



National Museums Online Learning Project

Final report



Late 19th century Japanese futon cover © Victoria and Albert Museum, London

May 2009

Contents

Summary	3
Introduction	6
1. Institutional boundaries and partnership successes	9
Partnership successes	9
Knowledge sharing	9
Boundary challenges	11
Federated searching	12
Institutional influences	14
2. Creative Spaces and its early reception	18
Introduction	18
Research methods and data generated	19
Context: social media and cultural content	19
Reading the Creative Spaces	21
Early responses to Creative Spaces	33
Conclusions	36
3. The WebQuests: a critical and visual analysis	39
Introduction	39
WebQuests in context	40
Research methods and data generated	40
Reading the WebQuests	41
Pedagogical design and content: questioning, searching and creativity	50
Conclusions	56
4. Project futures	59
Statement of Intent and evaluation	59
The future of the partnership	60
Opening up the project	62
Developing the federated search	63
Enhancing the social dimension	65
Future research	65
In conclusion	66
Endnote: research dissemination and knowledge transfer	68
Bibliography	70

Summary

The National Museums Online Learning Project (NMOLP) has been a £1.75m initiative funded by the Treasury's Invest to Save Initiative, and sponsored by the Department of Culture, Media and Sport. Led by the Victoria and Albert Museum, it is a partnership between nine national museums and galleries – the British Museum, Imperial War Museum, National Portrait Gallery, Natural History Museum, Royal Armouries, Sir John Soane's Museum, Tate, The Wallace Collection and the V&A. By creating online learning environments for children and adults structured around the digital image collections of the project partners, the NMOLP aims to increase levels of user access to partners' digital collections, to draw in new audiences and to forge change in the ways in which museum users engage with and learn from digital collections.

Running over the period 2006-2009, this is a project which has successfully delivered on its core objectives, developing innovative online learning environments for school children (WebQuests) and lifelong learners (Creative Spaces). It has tapped into the social media paradigm shift and has driven forward, within the museum sector, a vision of the genuine value of digitality to museum education. It has provided new ways of engaging with museum digital content online, and has shown how the digital riches of the national museums' archives can sit at the heart of the experience of learning. It has also opened new horizons for the national museums in terms of the possibility and achievability of effective partnership working across the sector, and it has established the viability of federated searching across multiple national museum online collections.

This report summarises research findings from the final stage of the research conducted by the University of Edinburgh team, who have worked as research partner to the project over the period 2007-2009. This research has been, by the project partners' request, focused on the user experience of the project's outputs and the broad social, educational and technological contexts within which they are embedded.

The aim of this report is not to provide detailed comment on known technical or operational issues with the project's output; rather it is to provide a rich descriptive and analytic view, based in the data, of its contexts, form and early impact. This aim is played out across the four main sections of the report:

1. Institutional boundaries and partnership successes
2. Creative Spaces and its early reception
3. The WebQuests: a critical and visual analysis
4. Project futures

A very brief summary of each section is given below.

1. Institutional boundaries and partnership successes

The project's major successes are perhaps those which are least visible to those beyond the project and beyond the sector. While the public outputs – the Creative Spaces and the WebQuests – each have their strengths, the major advances made by the project are in the effectiveness of its

partnership working across national museums and in the expression of this partnership in the form of the federated search across all partner collections.

While the partnership aspect of the project has been both significant and potentially influential, the general sense among stakeholders has been that its *digital* concerns remain to a large extent peripheral. In a sectoral culture which generally prioritises conventional practice, partners perceived innovative digital projects like this one as remaining a marginal concern at institutional level.

Despite inevitable compromises in terms of the project outputs, the NMOLP has been invaluable in driving the sector forward across multiple fronts not only in terms of partnership working between institutions, but also in its success at promoting the advantages of ‘joined-up thinking’ across the sector, and its understanding of the deep and essential *value* of digitality to museum education. However, significant challenges remain in continuing to advance these issues at institutional and sectoral level.

2. Creative Spaces and its early reception

Creative Spaces are clearly driven by a vision which is concerned with openness, creative user engagement with digital collections and the ‘permeability’ of institutional boundaries. However, they also work – perhaps inevitably – to neutralise the riskiness of this vision in a number of ways: in the relative inflexibility of the structure of the application, in the decisions which have been taken around copyright and search functionality, and in the prominence and content of the videos.

The way the issue of copyright has been handled is, depending on one’s perspective, either a major achievement or a major problem with the Creative Spaces site. From a partnership point of view, the agreement of nine national museums to a common approach has broken new ground and paved the way for future collaborations. This approach has, however, to an extent been unable to take account of the new ways in which learners expect to engage with digital objects and collections, as an analysis of the early online reception of Creative Spaces shows. This early reception among users and sector ‘insiders’ has recognised and celebrated the project’s successes, while also raising several critical points concerning the user experience of its output.

3. The WebQuests: a critical and visual analysis

As with Creative Spaces there have been some compromises with the design and build of the WebQuests. For Creative Spaces, these have in general been prompted largely by institutional structural and policy issues – to do with copyright, technical interoperability, institutional identity concerns – converging on the project. With the WebQuests, the compromises have perhaps been more to do with external factors – a general culture of closure and constraint in school online learning and a requirement to deliver a resource immediately usable and understandable by teachers, alongside a lack of available resources for managing and moderating a social dimension to the resource.

The context of constraint, control and over-structuring we have highlighted, in previous reports, as characterising much school online education has been, to an extent, played out in the final design of the WebQuests. The quality and power of the examples and images chosen from the collections for use in the WebQuests is outstanding, but they are used in the context of a learning resource which has a structural tendency to privilege linearity, closure and textually-informed modes of meaning-

making. This constraint seems to be at odds with the original vision of the WebQuests, and the views on their ideal functionality expressed by many of the stakeholders. Further, the development among learners of critical web skills, while a key aim of the NMOLP, has been restricted in the final design of the WebQuests by the limited functionality of the federated search, and the extent to which the search itself tends to be marginalised within the WebQuest pedagogical design.

The WebQuests have nevertheless made significant advances in terms of the project aims. They do encourage children to engage with digital objects in new ways, some certainly help teach children to take a critical approach to the reading of images and objects, and they without doubt increase awareness, among those using them, of the national museums' online collections.

Project futures

The NMOLP has been an externally-funded project of a fixed term of three years' duration, and thus resourcing for its further development and continuation is not assured. Yet the opportunity to learn from and build upon this project's significant achievements should not be lost. In this section, we outline the areas which emerged in interview with partners as those most likely to inform the future legacy of the project. These include:

- the future of the partnership
- opening up the project outputs – particularly the federated search – to other museums
- building 'federated search 2.0'
- enhancing the social dimension of the project outputs

The report ends with an overview of some possible areas for future research, and with a summary of our dissemination activities as research partner to the project.

Introduction

It is almost as if...museums are learning to be comfortable with heterogeneity and chaos again. With the age of standardisation and automation behind it (and the flagstones of interoperability in place), collections management today can with confidence...be unpredictable, inconsistent and personalised once again. (Parry 2007: 56)

A landmark project

The National Museums Online Learning Project has been both ambitious and visionary. It has made significant advances in progressing thinking within the sector relating not only to the deployment of social media in museum education and ways of learning through digital objects, but also to the pragmatics and possibilities of partnership working and cross-institutional collaboration among the national museums.

In a sense it has been a landmark project, successfully bringing together nine institutions in an exploration of how digitisation and social media can best advance a radically new approach to museum education – one in which users are asked to partner in the creation and distribution of cultural content, and in which collections take a central place in nurturing critical and challenging pedagogies within schools. It has represented a political impetus not only for partnership, but also for greater public involvement in the interpretation and collation of our cultural heritage.

The challenges of this project have been intense. It has had to develop two quite different and in themselves intricate outputs (the WebQuests and Creative Spaces), and it has had to do this not only within a very rapidly-shifting technological context, but also within a uniquely challenging and highly complex partnership, drawing together nine institutions with different cultures, information systems, policy orientations, priorities and copyright frameworks. It is to the credit of the partners and the project team that – in just three years between 2006 and 2009 – they have managed to deliver not only on almost all of the project's original objectives¹ but also on additional outputs and gains, such as the ground-breaking federated search and the unique quality of the partnership.

The focus of this report

It is within this broad understanding of the complexity of the project and its many successes that this report is written. Its aim is to explore our early understanding of what this project might have achieved, the nature and design of its outputs, and how its successes might be extended and sustained. As the WebQuests and Creative Spaces launched only weeks ago, it is too early to be able to report on their longer term organisational and metrical impact – this will be covered by the formal evaluation of the project, to be commissioned later this year.

The research conducted by the University of Edinburgh over the last two years has been, by the partners' request, focused on the user experience of the project's outputs and the broad social,

¹ see the National Museums Online Learning Project: Project implementation plan. http://www.vam.ac.uk/files/file_upload/24864_file.pdf. Date of access: 12 May 2009. pp.5-9.

educational and technological contexts within which they are embedded. As Russo (2009) has commented, interpreting the success of social media projects through web site metrics and quantitative measures of user engagement can be deeply problematic and can also have a tendency to be too focused on *organisational* value rather than *user* value. We need, she says, 'new methods for understanding the user experience and new ways of relating to individuals and the on-line "crowd"'. For Parry, web site metrics are useful, but the real challenge remains 'for museums to explore (and keep pace with) how the on-line museum culturally fits into the everyday lives of its users and potential users' (2007: 98). Our research throughout the project has aimed to contribute toward this richer understanding of the nature of the online user, their experience and expectations, and the educational and digital-cultural contexts of their use of museum web space.

This final report continues this focus on the user, taking the WebQuests and Creative Spaces separately in considering the nature of the project's output, its early reception and the contexts of its use. In considering the successes of the project, however, it is not enough simply to look at its most obvious and public outputs. It is the gains which are invisible to those outside the sector which perhaps constitute the project's most important advances. This report therefore also takes a little space to consider the nature of the partnership, and the perspectives taken by project stakeholders on this aspect of the project. Our view is that it is this which has been one of the project's most significant successes – and which most clearly holds promise for its longer term legacy.

The nature of the research

The detail of our approach to generating data is given in the relevant sections of this report. To summarise, however, we conducted this last phase of our research (over the period June 2008–April 2009) in the following ways:

- interviews with 25 key individuals: partners, resource writers, the central project team and the contracted developers (we refer to these uniformly as 'stakeholders' in order to preserve anonymity)
- observations of the WebQuests in use within four schools – two secondary, two primary (these are the same schools in which we conducted interviews for the stage 2 report on WebQuest contexts of use)
- interviews with 17 school pupils and their teachers (4) post-observation
- a critical review of the early reception of Creative Spaces in the blogosphere and relevant online mailing lists
- a critical and visual analysis of the WebQuests and Creative Spaces.

We would have liked to have further explored early users' experiences with Creative Spaces through interviews, but a delay of some months in the launch of the site meant that this was not feasible. As we write, project output remains emergent – the Creative Spaces site is in beta awaiting further technical input in response to its early reception and testing, while a number of the planned WebQuests are in process and not yet publicly available. In a project of such complexity, this staging of the release of output is entirely understandable. The aim of this report is not to comment on or summarise known technical or operational issues with the project's output – rather it is to provide a rich descriptive and analytic view, based in the data, of its contexts, form and early impact.

This aim is played out across the four main sections of the report:

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4. Project futures

We end with a brief summary of our own dissemination activities and the publication and knowledge transfer activities we have undertaken during our period as research partner to the project.

1. Institutional boundaries and partnership successes

Partnership successes

The NMOLP has been characterised by boundaries – by their constraint and their (partial) dissolution. Dividing lines between institutions, between museum and user and between the ‘material’ and the ‘virtual’ have all been approached, negotiated and challenged. The broad success of the partnership perhaps stands out, in this context, as the project’s most significant gain.

While the partnership dimension was clearly central to the political impetus and original vision of the project, it was not particularly foregrounded in the original objectives or anticipated benefits. The project objective which most clearly referenced the partnership angle simply stated that it would be used ‘as an opportunity to make more consistent quality of provision across the national museums and galleries websites’. Yet the benefits of the partnership extend well beyond this: the project has demonstrated that, with a driving vision and able project leadership, national museums can collaborate successfully on complex online initiatives, institutional agendas can be complementary, and knowledge-sharing in the context of museum online education is both possible and highly valued.

While, as one partner commented ‘it’s really just nice to see nine national museums working together, for a common purpose rather than for their own interests’, the nine partner institutions have, inevitably, each brought their own organisational understandings, resources and ambitions to the project:

to be honest, there’s so many vested interests from all the different museums ...it’s been really difficult, because it’s nine different museums, each with their very much own kind of agendas, er, vision about what this is supposed to look like and the outcomes, what the outcomes will be.

project stakeholder

The negotiations that have resulted are part of what has made the NMOLP so impressive. As we will demonstrate throughout this report, the project’s engagement with complex and contentious issues such as copyright, user-generated content, and the position of museums in the educational landscape have involved partners in much more than just the design and delivery of learning environments. For many partners, the quality of the project core team and the direction provided by the project manager, Carolyn Royston, has been key in turning a potentially paralysing complexity into a successful partnership. As one partner put it, ‘The main, the core team I think are fantastic and I’m so pleased to have worked with all of them. And I think everyone would say the same. It’s been so impressive.’

Knowledge sharing

In discussions with partners, it was clear that one of the most valued aspects of the project has been the way in which it has enabled the sharing of expertise and resources across institutions. The objective to make provision ‘more consistent’ across the partner web sites has been met in the sense

that the project has enabled the smaller partners, in particular, to engage with technology on a scale which would have been impossible without the existence of the NMOLP. The following comment is typical of the view taken by the smaller museum partners:

It did bring us into something that was way, way ahead of what we could possibly ever think about on our own. So, obviously if you're the Tate and you're already doing a lot of the stuff to do with virtual learning, then it's a smaller step, but for us it took us from way, way back into things that were, you know, light years beyond what we could ever afford. It's – it's broadened our horizons.

project stakeholder

In a sense, the further 'behind' in terms of social media development the museum, the more it had to gain from involvement in the NMOLP. As one partner put it:

For a relatively small direct cash input from the partner we get a share of a budget of 1.75 million, access to nine project staff, umpteen consultants, you know. The maths for us are phenomenal. I mean, they're good for all the partners, but they're better for some partners than others because of their level of web investment up to being involved in this project.

project stakeholder

This knowledge and resource sharing aspect of the partnership is one which has a personal as well as an institutional aspect. 'One main benefit', as one partner remarked, 'is that we now have really quite a close-knit working relationship and so you know each other personally as well as knowing that that person is the head of websites at whichever museum it is, and so I think that's been a very good thing'. In the face of doubts expressed by some partners about the formal sustainability of their future involvement with the WebQuests and Creative Spaces (see 'Project futures'), there was a desire at least among the smaller museums that relationships built over the period of the project would continue:

Yes. Yes. If we can keep the relations with other partners, then hopefully they won't leave us out in the cold if suddenly something goes horribly wrong and [our] stuff just isn't working, then hopefully we can call on our new friends.

project stakeholder

It is not simply at the level of technical support and knowledge exchange in relation to technological development that the value of the project has been felt, however. For some partners, it has provided the opportunity and space to take a more reflective stance toward their professional practice as educators:

I'll be honest, I was a bit negative at the beginning of this project because I just saw it as an additional thing to do which, at the time, I could see its potential but I felt I had enough on my plate and, and what I found actually is that I really enjoyed going to the meetings I enjoy having conversations about learning and about some of the issues that, that this project has made us think a bit more deeply about, which

sometimes we gloss over because we've got so much to do. And yet we are meant to be educators and think about learning theory a bit more. So I think from that point of view it's something I've enjoyed about this project, it's made me thoughtful about how we write, what we write, what we produce.

project stakeholder

Boundary challenges

The partnership has without doubt been of significant value to the partners both personally and in terms of individual partners' institutional remits. The extent to which it has been an agent for sustained, internal institutional change is perhaps more debateable, and is a theme we will turn to shortly. However, the success of the partnership stands as an exemplar for the way in which institutional boundaries might be rendered more permeable by cross-institutional collaboration, particularly within the context of the digital.

For it is so often activity within the digital domain which inclines us, across multiple areas of social endeavour, to think in terms of 'opening out'. As Parry (2007) has commented, in the context of the history of the web within museum practice, the kinds of technological change we have seen in recent decades challenge the notion of where the boundaries of cultural institutions lie:

Another challenge to the entrenched notion of the circumscribed, site-specific museum was the way the web appeared to scatter all that the institution had worked so hard to aggregate and frame. The modularity of networked hypermedia appeared to break down into individually discoverable chunks of data, the collections that museums were meant to bring together as a meaningful whole. As the web...developed, so, unsettlingly, emerged the notion of a museum literally turned 'inside out'. (95)

The conceptual 'turning of the museum inside out', the potential disaggregation of (digital) collections and resulting challenges to institutional identity are all, understandably, causes of anxiety in some quarters. For many of the partners, however, they represent something positive – a move to reconceive the work of the partner museums in terms of a single national collection:

The way things are divided up are very arbitrary really. Yes, one has all this armour, but one of the other partners has lots of portraits, and another one has silver and ceramics associated with them, and it's simply because of the way nationals were set up, it was this sort of stuff goes in this sort of place. And... you know, it's transformed when you do have the opportunities to create search engines that will go across a federation of collections... this is really about breaking down the arbitrary way that museums and galleries and many libraries and other institutions were set up.

project stakeholder

It's so obviously the right thing to do. The national museums all hold different elements of what is effectively a huge national collection. They're not different, you know, they are the property of the public and the public future as well as ours... We

happen to do the looking after bit at the moment but that's a very small part of the whole thing. And I think it, it starts bringing that idea of what rather gratuitously gets called the national heritage. But, you know, in reality it's not all separate, it can all be brought together and that's a huge plus... obviously that's a digital world, but it does bring disparate things together.

project stakeholder

Federated searching

Within this digital context, the desirability of having seamless searching across multiple online collections seems so obvious that it is easy to fail to see the very real and sometimes almost intractable difficulties involved in enabling such a thing. In technical and cultural terms, the digital erasure of boundaries between collections is a huge challenge – even when the technical details are sorted, we still have to grapple with the cultural challenges involved when the identities of individual institutions, and the boundaries between them, become less salient than the smoothness of the global user's progress through their archives. As one of the partners commented, 'I suppose you could say that once you do federated searches, then the collection becomes the significant thing, rather than the institution'. The NMOLP has had to negotiate this issue very carefully – the spreading of the WebQuests and Creative Spaces across the nine partner web sites, preserving institutional 'branding' under the umbrella of the NMOLP, might be seen as a compromise, but it was for this project a pragmatic way of managing these complex technical, political and institutional identity issues.

