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Abstract

The paper is based on a training programme given to researchers in the Textiles Environment Design (TED) project at the University of the Arts London (UAL). The programme took place over three years (September 2010 to October 2013) whilst the researchers were engaged as consultants and researchers for Hennes and Mauritz (H&M) and the Sustainable Fashion Academy (SFA) in Stockholm, Sweden. The project was developed as part of the Mistra Future Fashion research consortium, which aims to bring scientists and designers together to find sustainable and profitable industry solutions. The TED's TEN sustainable design strategies for textiles and fashion was the framework for the Sustainable Design Inspiration (SDI) work at H&M – a broad and holistic approach to redesigning products including materials, process, systems, services, consumer behaviour and activism.

Introduction

What do textile designers and researchers have to offer the corporate world of the fast fashion company, in terms of inspiration to incorporate sustainable design decisions into their everyday work? If the decisions that designers make account for up to 80–90 per cent of environmental impacts (Graedel et al, 1995), then it is crucial that the massive producers of global fast fashion ensure that their internal teams are fully engaged with sustainable design. Carbon emission reduction targets for 2020 (EU, 2007) require rapid change on a huge scale. Textile design researchers working in this field need to address volume production, and work at the corporate level. This paper addresses the question: What new skills and capabilities do textile designers need to inspire sustainable design innovation in large fashion corporations?

The paper is co-written by a practice-based textile design researcher who was the project leader (PL) for the Sustainable Design Inspiration (SDI) initiative at Hennes and Mauritz (H&M); the project PhD student (PhD1) and a leadership coach with a back- ground in management consultancy (PH). The fourth author – a Mistra consortium PhD researcher (PhD2) with a background in cultural studies – was an engaged scholar with the PL during the project phase.

The paper draws together insights from the training that the team of traditionally trained practice-based textile design researchers received through interventions with PH, and the feedback from the SDI project team and participants at H&M, to arrive at a proposal for new skillsets for textile designers and researchers to acquire in order to contribute to a more sustainable industry. Are sustainable textile design researchers T-shaped?

An Industry in Need of a New Shape

The underlying context of this paper is the sustainability agenda and the need for the fashion system to move towards practices and attitudes that are environmentally, socially and financially sustain-able. The textile and fashion industry is one of the most polluting industries in the world (Deloitte, 2013; EIPRO, 2006), and its environmental and social costs are compounded by increasing levels of garment consumption, on a global level. The numbers are staggering. According to the Ellen

MacArthur Foundation (2013), 91 billion garments are sold annually. In 1997, the average British woman bought 19 items of clothing per year; 10 years later she bought 34 (Poulton et al, 2014).

Our increase in consumption has resulted in a similar increase in disposal, i.e. in the UK the average citizen disposes of 23 clothing items in a year, textiles that by large end up in landfills. While our attention has mainly been directed towards the supply chain, laundry creates around one-quarter of the carbon footprint of clothing (WRAP, 2012). China, which is still the largest producer of textiles and garments, has some of the worst water pollution in the world. While the textile industry is not the only one to blame, it carries considerable responsibility. As much as 70 per cent of its rivers, lakes and reservoirs are affected (Greenpeace, 2011). The Rana Plaza building collapse in 2013, killing more than 1100 garment factory workers, demonstrates the continuous lack of social responsibility that marks an industry that competes on the 'race to the bottom'.

There has been a plethora of engagement and interest on sustain- ability issues from stakeholders across the industry in recent years, with fashion brands collaborating on transparent supply chain initiatives (Sustainable Apparel Coalition, 2014); cross-sector partner- ships for closed-loop recycling systems (I:Co, 2014) and an increase in consumer and government engagement with social impact issues in response to the Rana Plaza event (Rana Plaza Arrangement, 2014). However, these responses do not constitute the systemic approach needed to make positive, long-term change and there is also a lack of design-led interventions at the mass-market scale. Researchers including Fletcher (2010) and Tham (2010) have been advocating for a systems approach to the fashion industry for several years, and Tham has noted the lack of effective outcomes within the mass-market by researchers working with lifecycle approaches (McDonough and Braungart, 2002) or product service systems (Manzini and Vezzoli, 2003) in the fashion industry.

This paper takes the position that sustainability is essentially a change process, and requires transformation at multiple levels – material/technical, financial and human/personal (Ehrenfeld, 2008). Making design-led environmental improvements at the product level needs to be supported by change at the organizational level. Whilst the framework being used – The TEN (Earley & Politowicz, 2010) – are design strategies which prioritize design solutions to sustainability challenges from products through to systems, and had been tested in education and with (small and medium enterprises SMEs) and CEOs, the set had not been utilized with designers in a large organizational context. Thus, in order to introduce sustainable design thinking to designers in this context, it could be argued that the researchers were facilitating a training course for designers at the micro level, and an organizational change process at a macro level. This context demanded particular skills and capabilities from the researchers, hence the engagement of PH for a team-training programme.

