We Shape Our Tools, Then They Shape Us

Kay Politowicz
University of the Arts London (UAL)
Chelsea College of Art & Design
16 John Islip Street
London, SW1P 4RJ
k.politowicz@chelsea.arts.ac.uk

Rebecca Earley
University of the Arts London (UAL)
Chelsea College of Art & Design
16 John Islip Street
London, SW1P 4RJ
r.l.earley@chelsea.arts.ac.uk

Abstract

The artifact is a set of ten cards entitled TED's TEN, developed by the research group Textiles Environment Design (Chelsea College of Art and Design, UAL), a group of education and practice based design academics investigating sustainability in the textile and fashion industries. When used together, the cards can serve as practical guidelines to examine, survey and highlight the problem of sustainability and the role of designers in change and innovation. They present visual evidence of strategic thinking.

Each card identifies a significant, critical area for attention in the lifecycle of the product and suggests a strategy for analysis and change; approach and resolution; consideration and action, acting as a tool to overcome the barriers to improvement. Developed with a focus on textiles and fashion, they have a potential role in generating strategic concepts for the design process generally. They offer a persuasive prototype from design research and are a research tool in themselves, whose relevance becomes clear when used to facilitate design workshops.

The cards promote group workshop discussions in game-play and role-play formats. They are offered as a range of entry points for positive research-led engagement from the practical to the idealistic.

Author Keywords

Sustainability; textile design; prototype; toolbox; analysis; systemic change.

Research Imperatives

The name of the research group TED – Textiles Environment Design bears witness to its founding themes. The original imperative motivating our group of practitioners was to understand the growing problems of pollution of the environment from the production of the textile industry. As designers and teachers we needed accurate and detailed knowledge and a general overview of the entire chain of production. It was essential to research and collate the existing body of knowledge, which subsequently turned out to be limited and unconnected.

The meaning and possibilities of sustainability in textiles became a key element in our research. We dedicated our practice to understanding and demonstrating how design could contribute to the future of textile products. Detailed analysis of every stage of the process of production including the ecological challenge to design out wastage of material, energy, water and landfill made it clear that designers must consider the entire lifecycle of textiles (Graedel et al., 1995:17).

Questions surrounding production and consumption in the consumer society, including the role of new technologies in accelerating consumption, became important. We realised the need for a transformation of design education in textiles to be effective for future designers. Awareness of sustainability had to be brought into the core curriculum.

The need for a map of the subject of sustainability, a complex and difficult terrain, became a clear imperative. We focused on the

Figure 1: The TED's TEN cards (2011) www.tedresearch.net

Figure 2: The TED's TEN cards used during TED's 24: MISTRA Summer workshop at Chelsea College of Art & Design (June 2012). https://vimeo.com/52461083

barriers to environmental improvement and devised a cluster of strategies to overcome them. The TEN cards (Fig. 1) are a tangible presentation of those strategies.

As the TED group research evolved, the importance of collaborative and predictive roles, also relevant to other disciplines, became clear. Our imperatives have changed likewise and design activity has shifted from creation to facilitation, to publication, towards the development of our 'toolbox' and outcomes that have resulted from it.

The imperative always remains to develop methods of communication and dissemination and foster relationships as a community across disciplines. Two major challenges of international importance exist concurrently – to achieve viable systemic change within existing profitable industries and to change the perception and behaviour of citizens towards sustainability.

Research Process

TED research began formally in 1996 when research funding became available. The progress of research within the group was marked by a series of significant events / exhibitions and commissions over 10 years before the introduction of the TED's TEN cards.

At an early stage, exploratory research was necessary to both map the field of sustainable textile design and help identify a structure for a methodology of investigation. Qualitative research methods were used in combinations to develop theory and practice in an iterative sequence.

Through a process of 'constructive research', we identified the need to produce prototypes by 'imagining new things and building them' (Koskinen, 2011), defining our models through practice. This was made visible in our first collective staff exhibition in 2002. A large installation provided a case study for communication of our hypotheses to the public - a key event in the experience of collaboration.