One partner described how this approach has advantages for the institution above that taken by, for example, Europeana – a pan-European project which aims to bring together the cultural collections of the continent via an expansive federated search:

The weakness, the conceptual weakness of it is that you have to go to an obscure Europeana.eu. And the museums aren't really going to promote that. Why would we be interested in promoting another website when we've got our own and we have to report our visitor figures to DCMS? You know, we're not going to be interested in marketing that. Whereas the great thing about the federated search is that it works on all the websites. So it's that kind of distributed, federated... thing which I think is [pause] it's great because we can promote it.

project stakeholder

The federated search stands almost as a metaphor for the kind of boundary negotiation which has defined this project. Certainly, the search functions as an exemplar of the kinds of challenges this project has had to face.

Searching across the partner collections was not an original aim for the project but it rapidly became, in the words of one stakeholder, 'apparent that it was something that was needed'. If one of the most significant successes of the project is the way in which it has demonstrated that effective collaboration across national museums is possible, the federated search stands as a digital representation of that partnership, and is likely to constitute one of its longer-term legacies:

I think [pause] doing the federated search has been a real development that has benefits way outside this project and has made it possible for all sorts of other things to happen. And that, that certainly isn't going to go away and it's not going to fade away because there are many people who have an interest in developing that.

project stakeholder

Many partners, in interview, saw the federated search as being one of the means whereby the legacy of the NMOLP might be assured, seeing one possible future for the project as being to bring more national museums and galleries within the embrace of the search:

I think it will get to a point after a while, when people will be just, 'well why only these nine museums? Why isn't the National Gallery here? Why isn't the National Museum of Scotland?'

project stakeholder

The problem, of course, with the federated search is that it is a unique and hugely significant gain on the part of the NMOLP, but it is one which will not be recognised by the majority of the users of the WebQuests and Creative Spaces. Users cannot see, and are unlikely to be interested in, the complex negotiations and technical work going on behind the scenes of the project. They are likely to take the search for granted, or only to see the flaws evident in the final product:

We could have more features and, and have better searching [pause] but, you know, our compromise was about the fact that we've got the nine museums in a federated search and *no one else* has ever done that. And we've done it at a very low cost, low resource way, and that's [pause] that's a compromise. You know, if we were, doing something more sophisticated we'd never finish it in the proper time of the project. So again, that could be an expectation that people will, will go, 'oh wow, I can search across nine collections' and think it's like a Google-type search and it isn't. You know, it's not got that level, anywhere near that level of sophistication.

project stakeholder

To understand the compromises borne out in the federated search is to understand something of the complexity of the issues the NMOLP has had to negotiate. One stakeholder describes these vividly. In using the federated search:

you're essentially searching across an object's title and description. And that was a compromise. In an ideal world, you would want to have access to all the fields, you know? The year it was acquired, the artist's name, history, whatever it is. But we, when we looked at the collections from the different partners [pause] some had really amazing data, and some didn't. Some were created by curators and they were never intended for public viewing. So it's not really appropriate or even useful to display some of that information on, on this website. So we simplified it by saying OK, a title, and a short description, and a thumbnail is what we are going to use. And [pause] that kind of simplicity allowed us to quickly proceed with it, otherwise it, we didn't, wouldn't have finished it in time because pulling in, and having an advanced

search would have required a lot more work.... And a lot of the small partners don't even have a web department, let alone developers that can, you know, help set this up.

project stakeholder

In his excellent analysis of the history of museum computing, Parry (2007) draws our attention to the failure of the museum sector to lay the foundations for consistency between their information systems, despite a recognition of this as being desirable which has extended back 40 years. 'Why', he asks, 'are we still having these same conversations that we began in the late 1960s?' (1). The answer is of course complex – for Parry it includes an 'under-estimation' on the part of museums of the resources and skills needed to take collections into the digital age, badly-designed and volatile technological environments, a failure to prioritise digital developments and, above all, an historical and fundamental '*incompatibility* between the concept of a museum and the concept of a computer' [italics in the original] (2). There has also been an historical lack of joined-up thinking across the sector in terms of the design of information systems – one resulting in the kind of development problems described above – and, perhaps more fundamentally, the continuing dominance within the sector of epistemologies which privilege the material object and the physical museum over their digital and online counterparts.

Despite the compromises, the NMOLP has been invaluable in driving the sector forward across all these fronts. This is true not only in terms of technological 'build', but also in its success at promoting the advantages of 'joined-up thinking' and its understanding of the deep and essential *value* of digitality to museum education – an understanding which lay at the heart of the original vision for the project as it was conceived by Gail Durbin and David Anderson at the V&A back in 2005.

Institutional influences

Yeah, it's cultural. Institutional change needs to happen and I hope it will move in that direction, but I've got no way of knowing.

project stakeholder

We end this first section of the report by turning briefly to the extent of the NMOLP's influence in informing organisational change within the partner museums. This is an area in much need of further research, in the evaluation stage of the project and beyond. For, to turn once more to Parry's (2007) historical perspective, institutional change in the face of the 'digital turn' is a key issue for the sector:

For many institutions (which may have taken a hundred years to develop their missions, organisational structures, documentation, exhibition philosophies), it would be difficult, when confronted with the exponential growth of the web, to reshape and redistribute themselves to accommodate this new workflow and this new ontology. For many museums it would require not so much for them to adapt as fundamentally to re-sequence their DNA. (95)

As we have seen, the project has been influential in terms of its contribution to a broad, conceptual understanding of the place of digitisation and social networking within museum education. It has also been a significant influence in terms of the personal connections it has forged between partners

and its impact on partners' understandings of cross-institutional engagement. But to what extent is the NMOLP likely directly to forge change in policy and practice within its partner institutions in this 'fundamental' sense? It is perhaps on this question that the 'boundary blurring' which characterises the project meets its limit point, as the project comes up against what appears to be a quite intractable barrier, within the partner museums, determining which practices remain core and which are considered marginal.

For one stakeholder it is, at this time, too early to be able to make a fair estimation of this kind of impact – 'Because it hasn't really been up and running and fully demonstrable to the rest of the staff, for example. Nor has the museum had the opportunity to gauge and experience the reaction of people outside the institution to the project either. So it is – in a way it's the kind of baby in the cupboard really just now.' However, an anecdote given by one stakeholder in interview demonstrated effectively how an awareness of the work of the project within the partner institutions, and a willingness to engage with its fundamental concerns, is essential if its advances are to be sustained and extended beyond the personal:

I met up with the technical manager of a website for one of the other partner museums the other day and [pause] I asked him a question about social media and he turned to me and he said, 'I'm sorry, I don't understand that term, I've never heard it before'. And when I said to him, 'Well, [pause] that surprises me, is it not something that you want on your website?' He said, 'Well, you know, if it's about ...' – um, I had been talking about user generated content – 'We don't really want that because we haven't sorted out our own website yet.' And then when I said to him, 'But you're going to have this in the next three months because the National Museum Online Learning Project is bringing it.' ... He looked slightly surprised, then recovered himself and said, 'Oh yes, but I didn't think that was anything to do with me, that's the education department.' I kind of, I was left a little bit breathless after that. And I suppose what it demonstrated to me is how skin-deep some of this stuff is and how heavily it is relying on the role of individuals here. And in those circumstances, if one of those individuals goes away and gets another job, it may prove very difficult to maintain even this, what we've got, at a functioning level, um, let alone develop it a great deal.

project stakeholder

A few project stakeholders were able to identify areas of organisational change prompted by the project. One saw a direct influence on their institutional strategy relating to e-learning and user-generated content, another saw it as having encouraged education professionals across the partner museums to think 'more digitally', while another saw some systemic change resulting from the way in which the project encouraged cross-departmental collaboration between education departments and web teams. Others saw the partnership aspect of the project as having an effect at the highest levels of the partner institutions:

I think where it might have more impact is actually at a higher level, that nine museums have managed to work together, nine national museums. Which, you know, potentially gives an opportunity for more funding for other partnership

projects, [pause] because 'look, actually they can do it!'. So I think, at that level, it's... for the directors, then it's... like an exemplar of 'yes, yes we can do it'.
project stakeholder

While the partnership aspect of the project was held to be significant and potentially influential, the general sense was that its *digital* concerns remain to a large extent peripheral. In a sectoral culture which generally prioritises conventional practice (offline exhibitions, footfall, 'real' gallery re-development, publication), partners perceived innovative digital projects like this one as remaining at the margins:

But I think the problem, I think I figured out what the problem is. [pause] It's that I actually think the web is still very peripheral at a senior level in these institutions. It's still about the exhibitions, it's still about people coming through the door. And the web is seen as, you know, a way of supporting that rather than a, a medium in its own right. ... My, my feeling is that [pause], is that in terms of priority this is quite low.
project stakeholder

It's not at the core. You know, if this was a big exhibition, uh, that was a marvellous success, then it would be touring around the world. Then there would be another twelve months and there would be another, you know. But it's, it's not seen as core activity.
project stakeholder

Our curators aren't generally tremendously web aware and their priorities...are exhibition, publication, and then a long way down the list, digital. That's not true for absolutely everybody... but we're still a long way away from thinking of our curatorial staff as very web aware.
project stakeholder

Change is very slow. And you know, the people that are in the positions to make those changes aren't people who, you know, are possibly engaged with social media at that level. I think everybody, everybody likes to talk about it, everybody's interested in it but [pause] you know, it's not really happening.
project stakeholder

Where concerns are held to be marginal, funds are unlikely to follow, as another stakeholder made clear:

And even if we could keep a partnership together, there isn't £100,000, £200,000 sitting there to be used for the next stage of the project, even.
project stakeholder

Yet in the broadest sense, as this first section of our report has tried to make clear, this project has been about thinking through some fundamental concerns relating to the role of cultural institutions in the digital age: the productive challenging of institutional boundaries and identities; the

engagement with new, global user communities; and the potentially radical impact of new, social ways of participating and learning online. The significant advances made by this project deserve to be nurtured, resourced and extended – as one partner commented, the stakes are high:

This is about recognising that in the 21st century, it may only be a small part we play but it is an active part that we need to think hard about and say, you know, 'if we make the right contributions, we're a force for the good and we make the community stronger; and if we withdraw from it then we've only got ourselves to blame if we're marginalised and on the edge.'

project stakeholder

We will return to some of these themes in our final section on possible futures for the project. First, however, we turn to the project outputs, offering an overview and analysis of Creative Spaces and the WebQuests and their early reception online and in schools.

2. Creative Spaces and its early reception

Introduction

Creative Spaces – originally ‘Creative Journeys’ – has been perhaps the most conceptually challenging and volatile strand of the project since its original conception. In the NMOLP’s original vision the Creative Journeys were conceived as a location for user-generated content around the individual user’s inspirational connections with museum collections. Visitors were to be encouraged ‘to record their own creative journeys through photography, video, drawing and writing’ using different online media, and to make these journeys publically available (NMOLP, no date: 3). This vision – for an online, multimedia user space with a tendency toward the social – was prescient at the time (around 2005), as the ‘web 2.0’ paradigm shift was beginning to gain mainstream attention, and social networking was gathering strength as one of the most significant media developments of recent years.

The position of Creative Spaces – riding this wave of paradigmatic media shift – has made it the most vibrant, visionary and arguably most problematic aspect of the project. As social media rapidly became ubiquitous, associated web cultures changed, and the context within which Creative Spaces development took place became highly volatile. It became difficult for the project partners to envision what this application should actually *be*. The primary aim was to encourage use of the partners’ inspirational digital collections. But was it to be organised and structured around a vision of the individual user’s creativity and development, as it was originally conceived? Or was it to be primarily a social space, one which meshed with emerging patterns of user participation online and with the emergent social ‘norms’ of online networking? In its final form, Creative Spaces has something of both.

Aimed at adult learners, it consists of content created and curated by users drawing on digital objects from the nine partner collections, incorporating social tools for commenting, sharing content and making connections. User-generated content on the site falls into three categories: favourites (collections of museum objects the user has bookmarked), notebooks (blog-like, chronologically ordered entries consisting of text, images, sound, video and links) and groups (collectively generated notebooks around particular, user-generated themes), as well as the facility to comment on others’ notebook entries. The site launched in beta in late February 2009. At 3 June 2009, there were 582 Creative Spaces user accounts, 240 notebooks and 74 groups. A proportion of the early content has been created by partners, but many newer accounts appear to belong to users without professional connections to museums.

Groups and notebooks created so far have been on a wide range of themes, including: boxes and cases, 1880s fashions, “green” architecture and design, Pre-Raphaelite art, social reform, Jane Austen, doll houses, Balkans cultural heritage, images of jars of biological samples, 16th century monastic life, refugees, lines in art and music, cats, children and childhood, Salisbury street names, Mediterranean history and ideas, and lovers. Several notebooks have as their starting point a collection of the creator’s ‘favourite things’, either from one particular museum or artist, or across the collections. Others focus on a particular geographical area (Wales, Edinburgh, Italy). Popular

groups include: 18th century fashion, self-portraits, Jane Austen, and a group dedicated to ‘tea related objects and images’.

Our aim in this section of the report is to maintain our focus on the user contexts of the project as described in our introduction. After a brief overview of the broad context of social media use within and beyond the museum sector, we will explore – through critical analysis of the Creative Spaces interface, interview data from project stakeholders, and a reading of its early reception on the web – the ways in which Creative Spaces positions museum users, how it enables their active participation in learning and communication through the digital collections of the partners, and how it contributes to a new understanding of the role of the museum user as an active participant in the creation and distribution of cultural content.

Research methods and data generated

As part of this third stage of research into the NMOLP, we conducted interviews with 15 stakeholders focused wholly or in part on Creative Spaces, generating and analysing 337 pages of transcripts of interviews held between December 2008 and February 2009.

We analysed in detail the design and interface of the Creative Spaces site, as well as the videos and other partner-created content. We also evaluated the early reception to and feedback on the site, analysing more than 80 pages of data from weblogs, discussion boards, and user feedback groups and web sites. Ideally we would have had the opportunity to further evaluate the early user experience of the site through interviews with users, but the timescale of the launch and ongoing issues with the site’s development have meant this did not prove possible.

We are aware that the site remains in beta at time of writing, and that there are a number of bugs and usability issues still to be resolved. Our aim in this section is not to focus on these known faults and unresolved issues, but instead to examine some broader themes and issues affecting the conception and delivery of Creative Spaces.

Context: social media and cultural content

The Creative Spaces strand of the project has, as already discussed, been developed within the volatile context of an increasingly ‘social’ web, and a growing concern with the role of user-generated content within and beyond the museum sector. These are engagements which bring with them new or heightened concerns about authority, authenticity, moderation, and the nature of museum learning. Drawing on Manovich’s (2001) ‘principles’ of new media, Parry draws our attention to the *variability*, the mutability and volatility, the openness to ‘editing and reversioning’ of digital media (Parry 2007: 12). Such instability in the digital object, both in its form and in its appropriation by ubiquitous and volatile social networks of users, presents the museum with both a challenge and an opportunity:

For *variability* interferes with the authorship and authority of the curator, and yet allows new narratives to be told and new voices to be heard. [italics in the original]
(Parry 2007: 102)

Many institutions are engaging with this challenge positively. Along with the NMOLP, there are precedents and other examples which promise to be equally rich. User-tagging of digital objects, for instance, enables users to construct ‘folksonomies’ which sit alongside more conventional ways of classifying and searching collections. Where the Powerhouse Museum in Sydney have been pioneers in this (Chan 2007), other institutions have found imaginative ways to draw users in to the business of tagging – the Brooklyn Museum, for example, invites users to play an online game called ‘Tag! You’re it!’ which works around the notion of competitive tagging among users.² Such initiatives are apparently simple, yet inviting users to co-classify digital object collections goes to the heart of the way in which museums understand the nature and purpose of the archive, and the role of users in its compilation and ordering.

The Commons on Flickr project³ likewise demonstrates the richness to be gained by allowing users to publicly discuss, network around and contribute to digital collections. The final report of the Library of Congress Flickr Pilot Project provides many examples of the ways in which user interactions and commentary around images has enhanced and enriched them (Springer et al 2008).

Where user-tagging at the Powerhouse and the Brooklyn Museum takes place – like Creative Spaces – within the parameters of the museums’ own web provision, Commons on Flickr interactions occur within a relatively long-established social media environment which is external to the participating museums’ own web services. Yet all these innovations are clearly legitimised and contained by the institutions which initiate them. Other manifestations of the ‘liquidity’ of digital objects and associated networks are not so authorised. Flickr also contains many examples of images taken illegally from within museums and galleries, while other communities are wholly structured around user appropriation of cultural artefacts. Worth1000⁴, for example, an online community of digital artists, holds regular competitions in the digital manipulation of images. The ‘ModRen Sequels’ competitions ask artists to take famous paintings and re-craft them to show the scene five minutes ‘after the brushes are down’. Re-crafted images include Da Vinci’s *Lady with an ermine* being bitten by her pet⁵, Hopper’s *Nighthawks* after the drinkers have gone home⁶, and El Greco’s *Knight with his hand on his breast* picking his nose⁷.