Methodology

The development and delivery of the training programme that was a collaboration between the PL and PH began in 2010. A suite of capability building interventions were applied from 2011 onwards – involving professional development training courses for the PL's team in some key skill areas (such as group facilitation, structured thinking, consultancy training, online webinar leadership) and certain tools (such as after action review, opinion research). Five of the participants on the training course were then surveyed in 2014 using a questionnaire, which uses the 'left and right column' method, popularized by Peter Senge (1994; 2006) and colleagues at the Society of Organisational

Learning. The basic principle (of distinguishing between what has observably happened and the thoughts and feeling about it) was expanded into a set of research intentions to explore a broader set of dimensions:

- What intervention happened, and when?
- What was the purpose of this, and how far that was recognized?
- The impact and value of the approach?
- Any ideas for improvement and innovation?

Whilst at each stage of the training programme immediate feedback and evaluation was sought (as those 'happy sheets' were positive), the subsequent review in 2014 has provided an opportunity to con- sider the impact of the support more formally.

The SDI project at H&M generated a wide range of qualitative data, including visual records and many reflective texts by the authors PL and PhD1, written after each H&M session was delivered. The PL used an adapted after action review framework of six questions for the team to complete after each session – specifically the pilot lecture and the workshops. The PhD1 used reflective writing and participant observation at H&M.

PhD2, an engaged scholar during the project period, brought valuable social science methods to the practice-based research team. She mainly used participant observation and semi-structured inter- views to gather data at H&M and within the academic project team (Bernard, 2006; Dewalt and Dewalt, 2010; Kvale, 1996; Spradley, 1980). This was supported with more informal talks. She developed a framework of themes to be explored, but kept conversations open to allow new ideas to be brought up. She conducted participant observation of the three workshops, the re-cap session, as well as mid-way meetings and the final evaluation meeting between the PL and key H&M staff. The mid-way meetings and final evaluation meeting lasted one to two hours.

PhD2 also participated in the Textiles Environment Design (TED) development and evaluation sessions before and after each work- shop and the re-cap. She conducted a total of 10 semi-structured interviews with TED researchers and H&M stakeholders and four semi-structured interviews with groups of workshop participants. The individual respondents were selected for the study because they represent voices from a variety of positions within the organization and reflect different degrees of organizational power. On average each semi-structured interviews lasted about one hour.

PhD2 used DEVONthink to manage and support the analysis of field data. In the first stage of analysis interviews, planning and evaluation sessions have been selected for transcription. General field notes, photos, and short video recordings from fieldwork have supported this process. In the second phase, PhD2 read through all transcriptions, focusing on moments where the topic of sustainability and the role of designers and design tools are negotiated in discussions and in practice. In the third stage, PhD2 selected extracts for deeper analysis, again with a particular focus on the materials (tools) and the teams' role as facilitators.

Insights from the PL's reviews and PhD1 and PhD2's interviews make up the content in the section on Results at H&M.

The 'T' Shape of Traditional Textile Design

This discussion of skills and attributes within a textile design context will refer to Brown's framework of the 'T Shaped Designer' that out- lines the skills required by professionals in order to operate in collaborative and inter-disciplinary contexts. The term 'T shaped skills' has been used in management and innovation studies by researchers such as Iansiti (1993) and has been popularized by Brown and his company IDEO. The term is based on the notion that creative ideas and innovation come from the combination of people with different knowledge and experience, and proposes that team productivity will be most effective when the individuals involved have the ability to integrate multiple areas of knowledge (Madhavan and Grover, 1998). Brown explains that the vertical stroke of the 'T' represents the depth of skill an individual has acquired as a professional – designer, social scientist or engineer. The horizontal stroke of the 'T' represents the skill required to step outside the disciplinary boundary, and to use empathy and curiosity to upskill in another discipline. Brown argues that in order to work in complex contexts, that 'T shaped designers' are desirable, however not all designers will excel as 'T shaped'. The designers who have a natural disposition towards col- laboration, social-engagement, communication of concepts, and the values and motivation to work as 'change-agents', will require upskilling and professional training.

While Brown did not specifically refer to designers working on the sustainability agenda, many sustainability theorists such as Ehrenfeld suggest that the ability to collaborate across disciplines is essential for working at systems level change for sustainability, with various stakeholders (2008). This is also in line with Wood (2010) and his Meta Design methodology that asks what skills and methods do designers need to be 'Meta Designers'? This is about working at the higher level of designing for systems, and having enough self-reflexivity to redesign design itself.

This paper argues that skills and attributes both outside the field of textile design and beyond the current realms of practice or agency are needed if researchers are to fully contribute to systemic industry change. Traditionally, a textile design education involves the development of a design process based on craft skills of weave, knit, embroidery or printed textiles (the vertical bar). Students learn to develop visual, tacit and perceptual knowledge, all qualities that are intrinsic to learning how to craft textiles (Shreeve, 1997).

