strategies

The services adopted as hosts by Digitisation for OER projects were wide ranging as appropriate to the content types or subject disciplines covered and often included services of project partners. Some were institutional systems and services such as repositories, VLEs (Virtual Learning Environments) or Content Management Systems (CMS). Others were services provided by National bodies, community networks or services on the open web. Most projects utilised several different hosts which is a proven way to increase accessibility and discoverability, particularly if materials of different levels of granularity are made available through appropriate services. For example, hosting OER in repositories or learning environments and putting raw assets onto social sites such as flickr or youTube.

*The website was used to provide context for the learning resources, thereby engaging people who may not be familiar and comfortable with searching academic databases. The website has a general introduction to the resources, and then a page per theme split into sections: specific topic introduction; learning resources; Explore More (with a link to My Leicestershire History). (Manufacturing pasts)*

The following list identifies the range of hosts used, in addition to their own institutional platforms:

#### Services of national and local bodies

- Digital Dance Archives <http://www.dance-archives.ac.uk/> (CCC:EED)
- National Resource Centre for Dance (NRCD <http://www.surrey.ac.uk/library/nrcd/> (CCC:EED)
- Content dm (part of My Leicestershire History site - primary source collection and OER collection) (Manufacturing Past)
- British Library Sound Archive <http://www.bl.uk/reshelp/bldept/soundarch/index.html> (Observing the 1980s)
- UK Data Archive <http://data-archive.ac.uk/> (Observing the 1980s)
- Culture Grid <http://www.culturegrid.org.uk/> (Observing the 1980s, OBL4HE, Manufacturing Past)
- Europeana through CultureGrid <http://www.europeana.eu/>
- Mass Observations Archive (Observing the 1980s)
- OCLC Digital Collections Gateway - metadata (Manufacturing Past)
- JISC Media Hub - metadata (Manufacturing Past)
- The Wellcome Trust Image library <http://wellcomeimages.org/> (Histology and histopathology)

#### Services of community networks

- Humbox <http://humbox.ac.uk/> (OpenLIVES, Observing the 1980s)

#### Web services

- Project website (Zandra Rhodes, Observing the 1980s, Manufacturing Past, Architectus)
- Wikipedia articles which reference MP resources (Manufacturing Past)
- Google drive (Observing the 1980s)
- Youtube (Manufacturing Past)
- Flickr (Manufacturing Past)
- vimeo (Zandra Rhodes, Manufacturing Past)
- Apple iTunes (UKVM)

#### Institutional services

- OU OpenLearn (Histology and histopathology and UKVM) [Introduction to Histology](#) [Introduction to Microscopy](#) [Introduction to Histopathology](#)
- Institutional VLE (Observing the 1980s, OBL4HE)
- OU OPENScience Laboratory <http://www.open.ac.uk/blogs/openscience/> (Histology and histopathology)

Hosting decisions have a significant impact on discoverability, as does appropriate metadata and effective SEO. Making sure that metadata and links are included in a range of online catalogues and other finding services were also techniques used to enhance discoverability.

*Our Digital Assets Manager added discoverability code to the online catalogues that is expected to help search engines recognise the images and data as Creative Commons. (OBL4HE)*

UKVM and Manufacturing Pasts used social networking tools, such as twitter, scoop.it and facebook, as a valuable mechanism to disseminate resources to targeted groups of interested stakeholders, and to encourage sharing of these by users themselves

### 3.3 EMBEDDING OER AND DIGITAL COLLECTIONS INTO LEARNING AND TEACHING

The requirement to embed digitised materials within learning and teaching contexts had an impact on the kinds of OER developed and released, and projects benefited from the very clear focus that this provided them. It provided a known audience that could be involved at all stages - from choices around what content to digitize, to the best ways to incorporate this into existing courses, to providing evaluation opportunities throughout the project timescale.

