Engaging researchers with the world's first scholarly arts repositories: ten years after the UK's Kultur project

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Open access institutional repositories can be ill-equipped to manage the complexity of research outputs from departments of fine arts, media, drama, music, cultural heritage, and the creative arts in general. The UK-based Kultur project (Jisc, 2007-09) was funded to create a flexible multimedia repository model using EPrints software. The project launched the first arts based institutional repositories at the University of the Arts London and University for the Creative Arts. Ten years later, these pioneering repositories are still evolving in response to the needs of arts researchers, and in the context of rapid changes in the scholarly communications landscape. This paper discusses the evolution of scholarly repositories in the creative arts, with the aim of reducing the under-representation of arts research in open access repositories.

Introduction

Departments of fine arts, media, drama, music and cultural heritage are vibrant, research-active, valued contributors to the scholarly community and the research culture of their institutions. Yet open access institutional repositories can be ill-equipped to manage the complexity of their research outputs.

As early as 2007 institutional repositories were already proficient in managing text-based research, but they weren't yet attuned to the requirements of images and time-based media and no specialist arts university yet had a dedicated repository. Hence, the UK-based Kultur project (Jisc, 2007-09) was funded to create a flexible multimedia repository model using the EPrints software.

The Kultur plugin was developed in response to in-depth consultation with arts researchers and provided a metadata profile adapted to practice-based outputs as well as image previews and slideshows to suitably showcase this visual work. The project also

launched the first arts based institutional repositories at the University of the Arts London (UAL) and the University for the Creative Arts (UCA) - UAL Research Online and UCA Research Online.

This paper will revisit the first two 'Kulturised' repositories ten years after the initial project (2007-9), investigating how they have matured and are still evolving in response to real world use, looking especially at a number of in-house customisations made in consultation with arts researchers and setting this work in the wider context of the post-Kultur landscape.

Literature Review

For the information professional seeking precedents for customising institutional repositories for arts and design research, combining the uses of an institutional repository to support scholarly communication, with the analysis of user needs in arts and design research in particular, the literature is not abundant. Cassella (2010) provides a history of the development of institutional repositories with a focus on providing value to researchers, but discussions of repository use for art research, or for other non-standard outputs, is limited, especially when considering EPrints software only: discussions of the Kultur project dominate.

Dunning (2006) is an early study of archiving arts research, specifically research funded by the Arts and Humanities Research Council in the United Kingdom, and Cooke (2007) was a useful introduction to a visual arts perspective on open access institutional repositories, before any major repository software had engaged with arts research. From 2008, however, the Kultur project began publishing its findings and conclusions; important amongst these are Sheppard (2008a, 2008b, 2009); Brody (2009); Gray (2009); Silva, Meece, and Garrett (2010); White and Hemmings (2010);

Shear et.al. (2011); and Warner (2011). The impact of Kultur is discussed in Clarke and Lawson (2012) and Simons and Richardson (2013).

The Kultur project led to further funded investigations into arts repositories and researcher engagement: primarily the Kultivate project, which was tasked with finding strategies (digital and otherwise) to increase the deposit of creative arts research outputs into repositories (Gramstadt, 2012a). The Defiant Objects project at Goldsmiths, University of London, also investigated what makes some objects more difficult to deposit that others, and sought to make the deposit of these defiant objects easier through a decision-making guide and the project also led to the re-categorisation of the research types in their repository (Nadim & Cooke, 2011; Nadim & Randall, 2013).

Other repositories for arts and design items (including online, downloadable collections of primary sources as well as research repositories) include the Visual Arts Data Service (VADS) (Gill & Grout 1997; Robinson 2012, 2016) and the Research Catalogue (Hughes 2013; Schwab & Borgdorff, 2014). The Research Catalogue is a practitioner-led initiative, and thus is of great interest to information science professionals seeking to understand researchers' needs and preferences. e-artexte is a highly customised EPrints repository for contemporary Canadian art publications (Neugebauer, MacDonald & Tayler, 2010).

