Reading screens: a critical visual analysis

Siân Bayne, Zoe Williamson, Jen Ross

School of Education, The University of Edinburgh

sian.bayne@ed.ac.uk, zoe.williamson@ed.ac.uk, jen.ross@ed.ac.uk

Abstract

This paper conducts a critical visual analysis of an online learning resource, exploring the potential of visual methodologies for reading and analysing the media through which pedagogy is constructed and expressed. Visual methods have tended to be rather neglected in research into online and networked learning (Bayne 2008), but a close reading of the screen interface can be a generative research method in this context – one which connects the 'digital turn' with the 'visual turn' in ways which are highly productive.

Methodologies for describing and critiquing the image – emerging from the fields of art history, cultural studies, anthropology, sociology, linguistics, psychoanalysis and media studies – include content analysis, iconography, semiotics, social semiotics and visual ethnography. The term 'visual cultural studies' perhaps most usefully, and loosely, encompasses this methodological diversity, with its focus both on the way in which 'meaning and power are articulated within specific images', and how 'such images are produced and consumed within a wide range of social, economic and cultural contexts' (Lister and Wells 2001: 63).

The paper will take a critical approach to considering the visuality of a collection of recently-created webquests developed by the UK National Museums. In discussing the visual semiotics of this particular interface, the paper will show how this contemporary online learning resource is structured around a linear logic dominated by a print-informed understanding of the way in which reading and learning works online (Kress and van Leeuwen 1996). A series of learning spaces which were intended to nurture the idea of learning from images, have in the end been designed in a way which systematically de-privileges the image, preventing sustained engagement with digital and visual modes and, we would argue, limiting the capacity for users critically to engage in a genuinely 'networked' learning.

The analysis will draw on a two-year research project into museum learning, conducted as part of the UK National Museums Online Learning Project, a £1.7m programme led by the Victoria and Albert Museum, aiming to improve levels of usage of the UK National Museums' digital collections.[i] The research presented here will use the visual analysis as a way to draw critical connections between the constraints of the interface demonstrated in the webquests and the cultures of control and surveillance operating in school online learning more widely. Conclusions will be drawn relating to the usefulness of the methodological approach used, highlighting the applicability of these findings to areas of adult and higher education.

The National Museums Online Learning project webquests

The National Museums Online Learning project was a £1.75m initiative funded by the Treasury's Invest to Save Initiative, and sponsored by the Department of Culture, Media and Sport. It ran between 2007-2009; led by the Victoria and Albert Museum, it involved a consortium of eight other National Museums and Galleries - the British Museum, Imperial War Museum, National Portrait Gallery, Natural History Museum, Royal Armouries, Sir John Soane's Museum, Tate and The Wallace Collection. The project aimed to increase levels of user access

Proceedings of the 7th International Conference on
Networked Learning 2010, Edited by:
Dirckinck-Holmfeld L, Hodgson V, Jones C,
de Laat M, McConnell D & Ryberg T

35

ISBN 978-1-86220-225-2

to the museums' extensive digital collections by creating online learning environments for children and adults structured around already-networked objects and images.

One strand of this project involved the development of a series of 100 webquests, intended for use with children in schools at English key stages 1-4 (ages 5-16). The webquests were conceived as a series of highly visual online learning tasks that could be used in various configurations in the classroom to support and develop children's digital and visual literacy skills. The webquests were intended to be enquiry-based, would focus on a central question or challenge as a launch-pad for children's' active web searching, would foster creative and critical thinking and would develop children's ability critically to use and interpret museum content, and web content more generally.[ii]

Figure 1: the webquests home page

The aim for webquests to be inspirational, image-focused and critically challenging resources sat in a sense awkwardly within the context of constraint, control and over-structuring which we would argue characterises much school online education. A general climate of fear and 'moral panic' around children's' use of the internet in the broader culture has contributed toward governments, local authorities, parents and schools enforcing what are often extensive restrictions on young people's internet access (Weber and Dixon, 2007; Livingstone and Bober, 2005).