This close integration with their target audience resulted in high probabilities of success in developing content that would enhance existing courses, and that would meet existing strategic needs of the educational institutions involved. This did, however also allow for projects to be experimental in their approaches and to engage on conversations around learning design and pedagogic approaches to using primary sources for learning and teaching. This provided opportunities to enhance learning and teaching, even resulting in the creation of a new module for the OpenLIVES project and several new approaches for Dance education for the CCC:EED project. One of the key ways to ensure embedding was through working with a wide range of partners who could bring fresh insights and articulate the needs of wider audiences.

#### 3.3A NEW PARTNERSHIPS AND APPROACHES

Our project greatly benefited from the different skills, perspectives and knowledge that all our partners contributed and which were all essential to achieving our objectives i.e. the subject and teaching expertise of the historians; the collections expertise of the archivist; the technical expertise of the learning technologist and the copyright and resource description and discovery expertise of the library staff. (Manufacturing pasts)

Involving partners from a range of sectors brought a richness to project outcomes and encouraged some excellent collaborative activities. These partners included the agencies and individuals providing the raw formats for digitisation who brought valuable and often unique knowledge about the sources. One example of this is illustrated by the Zandra Rhodes Collection who had access to both the designer herself and her studio's production manager who had worked with her since 1976. This meant that the project had access to personal testimony that significantly enhanced the stories behind the garments and the design materials, bringing them to life for the students. Other partners brought specialised expertise that was essential for effective digitisation and management of the

processes. Some partners opened up access to a range of different audiences and provided effective dissemination opportunities through their existing networks.

The Architectus project worked with commercial architects whose traditional practice was very different to the notion of open resources and this required sensitive handling and took a lot of awareness raising efforts and reassurance. This project really highlighted the value of engaging with and involving partners from outside the sector, which can have significant impact on learning and teaching.

*The challenge was to gain the co-operation, trust, time and 'the primary assets' from a diverse commercial sector with inevitable levels of protectionism, secrecy and commercial confidentiality. (Architectus)*

A range of skills were brought together to enable teams to achieve their outcomes and this did bring challenges in anticipating what these were and getting the balance right. Most projects encountered difficulties in managing workflows that relied on different partners delivering their elements of the project workplans to a fixed schedule. The kinds of skills required by projects came from a range of different professional disciplines including research, curriculum design, teaching, archiving, curation, librarianship, learning technology, educational development and include a wide range of digitisation techniques such as photography, transcription, videoing, sound file creation and database management.

*At UCL, the project has provoked discussion about the optimum composition of skills required in a project team. In particular, the project showed that it is a tough job to get the perfect balance between those project staff with the requisite technical skill, those who are conversant in the academic subjects and the content of collections, and those who fully understand how to develop high quality learning opportunities through digital resources. It is often possible to get two of the three qualities in one person, but rarely all three and so it is important to have a project team that can cover all quarters. (OBL4HE)*

One of the most interesting approaches taken by the projects was the imaginative ways they involved students. Students were offered opportunities to feed into digitisation activities, evaluation activities and also in the creation of OER during learning and teaching activities. For example the Zandra Rhodes Collection project provided opportunities not only for fashion or textile design students, but also for students from other courses such as photography enabling them to gain authentic work related experience. Projects generally valued student involvement and feedback and saw real benefits for them as co-producers of OER. This is discussed further in the next section looking at impact.

## 4. WHAT WE ACHIEVED?

sharing research data as open content can be immensely satisfying and give research a new life in different contexts. the researcher who originally collected the openlives testimonies was moved to tears when she saw her colleague (from a different institution) presenting his students' reactions to her work, and their own work which builds upon her research. she was moved by the impact her work had had beyond her own students, as well as impressed with the new directions that the students had taken using the testimonies (OpenLIVES)

### 4.1 MEASURING IMPACT

This strand of activities was not simply about digitising content and the resulting assets or OER, but was also concerned with the processes that support this kind of activity and the challenges that need

to be overcome to achieve this effectively. It has also been about fundamentally changing practices of the various partners to encourage collaborative approaches to digitisation but also around open educational practice, which challenges traditional approaches to learning and teaching. It is difficult to capture these subtle changes that happen over time and which are best supported by longer term studies that include initial base-lining of people's perceptions and practice so that their progression can be measured. However the projects have evidenced impact on the institutions involved, and on a wide range of people, including students involved with the projects. They are also measuring use of their materials both through analysing download and viewing data but also through mechanisms built into some content looking to gather feedback on how they are being used and shared.