PRIMO is an EPrints based, open-access, online multimedia repository of downloadable material. Highly customised, it makes available musical performances, masterclasses, workshops, rehearsals, lecture-recitals and other sonic-based material that is either research-valid or of direct interest to researchers (Ellis, 2009).

Reviewing the literature indicates that publicly available accounts of the successful management of repositories for arts and design research, including customisation to encourage researcher engagement, are limited. Publications about

repositories and researcher engagement neglect the creative arts, contributing to the difficulty of achieving open access to research in these disciplines. This paper draws upon the published research, and upon pragmatic experience managing arts and design repositories, to work towards defining best practice in caring for the particular nature of research in the creative arts.

Research and scholarly communications in art and design

There is a substantial literature discussing the nature of research in arts, and how art and design work fits into a definition of research both imposed by external governmental bodies, and driven by the paradigm of research in the sciences (see for example Camp & Šiška, 2011).

For scholarly communications professionals an understanding of the particular situation of practice-based work is crucial, especially concerning the documentation of artistic work as part of its framing as research. In the last few decades, it has become widely recognised that artistic practice is a form of scholarly research (Kälvemark, 2010): artists carry out creative inquiry as a form of research, with the same attention to rigour, and systematic inquiry as researchers in any other discipline (Frayling, 1993; Sullivan, 2005). Arts research that is practice-based emphasises the fact that the best way to understand and express an idea may not be in words; traditional research paradigms and methods of inquiry may be inadequate to address the complexity of the way people engage with ideas, theories, information and experience (Biggs & Büchler, 2010). Communication through objects can be more nuanced, layered, ambiguous and polyvalent than communication through text.

Not all art is research, however (Frayling, 1993); an artist researcher needs to show that the solution was arrived at in a self-conscious, systematic and reflective way, making evident the decision-making process. Scrivener suggests that in order for art

practice to constitute scholarly research, the artist should describe the issues, concerns and interests stimulating the work; show the relationship between these issues and cultural preoccupations; and communicate knowledge, learning or insight resulting from the programme of work (Scrivener, 2000). In order to do this, documentation is necessary (Auslander, 2006). Already integral to the canon of some types of art (e.g., Arlander, 2010), documentation of the processes, relationships, and knowledge contextualising the work (Malterud, 2012) is a common thread in nearly all discussions of art practice as research: "When you experiment, research or produce innovative projects for the market, there are no demands for documentation or publication in the collegial environment. But when you choose to enter a research environment, this is precisely what you do." (Lilja, 2015). Though artists must document their work themselves (deFreitas, 2007), institutional repositories then play an important role in establishing research in the arts, as they hold, manage and disseminate the documentation of the research practice, regardless of the nature of the work itself. However, there is a tension between the freedom of description required to contextualise complex, non-text work, and the 'standardising impulse of metadata' (Cooke, 2007; Sheppard, 2009) that the repository needs. Providing a repository for arts researchers and their 'defiant objects' (Nadim and Randall; 2013) is always located between these opposite forces, and the post-Kultur customisations have reflected this.

Kultur

Kultur was a UK-based project from 2007-9 when repositories were already proficient in managing text-based research but weren't yet attuned to the requirements of images and time-based media. No specialist arts university yet had a dedicated repository and multidisciplinary institutions had limited content from their art departments. The Jisc-

funded Kultur project sought to address this by creating a flexible multimedia repository model using the EPrints open-source repository software.

The project brought together the expertise of the University of Southampton, University for the Creative Arts (UCA), University of the Arts London (UAL), and the Visual Arts Data Service (VADS). EPrints is the most widely used repository platform in the UK and was developed by the University of Southampton who provided the project's technical expertise. UAL and UCA are the two largest specialist arts universities in Europe, providing the project with two large research communities to test and feed into repository developments. VADS is hosted at UCA and provides a national image database from UK library, museum and archive collections, and was therefore a natural partner to provide advice in areas such as metadata and Intellectual Property Rights. Two new repositories for creative arts research, UAL Research Online and UCA Research Online, were launched by the project.