Similarly, the ‘reverse image search’ web site, TinEye, shows an image flow of 150 retouched Mona Lisas found on multiple personal web sites, image sharing sites, MySpace pages and weblogs – Mona Lisa Santa, Mona Lisa alien, Mona Lisa Michael Jackson among many, many others⁸. Playful and messy, engaging and lacking in reverence, these examples illustrate the way in which the user-learner has, in this context of volatility and ‘liquidity’, a level of control over the digital object which is far in excess of their ability to alter its ‘real’, material counterpart. ‘Notions of fixity or closed authorship in the museum’ (Parry 2007: 107) are challenged as the (digital) object enters the hands of the user.

² http://www.brooklynmuseum.org/opencollection/tag_game/

³ <http://www.flickr.com/commons>

⁴ <http://www.worth1000.com>

⁵ <http://www.worth1000.com/emailthis.asp?entry=410483>

⁶ <http://www.worth1000.com/emailthis.asp?entry=410461>

⁷ <http://www.worth1000.com/emailthis.asp?entry=410533>

⁸ <http://tineye.com/widgets/display?mona>

Our first report explored in detail some of the tensions provoked by museum engagement with digital images, user-generated content and social media, and these tensions remain apparent in the finished Creative Spaces site. Creative Spaces attempts simultaneously to draw on user-generated content, allowing users to create and bring in content from anywhere on the web – including ‘chaotic’ sites like Flickr and Youtube – while at the same time containing museum digital objects within a safe, museum-controlled environment. This section of the report will revisit and extend some of the early themes we identified, looking through the lens of the Creative Spaces site itself at: moderation, control and the voice of authority; risk, chaos and unknowableness; and searching and copyright challenges. We will then evaluate the early reception of Creative Spaces among early adopters and museum professionals, and draw some conclusions about the impact and legacy of this strand of the project.

Reading the Creative Spaces

‘Relegation of the vernacular’?: moderation, control and the voice of authority

While Creative Spaces clearly represents a move toward the mainstreaming of user-generated content and online user interaction on the partner web sites, this move has been to an extent constrained by conventional institutional expectations and understandings of the role and place of the expert and the amateur. Haleboua (2008) claims about user-generated tagging of collections that the apparent ‘empowerment’ of users through tagging can actually function to mask a more conventional understanding of expertise and its role within the museum:

one could argue that by tagging a piece of art, the public gains the sense that they own or possess that art, that they connect directly with it, that by naming it, they are brought closer to it. Applying the language of a non-expert to objects that have been allocated to the realm of the expert can be read as the opening up of the social space of the museum in a way. Yet simultaneously, the vernacular is being relegated to online space. ...Certain claims are being made about public knowledge of art and the language and depth through which the public can describe these works. According to Steve [the museum social tagging project], the value of the vernacular is limited to stating what you see, in single, elementary terms, and helping others like yourself, ‘find what they’re looking for’; so the curatorial voice seems to actually be validated rather than permeated. (8-9)

To what extent does the Creative Spaces notebook invite participation within similarly carefully defined limits? On the one hand, users are free to do much more than simply attach keywords to an object – they can create a substantial set of content of their own around a museum object or set of objects. On the other hand, user-generated content and tags from the Creative Spaces site do not feed back in to the museums’ databases or curatorial web spaces. Nor, as we will see, is Creative Spaces content intended, at present, to be published by the partners on other parts of their sites.

What significance or weight, therefore, does Creative Spaces user-generated content carry? When museum objects are initially added to a notebook, the museum-generated title and description come

with it by default. These can be edited later, but the message is clear – the object comes coupled with its own expert interpretation. Parry notes that:

even in the hypermedia moment, the emblematic coupling of text-and-image, text-and-object, has been resilient. At times, the frames of reference for building digital content in museums are, it seems, defined by the established practice of 'label writing'. (2007, 77)

When asked whether Creative Spaces content would be published in other parts of the museum or museum web sites, most partners were surprised by the question. They expected that Creative Spaces would be advertised elsewhere, but not that the content of the site might inform or permeate other museum spaces. In part this might be a reflection of the continuing relative low priority of the web and online learning within the museum already commented upon.

Nevertheless, partners understand that the Creative Spaces site has the potential to reach a wide and new audience, and the need to manage the voices being heard there thus becomes more urgent, and more fraught. There are also clearly issues of authority and power involved, and as we discussed in the first report, one of places these issues are most visible is in the discussion and decisions being made around moderation of user-generated content. One stakeholder put it plainly:

I think it's about control, you know, controlling your audiences and what you let them do. You know they want, they all like the idea, but when it really comes down to it, I mean, they pre-moderate everything here. [pause] Because the risks are too high and there are people in these institutions who say, 'no, why are we letting people comment on our things?'. You know, we are in some way [pause] lessening the value of our knowledge or, you know, sort of tainting [pause]. Or that 'we don't want our, our website full of a load of rubbish'.

project stakeholder

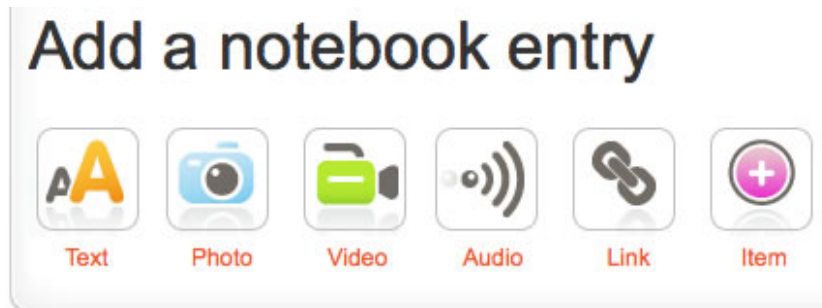
This linking of the value of museum knowledge or content to its exclusivity is a move which also comes up in relation to copyright, as we will see in the next section. However, other partners believe that Creative Spaces can be a force for attitudinal change within the museums:

I think there's a natural tendency for museums as institutions, to fear the involvement of the public because it might dilute the authority of the museum in some way, shape or form. And I understand that because [pause] the museum needs to have authority, but also it's got to be acknowledged that museums do not present the whole truth because nobody can. What we do is to present aspects of history, of our subject matter, through the objects in our collections. But, you know, it is only ever a starting point, it's always only ever a starting point and people have to figure things out for themselves. So I think Creative Spaces is the right approach.

project stakeholder

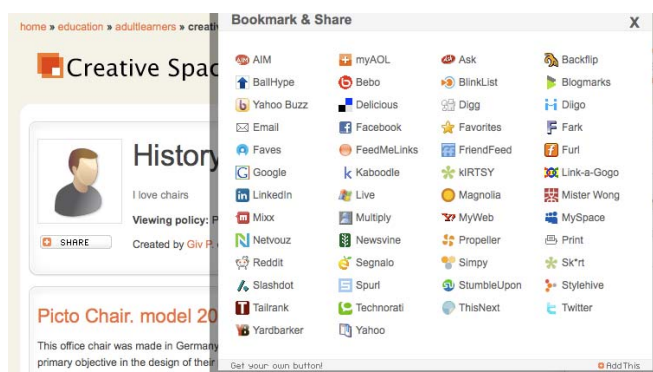
The perceived need for control described above has also been inscribed to a certain extent in the design of Creative Spaces. For example, though there are some weblog-like features of the

notebooks, such as the reverse chronology of the entries, unlike a typical blog tool, users must decide when they begin a notebook entry what it will be. Item, image, video, audio, text, and link are separate categories of content:

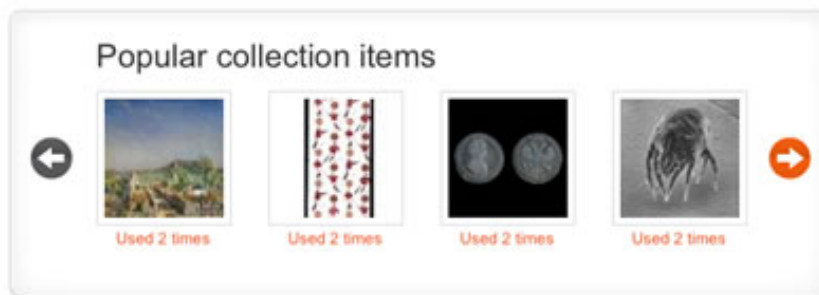


If text is chosen, then no images or media can be added to that entry. Media can be labelled and described but not discussed or combined within the same entry. Museum objects can only be selected from existing favourites, not searched for on the spur of the moment within the notebook structure, emphasising planning and de-emphasising spontaneity. These features create clear boundaries between different objects, types of content, and types of activity. Searching is one kind of activity, while notebook creation is another. The potential messiness that a paper-based notebook (or a blog) would have – its ability to elide ownership and attribution in particular – is limited by the structure of the Creative Spaces.

Sharing is similarly constrained and structured by the preservation of a sense of ownership. Any public notebooks on the site can be shared by anyone using email, Facebook, Twitter, Delicious, Digg, MySpace and many other social sites. However, sharing is at the level of the notebook, not individual posts. Objects (items) cannot be shared independently of the whole user-generated notebook, and there is at present no user-level RSS feed (for example) so that visitors could subscribe to a notebook they found interesting, or notebook creators could push their Creative Spaces content out to the web. The implication here is that the user’s content is for sharing, but not the museum’s content, and not outside the boundaries of the site itself.



However, other aspects of the site suggest a more freewheeling, spontaneous space – the list of automatically-generated popular collection items in the top left corner of the home page welcomes visitors with a glimpse of user-generated content, and sets the stage for the rest of the site:



Clicking through from these objects shows the notebooks or groups that have included them, and users are immediately drawn into the social side of the site in this way – and it is this social aspect of the site which perhaps constitutes its greatest richness. As we argued in our first two reports, ‘unknowableness’ and serendipity are part of what users want and expect from online encounters. Early, prototype Creative Spaces users told us how much the social aspects of the site meant to them, and one of the key themes we explored in our first two reports was around the learning benefits of sociability and community. The groups, the comments and the friendship links that the Creative Spaces site encourages will add enormous value to the content and structure of the site. It is also in this area that partners most positively embraced a certain loss of control, and dependence on trust in what is commonly described as the user ‘community’:

People start fretting about moderation and premoderation, but that’s just not workable with the amount of resource that we have ... so many people want to contribute and you have to allow a community to moderate itself. ... I would guess that most of the museums somewhere in their mission statements or current strategies are talking about being an open and engaging environment. Well, you just have to follow that through if you actually say it somewhere. I made the point when I was talking to some colleagues recently about, you know, the need for moderation or not, that actually the risk, the public relations risk, if you like, to the museum of a contentious debate on a controversial issue, on a Creative Spaces notebook, is far, far less than the risk we run every single day when we open our doors to the public at 10 o’clock.

project stakeholder

Risk: “Tis impossible to separate the chance of good from the risk of ill’

In almost all of our final interviews, partners emphasised the ‘unknowableness’ associated with the Creative Spaces post-launch. Social media and user-generated content is still seen, at the end of the project, as being as chaotic and unpredictable as it was at the start, and partners were reluctant to commit themselves to any particular vision of who would come to the site, what they would do there, or whether Creative Spaces would prove popular. Related to this, several partners saw the real work of Creative Spaces (unlike the WebQuests) as coming after the launch, despite it being unclear to many how this would be managed:

With WebQuests they’ve had the resource writers, they’ve written the content and they kind of, they know where they stand when it goes live and obviously with

Creative [Spaces], we don't know. It's [pause] it's actually when the application goes live and is launched that's when our, our real involvement begins. Because we just don't know what's going to happen in our communities.

project stakeholder

The potential resource implications are recognised but not necessarily planned for:

I think that we're kind of waiting to see what the uptake will be like and what the content is going to be like, before we actually start, you know, stipulating exactly how we're going to, how much resource that's going to take. 'Cos that's another issue for us. I mean hopefully the uptake's really big, but obviously that, that could mean more resources are needed to sort of moderate the content, or at least check the content.

project stakeholder

In part, this uncertainty is related to a sense that the project is breaking new ground and that the partner museums are in an unusual position in that respect. This project is, as one stakeholder put it, 'uncharted territory'. The Creative Spaces community is unlike other communities 'out there', partly because of its government policy-influenced agenda:

when you want to build a community you concentrate to the people that really are interested in that type of community. What you don't do, is you don't try to open to everybody. And I think this is the problem with government stuff, because it is funded by government... And, um, usually they have these things like 'access to everyone'.

project stakeholder

Despite these uncertainties, however, many partners welcome the riskiness of the Creative Spaces. As one stakeholder commented, 'it's a great opportunity for people to be able to use museum collections in the way that they want to. Everything that certainly we've done so far web wise, is incredibly, you know, wrapped in cotton wool'. This sense of excitement was evident in much partner talk about Creative Spaces, and represents a real shift in attitude from the early stages of the project. We might describe these partners' attitudes as embodying 'radical trust' (Fichter 2006) in a genuinely open way. All trust, including the radical kind, exists *because* of risk and vulnerability – 'where there is no vulnerability there is no need for trust' (Tschannen-Moran and Hoy 1998: 337). As Baier (1986) puts it:

to understand the moral risks of trust, it is important to see the special sort of vulnerability it introduces. Yet the discretionary element which introduces this special danger is essential to that which trust at its best makes possible. To elaborate Hume: "Tis impossible to separate the chance of good from the risk of ill.' (239)

However, whether institutional cultures can adapt as readily as individual partners is, as we have seen, a different matter. One stakeholder described the 'climate of fear' within which the project operated:

They're all so scared. They're scared of copyright, they're scared of abuse, they're scared of... You know, it's all in a climate of fear. There's no trust whatsoever. There's no sort of, you know, we're going to open this up and, hey, let's see what happens.

project stakeholder

Another acknowledged the same problem, but took a pragmatic stance that, at the same time, describes the journey that many of the partners themselves have taken:

interviewer: And so what, what are the implications of having user generated content?

project stakeholder: Uh, people in all the partner museums will freak out. [laughter]
And then they'll just need to get over, they'll just need to get over themselves.

The gap between individual partners' attitudes to risk and those of some of their institutions is a profound one in terms of the design and development of the Creative Spaces site. In writing about children's museums and multiculturalism, Doron (2008) argues that:

museums need to be a site where hospitality is...enacted as a singular event...where the museum does not serve as the silent third term that neutralizes risk. (80)

While Creative Spaces are clearly driven by a vision which is concerned with openness, user ownership of digital collections and the 'permeability' of institutional boundaries, they also work – perhaps inevitably – to neutralise the riskiness of this vision in a number of ways: in the relative rigidity of the structure of the application, as we have seen, in the decisions which have been taken around copyright, as we will see shortly, and in the prominence and content of the videos, to which we now turn.

The creation of the 28 Creative Spaces videos represented a significant investment of time, money and energy, and they are prominently placed on the Creative Spaces site.



The videos were integral to the project's original implementation plan, and were intended to serve several purposes, including inspiring people to use the partner web sites, helping promote and publicise the project, and providing examples of creative and inspirational uses of museum objects and spaces.

According to partners, there were additional benefits to the video creation in terms of the impact of the project within partner institutions. The NMOLP has been, as we have seen, at times low profile in

terms of its internal institutional impact. Several partners mentioned that some internal interest in the project was sparked by the filming arrangements and permissions, and the presence of film crews in the museum. However, the extent to which the videos make Creative Spaces seem more accessible to museum colleagues may be the extent to which they are concerned with themes which are already foregrounded in terms of museum priorities: the privileging of the physical collections over their digital counterparts, and of traditional models of museum learning over online innovation.

The videos focus on what are described on the front page of the site as ‘exceptional people’ and their personal creative processes. There is little in the way of connectedness or community here – rather, the videos are about creative links between individuals and objects or museum spaces. In addition, there is an immediate division produced between ‘exceptional people’ (insiders who have videos made about them and special access to the museum, its collections, experts and resources) and Creative Spaces users, who are neither exceptional nor insiders, and who have access ‘only’ to the digital objects and online social networks.

The videos perhaps help to contain the risk associated with more challenging ‘outsider’ uses of Creative Spaces. This could support some less confident web users to participate in what they may see as a ‘safe’ and institutionally-controlled space (see for example the portrait of Lindsey in the stage 2 report). They are also, as one early user commented, ‘engaging and provide a warmth and narrative that is – as yet – absent from the rest of the site’. (E West, BBC Culture Show blog, 26 March 09)⁹

However, the videos are also, perhaps, complicit in the de-privileging of the digital which we have already seen as constraining and marginalising online innovation within the sector. The material, ‘real’ museums are firmly centre stage here. Almost every video is filmed within a museum, and speakers emphasise the value, uniqueness and importance of the material collections and buildings:

To stand in front of the objects is absolutely wonderful...
promotional video

Look at this architecture. Look at that fantastic ceiling. ... Look at these stairs... you know that when you go up them you’re going to see something really special.
Tony Robinson video

Even those video subjects who are based at a distance from the collections, like Peter Lyon in New Zealand, stress the power of being co-located with objects, in contrast to ‘second best’ digital versions:

⁹ <http://www.bbc.co.uk/blogs/thecultureshow/2009/03/creative-spaces.html>

More recently I use the internet quite a bit. To actually get my hands on originals is virtually impossible in New Zealand, so I've had to rely on published materials quite a lot. ...It does feel a little bit surreal actually handling an original sword because I've been dreaming for probably 20 years about being able to do this.

Peter Lyon video

As advertisements for the museums, these videos make sense. However, they seem difficult to reconcile with the vision of a digital, dispersed, connected community of museum users, or for the stated purpose of the NMOLP 'to engage new audiences and transform the way they think about and use existing digital collections'.¹⁰ Very few videos make mention of the digital collections of the museums in a positive light, but those that do give a sense of how viewers *could* take inspiration from the videos in their Creative Spaces experience:

This has had a great impact on my work... I'm able to do a virtual residency, an online residency at the British Museum without having to come in every day, write hundreds of letters, I can just simply access the collection online, which has made me think I can work anywhere in the world and work in this way with collections and I, it's absolutely, um, mindblowing. It's obvious but not obvious.