In 2005-9 an AHRC funded project included a research exhibition on the theme of recycling. We exhibited 'narrative prototypes', explored through making. A significant element was the provision of workshops to encourage the interconnection between the strategies that have since been developed for professional design audiences.

The importance of communication through group workshops was focused on Swedish fashion businesses in workshops with particular reference to the life cycle of textile products. The use of cards (six at first and, subsequently, ten) as tools for analysis, role-playing and prompts for developing strategies began at this stage, with a phenomenological approach to designing for sustainability (Moustakas, 1994). Phenomenology provided a ready-formed methodological basis for our investigation, with our subjective, embodied design experience and our empathy for consumer appreciation of the material qualities of clothing, as knowledge.

As a tool for action and reflection, the TEN cards provide a checklist for designers - a lens with which to view issues of concern, cut through the rhetoric and solve apparently intractable problems. In using this as a tool for analysis of conditions, prompts and enablers, the designer contributes to networks of innovation (Bussramcumpakorn and Wood, 2010). The cards as tools are now used in workshops following an initial lecture and visual presentations, forming part of the delivery system (Fig. 2). As practitioners with tacit knowledge, we can group strategic combinations of the TEN cards to take risks and apply unexpected, sometimes playful solutions via experimentation and improvisation. This process was exemplified in a curated exhibition of artifacts, 2012. Using the cards as a brief to select and commission designers, we created imaginative, stimulating examples for large volume clothing producers, towards a different life view.

Figure 3: Once T-Shirt (Politowicz & Maclennan, 2012) created using the TED's TEN cards for US apparel company VF Corporation to probe the potential for short life, disposable/recyclable clothing.

Figure 4: Fractal Shirt (Earley, 2013), Top 100 project (upcyclingtextiles.net). Created using TED's TEN cards to extend the idea of material reuse – in this case overprinting a polyester shirt with paper stencils – by engaging directly with the consumer

http://vimeo.com/64294297

In the development of immersive workshops (Cassim, 2010), employing an empirical approach, we have demonstrated the relevance of the TEN cards to product development in industry, replicating and accelerating a proposed product supply chain with a design focus. An evaluative framework of the innovation that the workshops encourage is developed using qualitative research methods in a 'self–report instrument', to map the effects of the cards on the design process. In retrospective assessment of workshop participation, observation and description are used to examine the experience, to generate theories during the action research process for evolution of workshop practice.

This has been a key part of our participation in an international consortium as one of eight research projects, funded by the Swedish government. The multi disciplinary MISTRA consortium includes social scientists, political scientists, material scientists and designers in a 'Meta-design Framework' (Wood, 2013).

By proposing and promoting compelling alternatives to existing industrial structures through cross-discipline collaborations, we encourage social change while challenging assumptions and beliefs about how we live, work and consume. Bourdieu refers to such active researchers as 'cultural intermediaries'. The cards (now TED's TEN) are currently being reformulated for other design disciplines, which is a particularly significant development and testimony to interest shown in the research group.

Research Outcomes

The TEN cards are a tangible product of our research in the sustainability of textiles. They were created, over a long time period from our research into the body of knowledge, from extensive practice-based research and workshops for industrial companies. The cards are: templates for the development of individual strategies; flexible theoretical tools to help in the investigation of particular problems; and maps for surveying the whole territory.

The body of knowledge gathered from literature, conferences, exhibitions, practice-based research and teaching experience is a key outcome of our research. It informs our studies and has grown by addition from our original activities to the networks, which have developed in recent years. We adapt and update our resource materials for each intervention or engagement – tailoring to suit a broad and diverse industry – from bags to shoes, menswear to womenswear.