Kultur: User analysis

From the outset, the project prioritised input from arts researchers themselves. The team drew on survey responses from nearly 200 arts researchers from across UAL, UCA, and Winchester School of Art at the University of Southampton, about the nature of their research, barriers and incentives for using a repository, and the features they would like to see in a repository. The survey was followed up with hour-long semi-structured interviews with fifteen members of staff, chosen to represent as broad a spectrum of subject areas as possible, including: video, photography, crafts, printmaking, performance, textiles, digital arts, and theory. Positions included readers, research fellows, part time lecturers, teaching and learning co-ordinators, and curators. Interviewees were asked to trace their working processes for a specific work from conception to dissemination and to consider how a repository would fit within and

benefit their current practice. Interviewees were also asked for feedback on the shared demonstrator repository that had been made available at an early point in the project for continual testing and refinement.

The 'unsatisfactoriness of reproduction'

A recurring issue raised by researchers was the 'unsatisfactoriness of reproduction', as one interviewee described it, and the fact that a repository changes the nature of audience engagement (Sheppard, Gray and Persad, 2008). For example, it is difficult to convey the sense of a live performance through a recording, or the scale and setting of a large multiscreen artwork in a gallery. Notably the most popular types of work produced by survey respondents were installations (produced by 23.3% of respondents), video (20.7%) and site-specific work (19.8%), which raises these sorts of challenges (Sheppard, 2008b). One way the project sought to address this was to include multiple files to convey different aspects of a work, with the EPrints abstract page split into a series of tabs to display images, video/audio, documents, and metadata details.

Does my art look good in this?

The second biggest concern from survey respondents (37%) was the lack of control over the design and content of the rest of the repository. As one researcher commented, '[I'm] really worried that the interface would poorly reflect the work within' (Sheppard, 2008b). The interviews also emphasised the need for the repository to be visually attractive; to ensure text doesn't overwhelm visual work; and to have a clean look, with Flickr and YouTube mentioned as good models.

In response to this, a number of changes were made to the visual presentation so that 'in many ways it resembles more of a website than a typical repository' (Gray, 2009). This included: the creation of a slideshow on the homepage to showcase

selected images (see Fig. 1); image thumbnail previews displayed when searching and browsing; changing the abstract page to provide previews of the uploaded content instead of foregrounding the metadata (see Fig. 2 and Fig. 3); generating video and PDF thumbnail previews instead of displaying generic icons; varying the size of thumbnails according to the number of files; and providing lightbox style previews for all multimedia files (University of Southampton, 2009).

Figure 1. Image slideshow on UCA Research Online (image © Magdalene Odundo).

Figure 2. Item record on standard EPrints repository, with metadata foregrounded.

Figure 3. Item record on UCA Research Online, with images foregrounded (images © Ashley Howard).

Kultur Metadata

The default EPrints metadata profile went through a number of refinements in response to user feedback as the project grappled to accommodate the varying creative disciplines, with at least 27 different kinds of practice-based work identified in the user survey (Sheppard, 2008c).

Several non-mandatory fields were added to give context to these reproduced works including: ‘measurements or duration’; ‘materials’; ‘number of pieces’; and ‘locations/venues’. The majority of researchers were involved in producing collaborative work (64.2% of survey respondents) and the ‘other creators’ field was added with an extensive list of roles such as ‘curator’, ‘costume designer’, or ‘musician’. The ‘corporate/group creator’ field also enabled the documentation of artist collectives and groups.

It became clear that researchers often thought of their work in terms of ‘projects’ or ‘series’ rather than ‘outputs’ and a new hyperlinked ‘project or series’ field enabled

linkage between these related outputs. Existing field names and terminology were also updated for arts users. The default 'artefact' item type became the 'art/design' item type, since 'artefact' wasn't widely used or recognised by arts researchers in user testing, and 'abstract' became 'description' since 'abstract' refers to text only. 'Official URL' was removed as it relates to journal articles, and the 'related URLs' field provided links to contextual information such as gallery pages and artists' websites (Sheppard, 2009).