Jane Freud video

'No results for Twombly': the federated search and copyright challenges

The development of the federated search has been, as we have already argued, one of the major technical and partnership achievements of the NMOLP. However, decisions and compromises have had to be made in its development and functionality, one of which has been the exposure of a limited set of the museums' digital objects to it. The end result is somewhat confusing for users, as early reception to the site has shown. This is a problem because much of the site's success depends on the quality of the searching experience. Partners decided, in taking on board some user testing which was done in connection with the development of the site, to support and encourage a staged interaction with the site. The first thing users are expected to want to do is to search and bookmark objects:

I think initially people will go for the search, and that will be either because they're looking for something specific for a research project or for a creative art project.

project stakeholder

This expectation is pragmatic (it is easier to bookmark an object than to write a blog post), but it also relates to the project's remit to be as accessible as possible to a wide range of people, including those who might not think of themselves as 'creative':

You could just as easily use it as a tool for research. [pause] And if you weren't an artist or you weren't creative, you could do stuff, or you were a school teacher you could use it as a tool. And a lot of that relies on like how good the search is really, so

¹⁰ http://www.vam.ac.uk/about_va/online_learning/index.html

that's in a way the sort of slight unknown.

project stakeholder

The Creative Spaces site lacks transparency about what is and is not included in the search results. Some objects which are on the partner museum sites, and accessible through their search engines, are not available within Creative Spaces. Sometimes partners gave a justification for this, such as a perceived need to balance the offerings from the larger museums with the smaller collections:

We have now, as of yesterday, we've now got a million, over a million objects online, but we haven't put those on the federated search. We've put our smaller collection, the highlights of around 5000. Because we wanted to tie into the federated something that we were kind of roughly equal.... Yes, we wanted to be equal.

project stakeholder

However, this is a partnership issue and not necessarily a user-focused one. From a user's point of view, receiving relevant search results, and finding objects they expect to find, will be far more important than getting an even spread of results from across the partners. Nor are the limits of the federated search made clear on the site. For users who are looking for a particular object or image, this can be frustrating, damaging trust in the site, and creating a chaotic experience:

I tested the searches and I'm guessing that only parts of the collection databases are currently being searched as I got different results for a search on 'neolithic' in Creative Spaces and on the British Museum website. As a user, I'd appreciate more information about what exactly is being searched and if more will be added soon.

K Fernie, Museums Computer Group (MCG) list, 5 March 09¹¹

I searched for Sheffield Landscapes (hoping to get a small selection of objects with Sheffield *and* Landscape relevance, but it seems I get all the objects with Sheffield and all the objects with Landscape. so I deduce an 'or' search. what I want is an 'and' search - how do I get that? using and makes no difference, using " or ' doesn't seem to work either, and I can't find the instructions.

T Crockford, MCG list, 4 March 09

Caitlin Rowley, in one of the Creative Spaces videos, talks of learning about the artist Cy Twombly from the Tate web site, yet a search for Twombly in the Creative Spaces search produces no results.

¹¹ Please note that all excerpts from the Museums Computer Group mailing list are used by permission of the authors.

No results for *Twombly*...

Suggestions:

- Make sure all words are spelled correctly
- Try more general keywords
- Try different keywords
- Try fewer keywords
- Some items are under copyright protection and cannot appear here

From taking on early user feedback on Creative Spaces, partners are aware of this need to clarify the contents of the federated search, and to move toward including more of the collections within the search where possible. However, there are difficulties in this which go beyond issues of partnership politics and choice and into copyright and licensing territory – an area which is much trickier to negotiate.

In 1999, Beamsley wrote a pessimistic article outlining the dangers associated with digital museum objects on the web, including: threats to the integrity of the image and its contextual data, loss of control, failure to enforce copyright, and loss of authenticity due to a failure to detect corruption of digital information (359). Profound shifts have, since then, accompanied the advent of digital user-generated content and social media in terms of ownership, authorship, authenticity and creativity, and we have discussed these shifts at length in earlier reports for this project. Nevertheless, Beamsley's article succinctly outlines the copyright concerns facing NMOLP partners a decade later, which have had a major impact on the implementation of the Creative Spaces site and the federated search.

The way the issue of copyright has been handled is, depending on one's perspective, either a major achievement or a major problem with the Creative Spaces site. From a partnership point of view, the agreement of nine national museums to a common approach to the copyright issue has broken new ground and paved the way for future collaborations. The project's approach to copyright has, however, been unable to take account of the new ways in which learners expect and want to engage with digital objects and collections. This would suggest that there is still a gap between the vision of the NMOLP and the possibilities its partner institutions can permit. The implications are significant, not only for the usability of the Creative Spaces site, but also in the museum's construction of the agency of their user-learners. Gillespie (2006), writing in a slightly different context (he focuses on digital rights management software and hardware used by the entertainment industry to prevent breaches of copyright) has argued in relation to restrictions built into new technologies and hardware that:

Not only is the technology being designed to limit use, but to frustrate the agency of its users. It represents an effort to keep users outside of the technology, to urge them to be docile consumers who 'use as directed' rather than adopting a more active, inquisitive posture towards their tools. In other words, welding a car hood shut makes a difference not only for what users can and cannot do, but for the way in

which they understand themselves as ‘users’ – whether having agency with that technology is even possible, even conceivable. (653)

The issues of copyright are not clear cut within this project. For some partners, the main issue is that their collections contain works to which they do not own copyright. For others, concerns about image manipulation and authenticity are to the fore. Still others have been able to allow quite wide use of their digital collections. Even within museums with relatively restrictive policies, there has typically been room for some flexibility. For example, when asked about moderation of Creative Spaces, one partner explained the general approach within their institution:

We don't go on Flickr and look for people who took a sneaky photo and ask them to take it down... it's like, well, this is the web. We don't want to be idiots about it like the music industry are.

project stakeholder

However, the NMOLP in general has not had the freedom to approach copyright in such a flexible way. Partner institutions believed they needed to mitigate as much risk as possible by implementing a cautious copyright policy in relation to the project. There may have been other alternatives, had the need to tackle these issues been foregrounded as a priority for the project. As Poole argued in the email list debate about Creative Spaces:

there is plenty of scope within both Copyright and Contract law to permit us to do what we want to do in the brave new open online world... It isn't copyright law, it's how we manage our collections and how we negotiate our licenses, and the scary realisation that some of our family secrets are being dragged out into the public eye by the impetus to provide open access to collections online.

N Poole, Museums Computer Group (MCG) list, 5 March 2009¹²

The ‘family secrets’ Poole refers to include ‘the delicate filigree of “special arrangements” and licensing deals brokered with artists and creators’ and the constraints of ‘commercial content licensing models’, as well as a lack of strategy and documentation in relation to digitisation and recording ownership.

From the end user's point of view, the project's copyright policy has resulted in one of the more controversial aspects of Creative Spaces: the small size of images available to view, store or engage with on the site.

¹² Museums Computer Group archive, JISCmail. <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A1=ind0903&L=MCG>

Found 39 results



[View larger image](#)

WAR INDUSTRY, UI

From Imperial War Museum

Munitions workers smile for the camera in the canteen of a factory, somewhere in England

'view larger image' takes me deep into the museums collection, with no way back (other than the browser button) and the sample I chose has an 'add to list' button, which refers to the original site's list not the creative spaces one.... why are the images so small?

T Crockford, MGC list, 4 March 09

Although users are invited to view each image at a larger size, this opens a new window and takes them to the relevant museum web site, where they are unable to save the full image (if indeed there is one available there). This compromise – that users can view but not bookmark full-sized images through a link provided on the Creative Spaces web site – has been one of the main points of confusion and criticism from early adopters and reviewers of the site, as we will see. More than any technical issue, it is also perceived by some stakeholders as constraining the project:

There are some things that we would have liked to have done that we haven't been able to do [pause] because of non-technical considerations. And that's things like access to images, which is a particularly difficult subject because of the copyright restrictions. And then that, that I think's probably been our biggest frustration rather than it being the technical implementation or anything that's limiting it.

project stakeholder

As a result, one potentially powerful message of Creative Spaces – the permission that museums are being seen to give users to appropriate objects – is somewhat muted. By limiting the size of images on the site to small thumbnails, partner institutions have limited the loss of control over their objects within Creative Spaces. However, the qualified permission users are being granted may push them further away from regulated museum spaces, ultimately resulting, as Anderson (1999) has suggested, in a greater loss of control:

Once data has left the museum and become available digitally, it may be beyond copyright protection, especially in the huge deregulated zone of informal digital learning. (21)

While acknowledging the thorniness of this problem, one commentator put forth a challenge which was echoed by some project stakeholders as well:

Exactly when *are* we going to start questioning these big issues? When will people start standing up and asking why it is that image X which can be viewed in large size on site Y (and also, let's not forget, on Google Images, too) can't be viewed on site Z 'because of copyright issues'? At the end of the day, if the image is on the web, it's on the web – end. ...How do we stand to improve if all we do is defend these things in public but sit around shaking our heads behind closed doors?

M Ellis, comment on 'electronic museum' blog, March 4 2009¹³

This raises an important question about this and other digital projects which are ostensibly part of a larger shift within museums towards more user-centredness and digital engagement. The ways in which partners are able to push forward with copyright considerations in the wake of this project will give some indication of how profound the institutional and sectoral impact of the NMOLP has been.

Early responses to Creative Spaces

A week or so after the beta launch of Creative Spaces, a flurry of messages and blog posts emerged among the online museum computing community, debating the perceived merits and problems with the site, its conception and its execution. Debate was often passionate, both 'for' and 'against' Creative Spaces, and the various and dispersed online exchanges provided some fascinating research data for exploring the early impact of Creative Spaces among this specialist group of 'insiders'. Prior to this there had been a few blog posts about the site – the earliest from 27 February – and they had been mostly positive:

One problem with some online communities is that they focus too much on forums and verbal communication. Other media can sometimes be a more effective way of communicating: video can be a great way to engage some people, others want to express themselves with images or objects. In a museums context this becomes even more important. I may not want to discuss my reaction to an object, but I might want to upload an image of my own as a reaction to it. Creative Spaces lets you do this, and indeed lets you curate your own collection (they call it a notebook) with objects from the collections alongside your own content or content you've got from elsewhere. This is clever, allowing people to react and respond in whatever medium is most appropriate to them.

M Rhodes, Fresh Networks blog, 27 February¹⁴

I particularly like the notebook feature. If you were Darwin, you'd be creating a field notebook and collecting specimens. Here, you can do it, and save it, online. That's terrific public engagement.

S Brophy, Sustainable Museums blog, 1 March 09¹⁵

¹³ <http://electronicmuseum.org.uk/2009/03/04/creative-spaces-justwhy>

¹⁴ <http://blog.freshnetworks.com/2009/02/social-media-diary-uk-national-museums>

¹⁵ <http://sustainablemuseums.blogspot.com/2009/03/watch-uks-creative-spaces.html>

One of the nice things about Creative Spaces notebooks is the ability to add your own content. This is the important bit for me. The ability to augment the museum-supplied content with my own photos, videos, links etc from my own visits is just lovely.

Tom Goskar, Past Thinking blog, 3 March 09¹⁶

One early critical voice, however, commented that:

Few people would doubt the rising power and influence of social networks such as Myspace and Facebook. Millions of people use them to communicate and express themselves. That some of the UK's greatest museums should be represented is clear. It just seems they don't know how to go about it. The answer is not to create their own social networking website... I don't want to use a hundred different accounts across a hundred different sites (even with OpenID). I'd much rather our institutions, once they have seen the need for social networking, to fit it into what I do already.

E Baker, Ed's Blog blog, 1 March 09¹⁷

This criticism – that Creative Spaces is designed to pull users in rather than going to them – is one that emerged again through the MCG discussion and related blog posts:

We're failing to take our content to our users... People want experiences on their own terms, not on ours. C'mon, let's not have another collections portal.

M Ellis, Electronic Museum blog, 4 March 09¹⁸

The contribution of project partners to this public debate has been deliberately minimal, however many have made the argument, over the period of the project, that the pulling power of the museums involved will be strong enough to draw in a community and support user-generated content on the Creative Spaces site. Indeed, increasing 'hits' to the museum web sites and to the digital collections has been an explicit aim of the project. Yet the claim that institutional prestige and profile will be a major 'pull' for users has been contested by some early commenters:

'Connecting with your favourite museums' seems both vague (what does 'connect' mean?) and presumptuous (some of my favourite museums are included, but lots of them aren't).

F Roberto, MCG list, 4 March 09

The major way the offering could improve for users is if it can embrace more collections and focus even more on the user rather than on a cluster of museums. Despite it covering 9 nationals, the search really does feel very thin if you are exploring a particular topic (apart from something very generic such as portraits). Given that the search is so lightweight (Opensearch), it should not be very difficult to apply it to more databases.

B Mackenzie, Cultural Interpretation & Creative Education blog, 5 March 09¹⁹

¹⁶ <http://www.pastthinking.com/blog/2009/03/03/creative-spaces-social-media-and-museums/>

¹⁷ <http://pblog.ebaker.me.uk/2009/03/creative-spaces-museum-social-not.html>

¹⁸ <http://electronicmuseum.org.uk/2009/03/04/creative-spaces-justwhy>

Mackenzie and others made sense of some apparent issues with the site by framing it as a 'learning resource' to be used in schools, rather than by independent adult learners:

If we acknowledge that this was scoped as a learning resource which needs to be mediated by educators rather than a sophisticated piece of web development, it defuses the criticism that this cannot have the same mass appeal as a social network tool such as Flickr.

B McKenzie, Cultural Interpretation & Creative Education blog, 5 March 09²⁰

I think everyone is missing a crucial point – and that is the target audience is likely to be teachers (and the majority of students) who aren't up on 'other other options' and quite possibly have their access at schools *blocked* to the 'other options'.

S Chan, MCG list, 4 March 09

This is, of course, not actually the case, as the Creative Spaces are explicitly intended for adult user-learners and not for formal educational contexts. In part this mis-perception may arise because on the partner sites the links to Creative Spaces are mostly located within the domains of education or learning, and in some cases sit alongside links to the WebQuests. While it might be seen as a problem in some senses, the positive potential of the Creative Spaces site in formal educational environments may be a possible future direction for the project.

As with the WebQuests, Creative Spaces have generated a lot of excitement around museum objects and increased access to and engagement with these in the online environment:

Social networks (Facebook etc) are great for conversations, but there's nothing particularly bound to those conversations except a social relationship. A social media system (like Flickr) gives conversation a focal point. Giving an *object* a social life is profoundly more interesting to me. Dialogue around an object becomes an artifact in itself, and the way people imagine connections between objects often results in profound, original insight about relationships between things over time.

G Oates, comment Electronic Museum blog, March 3 2009²¹

Other museum professionals recognised and praised the partnership work behind the scenes, stressing – as we have done in this report – that the end product needs to be seen in the context of the challenges faced by the project:

i've been at the center of a number of large multi-institutional projects (over the last 20 years), and know what it feels like when someone says 'is that all' when the thing you'd worked on for what felt like ages finally limped out the door. ...so much of getting a project to this point is building understanding and agreement in the

¹⁹ <http://bridgetmckenzie.blogspot.com/2009/03/great-creative-spaces-debate.html>

²⁰ <http://bridgetmckenzie.blogspot.com/2009/03/great-creative-spaces-debate.html>

²¹ <http://electronicmuseum.org.uk/2009/03/04/creative-spaces-justwhy/>

institutions. from a policy perspective, finding a way forward requires negotiation and a level of creativity that's usually never seen on the surface of the finished app. developing that kind of trust and collaboration is essential: it lays the groundwork for the next level of functionality — the one you're demanding — that requires an even broader willingness to take risks.

J Trant, comment on Electronic Museum blog, 3 March 2009²²

However, this was argued by some to be privileging the partnership work over the user experience of the site:

It seems to me that you tend to support an assertion which was made earlier in the discussion, that the real value of Creative Spaces is the effect that *engaging with the project* has had on the organisations involved – their politics, culture, licensing regimes. Thus the project's actual output, a user-facing site, is of secondary importance.

P Walk, MCG list, 5 March 2009

Ultimately, no matter how much effort and progress has been made with internal politics, overheads, negotiations, copyright issues, etc, doesn't it all boil down to one thing though: Is the site any good? In the same way that we shouldn't look at the technology, we also shouldn't say that the project was successful because particular negotiations were, or because a lot of effort was put in.

D Zambonini, comment on Electronic Museum blog, 3 March 2009²³

We are of the opinion that these two positions – celebrating the partnership's successes, and being passionate about the user experience of the project's output – are not mutually exclusive. What is important is that the progress made by the project in taking both partnership approaches and a digital understanding of museum education forward can continue to be pursued within individual institutions and the wider museum community. As Poole suggests:

Let's not miss the achievement of NMOLP here. ...most of us talk about distributed content licensing. They've done it. Let's find out how it worked and build on that knowledge so that we stop holding ourselves back from becoming an effective media sector.

N Poole, MCG list, 5 March 2009

Conclusions

In the *Past Thinking* blog, Tehmina Goskar offers a detailed discussion of the groups and notebooks she has created on the Creative Spaces site. She goes on to say:

Everything that I have described above, I have wanted to do for ages. I have thought about setting up different blogs, forums or utilising existing networks such as facebook

²² <http://electronicmuseum.org.uk/2009/03/04/creative-spaces-justwhy/>

²³ <http://electronicmuseum.org.uk/2009/03/04/creative-spaces-justwhy/>

or flickr but none of these options enabled me to have the direct contact with collections that I craved. ...None of them provided a good space in which I could also get in touch with like-minded people.

Tehmina Goskar, Past Thinking blog, 19 March 2009²⁴

The site as it exists has already provoked not only passionate debate, but also enthusiasm, and it has been successful in making a new kind of space where those enthusiasts can feel connected to collections and objects they love, making links across and between museums in novel ways. As it grows, the interdisciplinary nature of the site, already evident in the range of groups and notebooks being created, will also grow in value to users. The social aspects of the site can support collaborative authoring in the form of groups, and critical discussion and debate. And the ability to start simply, by bookmarking objects, and then work up to more complex kinds of interactions, bringing in external links, videos and images, is a good way to scaffold adult learners to experiment with and learn about digital technologies. In these ways, the Creative Spaces site has met the goals expressed in the original NMOLP plan.