As practitioners we make prototypes as examples of innovation used in conjunction with the TEN strategy cards - as exhibited in: 'Artists at Work: New Technology in Textile and Fiber Art', Prato Textile Museum (inaugural exhibition), Prato, Italy (2003); Exhibits in 'Rethink! Eco-Textiles', Audax Textile Museum, Tilburg, Netherlands (2010); 'Trash Fashion: Designing Out Waste', Science Museum, London (2010-2012). They were used to curate 'Well Fashioned': Eco style in the UK', Crafts Council Gallery, London (2006) and to curate and commission work for the 'Responsible Living' section of the VF Corporation 'FutureWear' Exhibition, USA (2012) (Fig. 3). The Top 100 project (1999-ongoing) continually tests the combination of cards, specifically probing the potential for fashion: as a service, connecting the consumer to products for added value and additional lifecycles; and cyclability as a driver for systemic change (Fig. 4).

The outcomes in education have been important and have helped in the modification of the cards. Students researched the usual environmental problems and created a rich variety of visual examples to use on the cards. Some students looked beyond to life-cycle issues, consumer awareness, service and retail delivery and wider social concerns. Workshops in education were held in London, Hamburg, Berlin, Dublin, Eindhoven, Tel Aviv and Stockholm. Sustainability workshops can now be offered as part of the basic curriculum in Textile Design.

Dissemination and education workshops are important outcomes in influencing future professional developments.

Figure 5: TED's TEN cards in use with Danish fashion companies, at the Sustainable Fashion Academy / NICE workshop, (September 2011). SFA workshops in 2013 now use the Higg Index to measure this improvement by design, giving a pre- and post- TED workshop score.

"When educating the Scandinavian fashion industry in sustainability as part of the NICE project, it is crucial for us to include cutting edge tools and resources. TED's TEN provides designers with hands on examples and relevant dilemmas and have been highly valued in the NICE educational programme.

Furthermore, we have been much inspired to include TED's TEN in the 'NICE Code of Conduct and Manual for the Fashion and Textile Industry' as a concrete and recommended tool for designers to work with under the UN Global Compact umbrella."

Jonas Eder-Hansen, Development Director Danish Fashion Institute

The development of the workshops in industry is closely allied to the use of the TEN cards and to their current format. After launching the cards via the TED website, we were approached by large and small companies to introduce sustainability to their design teams. Companies recognise the need for general awareness and education concerning sustainability. Some wanted help in direct problem solving; others were concerned with product narrative for brand image and marketing. The experience of running workshops using the cards as strategies, accompanied always with visual examples and diagrams, helped us develop our communication techniques and tailor our efforts to make the workshops of direct relevance.

Our work in TED for MISTRA is particularly demanding and large scale – to look at the future development of the Swedish fashion industry. We collaborate with multi-disciplinary teams of scientists and engineers developing new materials and processes and with social and political scientists who are researching value systems. The work of lifecycle analysts on the connection between systems and speed are of particular interest to our study of the relative speeds within the lifecycle loops of products. This is of direct relevance to our proposals for changing manufacturing processes in order to embed cyclability without compromising aesthetic value or the functional sophistication of textile structures. Apart from collaboration, all TED practitioners have common ground in the sustainability of the lifecycle and the importance of consumer engagement.

Our individual studies include: open-source involvement in DIY and designer-led hacks to slow down the lifecycle of existing garments by refashioning and extending the life of clothes; the use of innovative paper-based fabrics developed from Swedish wood pulp in a radical new fast fashion cycle; a new generation of polyester treatments for closed loop cycles; the life-span of materials in relation to products and identifying the pressure points for environmental damage.

The cards are being used and developed in this exciting context and in the requirements to work with Swedish fashion companies such as H&M and in textile design education in Stockholm. The SMEs in the Swedish Fashion Academy (SFA) (fig. 5) are already using the TEN sustainable strategies in conjunction with the Higg interactive measurement tool (The Higg Index 1.0) to evaluate their TED redesigned garments. TED will present an online exhibition of the findings of our research team.

The development of communication skills is an important outcome in itself. The MISTRA Consortium has attracted an extensive group of like-minded designers and commentator bloggers who contribute to the project. A group of PhD students formally associated with each project in MISTRA have become an international network, bringing a new generation of critical involvement. Textile and fashion graduates, connected to TED through websites, blogs and annual events, are another part of our extensive, critical community. Our networks of communication are agents of change, shaping us and our work as much as the cards and workshops continue to do.