Developing a suitable classification scheme is well reported to pose a significant challenge in the arts, particularly for emerging contemporary arts practice, with 21% of art libraries in the UK using their own home-grown schemes (Currier, 2002) and a number of libraries make adaptations to established schemes (Varley, 2011). This was never entirely resolved by the project which explored various options including a home-grown tick list of broad 'art/design categories', as well as the art section of the Joint Academic Coding System (JACS) subject categories, which was developed by the UK's Higher Education Statistics Agency (HESA) as a way of classifying academic subjects and modules.

Intellectual Property Rights (IPR)

The user analysis found that the greatest concerns from researchers related to IPR, with 46.2% concerned about how their work might get used by others and 33.1% with uncertainties about copyright ownership. As collaborative works feature highly in their practice, there is often a complex web of multiple rights holders. Further rights issues are introduced through the arts practices of collage, appropriation and remix, and the documentation process itself may involve the skills of other people who photograph or film an artwork.

The project therefore developed guidance documents advising depositors on IPR and rights clearance, with a series of five example 'scenarios' aimed to capture the complexity of real situations, such as a film with multiple rights holders, and an artist's video with copyright material in the soundtrack (Eadie, 2009).

In response to user feedback and in order to protect researchers' work, the project also included a copyright statement and credit with each individual media file. The project also explored the possibility of automatically generating lower resolution files for web view whilst the original, high quality media files could be archived and available on request.

Creative Arts repositories post-Kultur

Following the end of the Kultur project in 2009, representatives of ten institutions met at UAL to preview UAL's newly 'Kulturised' EPrints repository. The visual look-and-feel encouraged these attendees, who were either without a research repository altogether, or were seeking to improve their existing repository. However, there were also aspects that still needed improvement: the use of the JACS classification to describe the subjects of arts research was problematic with terms missing (such as 'Installation Art' and 'Fashion Curation') or irrelevant ('Veterinary Science'); and the Kultur modifications hadn't adequately resolved the issue of describing project-based works.

It was agreed that the group should meet again to discuss some of these issues, and also to find out more about the UCA and UAL research repositories once they were fully live and in-use. Led by VADS, the group began meeting and inviting Jisc and other interested institutions to attend; a paper was submitted to Open Repositories 2010 (Silva, Meece, and Garrett, 2010); and the informal group meetings transformed into workshops with speakers invited to share best practice: from other repositories, such as

Enlighten, the University of Glasgow's EPrints publications repository; and from consortia such as SHERPA-LEAP (the London E-Prints Access project) and the CREST (Consortium for Research Excellence, Support and Training) Research Network. Arising out of these six meetings/workshops, Kultivate (November 2010 – December 2011) was funded by Jisc with the aim of increasing the deposit of arts research in repositories (Gramstadt, 2012a). The project included a further six workshops on the following community-led themes: technical; advocacy; archiving and curation; metadata; sustainability; and linked data. It also produced a Kultur EPrints demonstrator, plugins, toolkits, case studies, a conference, and reactivated the Kultur project's old Jiscmail list. By the end of the project, more than forty institutions had engaged with the project (University for the Creative Arts, 2011).

Kultivate achieved a lot in terms of building momentum and interest, and directly led into, and complemented, the Jisc-funded eNova (March 2011 – December 2011) and KAPTUR (September 2011 – March 2013) projects. These three projects were led by VADS, with a focus on the essential role of the research repository manager. A modified version of the Delphi method was used in which the repository managers were the experts, and Gramstadt was the facilitator; knowledge was gathered and analysed, going through cycles of iterative feedback. The eNova project used new feedback from researchers at UAL and UCA to produce a 'Kulturised' MePrints plugin – a visually appealing interface for individual research profiles that were automatically updated by depositing your research in the repository (Gramstadt, 2012b). The KAPTUR project was part of the innovative Jisc Managing Research Data programme, and tackled important questions such as 'what is arts research data?' (Gramstadt, 2013) and 'what technical architecture is needed to archive and make it accessible?' (Garrett, Gramstadt, Silva, 2013). KAPTUR continued to engage widely with other institutions

in looking at the suitability of systems, such as EPrints, for managing arts research data. Both Goldsmiths, University of London, and University of the Arts London adopted separate installations of EPrints for their research data repositories (Goldsmiths Data Online; University of the Arts London Data Repository).