However, since that plan was conceived in 2005, the social and read-write web has begun to move toward a more distributed, user- (rather than destination-) centred model (Siemens and Tittenberger 2009), and from fixed groups towards more flexible networks (Downes 2008) within which users can move in and out of shifting configurations of people and technologies according to their multiple interests and needs. The Creative Spaces site already works on a flexible, networked model, but web users and learners will increasingly expect content to come to them, into their preferred spaces. This will pose new challenges for museums (especially in terms of copyright, as we have already seen), and for the Creative Spaces site. There can still be a role for sites like Creative Spaces, but content created and curated within such sites will need to be able to be fed and tracked outside the site itself, joining a stream of other content 'out there' as well as continuing to be part of a unique, coherent and compelling space in its own right. This is surely a positive way forward for digital content in museums, and one which will be of significant benefit in terms of increased access to collections.

The relevance of Creative Spaces, then, will be not only in how this project is received, developed and supported, but also in how future projects draw from its experiences. As such, its value potentially extends far beyond the nine national museums and the learners who use the site. In the meantime, the possibilities for the site itself remain intriguing. As one blogger put it:

Its a great way to see some amazing pieces. One of my favorite parts about it is the site allows you to search all the collections at once, tag and store items in notebooks and groups, and upload your own images, videos and notes to share creative inspiration with others. ...There is a search box at the top, so for instance, I wanted to check out gowns. I typed in gowns and up popped tons of beautiful historical gowns complete with descriptions! I did the same thing for medieval furniture, it was amazing.

E Knight, History Undressed blog, April 6 2009²⁵

²⁴ <http://www.pastthinking.com/blog/2009/03/19/i-like-creative-spaces>

Putting the power to search, sift, publicly interpret and display objects in the hands of users is an essential step forward for museum education. The longer-term success and uptake of Creative Spaces remains to be proven, and the final Creative Spaces site has – inevitably – been structured to an extent around compromise. However, a beginning has been made that has real potential as a model for the future of online museum education, partnership and participation.

²⁵ <http://historyundressed.blogspot.com/2009/04/museums-collaborate-of-creative-spaces.html>

3. The WebQuests: a critical and visual analysis

Introduction

The National Museums Online Learning Project WebQuests were conceived as a series of learning environments that would support and develop children's digital and visual literacy skills. Where the final form and ethos of the Creative Spaces had been subject to some uncertainty over the period of the project, as we have seen, clear precedents exist for this kind of online learning task; the intended vision and purpose of the final artefacts were to an extent less contested, while the process of their development was clearly operationalised through the work of the team of resource writers employed by the project. The final WebQuests would be enquiry-based, would focus on a central question or challenge, would 'foster creative and critical thinking'²⁶ and would develop children's critical web use.

These aims have currency in the present educational climate, which has seen a proliferation of technologies employed within school and the ubiquitous use of the internet in teaching and learning. Buckingham (2007) warns that 'the internet is now essentially an unregulated commercial medium; while this does not in itself automatically undermine its educational value, it does mean that it can no longer be seen merely as a neutral conduit for "information"' (11). It is increasingly important that teachers and students are able to adopt a critical approach to the use of technology. The vision for this project was that WebQuests would push forward this agenda, alongside the objective to get the digital collections of the partners better-used and to promote positive changes in online pedagogy within schools:

The intention was that we would get more people to use the joint websites of partner institutions and that we would make sure that kids used that stuff critically. So they would go away from this project being more aware and better web users, more critical web users in general. We also wanted to change practice in the schools in order to demonstrate the value of the web to teachers.

project stakeholder

The project's goal was to create 100 WebQuests spanning Key Stages 1-4, and with a cross-curricular/cross-museum focus. Each WebQuest has been explicitly and carefully linked with the English National Curriculum, in order to provide teachers with an immediate, relevant and engaging resource for use in the classroom. In interview, stakeholders (project partners, the project team, the resource writers and the developers) have identified successes in linking the collections, developing the federated search, providing access to engaging and inspiring content, and the development of a flexible yet structured learning approach. For those involved there is a sense of accomplishment and pride in what has been produced, and most regard the WebQuests as exciting, high quality and trustworthy resources for teachers.

Teacher and pupil response and uptake will be a critical determining factor of the WebQuests' success. Although they have not been launched for long enough for a critical mass of teachers to be

²⁶ 'Why Use webquests?' Teacher Resource, available to download from each webquest

using and providing feedback on the WebQuests, there has been a positive and excited response to their initial presentation to small groups of teachers in project WebQuest training workshops.

Not all WebQuests have been available over the period of the research, but they continue to be published and it is anticipated that all 100 will be publicly available by August 2009.

WebQuests in context

In our previous two reports we highlighted tensions within the educational context between innovation and creativity on the one hand, and contexts of constraint and control on the other, perpetuated through a climate of performativity and a culture of risk aversion in relation to internet use within schools. These issues were manifest in the highly structured and controlled physical and virtual spaces we observed, and in a culture of surveillance and monitoring in school online and offline learning space. Alongside this tight regulation, we highlighted within the schools sector the existence of a rhetoric of innovation and creativity and a push toward pedagogy that supported greater critical and creative engagement with the internet. It is this context which has informed the development of the WebQuests, and it constitutes the environment into which they will be received.

Pedagogy that embraces the opportunities afforded by new and emerging technologies remains an important government agenda in the UK. Becta (2008a) recognises the importance of significant investment in ICT and the potential pedagogical developments it may offer. However, it also cautions that pedagogical improvements will not follow automatically from the inclusion and use of such technologies. A recent report on the use of Web 2.0 technologies (Becta 2008b) discusses the delicate balance between promoting and investing in new technologies for learning while at the same time ensuring appropriate e-safety and the monitoring of risk.

While the use of the internet, in particular the emergence of Web 2.0 technologies and children's familiarity with and experience of these in their personal lives, is dominant in current discourse surrounding educational technologies, Becta is also quick to note that it must not be assumed that children have the technical skills to deal effectively with these technologies. The Becta report on the use of Web 2.0 technologies for learning at Key Stages 3 and 4 (Becta 2008c) states quite explicitly that digital literacy and critical skills need to be taught and that teachers 'should be careful not to overestimate learners' familiarity and skills in this area. There is a clear role for teachers in developing such skills' (2008c: 4). The intention and vision driving the WebQuests is therefore clearly in line with current preoccupations and discourses surrounding learning technologies within the schools sector.

Research methods and data generated

The second stage of our research into WebQuests allowed us to look in some detail at the potential contexts within which they will be adopted. In our report we identified key influencing factors for the use of WebQuests in schools: constraint, control and surveillance; the need to develop technical, operational and, most importantly, critical digital literacy skills; and pupil expectations of digital environments.

For this final stage of research, we draw upon data from a wide range of sources. Face-to-face interview was our primary method of data generation with project stakeholders, although some telephone interviews were necessary. Interviews were held with those who had a significant involvement in the development of the WebQuests, and generated over 400 pages of transcript. These included 14 interviews with project partners, five interviews with the WebQuest resource writers employed by the project, and six interviews with other project 'insiders'.

In addition to this, we also returned to the schools we visited as part of the stage two research – two secondary and two primary schools. Three of the schools we visited were rated as 'above average' in their Ofsted inspections, and one was rated as 'below average'. All were located either in Newcastle or Doncaster. Our aim was to use teaching session observations and interviews with class teachers and pupils to gain some insight into the ways WebQuests might be used in schools. Where possible we met with the same teachers and pupils from stage two²⁷. In total we interviewed four teachers and 17 pupils (8 girls and 9 boys), and these interviews generated more than 200 further pages of transcription and notes.

Teachers were given a choice of WebQuests to use with children for the purposes of this research, from a limited range of four options for KS2 (*A Perfect Chair*, *Parklife*, *Dressed for Adventure* and *The Radiant Buddha*) and three for KS3 (*Watch this Space*, *Charles Darwin's Big Idea*, and *The Sikh Warrior Tradition*). Teachers tried where possible to select and use a WebQuest that connected with current curricular work, but this was not achievable in every case. In addition, the presence of the research team in the classroom will, inevitably, have had an impact on teachers and pupils. Nevertheless, the lessons we observed provided very useful insights into the way teachers planned for and incorporated the WebQuests into their teaching, and initial pupil and teacher response to the WebQuests themselves.

Finally, we conducted a visual and critical analysis of the WebQuests focusing particularly on the WebQuests we observed in use – *A Perfect Chair*, *Watch this Space* and *Charles Darwin's Big Idea* – but drawing in consideration of a further 20 examples. We also analysed and referred to a range of ancillary documentation supporting the WebQuests, including the teachers' toolkit, teacher's notes, and other teacher resources on the WebQuest websites. In addition, we attended one of the teacher training sessions offered in March 2009.

The sections that follow use the themes emerging from our visual analysis to structure our review of the NMOLP WebQuests, looking both at their design and interface, and at their content and pedagogical design.

Reading the WebQuests

The aim for WebQuests to be an engaging resource that is inspirational, innovative and critically challenging sits at times awkwardly within the context of constraint, control and over-structuring we have highlighted as characterising much school online education. This is a tension which has, to an extent, been played out in the final design of the WebQuests, and is one that frames our discussion

²⁷ In one secondary school this was not possible due to the change in webquests available for use at that key stage. In one primary school we met with a different teacher, due to long-term staff absence.

of their final iteration. We focus first on the design of the WebQuest interface, particularly considering its visuality – the way in which its composition and ordering works to position learners. We then turn our gaze more briefly to the content and pedagogical design, thinking about the relationship between interface and learning task. These two dimensions, while distinctive and meriting individual attention, also necessarily overlap.

Digital design and the WebQuest interface

A visual analysis of the WebQuests allows us to consider and question the design of the interface and its social and pedagogical contexts. We take a broadly social semiotic approach to visual analysis of the interface, as described by van Leeuwen and Jewitt (2001):

Social semiotic visual analysis provides a detailed and explicit method for analysing the meanings established by the syntactic relations between the people, places and things depicted in images. These images are described as not only representational, but also interactional (images do things to or for the viewer), concerned with the modality or perceived truth value of images, and compositional (for example, positioning images and written text in certain ways). (3)

We also work within an understanding that the location of learning resources on the screen has some far-reaching implications – the modes of meaning-making we bring to bear on such ‘texts’ are qualitatively different from those which operate around their print equivalents. They work *differently*, and it is this difference which to a large extent constitutes their value:

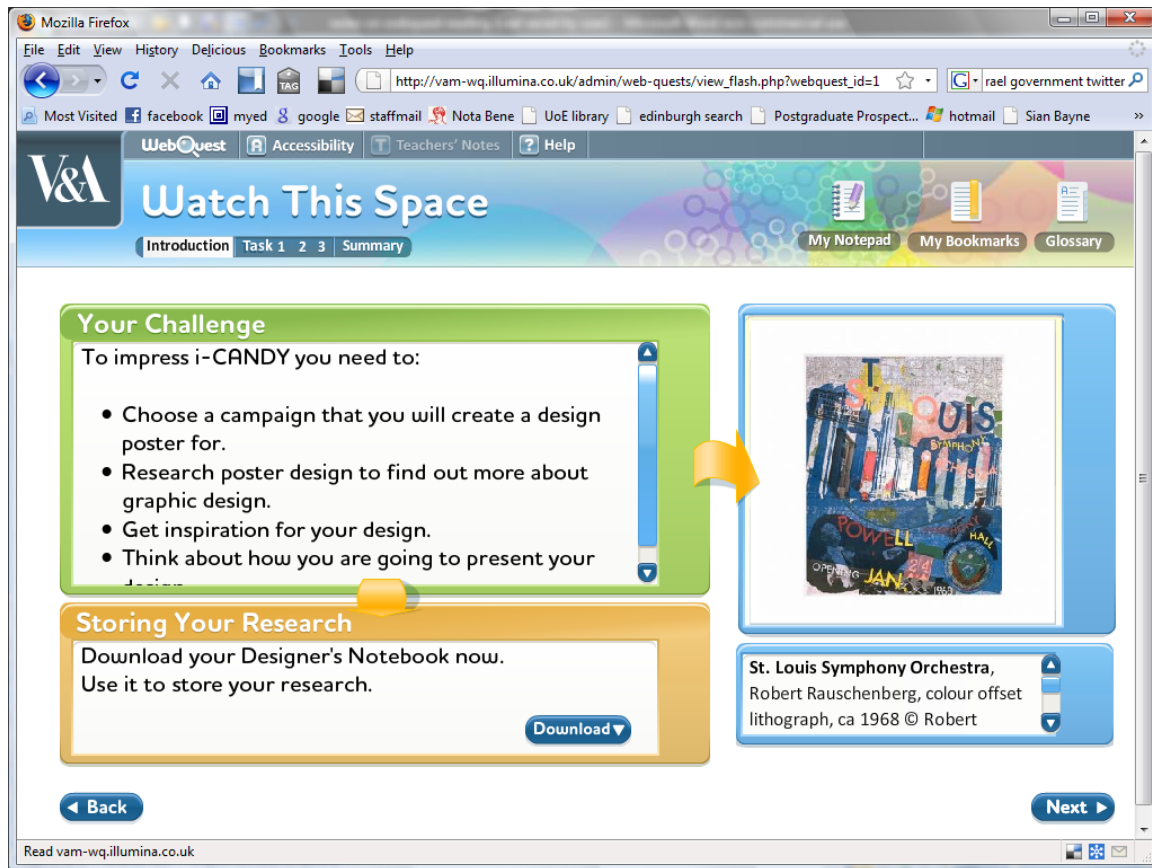
After a long period of the dominance of the book as the central medium of communication, the screen has now taken that place. This is leading to more than a mere displacement of writing. It is leading to an inversion in semiotic power. The book and the page were the site of writing. The screen is the site of the image – it is the contemporary canvas. (Kress 2003: 9)

We look here at ways in which the WebQuests position the user, reading the design of the interface in order to highlight its messages about the relation between text and image, and between teacher and learner. We move beyond basic conceptualisations of the user’s ability to manipulate specific objects on screen, and understand ‘interactivity’ in terms of the user’s cognitive engagement (Hedberg 2004). Interactivity in this sense considers how learners are able to construct their own meanings and understandings from and with an interface, and how hypertextuality allows them to ‘enter an entirely new relation with text’ (Kress 2003: 5).

The ‘reading path’

The multimodal nature of screen-based digital texts challenges reading paths offered in traditional texts (Kress 2003). Traditional, printed text-based reading paths are structured according to left to right, up and down, text first and sentence-by-sentence reading. In the multimodal text – structured according to ‘the logic of image’ (Kress 2003: 9) – numerous entry points are offered, creating a subtle shift in power between the author and reader. To competently negotiate these texts Kress suggests that a new skill of ‘modal scanning’ is required, in which the reader critically identifies the key elements and decides on an appropriate reading path. The reader, according to Kress, is now in a

position to bring to the screen their own 'interest, desire and disposition', although in recognition of and in response to what is on the screen, not in isolation of it (138). A reading of the WebQuest interface, however, reveals that there is little here that encourages modal scanning – reading paths and task progression are highly contained, controlled and structured.



The screen design is informed by conventional, analogue exhibition design, with 'panels' used to present text, 'flip' options offering additional information, exhibition style 'labels', and a tendency toward the isolation of image from text. The analogue influence appears not only in the mirroring of an exhibition style layout in the WebQuest interface but also in strong echoes of printed textbook design. This was explicitly acknowledged by one stakeholder:

Although the kind of the feel of the WebQuest environment probably has more in common with a textbook than maybe an online learning resource... the actual activities and the outcomes are really different.

project stakeholder

Different sections of the screen are heavily framed and colour coded to distinguish between them (instructions: green; actions: orange; images and captions: blue; linkage: purple). Disaggregating the learning space and coding it for 'teacher/designer defined instruction' (green), 'task for the learner to complete' (orange) and 'illustration/example' (blue) has the effect of heavily distinguishing learner from teacher, task from context and image from text. Further, the sequenced animation of each element's arrival on screen determines which box must be read first – as the green instruction box is the first to enter the screen, implicitly it is given priority. Each object enters the screen through a

series of fixed animated sequences (these are the same in all WebQuests). Large yellow arrows are used throughout to indicate a 'preferred' route through the screen, providing a linear and predetermined reading path and again working against any expectation of modal scanning.

Progress through the WebQuest tasks is similarly constrained, with the ability easily to flip back and forth between sections disallowed. With 'Back' and 'Next' buttons constraining users to a highly delimited route through the WebQuest, the user-learner is contained within a designer-determined working and learning path with no options for forging his or her own direction through the activity. This point was not lost on two year 5 pupils as they commented on the WebQuest design:

Pupil 1

Also I think the people who designed the website were thinking more adult.

Pupil 2

Yeah.

Pupil 1

And not children who were going to look at this website.

Pupil 2

I think, I think they just decided themselves that they were just going to do this, do that, do that.

Pupil 1

It didn't really appeal to us.

Arguably this over-structuring works to resist the multimodality and flexibility which is characteristic of the digitality and semiotic 'otherness' of screen-based online texts. In fact the WebQuests may impose greater restrictions and constraints upon learners than was previously possible with textbooks or other print-based learning resources. Some teachers may find this appealing – one we interviewed suggested that even more structure would be necessary to ensure pupils read everything and did not skip parts, 'otherwise kids are going to just jump ahead and they're going to miss some of the key points' (*Mr. Young, secondary PSHE teacher*²⁸).

However, the learners we observed and spoke with expressed their frustration at these measures of control built in to the WebQuest design. Having to wait for each element of the page to 'bounce' in was described as 'annoying'. Furthermore, as learners made their way through the WebQuests they often wanted, or indeed *needed*, to return to an earlier page, to remind themselves of the task in hand, double check a reference, review an image or sometimes to jump ahead so they were aware of what was coming next. However, this flexibility is not offered. For example, this boy commented:

²⁸ Teachers' names have been changed.