References

1. Bussramcumpakorn, C., and Wood, J., (2010), 'Design Innovation Networks' Lambert Academic Publishing
2. Cassim, J, (2010) 'Designing Effective User Interactions – examples from the Challenge Workshops,' Proceedings of the 3rd Conference of the International Association for Universal Design IAUD, Hamamatsu, Japan
3. Graedel, T.E. et al. (1995), 'Green Product Design', AT&T Technical Journal (November/December. p17-24)
4. Koskinen, I., et al, (2011) 'Design Research Through Practice: From the Lab, Field and Showroom': Amsterdam; Boston: Morgan Kaufmann/Elsevier
5. Moustakas, C., E. (1994) 'Phenomenological Research Methods': SAGE Publications Inc. July 27th 1994
6. Wood, J., (2013), 'Metadesigning Paradigm Change: an ecomimetic, language-centred approach', a chapter in Handbook of Design for Sustainability, edited by Stuart Walker and Jacques Giroud (Berg), 2013

Praxis + Poetics
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Corporeality, creative process and dissemination

Ko-Le Chen
Newcastle University
Newcastle upon Tyne
NE1 7RU UK
k.l.chen2@newcastle.ac.uk

Elaine Campbell
Newcastle University
Newcastle upon Tyne
NE1 7RU UK
elaine.campbell@newcastle.ac.uk

David Kirk
Newcastle University
Newcastle upon Tyne
NE1 7RU UK
david.kirk@newcastle.ac.uk

Abstract

As part of my PhD project I am investigating how researchers may be invited to reflect on their written work, through thinking and creating new formats for research dissemination. Two pilot workshops were carried out recently which aimed at creating a space for my colleagues working in the Digital Interaction Group (School of Computing Science, Culture Lab, Newcastle University) to unpick their writing processes. A third session with a theatre practitioner was also conducted as an opportunity to understand how the workshop framework may be applicable in the future for researchers working in disciplines of the Humanities. This paper presents a tool that was devised to facilitate group discussion and individual exploration of future formats for documenting research process.

Author Keywords

Dissemination; hypermedia; publication; video; visual prompts.

Research Imperatives

Academic researchers are motivated to publish and disseminate their work by their desires to enrich a collective understandings on particular subjects. A report compiled by the Research Information Network and JISC detailed why and how academics working in the UK are sharing their knowledge. The report explained that UK researchers face difficulties in choosing different channels to communicate their work '…but the perception that their work is being monitored and assessed in particular ways, notably by the Research Assessment Exercise (RAE), has a major influence on how they communicate' (RIN report, 2009, p.4). Although the RAE will be replaced by the Research Excellence Framework (REF) in 2014, we may still anticipate to find researchers working under similar pressure presented by the new framework.

In short, the changing environment in academia indicates that the notion of publication and dissemination are potentially conflating. On one hand, academic researchers seeks to have their work acknowledged by high status journals, on the other they are also encouraged, or sometimes pressured into making impact on a wider audience through various venues such as conferences, press release and social media (Vines, 2013).

There are various definitions on the term publication and dissemination. The level of ambiguity those two terms carry is somewhat analogous to the level of complexity in the ways we communicate research. When referring to publications, Pike and Gahegan claims that 'Publications are a high-level mechanism for knowledge transfer within a large community, but much of the discourse relevant to science is inaccessible outside of the small groups in which it occurs. Practitioners in other places or times can have difficulty in reconstructing the discursive process that lead to a particular finding' (Pike and Gahegan, 2007, p.661).

Compared to publication, dissemination indicates that the information will reach a public audience. Thorin explained that our use of the term scholarly communication these days illustrates the fact that we are no longer communicating in the traditional model when publication was clearly defined (Thorin, 2006). While most academics adhere to the idea that we tend to disseminate completed results to a public, and scholarly communication mainly includes aspects of academic practice that occurs within a research community, this paper would like to suggest a way to consider disseminating information that is generated during the periods of trial and errors, not only to our peers but to a public of practitioners.