Recent art and design institutional repositories

A number of specialist arts universities have subsequently launched repositories that are based on the Kultur model. In 2011, RCA Research Online was launched by the Royal College of Art in London, which combined the Kultur plugin with some of their own customisations (Warner, 2011), which was presented as a case study at the Kultivate project conference. At Glasgow School of Art another highly visual EPrints repository was developed in 2012 called RADAR, replacing an internal database using Filemaker Pro software (Burgess, 2012).

Figure 4. RADAR, Glasgow School of Art (images © Anna Gordon).

Other arts universities have followed suit, including: OCAD University Open Research Repository from Ontario College of Art and Design in Canada; Central Research and Creativity Online from the Central School of Speech and Drama in London; Falmouth University Research Repository and NUA Research Online from Norwich University of the Arts in the UK.

Multidisciplinary institutions have also incorporated elements of the Kultur model. For example, Goldsmiths, University of Brighton, University of Gloucestershire and University of Sunderland in the UK have added the image carousel to visually enhance their repository homepage, and the University of the West of England has

made changes to incorporate some of the Kultur metadata to describe their practice-based outputs.

UAL's repository customisations after Kultur

In 2012, two years after the launch of UAL Research Online (UALRO), the university enlisted the help of its researchers to evaluate the service it provided for them. A deliberately diverse group of researchers was selected for this exercise, including: a historian of fashion, whose research outputs are always text-based; a fine artist who makes no text outputs; a photographer whose work is published in large illustrated books; a filmmaker; and an early career researcher. The researcher group had different levels of engagement online ranging from 'digital residents' to 'digital visitors' (as defined in White and Le Cornu, 2011), and others who were very uncomfortable with using digital tools at all. Scholarly Communications staff spent at least an hour with each researcher, observing as each one deposited an item, noting where difficulties occurred and where the deposit flow was counterintuitive, and encouraging unstructured discussions about their views and needs, inspired by the deposit process. This project, a continuation of the user-focused survey methods of the Kultur project (Sheppard et.al. 2008, Sheppard and White 2009) produced many insights into the diversity of users' needs, and the sources of their frustrations, and inspired UAL's post-Kultur customisations.

UAL: Simplification

The strongest message received from this exercise was for simplification. Researchers were being asked for too much information, and were expected to make too many

choices between uncongenial options. The response to this was to remove as much metadata as possible, reducing the number of mandatory metadata fields to six (type of work, title, date, creator, college affiliation, and subject). The Kultur project had devised a list of possible item types, the choice of which governed the subsequent metadata requested during the deposit process: this list was reduced by nearly a third. Obscure import and export formats were also removed. Researchers wanted more guidance after logging in, so a new page was created for logged-in users to start from:

Figure 5. 'Getting Started'.

Some of the feedback received during this project contradicted the conclusions of the Kultur studies; the division of the metadata fields across several pages was discouraging, for example, and researchers asked for it to be fitted on one page. The labels used for basic metadata, while familiar to information science professionals, needed to be explained clearly. Most of the standard EPrints help texts had not been rewritten during the Kultur project, so these were revised to remove terminology and examples specific to science, technology and medicine, and to translate into straightforward English.

Researchers almost unanimously asked to remove any 'request a copy' buttons which allow requests for items to be sent directly to researchers, as these were felt to be onerous and, in the case of non-text outputs, difficult to fulfil.

UAL: Support for staff profiles

The Scholarly Communications office at UAL has a close relationship with the university's research support office. As one of the motivations for developing the repository was to reduce duplication of effort in recording and sharing data, records from UALRO are harvested by the research support office to fill online staff profiles. A

radio button was added to each record in UALRO, allowing the self-archiving researcher to select outputs for inclusion in his/her research profile.