There should be like a side like bar where you can pick the parts of it. Instead of going like through all of it, you just do like sections. If, say if you just wanted to make the poster or if you wanted to find out about it, you could just go onto them.

Year 9 boy

This sentiment was also echoed by one teacher in particular who felt frustrated when trying to navigate through the WebQuest herself, and saw the same frustration in some of her pupils:

What I found frustrating when I was using it was that you couldn't look at the end of the task. So I mean, I think I'm just one of these people who read the back of the book. I wanted to look at the summary. And it wouldn't let me click on it because it was making me go through the steps. And I think some of them were frustrated by that.

Mrs Bale, Year 5 ICT teacher

The flexibility of the WebQuests has been important to the project partners and resource writers in conceiving their design and contexts of use in the classroom – it has always been assumed that teachers will need to tailor their use to meet the needs of individual classes. The teachers we spoke with agreed that there could be no single way of approaching the WebQuests – teachers will need to make choices about whether pupils will work alone, in pairs, in groups or as a class; they will decide how long the class will spend on a WebQuest, whether a single session or longer; and they will need to consider ways in which the WebQuest will support and complement other ongoing work. Constraining the WebQuests by limiting the ability to move between screens works against many of the potentially valuable features and learning opportunities the WebQuests provide. The teacher who wishes to use the tasks flexibly, ensuring appropriate differentiation, may need to have different groups tackle different aspects of the WebQuest – something which they will find very difficult to manage given the current design. This may be particularly problematic for the longer WebQuests, as spanning several lessons or weeks will likely create significant frustration in terms of navigation and re-navigation.

This constraint seems to be at odds with the original vision of the WebQuests, and many of the stakeholders (project partners, resource writers and developers) we interviewed indicated their awareness that a degree of flexibility from both WebQuest and teacher is essential. There appeared to be some discrepancy between stakeholders' understanding of the requirements of the WebQuest design and the flexibility on offer to teachers:

How much they choose to use the scaffolds and structures that are given and how much they feel, 'well no, that's not going to work for my group but I'll, I'll tweak that and'. And I hope that there are enough, sort of prompts that, that people will be able to pick up on what they think is relevant to their group without feeling, 'oh, I have to work through the whole of this'.

project stakeholder

And hopefully the teachers, I'm sure they will because I think that's how teachers operate, but I'm sure they'll be able to pick and choose and just do the bits they want to do or the bits they find interesting, you know.

project stakeholder

The place of the image

The previous section looked at the way that framing, progression and other devices are used to control how the WebQuest reading and working path is determined. We now turn to focus on the relationship between text and image within the WebQuests. A primary aim of the NMOLP has been to engage users with the partners' digital collections – implicit in this is a valuing of the image itself as the primary location for the meaning-making and learning activities of museum users. Thus it is perhaps surprising that on close reading the design of the WebQuests works systematically to de-privilege the image and generally to craft learning around more conventional textual meaning-making activities.

Digital objects from the partner collections were highly valued by project stakeholders, teachers and pupils, and the images and objects used in the WebQuests are without doubt of the highest quality. The images are consistently well-chosen, and the WebQuest tasks which focus on critical readings of the images are often exceptional. The work involved in sourcing and selecting these images has been significant:

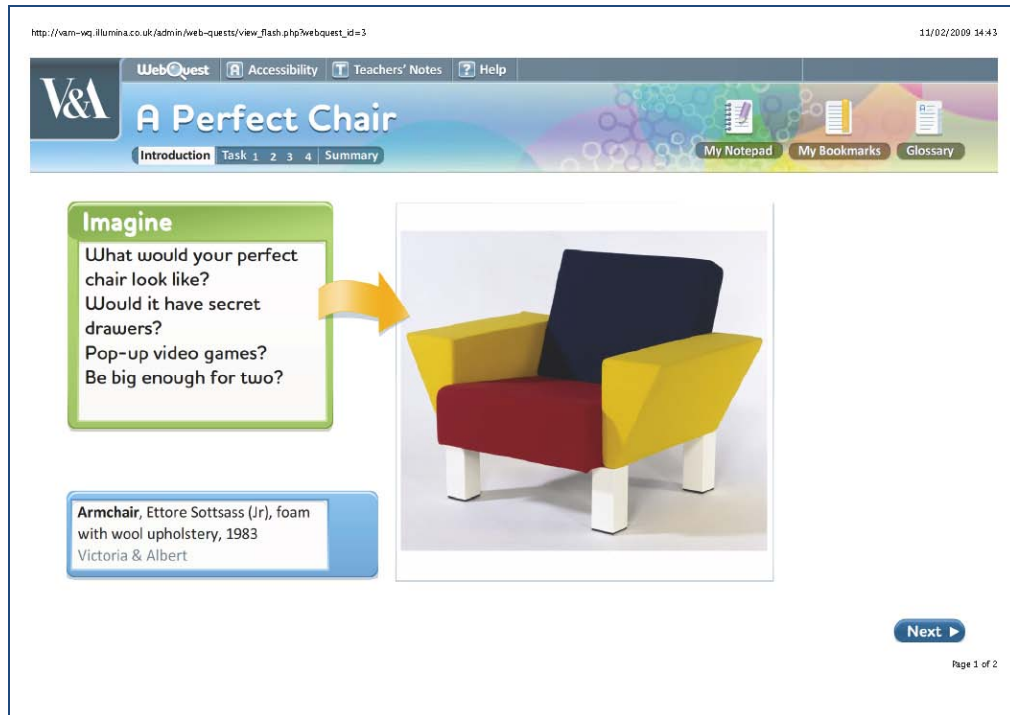
You know that perfect object's in there somewhere but there's 97 billion objects to go through to get to it and, you know, finding all the stuff is, is really hard work, so, you know, when people have found really gorgeous objects or objects that just reinforce the teaching point really well or, something you think that's going to get the kids really engaged and it is really impressive.

project stakeholder

However, despite this impressive commitment to the value of the object shown by the resource writers and partners, it is the textual element of the WebQuest task which tends to dominate the final design of the WebQuests. A visual analysis of the interface reveals that the greatest salience is given to the green (text based) instruction element (placed top and left²⁹). Each WebQuest places the images on the right of the screen, and as appearing *after* the textual information in the reading path already discussed – both strategies work to locate the images as subordinate to the dominant text box. The use of very heavily framed modal 'blocks' (Kress, 2003) also disconnects text from image (one Year 10 boy described the interface itself as 'a bit blocky').

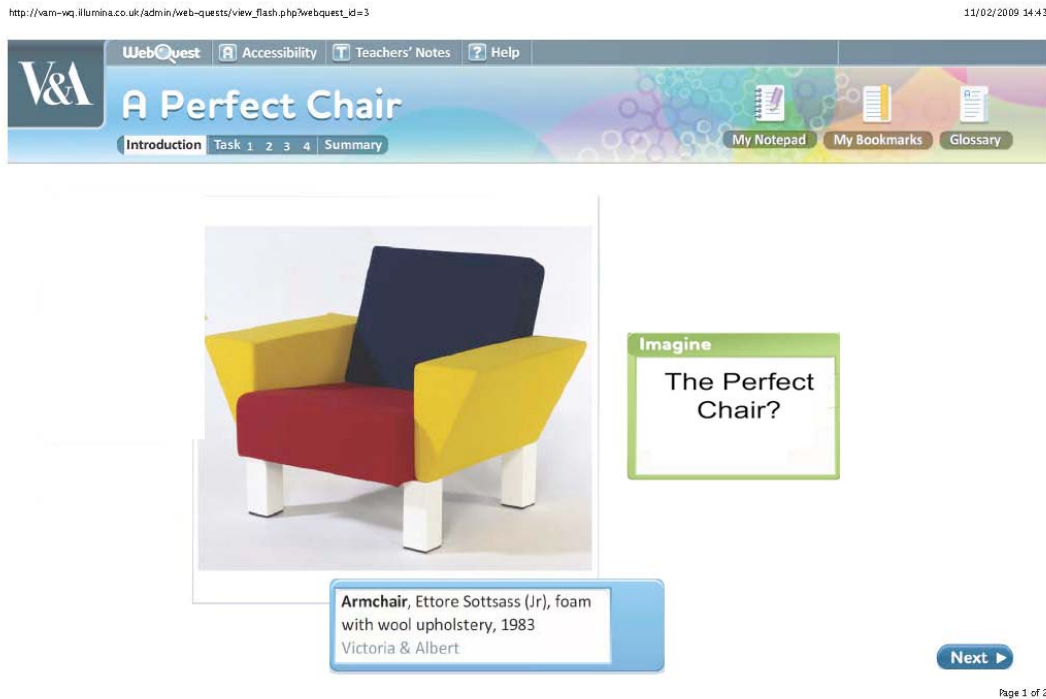
In some cases it is possible to navigate through and complete an entire WebQuest without considering the images in any detail. Often the images act simply as placeholders, providing high quality aesthetic added-value but contributing little to the learning task. The opening screen of *A Perfect Chair* is an example:

²⁹ In Kress and van Leeuwen's approach to a semiotic engagement with image composition, the left of the screen or image is aligned with the 'Given', the right with the 'New' and contestable, the top with the 'Ideal' (the essence of the information, the most salient) and the bottom with the 'Real' (the more down to earth and practical). (Kress and van Leeuwen 1996: 187)

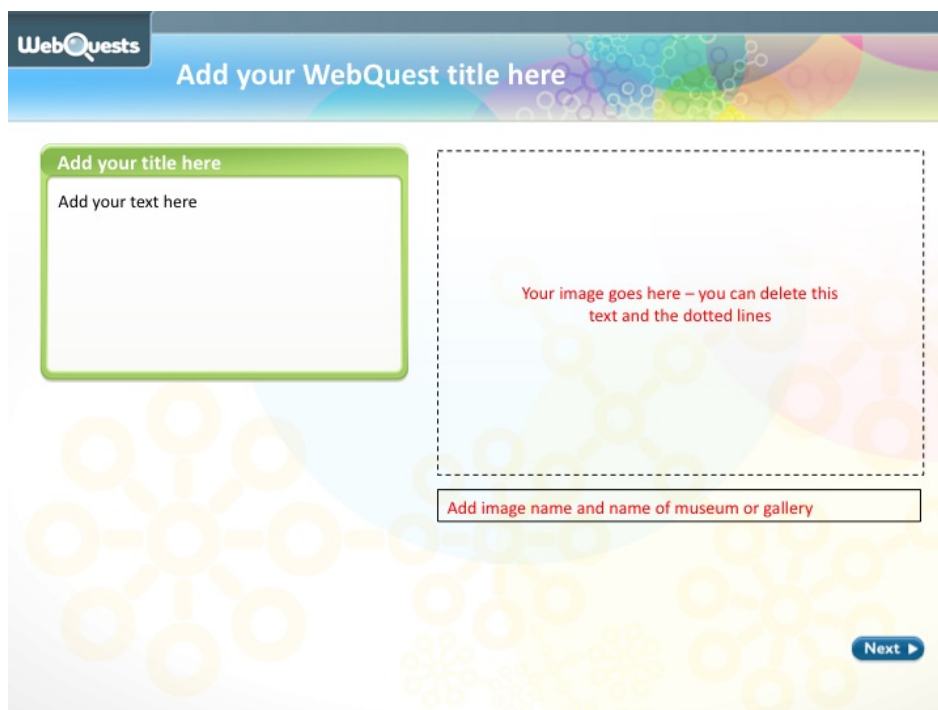


The large and colourful image is located to the right, with the text box in the dominant, more salient left-hand position. We are directed by the animated order of entry (green text box first, followed by blue label text box, then arrow and finally image) to focus our attention on the text. The arrow suggests a link and a sequence between the text box and the image, yet the text has no real connection to the image at all.

A simple relocation of the image to the more salient position and reduction of the amount of text subtly but significantly re-formulates and opens up the learning task and makes critical consideration of the Sottsass chair the starting point and trigger for the learner's thinking:



All WebQuests are locked into the original text-oriented design through the use of the Content Authoring Tool (CAT). Although partners will be able to change content and choose between the type of screens they would like for each WebQuest, they are unable to move or resize any element on the screen. Similarly, teachers can download a 'Teacher's Toolkit' from the WebQuest website, which includes a Powerpoint file containing template designs of all major WebQuest screens. Although this is an excellent way to give teachers an opportunity to develop their own WebQuests, the templates provided conform to the same layout as the project-created WebQuests.



With text given such salience throughout the WebQuests, some teachers understood the images as being supplementary to, or perhaps even a distraction from, the WebQuest task. For example, one of the Primary teachers, in presenting the WebQuest task, stressed the importance of the green text boxes, encouraging pupils to be selective about the images they look at, but cautioning them not to skip any text:

The blue boxes are pictures. The pictures will just give you ideas, these are examples from a museum. The green boxes are what you really need to be concentrating on, the green boxes are all of the questions it's asking you as a designer. ... The green section is what you have to do. If you're wanting to get on as far as you can in this lesson because we've only got an hour, I would suggest that you do look at the blue boxes for inspiration and for ideas, but I wouldn't necessarily click on each one of them.... Green boxes, very important, make sure you read them, off you go.

Miss Herd, Year 5 Teacher

As with the issue of the flexibility of the reading and working path in the WebQuests, the relation of text to image in the understanding of project stakeholders is at odds with the deprivileging of image we see in the final resource. As one resource writer commented, the aim of the WebQuests is to have children 'learning from images rather than learning from text.' There was an understandable recognition that at times image alone is not sufficient and that some sort of 'pathway' or additional information is needed:

If you're trying to talk about how medieval monarchs kept control, that's very difficult to do, you can't tell someone's character from a portrait.

project stakeholder

Yet at the same time, there was a worry that in providing too much text 'about' the object, the image would become secondary:

It's using the images just as illustrations rather than using them as sources in themselves or as sources to actually analyse. And I, you know, I thought that we were not supposed to be doing that.

project stakeholder

There are instances where the image is brought to the forefront of the enquiry. For example, in *Farewell to Arms* and *Watch this Space* learners must examine and negotiate meaning and its ideological construction through poster design. These WebQuests offer significant potential for students to work critically by examining images through the 'lenses' of particular world-views. The clever use of 'hotspots' on some images also supports a deeper critical engagement and a closer relation of image to text.

Pupils themselves were excited and engaged by the images in the WebQuests, and were generally turned off by text-heavy screens. Text was described as 'too boring', while the images were thought to be 'cool' and were spoken about with enthusiasm:

The first page was a bit boring just having the listed things but when you got on to it, it was quite good, I liked all the pictures.

Year 5 boy

They could have had a few more pictures of what you liked.

Year 9 boy

When secondary pupils spoke to us about the learning resulting from their engagement in the WebQuest, this was largely with reference to the images and objects they had seen. Images are not only highly valued by learners, but also have the potential to form the critical and intellectual heart of the WebQuests.

Some closing thoughts on the interface

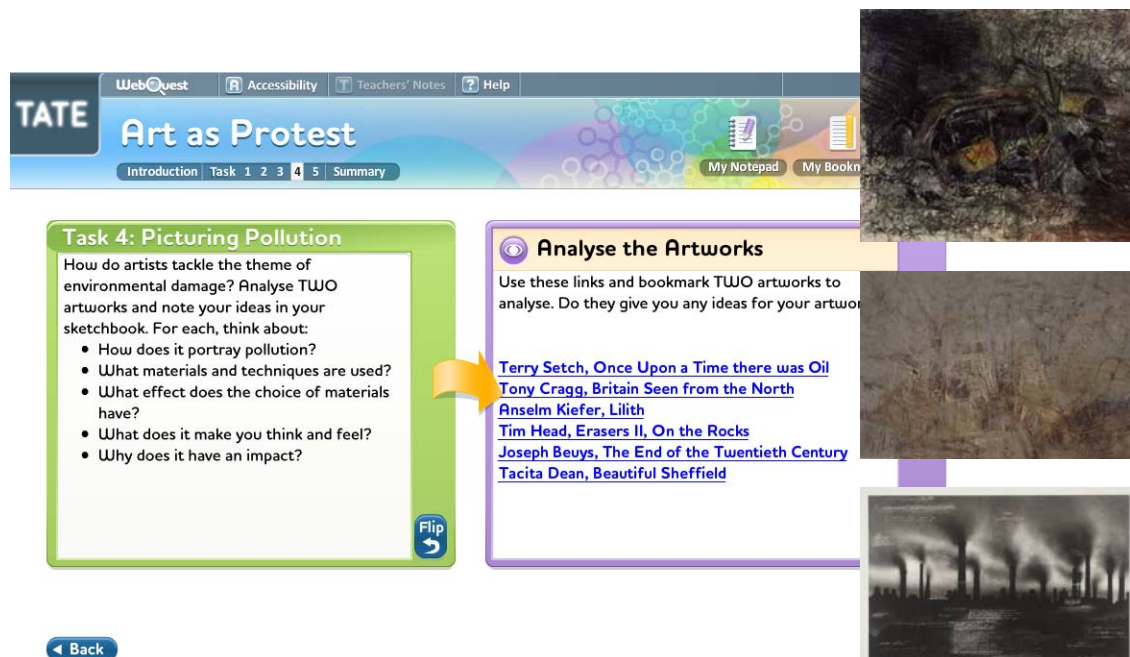
We have highlighted above some of the key features of the design of the WebQuest interface, looking at how it is organised around an over-structuring of the learning task and an emphasis on the centrality of text over image. In a sense, the WebQuest design does not take account of the digital environment learners are familiar with outside this learning space – the semiotic *difference* of the online mode highlighted at the beginning of this section is largely subordinated to conventional print-informed modes of engagement. Arguably, the WebQuest design aligns with Hedberg's (2004) description of early strategies used by instructional designers that rested largely on assumptions of learning rooted in behaviourist approaches, presenting 'logical learning sequences that would serve as an instructional path through the material' (2004:242). These strategies result in resources that are highly structured, atomising elements of content rather than looking at learning more holistically. In order to further explore the pedagogical implications of these design decisions, we now turn to the WebQuest learning design.