## 4.2 WIDENING ACCESS TO UNIQUE PRIMARY SOURCES AND COLLECTIONS

Most projects achieved their original, or slightly revised, objectives and successfully digitised a wide range of primary sources that were made available with open licences to be used globally. This effectively widened access to some very rare and valuable collections that would otherwise have been accessible to only a few people. Several projects received early recognition of their work and requests from other institutions to either use the raw assets or the OER. For example Observing the 1980s content was used in an augmented reality application being developed by the University of Manchester. The UKVM project received requests to include other collections of other universities. Both UKVM and Histology and histopathology were based at the Open University and they were included in a bid to get funding from the Wolfson Foundation to create an Open Science Lab. This activity raised the profile of both departments and impacted on the institution overall, as well as increasing the visibility and discoverability of the two collections.

Some of the original collections were so inaccessible that their use was severely limited. For example the materials in the Mass Observation Project consisted of many handwritten documents that had not been previously digitised. The Observing the 1980s also digitised sound archives and ephemeral materials that were not accessible to either students or the general public. The Zandra Rhodes project made a private collection accessible and the Architectus project persuaded private companies, who were very protective of their materials, to make them openly available.

## 4.3 CHANGING PRACTICES

The processes of digitising these collections and sources have built on the expertise of the various partner institutions and provided some individuals with new skills in digitisation, curation and making digital assets discoverable. For example, the Observing the 1980s project listed a range of new skills that they developed during the process:

*blogging, editing audio files, editing and resizing pdfs, using cloud storage and retrieval, creating and editing archive catalogue records, creating records for depositing data in external repositories eg Humbox, and using Moodle to build an OER. This latter involved learning about E-learning eg structuring teaching materials for an online environment; thinking about issues of accessibility, usability, attention span and search strategies. (Observing the 1980s)*

In addition to new skills and expertise around digitisation, projects widely reported changes of practice in relation to incorporating these primary sources within learning and teaching and a re-consideration of existing pedagogical approaches.

*[The project] has been very important for me professionally because I have learnt many different skills, I have developed new career paths, I feel more confident as a practitioner, I think I can offer better education and better learning and teaching to my students. I feel now*

*that I can make a greater difference in student education.”- Antonio Martinez-Arboleda, Leeds (OpenLIVES)*

Projects described these activities as 'bringing a new lease of life' to their teaching and their courses and several noted the value of bringing research and teaching closer together as a result of engaging with primary sources. They offer tangible evidence that using OER has a positive impact on teaching and go some way towards challenging negative assumptions around using content created by others. The OpenLIVES project, in particular offered some powerful stories of changed practice and the potential that OER can bring to the teaching of modern languages.

*The re-use of OERs does NOT lead to sameness or lack of originality in teaching. The project has demonstrated how one set of research data can be interpreted in widely different, original and exciting ways by different practitioners working in different settings. This reaffirms the importance of individual teachers in delivering quality in Higher Education teaching and rebuts the notion that using third party materials reduces quality, or results in homogeneity of learning experience. (OpenLIVES)*

Engaging with the OER produced by projects also led to increased engagement with new technologies for teaching and encouraged a culture of experimentation and innovation. The CCC:EED project focused on digital literacies as a way to incorporate both different technological approaches and the new OER and had a significant impact on their existing dance and choreography courses, and on the literacy levels of both staff and students within their partner institutions.

*CCC:EED has enabled both lecturers and students to see the interrelationship between how digital literacy impacts on both the creative process and learning of theory and the benefits of these connections to new developments in pedagogy, performance and practice. It has also brought up issues of use of appropriate content, authorship, copyright, openness, collaborative working and accessibility. (CCC:EED)*

#### 4.4 IMPACT ON LEARNERS

There is a considerable amount of evidence around the impact of project activities on students, not least the increased access to unique primary sources as digital assets. These new resources enhance the specific courses involved in the projects but also widen access to materials for learners worldwide. The enhancements made to some of the courses opened students to new pedagogic approaches and appeared to have an impact on their levels of understanding, critical engagement and research skills.