UAL: Projects

Like the other specialist repositories for arts and design, however, UALRO has had difficulty being responsive to the way artists conceptualise their outputs. Unlike in science, technology and medical fields, in which a project is usually a defined, funded enquiry, and whose outputs consist solely of journal articles, artists and designers don't always draw boundaries between granular research outputs. An artist may work on a thematic investigation for several years, producing many outputs during this 'project'; the corpus of paintings, events, sketches, seminars, and exhibitions feels intuitively like one piece of research. It can be difficult for the repository manager to pull apart this body of work into individual research outputs as required by repositories, while still retaining the coherence the author desires.

The current solution in UALRO to the problem of projects has been to allow a free text field for 'Project', which sees some use, but is of limited use in retrieval due to variable spellings, and the sporadic use of acronyms. Use of the Shelves for EPrints plugin may be a response to this, allowing researchers to designate their own Project Shelves, to which they could add individual outputs and activity (Francois, 2013).[1]

UAL: Future customisation

UALRO will never be 'finished'. Improvement of the visual sophistication of the repository interface is always of primary importance to researchers in arts and design

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[1] The Kultivate Project Containers plugin (West, 2012) can also document the relationship between projects and individual research outputs.

(see Gray 2009). UALRO has recently been reviewed by a user experience expert, which will lead to improvements including a redesigned landing page.

Figure 6 A re-designed landing page for UALRO.

Researchers need more control over their online items, without sacrificing the necessary quality control and editorial oversight; unlike published texts, art objects do not stop evolving after they become publicly available. Researchers need to update existing items as their work continues to be included in exhibitions, their films are screened at festivals, and so on; they need to be able to automatically request (and instantly receive) the return of a repository item to their workspace, followed by automatic reminders to re-deposit the item in a timely fashion.

Figure 7. A film in UALRO, with many screenings.

The JACS scheme for subject classification that is included in Kultur has caused frustration for users; it includes very minor specialities (blacksmithing, glassblowing) but excludes important areas of fine art practice, such as performance art and installation, and stifles innovative work. As the Kultur group discovered, however, there is no other standardised subject classification that offers adequate coverage for arts subjects. The utility of this laborious, resource-demanding classification is being evaluated, as UALRO's analytics indicate little use of this field, with most users discovering items via results from search engines which index the entire text.

UCA's repository customisations after Kultur

In 2014, similar customisations were undertaken at UCA to update the repository and encourage greater take-up of self-deposit by arts researchers. Since its launch in 2010, the repository has grown to hold 1527 items with 35% being practice-based outputs.

Interestingly, this doesn't mirror the ratios submitted by UCA to the last two national research assessments (60.6% in 2008; and 54% in 2014), indicating there may be a disproportionately higher take-up of the repository by theory and text-based research. Furthermore, only 50% of outputs have been self-deposited in the repository by researchers themselves with the remainder being uploaded by a repository manager.

The evidence for further repository customisations was gathered through semi-structured interviews with three repository managers at the University of the Arts London, Glasgow School of Art, and Goldsmiths, University of London; as well as a case study written on the Royal College of Art's repository (Warner, 2011); and anecdotal evidence from academic staff using UCA Research Online.

This was supplemented by existing user research undertaken for similar open access resources hosted at UCA, including the user survey for the Jisc-funded Enhancing the VADS Image Collection project (2008-9) which received 349 survey responses; and research conducted for the Jisc-funded Zandra Rhodes Digital Study Collection (2011-13), which included interviews with twelve academic staff and a student focus group.

UCA: Continually updated visual design

A common theme across all of these sources was the need to continually update the look and feel of an arts repository to suitably showcase the visual research within. For example, one interviewee felt the Kultur slideshow should be updated as it no longer reflected current trends in web design, which often foregrounds a much larger screen-width image or video. Notably the new UCA website in 2016 has been updated with this image-heavy approach.

Figure 8. UCA website, 2016, with large, screen-width video on homepage.