Pedagogical design and content: questioning, searching and creativity

The WebQuest learning design comprises multiple aspects: the structural and functional dimension discussed in the previous section; the language genres used in setting the tone and locating the learner and his or her role within the WebQuest; the relationship between text and image and associated messages about what sort of response is valued and required; the use of questioning throughout the WebQuest, shaping the level and focus of critical interaction the learner will have with the activity; the extent to which the search function is integral to the task in terms of developing critical web skills and a genuine connection to the wider web; and finally, the way in which differentiation is built into the resource, determining how accessible and engaging pupils will find it. We focus in the analysis that follows on the use of questioning and searching within the WebQuests and the ways in which the learning tasks offered motivate learners to adopt an active approach to their learning and a critical approach to their consideration of the WebQuest themes.

As we highlighted in the previous section, the design of the WebQuests gives greatest salience to the green instruction element, coding the interface for teacher/designer authority and orienting learners' activities around a set of instructions. Questioning is also used in a range of ways. At times, questions are employed very effectively as a way of engaging learners and promoting deeper critical

or creative thinking. For example, *Art as Protest* invites students to critically engage with the artistic construction of pollution through direct questioning and an invitation to analyse a brilliantly-selected series of images from the Tate’s online collection:



At its best, such questioning does prompt a critical response in children. For example, children were asked what they had learned from a similar activity in *Watch this Space* – a WebQuest on the theme of poster design – prompting the following responses:

I learnt that posters are more important. There are a lot more stuff behind the poster, like secret thoughts.

Year 9 pupil

I learnt that there are different kind of posters, some advertise stuff and some try to say a message.

Year 9 pupil

At other times, the WebQuests emphasise questions that prompt a far less critical response, simply requiring children to recall facts or previously stated information. These examples from *A Perfect Chair* and *Palace and Mosque* illustrate this point – the questions posed simply require pupils to restate information given (in *A Perfect Chair* they are also required to navigate back through screens to find this).

The screenshot shows a WebQuest interface for 'A Perfect Chair'. At the top, there is a navigation bar with 'WebQuest', 'Accessibility', 'Teachers' Notes', and 'Help'. Below this is a title bar with 'V&A' logo and 'A Perfect Chair'. A progress bar shows 'Introduction', 'Task 1', '2', '3', '4', and 'Summary', with '2' highlighted. On the right, there are buttons for 'My Notepad', 'My Bookmarks', and 'Glossary'. The main content area features a green task card titled 'Your Chair's Function' with the following text: 'Now that you have explored some chairs made for different purposes, think about your own chair design. Look again at your client's Fact File and remind yourself about the chair's function.' followed by two bullet points: 'What does your client want the chair for?' and 'What features does your chair design need to have?'. Below this is an orange 'In Your Sketchbook' card with the instruction 'Write down the features your chair needs to have.' and a 'Flip' button. To the right is a blue-bordered image of an ornate armchair. Below the image is a caption: 'Armchair, Ferdinand Rothbart, oak and pine, with original plush upholstery, wool tassels and brass'. At the bottom, there are 'Back' and 'Next' navigation buttons. A small page number 'Page 1 of 2' is visible in the bottom right corner.

The screenshot shows a green task card titled 'Learn about Constantinople'. The text reads: 'Click on the link to view the interactive map of the Islamic Empire and find Constantinople/Istanbul.' followed by three bullet points: 'When did Constantinople come into the Islamic Empire?', 'Under which dynasty?', and 'Which two buildings are mentioned as landmarks of their rule?'. Below the list, it says 'Make notes in your Notepad.' The card has a yellow tab at the bottom.

While recall questions do have a place and can be very useful, a high frequency of these questions is likely to switch pupils off, possibly creating low level disruption as they become bored (Wragg and Brown, 2001: 21). This form of low level disruption was noticed during our lesson observation sessions as pupils got stuck or frustrated by the text-heavy screens and over-structured pathways through the WebQuests:

You sort of lost the plot halfway through because it, it was telling you random things that you didn't really think you needed to know.

Year 5 girl

And when you like open a web page you want to like know what you're doing and you don't want this going through a load of things because then you eventually get bored and just find another one.

Year 9 boy

I don't know what I'm doing here. I don't know what this is about. I don't know what the point is.

Year 9 boy

This frustration and lack of clarity led to some restlessness and off-task behaviours in the observation sessions. For example, one boy on coming to the first 'click and reveal' task in *Watch this Space* appeared unengaged in the content of the task and instead found greater interest and amusement in 'flipping' the posters quickly to try and make them all spin at the same time. In his feedback he commented that the bit he liked best was 'flipping the posters at the beginning'.

In *A Perfect Chair*, pupils are asked to write down five words to describe their client's likes and interests. However, the 'client fact file' provides several key words – for example, for 'Miss VIP', 'glamorous', 'sparkle' and 'Indian' – which tended to reappear in the pupils' lists of five words. This is a pattern often repeated throughout the WebQuests – a question or instruction is given (such as 'list five words', 'find four links'), while the words or links are provided in plain sight. Learners therefore simply need to locate and copy information from one place to another, and very little is required in the way of critical thinking. These kinds of questions risk failing to build on previous understanding or to probe the learners' thinking, issues Wragg and Brown (2001) identify as potentially problematic in the use of questioning. Learners need opportunity, support and encouragement to ask their own questions – as Dillon (1988) reminds us, 'if the teacher is asking questions the student cannot' (25).

Like questioning, searching is used in a variety of ways in the WebQuests, but most commonly it is structured in terms of a search box accompanied by a set of suggested search terms (either hyperlinked directly to results, or provided for pupils to type in or adapt themselves). Teachers and partners saw the federated search as offering an attractively contained way of learning key search skills within the context of the WebQuests: 'It's using the internet in a constructive way so you don't waste so much time just coming up with huge screens of stuff that you can't understand. You know, when they click on any old website' (Mrs Bale, Year 5 ICT teacher). However, as a recent Becta report stresses, such 'walled garden' approaches can be risky in themselves, as they can 'result in a new digital divide between the internet explorers and the internet followers' (2008: 29). WebQuest writers have needed to be especially creative in order to support the acquisition of information retrieval and evaluation skills, yet the limited functionality of the search tool cannot but limit the extent to which critical web searching skills are enabled by the tasks set in the WebQuests.

Supporting children to become critical web users has been an important aim of this project – integral to this is the ability to search online collections effectively:

Trying to get our heads around the search and trying to create a really structured way of searching that would support kids without taking away, you know, what makes a search a search, the element of randomness. That was a really interesting challenge and I think it seems like everyone feels really pleased with what we, we've managed to do with that, so that's been particularly good.

project stakeholder

For pupils, and teachers, being able to select the most relevant search terms, and search results, remains a really critical and challenging skill to develop. As teachers noted in interview, pupils often rely heavily on Google as the most popular search engine, yet they do not always have the skills needed to negotiate and select the information they need from these sources. Learners assume the first few hits are the most useful, reliable and valuable sources of information.

Most WebQuests support the selection of relevant search terms and results by providing some 'suggested searches'. Occasionally, suggested searches return 'recommended links' (framed in purple), clearly indicating that these are the ones the pupils *should* look at, and potentially reinforcing the habit of assuming that the first links they see in search results will be the best. Instead of highlighting recommended results, suggested searches could perhaps go further in encouraging pupils to think critically about what terms may be the most useful and provide the most interesting results. This can be quite challenging; for example, in *Watch this Space* one of the suggested searches for shocking or dramatic images is 'poster'. As a group of Year 9s found, it is difficult to complete the task (to find 'dramatic' or 'shocking' images) using 'poster' as a keyword – in the end they wanted to give up and go to Google, where they were sure they would 'get something'. While the search facility allows no refinement, for example in the enabling of Boolean searches, the extent to which critical skills in searching on the wider web are developed is necessarily limited.

Future WebQuest development would benefit from greater clarity in the way the search works, and might structure activities in such a way as to play to the strengths of the federated search. For example, as we have discussed, one of the core successes of this project is its use of exciting, engaging and inspirational images and objects from the collections. The federated search can produce unexpected and sometimes revealing results:

Pupil 2: We typed in 'cartoon', 'rainbow', 'monkey', it came up with like proper big gorillas and that.

Pupil 1: I know.

Interviewer: And how come you think that happened? How come it's different?

Pupil 2: I think it's because it might have been made quite a while ago because it had like a lot of pictures you would see from pictures in Victorian times.

Pupil 1: And like museums and stuff.

Pupil 2: Instead of like in modern pictures, like Google.

Carefully designing WebQuests that make the search facility more integral will give pupils opportunities to develop and practice the criticality and creativity that they need as they navigate the wider web. Despite the centrality of criticality and web skills development to the aims of the project, the search facility is rarely central to the learning design of the WebQuests – at times, it is not present at all. For example, *Write a Suspense Story* is an imaginative and rich WebQuest which uses museum objects as a stimulus for writing a story, supporting creative writing and making

excellent use of multimedia – in particular a 360° video tour of the Sir John Soane museum and numerous audio clips from the tour of the museum. There is great potential for searching within this WebQuest: asking individuals to search for particular objects or people featured in their story, or encouraging learners to search for objects mentioned in the WebQuest to help them build up a richer creative context. For example, ‘sarcophagus’ and ‘crypt’ are mentioned, and a simple federated search using these terms brings up some exceptional items from the British Museum and others. Such objects would help give pupils a better sense of what might be lurking in the crypt and would extend their engagement with and knowledge of the digital collections. Yet not a single search opportunity is incorporated within this WebQuest.

As we observed pupils interact with the WebQuests, it became apparent that while some engaged intently with every word and item on each screen, many skipped quickly through screens, stopping only if there was an activity to do. For example, the matching pairs in *A Perfect Chair* and the V&A ‘Create Your Own Poster’ activity were both quite popular, and appeared to promote on-task dialogue between pupils, even those who were working individually. This dialogue was regarded as one of the WebQuest’s successes by teachers:

They loved it and they were talking and were saying, ‘well, I think that one looks like it’s made out of such-and-such, and’ – like with the recycled chair, they were discussing about how it looked like it was different colours and different pieces, and maybe that’s because it was things that had been squished together, so they did spend a lot more time really interrogating those objects as opposed to the pictures. They were really successful.

Miss Herd, Year 5 Teacher

Creating online learning activities that are interactive in meaningful ways is challenging. Too often resources are deemed ‘interactive’ if pupils are able to click, move and choose elements of the task, with little attention given to the extent to which the task is intellectually engaging. In the observations and interviews, we found the WebQuest image hotspots (clickable areas of an image which give detailed contextual information) to be especially effective – the immediacy and connectedness of the text to the image makes this a useful tool for learning and worked against the general tendency to privilege the text and isolate it from the image components of the WebQuest.



Hotspots used in Painting Elizabeth I

To help support and structure the learning tasks, many WebQuests also incorporate worksheets for users to download. These vary greatly in content and style – some are designed to help pupils structure their notes and remind them of the task questions, while others are more akin to a ‘print and complete’ style of activity. Many of these worksheets are cognitively challenging and function well within the flow of the WebQuest. The ‘spider diagram’ included in *Masks from Around the World*, or ‘Heroes Table’ from *Heroes of Abolition*, for example, are effective in encouraging pupils to consider and negotiate the purposes of different masks or the traits and motivations of different historical figures. This type of activity asks pupils to be active in their learning, and makes discussion an integral part of the WebQuest.

Conclusions

The WebQuests are an innovative and worthwhile endeavour and have the potential to offer schools a rich and valuable teaching and learning resource. As one teacher commented:

I think the theory, the theory behind it is excellent, and I love that they can just get on, and it’s them exploring, I don’t need to spoon-feed them it, as long as they had the instructions, which I did have to do separately because I thought they needed something to come back to every time they got stuck, they need something to point them in the right direction. But I think the theory behind it that they can get on and do all of this individually is excellent.

Miss Herd, Year 5 Teacher

However they present a number of issues which might be drawn upon in informing future WebQuest development, both within the context of the NMOLP and for educational WebQuests more widely.

In the context of the NMOLP, the image is fundamental to the value and pedagogical ethos of the project. Museum and gallery objects provide the rich and unique foundation around which the WebQuests have been conceived. Yet, paradoxically, the image is subordinate to the text in the

WebQuest interface design and in the way in which many learning tasks are constructed. The quality and power of the examples and images chosen from the collections is outstanding, but they are used in the context of a learning resource which has a structural tendency to privilege textually-informed modes of meaning-making. While the technical and structural aspects of the content authoring tool may not be alterable at this stage, the way in which text and image are used and interlinked in the learning tasks can be considered and refined as new WebQuests are developed.

The flexibility of the WebQuests has been an important aim in their development throughout the project, yet the structure of the final artefact has a tendency to work against this desire for adaptability and customisability. It is assumed, and made explicit through teachers' notes, that the teacher's role is critical in the success of WebQuests in classrooms, and that teachers must be able to support, extend and tailor the WebQuests for their own classes:

No one approaches a task in the same way, no one uses a scheme of work in the same way or a lesson plan in the same way. And I think that by having very clear paths of activities it gives somebody a lot more freedom to see the bigger picture and to think, right, I want to go into depth here but I'm going to sort of skip round that and come back to it because there's some other stuff I want to do first.

project stakeholder

However, the WebQuests are packaged primarily as independent, individual activities, removing the explicit need for teacher direction and adaptation. This is further reinforced through the awkward, closed and linear pathway through the learning task. More user flexibility and control, and the option for easily navigating between WebQuest sections would be extremely positive future developments for the WebQuest interface.

The WebQuests exist within the broader context of digitality and the kinds of semiotic shifts we identified at the start of this section. Yet in some important respects they limit or even deny their own status as networked, digital artefacts. Compromises were made at an early stage of development that saw more digital, 'web 2.0' features put aside because of concerns about moderation and sustainability of the resources after the project ended. Despite widespread recognition by stakeholders that a communicative space for student discussion and shared knowledge-building would be a valuable additional support for learning, the WebQuests lack such a space, and as a result the project has perhaps missed an opportunity to nurture some of the primary strengths of online ways of learning – connectivity, communication, sharing.

A pair of year 9 boys told us that one improvement to the *Watch This Space* WebQuest would be if they could use it to share their poster designs online, commenting on and rating the work of others:

Pupil 1: Well, like, um, to compare it with others and just see if it's, if mine's better than the ones ...

Pupil 2: You could put it on like that, that website, and people could like rate it and see how good it is.

Similarly, several project stakeholders expressed their vision for the future of the WebQuests in explicitly social terms:

Well say now for example you can create a profile, and maybe you know share the WebQuest that you've completed and you can maybe, you know, give some feedback and say 'I love this WebQuest, it's blah, blah, blah, blah', and you can make some friends, you know.

project stakeholder

Another suggested possible ways to incorporate freely available web tools beyond the WebQuest environment:

They could create a forum and put their images on Flickr or something... I think it would be really interesting. I mean, especially, you know, if you've got different schools say working on the same WebQuest that has an output, it would be really interesting, I think, for students to see what other people have come up with.

project stakeholder

In the short term, encouraging teachers to explore some freely available web tools in the context of the WebQuest activities could be a constructive way forward and, as the same stakeholder noted, such encouragement could easily be incorporated into WebQuest teacher notes. However, if there are future iterations of the WebQuest platform a more participatory, social ethos might be considered as a determining feature of the design.

As with Creative Spaces there have been, as we have seen, some compromises with the design and build of the WebQuests. For Creative Spaces, the compromises have in general been prompted largely by institutional structural and policy issues – to do with copyright, technical interoperability, institutional identity concerns – converging on the project. With the WebQuests, the compromises have perhaps been more to do with external factors – a general culture of closure and constraint in school online learning, a requirement to deliver a resource immediately usable and understandable by teachers, a lack of available resources for managing and moderating a social dimension and so on. Despite the compromises, both sets of project output have made significant advances in terms of the project aims. The WebQuests do encourage children to engage with digital objects in new ways, some certainly help teach children to take a critical approach to the reading of images and objects, and they without doubt increase awareness, among those using them, of the national museums' online collections. We turn now to consider how these advances might be built upon by considering the project's impact and potential legacy.

4. Project futures

We can't just launch it and let it go. I just hope that ... there is an active legacy Even if that's only for six months, that's better than everything just dying on its arse at the end of March 2009. You know, which is a risk. I mean, that's the nature of fixed funding.

project stakeholder

The NMOLP has been an externally-funded project of a fixed term of three years duration, and thus resourcing for its further development and continuation is not assured. Yet the opportunity to learn from and build upon this project's significant achievements should not be lost. In this section, we outline the areas which emerged in interview with partners as those most likely to inform the future legacy of the project. These include:

- the future of the partnership
- opening up the project outputs – particularly the federated search – to other museums
- building 'federated search 2.0'
- enhancing the social dimension of the project outputs

Finally, we outline some possible areas for future research. First, however, we provide a brief summary of the current situation regarding the sustainability and maintenance of the project.

Statement of Intent and evaluation

In terms of formal continuation, a Statement of Intent has been produced with intention of receiving endorsement by all partners. This documentation sets out partners' commitment to the sustainability of the project in terms of resourcing, evaluation and administration. While not a legal agreement, the Sol "describes an ongoing partner commitment to a continuing relationship and level of trust and support in order to implement the project and to deliver specific actions" (2009: 1). Those actions are the collaborative co-ordination and maintenance of the project to April 2012, and the monitoring and evaluation of the project resources.

In addition to the financial resources available through the project budget, and administered by the lead partner (the V&A), partners on signing the Sol will commit to appointing a consortium member, a technical representative and a WebQuest and Creative Spaces administrator from each institution. The Sol sets out the responsibilities and time commitments for each of these roles. In addition, it makes clear the partners' proportional 'shared liability' (2009: 5) for the maintenance of the WebQuest and Creative Spaces resources, and that future developments on the site (post-evaluation) would need to be self-funding.

Project administration between 2009-12 will be overseen by the lead partner, supported by a lead technical co-ordinator and the consortium. Administrative tasks will consist of technical co-ordination and maintenance of the WebQuest and Creative Spaces sites, reporting on the project and responding to requests, internal and external advocacy, and managing evaluation and decision making on future developments.