Figure 4 & 5. *Details of Bitmap transferred onto acetate, Gelflex and acrylic.*

Thus the proposed framework for a workshop in which we may allow ourselves to consider alternative ways of recording our research process and create hypermedia documents as new vehicles for dissemination.

Research Process

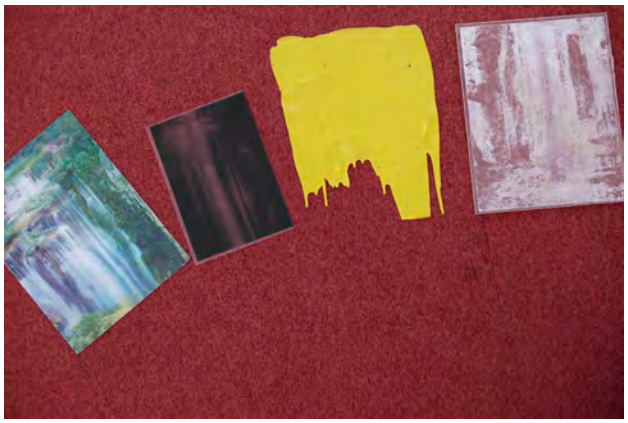
Video-making has become a fundamental part of the dissemination process for many research communities, including Design and Human-Computer Interaction (HCI) field, over the past two decades (Cater; Chow, 1989). Some observations that sparked my PhD interest took place while I was working as a freelance video maker. Therefore the initial phase of my first year study comprised attempts to reconcile my previous professional stance and the new analytical distance I wish to adopt.

A sketch video – the academic paper as visual object

Producing research videos for academic researchers in Culture Lab not only allowed me to gain insight to certain technological development, it also revealed different ways of seeing images (Berger, 2008). To better understand the difference between the standpoint of a video-maker and that of the researcher, I started exploring ways to first treat the conventional academic publication, printed on acetate, as a *poor image* (Steryl, 2009). This process was documented by creating a sketch video (the full video can be seen on Youtube - http://youtu.be/A8VOT6pIp0U) with my colleagues working in the Digital Interaction group. In summary, a front page of an academic paper published in the Designing Interactive Systems conference (DIS) was printed on acetate. I then asked ten colleagues to each pick a background for this acetate in order for me to film the object with their hands holding it against their chosen backgrounds. The video was shown as a provocation to my colleagues during a semi-public event in December 2012. The event allowed me to gather ideas and confusions about the project from my colleagues. Some of the feedback has directly informed the way I prepared a pilot workshop two months later.

The proposed pilot workshops were designed for but not limited to HCI researchers. For the academic group (2 PhD students and 4 research associates), the use of ‘video figure’ was one of the main topics of discussion. Each participant were invited to share their experience in using videos for conference submissions. Incidentally most participants had recently encounter a new challenge to create a short video clip as part of their submission to the ACMCHI conference – an annual HCI event that hosted over 3000 delegates in 2013. Whereas discussion with a theatre director (Tess Denman-Cleaver) focused on her approach in recording and sharing the creative process one engages in when developing a play. The main motivation to involve the director in the third workshop was that she had just produced a play called *Alice in Bed* (Sontag, 1993) which is a story that explicitly resisted linear reading and demanded an unconventional staging to highlight the bodily experience the central character (*Alice*) suffers from as part of her mental illness. Thus one anticipated that the focus on corporeality in theatre could also bring a radically different dimension when considering alternative formats for publishing.

Visual Prompts



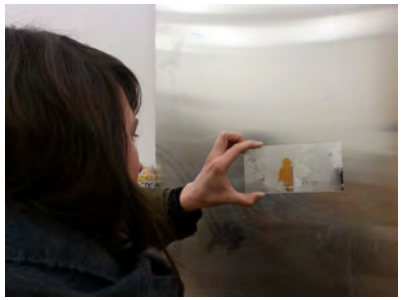


Figure 6 and 7. Tess holding an artefact created after our interview. An image was laser-etched onto a single-sided acrylic mirror as her choice of medium for dissemination.