When asked what they would improve about the VADS collection, a number of survey respondents also commented on the small size of the thumbnail images on the search results pages. This was described as being, 'a bit outdated compared with other image-searching databases' and too cluttered and crowded with text. Similar feedback was received from the student focus group about the small size of thumbnails of the Zandra Rhodes dresses. Therefore, the thumbnail images on both VADS and UCA Research Online were increased from 90 pixels to 120 pixels on their longest side, and a more comprehensive redesign of the repository is also being considered.

Figure 9. New image thumbnail size on 'browse' view, UCA Research Online (images © Magdalena Odundo).

Figure 10. Old image thumbnail size on 'browse' view, UCA Research Online (images © Amanda Couch).

UCA: Simplify and streamline deposit

Another key finding was the need to modify the deposit workflow and metadata in order to make the process simpler and quicker. UCA academic staff are often balancing their research practice with multiple roles including teaching and course management, often at multiple institutions on fractional contracts, and self-deposit needs to be clear and efficient.

Anecdotal email evidence shows a number of staff didn't have the time required to get to grips with the detailed metadata requirements of the repository. As one stated, 'I am bogged down with working on our new course document as we have a validation coming up … as well as marking and teaching!...I have had to update my CV for the new course documentation…I have highlighted the elements that you might be interested in.' As another writes, 'pressure of work means I am struggling do this in the

required time frame…is there any support e.g. a way I can send info and someone else uploads?'.

Therefore, the number of item types, metadata fields and workflow stages in UCA Research Online has been condensed, and all non-mandatory fields have been made into collapsed fields to reduce the length of the form. This echoes a number of the modifications undertaken by UAL Research Online in 2012 and RCA Research Online in 2011, which also sought to simplify the deposit process.

Figure 11. Non-mandatory fields as collapsed fields, UCA Research Online.

Item types that were removed included: 'experiment' and 'dataset' which are more common to the sciences; 'patent' which had not yet been used; and 'teaching resource' which is out-of-scope. The additional workflow stages developed through Kultur were merged into a single page called 'details', and the separate stage for selecting either 'art/design' item or 'text' item was consolidated into one list of item types.

The default page once logged into the system was changed to a simpler, custom made version, with just the necessary links to 'upload item' or 'edit item'. The import options (from sources such as PubMed, DSpace and EPrints XML) aren't relevant or recognisable by arts researchers, so have also been removed from view. On the public user interface, the option to export in various formats (such as Dublin Core, JSON and CSV) has also been hidden for the same reason and to give a clean aesthetic.

UCA: Staff profiles

An earlier modification that took place in 2011 was the adoption of the 'Kulturised' MePrints plugin in UCA Research Online, which had been developed through the eNova project to provide a visually appealing interface for arts researcher profiles. This

plugin provides each researcher with a dedicated profile page with their research statement, research interests, professional affiliations, and other information, a profile photo, and links to their research outputs in a slideshow format. As one interviewee reported, the use of profiles and esteem is a useful driver for encouraging researchers to deposit outputs in the repository and to keep their dedicated profile page up-to-date.

UCA's new website, developed by the University Marketing team in 2016, has expanded on this concept to include profiles for all professional staff including librarians, careers advisors, technicians and academics, with the outputs from the repository displayed within relevant profiles using the EPrints JSON export.

Figure 12. Staff profile for Lucy O'Brien on UCA website.

Figure 13. Links to Lucy O'Brien's repository outputs on her staff profile.

UCA: Targeted advocacy and support

Real-world use has shown that the Kultur project needed to go further in modifying the EPrints software to engage arts researchers, and that much more specialist support and advocacy is also needed. The tangle of issues around the elusive definition of arts research; the relatively recent recognition of artistic practice as a mode of research; as well as the greater intricacies around ownership and IPR, continue to cause confusion and hindrance to arts deposit. As one researcher wrote, 'just about to fill out the online database however I am not sure if my activities as a designer qualify or not, unsure if I can contribute'. There is also some ongoing misunderstanding about what constitutes an 'output' for practice-based works, for example, researchers sometimes upload reviews of their work by others, or residencies that they have been awarded, which is useful contextual information but not usually an 'output'.