A formal evaluation will be commissioned in the autumn of 2009, with a view to considering 'options for changes to and/or development of the project' (2009: 5). Throughout our final interviews, evaluation was identified by many partners as extremely important to them in terms of understanding how the WebQuests and Creative Spaces are being used, and whether they work as they should. Many stakeholders commented in interview on the difficulty in ensuring that the project's outputs remain 'live' and growing when limited resources are available to ensure that development is responsive to user's needs:

I think this sector has a history of starting again every time. ... If this was a commercial venture, you know, I'd feel much more optimistic about where we are right now and where we might be in 12 months in terms of product development, if you like. You know, so we get our production out there, people use it, we respond to the way they're using it. All the technology, everything that we've got, could respond, you know, we could respond quite rapidly to user interactions. But it's not a commercial product and it's not going to have anybody looking really at what's going on, how it might develop.

project stakeholder

If we were a Web 2.0 start-up and doing this it would, we would, be evolving as our audiences evolve. But we're not, we're launching something and then that's [pause] that's how it's going to stay. So people will push boundaries and, you know, if we were monitoring that we'd go, 'yeah, wow, look what people are doing, let's build some functionality to help them'. We can't do that.

project stakeholder

If the commercial model of web 2.0 development is not available to the partners, there is at least a commitment to – and resource available for – the final project evaluation. All decisions relating to the extension of the project, particularly through the integration of other museums within the federated search, will not be made until this has taken place. Previous to this, remaining project funds will be expended in developing the Creative Spaces site beyond beta, in response to the feedback it received post-launch, and in finalising and launching all 100 WebQuests.

The future of the partnership

As we emphasised in the introduction to this report, the success of the partnership aspect of the project promises to be one of its most significant legacies, and a dimension worth reflecting upon critically as the development period of the project draws to an end. As one partner said, the negative aspects of the partnership need to be considered alongside its successes:

There have been a huge amount of positives, but I think especially if this is going to be held up as a template for future projects, because it is the first of its kind and has been very successful, but in a way it's a strength to talk about weaknesses, so I'm concerned that they're not swept under the carpet. There have been quite a lot of challenges, and I think they've generally been dealt with very well, but things like it taking almost a year of just all the museums sitting round a table thrashing out the MoU [memorandum of understanding] and stuff, you know, those things would need

to be addressed for whatever project happens in the future and not just sort of say – yes, everything’s perfect.
project stakeholder

Planning and organising across nine partner institutions, while a major achievement, has taken a significant amount of time, and the inevitable heavy commitment to meeting and talking was commented upon by several project stakeholders:

Things that, I suppose, that have surprised me about the progress of the project; um, I think it’s been quite impressive on some occasions, how nine different partners have been able to come together and actually progress things. The flipside of that, of course, is that sometimes having nine partners makes things feel really, really painfully slow. Because there’s a lot – well, because there’s a lot of voices to be heard.
project stakeholder

This ‘slowness’ was one aspect of the partnership which stakeholders commented upon as a frustration – the other concerned a perceived imbalance among partners in terms of their commitment to the project:

I think that we’ve put a lot in for our side and I think that certain museums haven’t put any in. I think people feel resentful of that. I think we all signed up to something and some of us have pulled our weight and some of us haven’t.
project stakeholder

What became very clear when we started to talk about the legacy was that [pause] some of the museums didn’t really want to contribute financially, nor were they in fact expecting to. ... Because it is, the weird thing is it’s an Invest to Save Project [pause] but we’re not quite ready to do the saving yet. I think the, I think the feeling is it needs a little bit more investing, another year and some more investment.
project stakeholder

The NMOLP benefitted from extremely efficient project management, yet even so the time commitment required for building the partnership contributed to a delay in the development and implementation process which had quite serious knock-on effects. With a delay of some months to the launch, the period of time available to refine the Creative Spaces and WebQuests, to iron out bugs and to respond to initial user feedback was limited:

I think it’s unfortunate it’s taking longer to complete than originally planned. I mean, if we’d been launching it in the autumn, which was the original scheme, then in that case there would have been a chance for people to see what it could do and therefore to have some planning towards what would happen afterwards – we’ve just kind of lost all that time now.
project stakeholder

Many partners were clear that, while they were committed to the delivery of the project objectives in terms of the development of the WebQuests, the next stage of work on Creative Spaces and the other commitments outlined in the Statement of Intent, they found it hard to see how they would contribute to the building of the project beyond that:

I think it's been a good experience in terms of what we've learnt, because we've worked with all these bigger museums that have a lot more experience than we do of online learning. And it's been really good to be involved in that. We're just not sure about what to do, how to take it forward, you know, how involved to be in the next stages because we've found it quite a drain on our resources, despite the fact we think it's a good project.

project stakeholder

If we, in three years time, still had WebQuests and Creative Spaces on all of our websites, working, to me that would be a huge huge success. .. and I will do, you know, move heaven and earth to try and make sure we've still got all this here in three years time. It's this extending it and doing all sorts of other things that I don't commit to.

project stakeholder

We don't want to say goodbye to the project, we want to be involved. We're proud of what we've done and we're delighted to have been involved in the project and form these partnerships and you know, have an amazing time and learnt so much. But we can't commit any more to it and other stuff has been put aside while we've been doing this project and there comes a time [pause]. We're not going to get more resources to take this on. I personally think the project has been fantastic for us but [pause] it's just one part of what we do and then... I don't want to end the project but I want to [pause] I want to do other things.

project stakeholder

The personal and, to an extent, institutional links forged by the project partnership seem likely to remain in place. Certainly the project seems likely to stand as an example of successful partnership working across the nationals, and as a beacon of possibility for future formal partnerships. However, the further development of the project's outputs will remain in doubt until resources are available to support it. And, as we have already argued, while digital developments in museum education remain a marginal concern within institutions, resourcing for such development will be problematic. However, it became clear in interviews that partners saw significant potential for the future development of the project outputs, particularly as regards the opening up of the project to other museums, the building of 'federated search 2.0' and the enhancement of the social dimension of the WebQuests and Creative Spaces. We turn briefly to each of these now.

Opening up the project

As we commented in the first section of this report, many partners saw the opening up of the project to other museums and galleries as an important way in which its legacy might be extended. Whether and when to allow or invite new members to join the consortium is a matter which has been

discussed throughout the term of the project. Partners in interview saw the potential benefits of including more collections in the Creative Spaces in particular:

I would like to see the Creative Spaces, I would like to see it opened up not just to more nationals and regional museums, I'd like to see it open up to international museums, I don't see why it couldn't be a worldwide thing. Obviously the federated search becomes a little bit more difficult, but I'd like to see it as a way of the entire museum community, as a way of them connecting together, whether in, you know, San Paolo or St Petersburg or Slough.

project stakeholder

I think there's scope for adding, in my opinion, for adding more museums across different sort of cultural sectors, which would enrich the experience, you know, so you're getting maybe some more niche type museums out there that have, that have some really interesting stuff to contribute. So I'd like to see it being accepted by more museums.

project stakeholder

Decisions about the inclusion of additional museums will not be made until the project has been evaluated. However it is to be hoped that by that time the value of the federated search in particular will have been proven to the extent that the inclusion of other databases – and, in fact, the more complete inclusion of *existing* partner databases – will be seen as something worth resourcing. As we have already argued, it is here that the contribution of the project to the productive digital 'blurring' of boundaries between institutions is most clearly displayed.

Developing the federated search

The federated search has been one of the most important outcomes of partnership working on this project, and copyright, licensing and distribution issues have impacted upon it in significant ways. Partners identified these areas as key for potential future development, particularly identifying the need for better quality (i.e. larger) images in the search result, and the more complete exposure of collections to the federated search – factors both currently limited by existing copyright constraints. Currently search results are limited to a small thumbnail, and the provision of links out to partner sites to view the full sized images, rather than displaying them within the WebQuest and Creative Spaces interface:

The copyright thing has, you know, that could end up being a criticism [pause] thumbnails, that's not great. But again, no one has ever done this before. And [some partners are] very, very nervous even with what we're doing, even though it's educational – what can people do with a thumbnail? So it's, it's that kind of stuff which, you know is, is about internal museum workings and policy and not about a web user experience.

project stakeholder

Partners would like to see work done on the copyright implications of the federated search, in order that more of their collections might be opened up to it:

One of the problems that we have had, one of the big problems that we've had, is the fact that due to the way that our digital assets have been kept and copyright restrictions on various images, we didn't have lots and lots of material we could release to the, that we could expose to the federated search. If it develops in one way it'll be, for me, to gradually sort of get more and more content released, exposed, to the federated search.

project stakeholder

Another issue stakeholders raised related to the limitations of the digital objects being displayed only within the Creative Spaces site, rather than being 'pushed' out to the wider web. Some identified this as an important future step for the development of Creative Spaces:

Where I'd like to see it go is maybe creating APIs where, where other people, other applications can extract the information from that site and put it in other applications.

project stakeholder

There's a lot more we can do [pause] with the actual experience itself and integrating it with different things that you would do normally. So, you know, you're interacting with Facebook or providing the feeds to your phone, so things that are created in Creative Spaces go out into different areas to be, to be viewable in different mediums and different websites. So, for example, you could log into your computer every day and it would give you something inspirational from the Creative Spaces.

project stakeholder

The functionality of the search is also, clearly, an area which needs more development. It does not at present support refinement of searches, Boolean searching, or suggested alternatives when searching – all features which users of standard web search engines have come to expect. This has been problematic for users so far, as they have sometimes been unable to get a different set of results by combining or adding search terms, for example. It may be that in the future the best solution for 'federated search 2.0' will be to push for all partner museums to make their collections search-engine compatible, so that searching can be done through Google or other more sophisticated engines.

For some partners, their digital objects can already be used and shared beyond the boundaries of their institutional web sites, as they do not carry onerous restrictions in terms of copyright and licensing. For these institutions, the challenge may be in reconceptualising, at institutional level, the relative importance of access to as opposed to ownership of digital objects. Others will need to confront these issues in conjunction with pursuing new distribution policies which take account of the way people increasingly wish to aggregate, interact with and learn from digital objects online.

Enhancing the social dimension

While the Creative Spaces are designed at least in part around a vision of the ‘socialness’ of online media, the social dimension of the WebQuests is to date embedded in their offline contexts – in the way they are designed to be used collaboratively in classrooms. Some stakeholders highlighted this lack of online social ethos in the WebQuests as an area for future development:

Stakeholder: I would like to see WebQuests become more of a social tool.

Interviewer: In what ways?

Stakeholder: Well say now for example you can create a profile, and you know you share the WebQuest that you’ve completed and you can give some feedback and say ‘I love this WebQuest, it’s blah, blah, blah, blah’. And you can make friends, you know. Contacts. Sort of making more of an online community.

Interviewer: Yeah. Would you see that as a community of teachers or a community of students?

Stakeholder: I was thinking more students.

To move in this direction could be, as we have seen, to move toward the use of Creative Spaces in conjunction with WebQuests in formal education settings. As partners know, this would create additional obligations in terms of the maintenance, support and moderation of the resource, and would also involve a jump into the unknown in terms of how children and teachers might engage with such an environment.

For the Creative Spaces site itself, which has been built from the ground up with social networking and social media in mind, there is scope to create even more opportunities for sociality: more places for discussion and feedback; the ability to search for users by location as well as name; and allowing users to bookmark one other’s finds, for example. Partners may also wish to rethink how the videos are promoted on the site: to embed them more richly in their web context by offering easy bookmarking of the objects shown in the videos; to consider the wording to put less emphasis on ‘exceptional people’ in contrast with regular users; and to offer a place within the videos section for user-generated videos to be highlighted. By continuing to pay attention to and learn from user feedback and new directions of web use and learning, there will be many opportunities to continue to think about, work with and develop the Creative Spaces framework to support communities of practice, personal development, and online learning.

Future research

The evaluation of the NMOLP will provide data on how, in the period following their launch, the WebQuests and Creative Spaces demonstrate technical robustness and encourage user take-up:

We need to make sure that what is there works, that it’s technically robust. And that it’s used, and that is enough success in a way, you know, that they operate, they’re used.

project stakeholder

We need to see whether people are using it; if every school in the country decides that WebQuests are fantastic and they want to use it and it has you know enormous potential, then obviously you know we need to think about what it should do next. But if it doesn't necessarily set out what we wanted it to do then we need to look at what's there and how that should be amended rather than trying to expand it further.

project stakeholder

There is also, however, potential for further academic research around this project which so intriguingly engages with multiple issues of social, technological and institutional change. The partnership aspect of the project has not, by request of the partners, been the focus of research to date, but is an area in which the sector as a whole would benefit from further academic investigation. As one commentator during the debate surrounding the release of Creative Spaces commented, '[this] is a beautiful piece of work and quite an achievement - not least for the effort of will and human and political wrangling that has gone into bringing it to life (I'm hoping someone will write that case study some day...)' *N Poole, MCG list, 5 March 2009*.

There is also scope for a more longitudinal, ethnographic investigation of the future Creative Spaces community, its impact on institutions over the short-medium term and its positioning within the multiple and always-expanding social nodes of the read/write web. This has formed the basis for a University of Edinburgh bid to the AHRC 'Beyond Text' programme which, if successful, will fund research for a further 18 months from January 2010.

Other potential areas for future academic research include more work on the nature of school e-learning and the ways in which the WebQuests might challenge conventional models of online classroom pedagogy, further analysis of the role of user-generated content and social networking in shifting understandings of museum education, and possibilities for international collaboration in researching the nature and impact of social media usage within museums and galleries globally.

In conclusion

The National Museums Online Learning Project has successfully delivered on its core objectives to develop new and innovative online learning environments for school children and lifelong learners. It has tapped into the social media paradigm shift and has driven forward, within the museum sector, a vision of how the inherent value of digitality to museum education can be built upon. It has provided new ways of engaging with museum digital content online, and has shown how the digital riches of the national museums' archives can sit at the heart of the experience of learning. It has also opened new horizons for the national museums in terms of the possibility and achievability of high quality partnership working across the sector, and has established the viability of federated searching across multiple national collections. There have been compromises along the way, particularly in the final form of the WebQuests and in the functionality of the federated search, and significant challenges remain in ensuring that the legacy of the project is nurtured and built upon in whatever future directions the partnership takes. This report has attempted to reflect critically upon these compromises and challenges, within a broader understanding of the project's many successes. The achievements – gained over just three years – remain significant. As one partner commented:

I can't think of another project that is quite like it, to say, 'look – look – look how they did it and let's learn from their mistakes and ...'. I mean, this is fairly, it's the icebreaker, isn't it? It's the one that's going ahead, doing it, and saying, 'the most important thing is we learn from it'.

project stakeholder

Endnote: research dissemination and knowledge transfer

As the research partner to the National Museums Online Learning Project, the team at the University of Edinburgh have made a formative contribution to the project via three reports and one literature review, in addition to this final report:

Ross, J., Bayne, S., Martin, B. (2007) *NMOLP: a concise webquest literature review*.

Bayne, S., Ross, J., Williamson, Z., Martin, B. (2007) *National Museums Online Learning Project Stage one report*. V&A/University of Edinburgh.

Bayne, S., Ross, J., Williamson, Z., Martin, B. (2008) *National Museums Online Learning Project Stage two report: part 1, Creative journeying: portraits of our users*. V&A/University of Edinburgh.

Bayne, S., Ross, J., Williamson, Z., Martin, B. (2008) *National Museums Online Learning Project Stage two report: part 2, Watching, gaming, learning: webquest contexts of use*. V&A/University of Edinburgh.

Bayne, S., Ross, J., Williamson, Z., Martin, B. (2009) *National Museums Online Learning Project Final Report*. V&A/University of Edinburgh.

We have also been active in sharing and disseminating findings with the wider academic community over the period of our involvement. The following academic papers have been informed by the project and are either published or are currently awaiting publication:

Ross, J., Bayne, S. and Williamson, Z., (2008) Reach, Relevance, Relationship and Recontextualisation: The 4 Rs of Inclusive Online Museum Learning, *The International Journal of the Inclusive Museum*, Vol. 1(1), pp. 67-74.

Bayne, S., Ross, J., Williamson, Z. (forthcoming, July 2009) Objects, subjects, bits and bytes: learning from the digital collections of the National Museums, *Museum and Society*.

Williamson, Z., Bayne, S., Ross, J. (in process) Performativity, innovation and surveillance in online learning: a question of vision? *Surveillance & Society*, Special Issue: Surveillance, Children and Childhood

Further academic papers are in the early stages of writing.

We have presented NMOLP-related research at the following conferences and events:

Bayne, S. (2009) Creative spaces: social media and cultural heritage (March 2009). *Royal Commission on the Ancient and Historical Monuments of Scotland, Centenary Seminar*, invited lecture.

Ross, J., Williamson, Z. and Bayne, S. (2008) Participation, possessability and power: multimodal learning in online museum education. *Multimodality and Learning: New Perspectives on Knowledge, Representation and Communication*, 19-20 June 2008, King's College London, London.

Williamson, Z., Bayne, S. and Ross, J. (2008) Performativity and innovation in online learning: a question of vision. *British Educational Research Association Annual Conference*, 3-6 September 2008, Heriot Watt University, Edinburgh.

Ross, J., Bayne, S. and Williamson, Z. (2008) 'This is their stuff': The role of social media in museum learning online. *Association of Internet Researchers Conference*, 16-18 October 2008, IT University of Copenhagen, Copenhagen.

Ross, J., Bayne, S. and Williamson, Z. (2008). Reach, relevance, relationship and recontextualisation: the 4 Rs of inclusive online museum learning. *International Conference on the Inclusive Museum*, 8-11 June 2008, National Museum of Ethnology, Leiden.

Funding for further research related to the area has been achieved via an AHRC Collaborative Doctoral Award in partnership with the Royal Commission on the Ancient and Historical Monuments of Scotland, with additional funding applied for by submission to the AHRC 'Beyond Text' programme for a small grant to fund a further 18 months of research specifically around the Creative Spaces (the outcome will be known in October 2009).

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