"…I think it's a really simple thing to do […] this idea that you're gonna collage some images, or some text, or some shapes from your research process which are your images. And now we can talk about the decisions you make about how you overlay them or cut them" [Quotes recorded on 21/03/13].

Figure 3. Multiple "copies" of the "original" lenticular image of the left. The lenticular was first digitized through scanning and converted into Bitmap. The Bitmap file was then printed on an acetate, laser-etched on a 8mm acrylic, and lastly a form work was created by pouring yellow Gelflex onto the acrylic surface.

A *lenticular* image, or more commonly referred as 3D picture was adopted as a device to illustrate multiple perspectives. During the workshop I introduced an analogy between the inherent complexity of research projects and the multiple views on the lenticular image. Depending on how one is situated, we see different things. The visual prompts was brought to participants' attention in the second half of the workshop when the group discussion began to focus on aspects related to everyone's own experience in documenting a research projects on video.

Research Outcomes

The visual prompts caused many initial confusions in terms of its role in the workshop. However, key terms like "translation", "modality", or "mental filter" appeared several times during discussions prior to and after the use of visual prompts. When looking at the prompts, some participants were able to associate the visual differences amongst the set of images to the lifecycle of an academic paper. For instance, whilst looking at the image registered on the yellow Gelflex (Fig. 3), a participant questioned the difference between the integrity of a film director's message embedded in a Hollywood film and a researcher's main argument presented in a paper. In other words, the array of visual prompts seems to have led some participants to engage in an exercise where they searched for their personal experience that embodies the challenge of meaning making and its transfer onto a physical medium.

As well as using the prompts as a source of analogy, some also commented on its physical appearance. The physical textures of the prompts were aimed to be significantly different from printer papers - in order to make the images on its surface somewhat ambiguous. However, the range of textures seemed to have encouraged the workshop participants to propose future design. For example, a participant suggested using the location of his field study as the source of materials that could become a new printing surface for the paper that he had written about the project. In other words, the participant attempted to find a physical link between the medium for dissemination and the social context of his original study, thus inspiring a new dissemination format. Whereas another participant considered the challenge of creating radically new dissemination formats as a way of reaching a wider audience. Overall, participants explored the possibilities of new formats, both in terms of its social functions or its aesthetics. The pilot studies offered an opportunity to situate the current debate on publication vs. dissemination within a specific research group. The approach to treat academic paper as visual object has helped create a space for colleagues to reflect on the ways and techniques they have adopted in order to produce academic knowledge. The current workshop framework deserves more explorations in the future. And further in-depth analysis will be conducted to clarify the role and functions of visual prompts in the workshop. The project anticipates to organize a series of formal workshops in September 2013 for researchers working in cross-disciplinary teams.

References

1. Berger, J. (2008*). Ways of seeing*. Penguin.
2. Carter, K., Anderson, B. (1989). Can video research escape the technology? Some reflections on the problems and possibilities of A. V. research. *SIGCHI Bull*. 21, 2 (October 1989), 112-114.
3. Chow, M.D. (1989). The role of the video professional in a research environment. *SIGCHI Bull*. 21, 2 (October 1989), 83-87.
4. Communicating knowledge: How and why UK researchers publish and disseminate their findings (2009). Published online at : http://www.jisc.ac.uk/publications/research/2009/communicatingknowledgereport#downloads
5. Pike, W., and Gahegan, M. (2007). Beyond ontologies: Toward situated representations of scientific knowledge. *International Journal of Human-Computer Studies*, 65(7), 674-688.

6. Steyerl, H. (2009). In defense of the poor image. Published online at http://www. e-flux. com/journal/view/94.
7. Thorin, S. E. (2006). Global changes in scholarly communication. In eLearning and Digital Publishing (pp. 221-240). Springer Netherlands.
8. Vines, J. (2013). HCI in the press: online public reactions to mass media portrayals of HCI research. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 1873-1882