In the schools context this has resulted in the proliferation of internet usage policies and 'e-safety' guidelines and regulations, with a general culture of surveillance (Hope 2009; Bayne et al 2009) and 'over-blocking' (Hope 2008) of external web sites working to compromise teachers' and students' abilities to engage critically with the real, risky internet. (Some of the digital resources provided by the National Museums project partners – the collections of UK national museums and galleries – were among the sites being blocked indiscriminately at local education authority level in some of the schools visited during this research.) The culture of 'over-blocking' and the lack of risk-taking in terms of e-learning in schools, is potentially significant for higher education in that it is likely to inform student expectation and tolerance of technological engagement in formal learning and teaching. We will return to these broader contexts of control, constraint and surveillance later, when considering how they have informed the visuality, structure and design of the webquests themselves.

Visuality and visual methods

Proceedings of the 7th International Conference on Networked Learning 2010, Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

36

ISBN 978-1-86220-225-2

Digital culture and internet practices have contributed to what Mirzoeff calls 'the new urgency of the visual' (Mirzoeff 1999, p.6), and there has been an historically tight relation between the emergence of a visual 'cyberspace' and an already highly visually-oriented culture:

> Cyberspace has become embodied in the screen not accidentally or contingently but because of the visualized nature of our culture and its prevailing pleasures. The technology predicated on an economy of watching has been pervasive for at least a century. (Grosz 2001)

In an image-saturated culture, the need to conceptualise frameworks for describing and critiquing visuality is intense, in that image is never neutral or 'innocent', but rather works to enable particular ways of seeing and occlude others, situating and constituting subjects in specific ways (Rose 2001).

Discourses and methodologies of visual cultural studies and visual analysis have significantly informed educational theory and practice through the critical focus on visual literacy and 'multiliteracy' (for example New London Group 1996; Cope and Kalantzis 2000; Kress 2003; Thomas 2007; Carpenter 2009;), but there are relatively few studies which have used critical visual methods in the context of the analysis of networked learning interfaces (exceptions are Selfe and Selfe 1994; Bayne 2008) . The 'ways of seeing' (Berger 1972) enabled by the particular visualities of design for online learning are deserving of more analysis, in that the spatial organisation and visuality of the screen both represents and creates a value system and an ontology, opening us up to particular ways of visualising pedagogy, and closing off others.

In this paper, we apply a method of visual analysis to the webquests described above, drawn from semiotic and social semiotic approaches to the reading of images. Such approaches attempt to develop frameworks for describing and critiquing the visual comparable with those we have for discussing the forms and modes of textual-linguistic meaning-making. Where semiotics is concerned with the study of the internal structure of signs and systems of signification, social semiotics – informed by Halliday's systemic-functional linguistics (Halliday 1978) and by critical discourse analysis – extends this concern into an analysis of the socio-cultural processes by which signs emerge and circulate (Kress and van Leeuwen 1996).

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 artefacts under consideration – the webquests – position the user, reading the design of the interface in order to highlight its messages about the relation between text and image, between teacher and learner, and between autonomy and constraint.
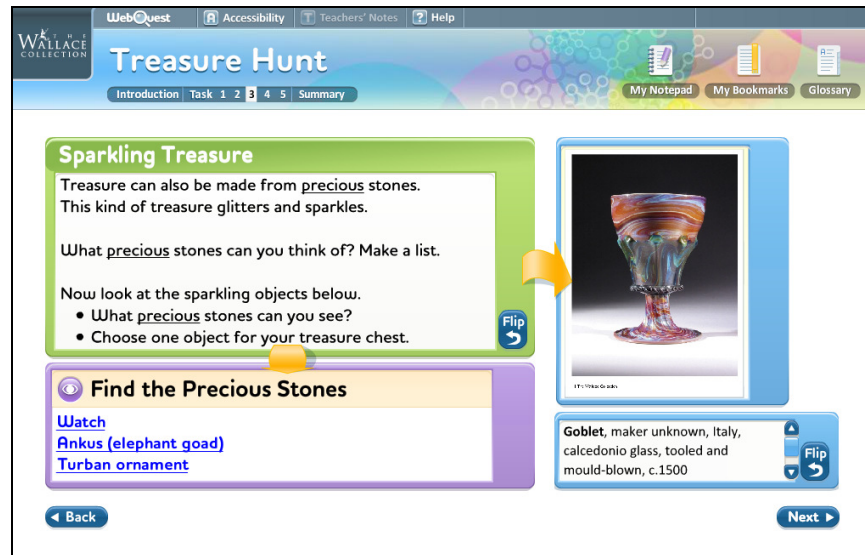
Reading the webquests