*Among the achievements students gained in this Choreography module was an awareness of choreographic process and conscious decision-making. This helped to experience choreography as process oriented. The impact this has had has been witnessed in the subsequent choreography modules where intellectual engagement with choreographic process appears richer. Other ways the digital sketchbook process demonstrated impact include: the development of students' ability to articulate and present process; an opportunity to engage with and operate artistically through a different medium; a way to position oneself in relation to others' practices; and an increase in confidence and the ability to see the value of approaching their work through new digital mediums. ( CCC:EED)*

Projects investigated a variety of approaches for involving students in the process, often by paying them to contribute towards researching, digitising, cataloguing or locating rights holders, all of which had an impact on their skill levels outwith their subject discipline. Students also fed into project plans and development as potential users, which challenged existing relationships between staff and students and empowered them to contribute ideas and feedback.

*Students asked us to provide as much context as possible to aid their interpretation i.e. on the provenance of the sources and the sort of historical issues that they raise – in order to assist students in interpreting them for themselves. We addressed this by including a ‘toolkit’ section on the Manufacturing Pasts Website and short, video based introductions to each of the historical themes. (Manufacturing pasts)*

*“I have really enjoyed the OpenLIVES module as it has given us, the students, an opportunity to do our own primary research and genuinely engage with the issues we are studying. Having more academic and creative control over our own education is extremely stimulating and motivating.” (Student OpenLIVES)*

As mentioned earlier some of the student involvement provided valuable experience of authentic work practices of different professions, not just those related to collections, archives and managing resources but also to the development of learning materials and, sometimes even wider. The Zandra Rhodes Collection offered a range of internship opportunities around textile and fashion design, photography and videoing. Comments from students were very positive and indicated that many of them saw a longer term value that might help their future employment prospects<sup>7</sup>.

*“Shows future employers that I am willing to work hard”*

*The students felt that the internship will help them with securing future work experience placements and their future employability, and that it will demonstrate their passion for their field of study and a strong work ethic. (Zandra Rhodes Collection)*

One of the most interesting ways of involving students was as co-producers of the OER themselves. Projects reported that this provided motivation and resulted in some very interesting and new resources to share with peers and other learners worldwide. This provided new levels of understanding for students around content to support learning and also significantly enhanced their digital literacies around rights management, metadata, content management and technologies to support open release of content. Several projects felt that these activities supported peer interaction and collaborative working and would ultimately enhance employability.

*“It has made me realise how important the materials we use are in terms of motivating our students and also it has allowed me to realise that our students can be good producers of OERs...producers of high quality OERs and partners in research, which is something I had not explored before. The quality of what they produce is really, really good...” – Miguel Arrebola, Portsmouth (OpenLIVES)*

## 4.5 INSTITUTIONAL CULTURE AND EMBEDDING

In addition to transforming practice of individuals involved in project teams the Digitisation for OER activities also had lasting impact on the different institutions involved, including partners from outside the higher education sector. Initially, linking project visions and goals to institutionally strategic themes (such as employability or widening participation) was recognised as a useful way to get engagement and buy-in from key staff (academics, senior managers and support teams) as well as tying in project activities with ongoing developments in institutional systems (for example utilising institutional repositories or learning environments to store OER).

The CCC:EED project, in particular, connected their digitisation work with a radical transformation of the whole pedagogic approach for dance education and tied this in by embedding new technologies.

<sup>7</sup> Blog post by Zandra Rhodes project about student internships  
<http://zandrarahodesarchive.wordpress.com/2012/11/29/what-difference-has-the-project-internship-made/>

As well as having a transformative impact on staff and students this kind of embedding ensures sustainability.