The UCA Library & Student Services department has tailored repository promotion and advocacy to attempt to unpick these particular complexities and grey areas in the arts. For example, the question of 'What is a research output?' is answered in repository literature and presentations, including a new 'Mini Guide to Open Access at UCA', webinars on UCA Research Online, and online FAQs. The department has also developed further specialist advice on the many and varied IPR issues raised by arts deposit, including a new guide to the use of 'Images in E-theses'.

Metrics, mandates and management

Despite their primary roles in providing open access to research outputs, and management and preservation of digital outputs, repositories also provide opportunities for research management, and the collection of data for evidencing the impact of research. As funders and government move towards the adoption of open access as the standard in scholarly communication, with increasing requirements for open access to funded research (see for example the policy of the Higher Education Funding Council for England, recognised as a 'game-changer' within the UK repository landscape), have raised open access significantly up the institutional agenda.

Since the Kultur project, the imperative to collect research management information for the Research Excellence Framework (REF), and annual monitoring at UAL and at UCA, have also driven a number of bespoke changes to arts repository metadata. Although these data collection exercises can somewhat eclipse the positive message of open access and the sharing of research for the public good, they have nonetheless greatly increased the number of deposits. In the case of UCA, an internal exercise to prepare for a Research Degree Awarding Powers (RDAP) application has increased deposits by over a third. At UAL, the alignment of UALRO with the annual

Planning, Review and Appraisal process for academics has significantly increased deposit post-REF2014.

There is resistance in the arts and humanities to the use of metrics as an indicator of reach and impact: “views that the impact agenda is problematic are found across all disciplines but are perhaps strongest in the arts and humanities where it is felt that it is impossible to be able to show the variety and depth of impact of the work in those fields.” (Wilsdon et.al, 2015, p. 48; see also Thelwall and Delgado 2015). Studies have shown that the traditional citation analysis applied in science, technology and medicine needs adjustment to be viable for arts, humanities and social sciences (Hellqvist 2010, Linmans 2010), and bibliometric databases used in citation analyses have poor coverage for the arts (Linmans 2010, Leydesdorff et.al. 2011).

It may prove to be the case that impact in arts research is best captured using altmetrics: tracking reach through shares over social media, and reviews and mentions in mainstream media. UAL is piloting the use of Digital Object Identifiers for research outputs in arts and design, including non-text research outputs, in order to enable tracking and recording of reach and impact beyond traditional bibliometrics.

While these approaches are developed, institutional repositories can provide institutional stakeholders with valuable quantitative evidence for the reach and impact of research. Combining data from IRStats, an EPrints plugin, with selective use of Google Analytics allows institutional stakeholders to build an internally coherent package of metrical indicators that can be tracked through time; this package is of great value in the absence of adequate external, international metrics.

Summary

For disciplines in the creative arts, which do not primarily communicate through the journal article, and indeed often lack formal digital publication of research outputs, the institutional repository is the only way to achieve formal open access to research. However, without sufficiently-customised repository software, it is challenging to engage researchers so that they deposit their work, to adequately showcase this practice-based research, and to make the work adequately discoverable by external users. An institutional repository in which all research in arts is categorised as the research type 'Other', is not successfully providing open access to its scholars, and must address the needs of its arts researchers.

The Kultur project was a pioneer in its field that has paved the way for a number of specialist arts institutions to start up their own research repositories, and for multidisciplinary institutions to enhance their existing repositories to enable arts deposit. Ten years on from the project, this paper has brought the work of Kultur up-to-date with in-house customisations at the first two arts repositories at UAL and UCA, as they have continued to evolve and mature in response to user feedback.

Although these modifications have been conducted independently at the two universities, there are many areas of commonality and key learning points between them, including:

- simplification of the deposit process;
- adjusting terminology to accommodate creative arts practice;
- ongoing modifications to keep the interface visually appealing and fresh;
- and re-use of the data for staff profiles, internal audits and REF.

It is hoped that this paper will provide a key reference for any institutions seeking to undertake work to address the under-representation of the arts in open access

research repositories and that it will also act as a catalyst for global collaboration and networking in this area.

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