Proceedings of the 7th International Conference on Networked Learning 2010, Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

ISBN 978-1-86220-225-2

37

Figure 2: webquest interface design

Reading paths and screen composition

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. On analysis, the design of the interface and of the learning activity it represents is one informed largely by closure, directiveness and constraint, within an ethos of over-determination of the reading, learning and working path of the user.

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.

The greatest salience is given to the green instruction element (placed top and left[iii]), coding the screen for teacher-designer authority and presenting teacher-designer instruction as the origin point for the learners' activities. 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 is similarly constrained, with the ability easily to flip back and forth between quest sections disallowed. Old-style 'Back' and 'Next' buttons constrain users to a highly delimited path through the activity. The user-learner is 'trapped' within a determined working and learning path with no options for forging his or her own direction through the activity.

Proceedings of the 7th International Conference on Networked Learning 2010, Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

38

ISBN 978-1-86220-225-2

Analogue models

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.

The driving sense here is of a digital learning space which works against its own digitality. Most strikingly this emerges in the way in which the webquest interface closes the user within an online sub-space of the web in which the primary digital ways of working with which students are familiar is disallowed. There is no user-generated content, no shared space for knowledge construction or discussion, no user-defined pathway through the text. This denial of the digital and the 'networked' is seen particularly in the constrained nature of the Search function, which is restricted to particular aspects of each activity, rather than being allowed to be the informing principle of the whole webquest. Being restricted to partner museum sites only, the Search locks the learner within an artificially constrained digital environment which prevents their acquisition of critical and genuine information retrieval and evaluation skills.

This ethos of closure extends to the webquest's lack of a communicative space for student discussion and shared knowledge-building. The register of the activity text is aimed at instructing individual action ('do this search', 'write these notes'), punctuated by instruction to then 'discuss' isolated elements of the task. Because the context of use of the webquest is left undetermined, such instructions sit oddly. There is no link to a student discussion or knowledge-building space where the primary strengths of online ways of learning – connectivity, communication, multilinearity – could have been nurtured in a meaningful way.

In this context of closure, task-orientedness and teacher-designer determined learning path, the openness of the mode of questioning posed within the webquests seems like a hollow gesture. 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 turns its back on all the richness of contemporary online social modes.

The place of the image

A primary aim of the National Museums project was to engage users with the museums' 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 core to this project, and the images and objects used in the webquests are consistently of the highest quality. However, despite this impressive commitment to the value of the object, it is the textual element of the webquest task which tends to dominate the final design of the interface. As already described, the greatest salience is given to the green (text based) instruction element (placed top and left). 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.

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 (a key stage 2 webquest designed to support the Art and Design curriculum) is an example:

Proceedings of the 7th International Conference on
Networked Learning 2010, Edited by:
Dirckinck-Holmfeld L, Hodgson V, Jones C,
de Laat M, McConnell D & Ryberg T