*By the end of the project, technology had become crucial to teaching and learning thereby shifting the culture of teaching from one of passive student/active lecturer to that of collaboration, student-as-creators and deeper integration between technology and dance.*

CCC:EED

A significant impact of project activities emerged from the new partnerships within institutions, and the resulting conversations across faculties and departments. This was also echoed for those partnerships across institutional boundaries, as these new collaborations provided strong foundations for future work, as well as robust workflow patterns and management practices that could be taken forward.

*Collaboration through the creation of open content is rich and satisfying and can produce excellent work and curriculum innovation. The freedom that open practice offers to researchers and teachers working across different institutions to share ideas, practice and experience in their discipline area has been extremely exciting and motivating for the project team. Colleagues working in different institutions do not often have such opportunities to work closely together, and the competitive nature of Higher Education makes such a situation even more unlikely, but open content is proving to be an effective antidote to traditional closed ways of working. OpenLIVES*

## 4.6 WIDER IMPACT

It is helpful to consider some of the impacts for the wider community that may not be immediately obvious across such complex activities with many stands. A significant outcome is the increased access to collections, both as raw assets but also as packaged learning resources, that can be used within educational institutions but also in lifelong learning contexts, and across a number of different disciplines. The fact that projects were often responding to specific challenges within a subject discipline means that these subject areas benefit both nationally, and in some cases internationally. The models and approaches demonstrated by the projects are supported by materials (also released as OER) to help other institutions through similar processes, such as the OpenLIVES project which has released several resources that offer guidance on digitising oral history materials. The following list highlights some of the wider impacts demonstrated by projects even before they have had an opportunity to consolidate and disseminate their work more widely after the funded period:

- increased **access to many rare collections**, including some designated by HEFCE as 'strategically important and vulnerable subjects'
- all projects released **raw assets of relevance to a wide range of related disciplines** making research data and collections usable across a wider number of institutions and countries
- **expanded understanding** of both digitisation and OER across several partners that will impact on future work (this is particularly true for bodies who were familiar with digitisation but not OER and open licensing)
- **preserving non digital practices** - highlighting the value of traditional craft processes and making these more widely appreciated
- use of assets and OER **outside the HE sector** - local community groups and schools accessing content
- **international interest** in the digital collections
- interest from **other HE institutions in the UK**
- improvements in efficiency for several agencies through some of the technical developments (eg. VLE Adlib plug-in from OBL4HE) or through shared generic resources (eg. Architectus)

## 5 SUCCESS FACTORS

Another critical factor for our project has been the willingness of participants to collaborate and share their ideas and work. Without this open attitude, the project would not have achieved so much. For the project team, OpenLIVES has been a “very important and deep experience” (Irina Nelson) which has encouraged all of us to re-evaluate how we work. The enthusiasm for this new, open way of teaching and sharing is undiminished, and we will seek to find ways to spread our experiences and to expand on them in new projects and with new audiences. OpenLIVES

In identifying the different motivations, models and approaches taken by projects we have touched upon the kinds of barriers they were attempting to overcome and the critical factors that enable them to do so. Consideration of the enablers that support digitisation of primary sources and ways to incorporate these into OER within real learning and teaching contexts provides some insight into the kinds of factors that may be applied to other educational institutions wanting to engage with either OER or OEP. These are the resulting top level critical success factors.

### 5.1 FACTOR 1. STIMULATING AND SUPPORTING CHANGE IN PRACTICE

*Because of the emphasis on digital literacy and what methods, computer programmes or delivery would be best suited for the inculcation of such literacy, the project led Faculty to begin to revise module content and assessments to reflect this shift in pedagogical awareness. Therefore, the integration of e-learning and digital literacy skills required a review of the modules we have, how we teach them, how we assess and how we want e-learning to facilitate teaching and learning. As a result, new developments in pedagogy have emerged that will inform the redesign of the entire BA (Hons) Dance and Culture programme. CCC:EED*

Examples to illustrate these factors are included in the tables below:

#### THROUGH ENGAGEMENT/AWARENESS RAISING

use different new formats to gain people's attention/interest	Manufacturing Pasts utilised Prezi and various social networking tools CCC:EED adopted a wide range of different learning technologies
gain commitment from outset.	OBL4HE emphasised the importance of this and acknowledging that not everyone will 'buy-in' to new concepts
link project activities with wider agendas	OBL4HE linked project activities to the broader agenda of using technology in collections based teaching for HE OpenLIVES linked activities to employability and widening participation
one to one interviews with key academic staff	Zandra Rhodes Collection adopted this approach
focus groups with other institutions in subject area	Zandra Rhodes Collection adopted this approach
supporting staff to engage with new forms of content	Observing the 1980's, OpenLIVES and CCC:EED adopted this approach

**BY CHALLENGING AND CHANGING PERCEPTIONS**

gaining staff commitment	All projects invested considerable time into this activity
adopting new pedagogic practice	Observing the 1980's, OpenLIVES and CCC:EED all established new pedagogic practice
implementing new technologies	Manufacturing Pasts and CCC:EED introduced new technologies to staff and students
sharing of practices, knowledge and experience with staff	CCC:EED adopted a digital literacies approach which supported sharing of practice
transforming perceptions and practice of other sectors	Architectus worked with commercial partners to allow their work to be incorporated into OER

**BY CHANGING PEDAGOGIC APPROACHES AND PRACTICE**

student engagement as producers co-creators	OBL4HE, Zandra Rhodes Collection, OpenLIVES, Observing the 1980's and CC:EED all noted benefits of working with students as co-creators and producers of raw assets and OER
student opportunities for authentic work practices	Zandra Rhodes Collection offered a variety of internships and other opportunities for students form a range of disciplines
student peer interaction & collaboration	Histology & Histopathology and CCC:EED noted the benefits of this approach
digital literacies approach	CCC:EED focused on digital literacies of staff and students to both shape and implement project activities. OBL4HE and Observing the 1980's also linked to this broader agenda.
providing evidence of practice change	Most projects reported on practice change across a range of areas. OpenLIVES offers very strong evidence of practice change in staff and students

**5.2 FACTOR 2. ENCOURAGING AND SUPPORTING INSTITUTIONAL CHANGE**

**THROUGH APPROPRIATE TECHNICAL INFRASTRUCTURE FOR OER RELEASE**

ensuring that institutional technologies can integrate open content (either raw assets or OER)	All projects made efforts to incorporate assets into institutional systems
challenging closed institutional systems	Access was noted by CCC:EED as an important requirement for remote students and wider audiences
replacing out of date hardware and software	CCC:EED activities highlighted challenges with existing systems and led to subsequent change
ensuring equitable access to appropriate software needed to utilise OER	UKVM and CCC:EED took efforts to ensure that outputs were accessible on mobile devices for remote students or student learning in non conventional spaces
reconsider existing policies around technologies	CCC:EED considered their policy for automated submission of assignments

**THROUGH CHANGES TO INSTITUTIONAL PROCESSES**

changing policy and processes	OBL4HE integrated lessons from project activities into strategic planning
acknowledge that processes move slowly and to different agendas	Observing the 1980's highlighted this

obtain solid institutional commitment	All projects required institutional commitment. OBL4HE noted that there are different levels of commitment
creation of new posts	OBL4HE established a new teaching fellow in Object based learning
embedding project outputs into institutional infrastructure	OBL4HE noted that focusing on impacts on efficiency supported incorporation into corporate plans

### THROUGH PARTNERSHIP/COLLABORATIVE APPROACHES

encourage new partnerships that cross traditional boundaries within institutions	A key focus of the programme was to encourage new partnerships and all projects noted benefits and challenges around this
encourage and build new partnerships outside the institutions and across sectors	Manufacturing Pasts established new partnerships with the local library and record office. OBL4HE linked museums staff with the academic staff. Architectus linked commercial partners with University staff.
balancing skillsets and expertise from a range of partners to ensure digitisation is efficient and effective	All projects reported challenges in ensuring a balance and managing this throughout the project.
build strong communication mechanisms, particularly to facilitate conversations with remote participants	All projects noted this.
understand complexities around creating formal partnership agreements and be prepared to work in less formal ways sometimes to achieve common goals	Histology and Histopathology noted this in particular.
identify common goals and visions	All projects did this.
be prepared for challenges with multi-partnership approaches and forge strong management mechanisms to facilitate conflict resolutions and workflow control	All projects.