ISBN 978-1-86220-225-2

39

Figure 3: placement of image 1

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 Mahraja Ranjit Singh throne the starting point and trigger for the learner's thinking:
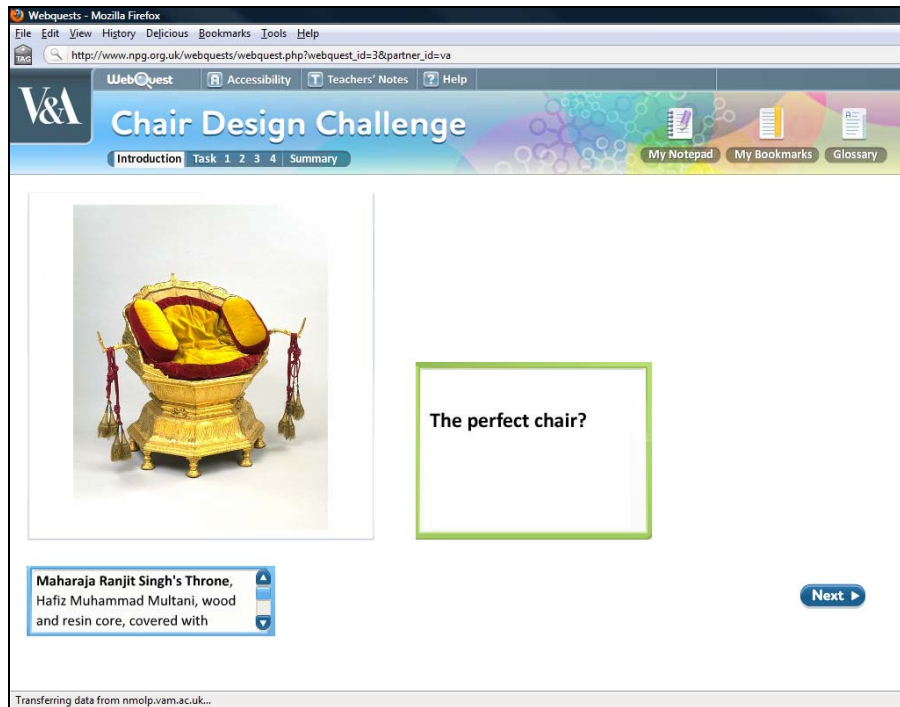
Proceedings of the 7th International Conference on Networked Learning 2010, Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

40

ISBN 978-1-86220-225-2

Figure 4: placement of image 2

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, a dependence on linear and print-informed reading paths, 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 non-digital textual modes of engagement.

Conclusions

The visual analysis of the webquests reveals intriguing connections between the broader contexts of online learning in schools and the specificities of the interface design. The over-structuring and closing-down of the learning experience here, coupled with the almost nostalgic dependence on linear and text-informed modes of reading and meaning-making, mesh appropriately with the culture of fear and risk-aversion which appears to structure discourses around the internet and digitality in schools.

If teachers are unable, through a 'culture of over-blocking' (Hope 2008) and a deep constraint by the discourses of 'e-safety', to work creatively with the generative riskiness of online texts and communicative spaces – chat rooms, social networking sites, richly visual environments and collaborative authoring spaces among them – the ability of children to learn the critical skills necessary for effective engagement with such environments in higher education and beyond is clearly compromised, leaving genuine critical digital literacies to be picked up ad hoc through internet usage outside school.

Recent research (for example Hope 2005, 2008; Cranmer et al 2009; Monahan and Torres 2009) has highlighted the ways in which computer use and online learning in schools is increasingly characterised by a culture of panopticism, protectionism and constraint. Justified via the increasingly dominant 'e-safety' discourse, children at computers are subjected to material and virtual surveillance by teachers, while internet use by teachers themselves is watched and monitored by local authorities. At each level, restrictions are imposed, rules are set, sites are blocked and certain activities disallowed in a climate which constructs the internet as dangerous, risky and out of control. Of course, there are aspects to internet usage which *are* risky and awkward for schools to

Proceedings of the 7th International Conference on
Networked Learning 2010, Edited by:
Dirckinck-Holmfeld L, Hodgson V, Jones C,
de Laat M, McConnell D & Ryberg T

41

ISBN 978-1-86220-225-2

negotiate. At the same time, it is questionable to what extent schools are enabled to teach children vital skills of critical internet usage when the 'riskiness' of the internet is so overly emphasised and controlled. The implications for networked learning beyond school are significant, in that we know that practices in schools inform student expectations of higher education (Melville et al 2009). The 'conceptual difficulties' (Melville et al 2009: 26) students experience in the application of social media, for example, to formal teaching and learning conceivably depend to some extent on the limited vision of networked learning to which they are exposed in school.

As one theorist has expressed it, visuality is about 'how we see, how we are able, allowed, or made to see, and how we see this seeing and the unseeing therein' (Foster 1988, p.ix). In conducting a close reading and analysis of a particular instance of networked learning design, we have demonstrated here how visual and design choices work to both express and inform broader social and cultural influences on learning. This particular expression of visuality, perhaps paradoxically, reveals a profound 'unseeing' at the heart of online pedagogy.

References

Bayne, S (2008) Higher education as a visual practice: seeing through the virtual learning environment *Teaching in Higher Education*, Vol. 13(4), pp. 395-410.

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

Berger, J. (1972). *Ways of seeing*. (London, BBC and Penguin).

Carpenter, R (2009) Boundary negotiations: electronic environments as interface. *Computers and Composition*. 26, 138-148.

Cope, B. and M. Kalantzis Eds. (2000). *Multiliteracies: literacy learning and the design of social future*. (South Yarra, Macmillan).

Cranmer, S., Selwyn, N., Potter, J. (2009) Exploring primary pupils' experiences and understandings of `e-safety'. *Education and Information Technologies*. 14/2: 127-142.

Foster, H. (1988). *Vision and visuality*. (Seattle, Bay Press).

Grosz, E. (2001). *Architecture from the outside: essays on virtual and real space*. (Cambridge, Mass., MIT Press).

Halliday, M. A. K. (1978). *Language as social semiotic*. (London, Edward Arnold).

Hope, A. (2005). Panopticism, play and the resistance of surveillance: case studies of the observation of student Internet use in UK schools. *British Journal of Sociology of Education* 26/3: 359-373.

Hope, A. (2008) Internet pollution discourses, exclusionary practices and the 'culture of overblocking' within UK schools. *Technology, Pedagogy and Education* 17/2: 103-114.

Hope, A. (2009) CCTV, school surveillance and control. *British Educational Research Journal* . 35/6: 891 – 907

Melville, et al (2009) *Higher education in a web 2.0 world: report of an independent Committee of Inquiry into the impact on higher education of students' widespread use of Web 2.0 technologies*. [Online] Available at: http://www.jisc.ac.uk/media/documents/publications/heweb20rptv1.pdf [Accessed 17 February 2010]

Kress, G. (2003). *Literacy in the new media age*. (London, Routledge).

Kress, G. and T. van Leeuwen (1996). *Reading images: the grammar of visual design*. (London, Routledge).

Proceedings of the 7th International Conference on Networked Learning 2010, Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

42

ISBN 978-1-86220-225-2

Lister, M. and L. Wells (2001). Seeing beyond belief: cultural studies as an approach to analysing the visual in: *Handbook of visual analysis*. T. van Leeuwen and C. Jewitt (ed.) (London, Sage): pp. 61-91.

Livingstone, S. and Bober, M. (2003) *UK Children Go Online: final report for ESRC* (London, LSE)

Mirzoeff, N. (1999). *An introduction to visual culture*. (London, Routledge).

Monahan, T. and Torres, R. D. (eds) 2009. *Schools Under Surveillance: Cultures of Control in Public Education*. Rugters University Press.

New London Group (1996). *A pedagogy of multiliteracies: designing social futures*. Harvard Educational Review Spring 1996: pp. 60-92.

Rose, G. (2001). *Visual methodologies*. (London, Sage).

Selfe, C. and R. Selfe (1994). The politics of the interface: power and its exercise in electronic contact zones. *College Composition and Communication* 45(4): pp. 480-504.

Thomas, S et al (2007) *Transliteracy: crossing divides*. First Monday. 12(12).

Weber, S. and Dixon, S. (Eds) (2007) *Growing Up Online: Young People and Digital Technologies* (Basingstoke, Palgrave Macmillan).

---

[i] The NMOLP web site is at: http://www.vam.ac.uk/about_va/online_learning/index.html

[ii] The webquests can be accessed from: http://www.npg.org.uk/webquests/

[iii] 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)

Proceedings of the 7th International Conference on Networked Learning 2010, Edited by: Dirckinck-Holmfeld L, Hodgson V, Jones C, de Laat M, McConnell D & Ryberg T

43

ISBN 978-1-86220-225-2