## 5.3 FACTOR 3. ADOPTING SUSTAINABLE APPROACHES

### BY LINKING TO EXISTING INSTITUTIONAL SYSTEMS, POLICIES AND STRATEGIES

linking to existing services, activities and other projects	UKVM and Histology & Histopathology linked to the Open University OpenScience Laboratory, OpenLearn and other OU projects.
integrating into new institutional software	CCC:EED linked activities to implementation of a new VLE
changing institutional policy	OpenLIVES fed into a new OER policy within one institution which was adopted at institution-wide level CCC:EED changed their policy for electronic submission
embedding OER into learning and teaching	All projects.

### BY DEVELOPING SUSTAINABLE DIGITAL ASSETS AND OER

ensuring visibility and discoverability	All projects had to do this. Manufacturing Pasts put a lot of effort into this aspect.
utilise existing services for hosting	All projects made excellent use of existing hosting services within their own institutions and also national & international services.
making OER that can be re-used outside the specific context	Several projects noted that their OER were relevant outside of the specific educational context they were created for.
commercial engagement opportunities	UKVM noted opportunities to produce slides sets for publishers or other academic institutions,

### BY SUPPORTING NEW OPEN EDUCATIONAL PRACTICES

offer exemplars to other staff and models for creating OER	OpenLIVES provided an exemplar of integrating research and teaching and Manufacturing Pasts provided exemplars of mobile learning and open learning
maintain systems and workflows for digitisation and OER	Manufacturing Pasts developed workflows which would be appropriate to support ongoing work
training and support documentation created during projects can be cascaded and offered in an ongoing way for staff of different partner institutions	CCC:EED produced staff training materials as part of their digital literacy approach

### BY NURTURING NEW AND EXISTING PARTNERSHIPS

explore opportunities for future collaboration	Many projects noted that they plan to do this.
Continue cross-fertilisation of ideas and practice through collaborative partnerships and close working relationships	OBL4HE noted this particularly.

THE FULL REPORT IS AVAILABLE ON THE UKOER EVALUATION AND SYNTHESIS WIKI

<http://bit.ly/digitisationandOER>

# APPENDIX 1

## Formats/types

rock specimens on virtual slides	UKVM
oral history	OpenLIVES, OBL4HE
garment designs and garments	Zandra Rhodes Collection
zoological specimens	OBL4HE
ancient artefacts	OBL4HE
diaries	OBL4HE
Photographs	OpenLIVES, Zandra Rhodes Collection, CCC:EED, Manufacturing Pasts
Images/artwork	OpenLIVES, Zandra Rhodes Collection, OBL4HE, CCC:EED, Architectus, Manufacturing Pasts
Audio files	OpenLIVES, Histology & Histopathology
Text documents	OpenLIVES, Zandra Rhodes Collection
Teachers notes	OpenLIVES
Student activities/reports	OpenLIVES
Videos	OpenLIVES, Zandra Rhodes Collection, Manufacturing Pasts, Histology & Histopathology, CCC:EED Architectus
Scanned materials	OBL4HE, CCC:EED, MP, Observing the 1980's
Ephemera )booklets, pamphlets, newsletters	Observing the 1980's
Creative practices	Zandra Rhodes Collection
Architecture plans and drawings	Architectus
Microscope specimens	UKVM, Histology & Histopathology
Prezi for presentation	OBL4HE, Manufacturing Pasts
Outputs as ibooks	UKVM
Incorporated into MOOCs	UKVM
mobile (phone, laptop, desktop, smart devices) friendly	UKVM, Histology & Histopathology, Architectus
Maps	Manufacturing Pasts, Architectus
Interviews	Manufacturing Pasts, Observing the 1980's, Architectus
Case studies	Architectus