As graduates, textile designers work across a very broad range of activity including designer/makers and freelance designers, and the applications for their designs include fashion, automotive design, medical/technical, architectural and interior design. However, while there is a focus on craft skills and creative thinking, students are generally taught to create artefacts as outcomes rather than concepts, and there is a paucity of training in business, marketing, strategy/management and collaborative skills.

The unique knowledge and skill of a designer, as compared to other professions, has been extensively by design researchers since the 1960s; what Cross calls a 'designerly way of knowing' (2006). The research has been based on architecture, product or service design; not textile or fashion design, and there has been a lack of investigation into professional textile design thinking

and process. Exceptions include a recent study by Igoe (2013), and early studies by Shreeve (1997) and Moxey (2000).

This paper takes the position based on Igoe that textile designers have a unique design thinking process distinct from other design disciplines, referred to in this paper as a 'textile designerly way of knowing'. PhD1 has analysed the design and material thinking literature, along with Igoe's study, and has developed a preliminary set of textile design qualities and attributes. These include: material experimentation; subjective process that involves sensual/tacit elements; light focus on customer profiling; reliance on 'paraphernalia' to feed inspiration; a 'whole life practice' that covers professional/personal realms; motivation by the pleasure in designing rather than external accolades; and as the majority of textile designers are female, an emphasis on 'feminine' qualities and 'ways of knowing'.

Using Brown's framework of the 'T' shaped designer, the qualities and attributes listed above would also sit on the vertical stroke of the 'T' shaped textile designer. They are the particular, expert skills of the textile design discipline. As designers who had gone through a traditional textile design education, both the PL and PhD1 demonstrated the above set of attributes and qualities associated with being a textile designer. In addition, the PL and PhD1 had focused their career and professional development on exploring and advocating for the sustainability agenda and the values that accompany this, including an understanding of lifecycle and systems thinking.

In order to become practice-based design researchers and educators, the PL and PhD1 had developed a range of skills and attributes, including: the facilitation of group learning; communication and presentation skills; and a level of emotional intelligence (EQ) that is required in learning environments. However, it became clear that in order to engage with the systems-wide sustainability agenda within the textile/fashion system across industry and academia, the textile design researchers needed to develop skills that would sit somewhere on a horizontal stroke of the 'T' (see Figure 1) – empathy, skills for collaboration, curiosity and management and strategy skills. What would these skills, attributes and roles look like for textile designers working to deliver an SDI experience in industry?

Emerging Role: The Designer as Facilitator

Alongside the need to up-skill as textile designers, the PL and PhD1 also understood the expanding context for design – from the creation of artefacts through to services and social innovations. Pastor and Van Patter (2011) have divided these new design contexts into four connected fields: Design 1.0 is traditional artefactual design; Design 2.0 is product/service design; Design 3.0 is 'organizational transformation' and Design 4.0 is 'social transformation'. While most textile designers were focused on artefactual design, what would it look like if textile designers began to design for 'organizational trans- formation'? In the delivery and facilitation of an SDI experience within a large fashion company, the PL and PhD1 were demonstrating how a traditionally trained textile designer might act in the new role of a facilitator.

The discussion and debate around new roles for designers has been ongoing for several years from authors including Julier (2007), Manzini (2009) and Fletcher and Grose (2012). Within the sustainable fashion discourse, Fletcher and Grose discuss new roles for designers including Designer as Facilitator, but there is a lack of detail about what these roles actually are, and the focus is on

designers who are either independent or SMEs. There is also a distinct lack of research into design practice within an organizational context in the sustain- able fashion discourse, as most sustainable fashion researchers are highly critical of the mainstream fashion industry, and are focused on exploring 'alternative ecologies of practice' (von Busch, 2013), outside of the so-called 'fast fashion' industry.

As mentioned above, the designer acting as a facilitator is a role that has been recognized within the design literature but with little elaboration. Brody et al (2010) and Tan (2012) provide the most comprehensive descriptions of the practice. A facilitator is 'an individual who enables groups and organizations to work more effectively to collaborate and achieve synergy' (Kaner et al, 2007). The professional role was developed in the 1980s within organizations in order to cope with the increasing complexity, level of change and available information (Tan, 2012). Many have described designers as intrinsically playing the role of facilitator using skills such as empathy, listening, observations and synthesis to bring different stakeholders and perspectives together (Tan, 2012). Both Brody et al and Tan state that what sets a design facilitator apart from a general facilitator is the use of visual tools to represent ideas back to the group and an emphasis on the creation of possible futures rather than analysis of an existing situation.

As textile designers, with a unique skill set based on a crafts- based design training, it could be argued the PL and PhD1 brought a 'textile designerly approach' to the facilitation of the SDI course at H&M. A range of methods and approaches were used that were highly visual and experiential, as seen in Figures 2 and 5. The pro- cess also followed a typical design innovation process as seen in Figure 3 that encouraged participants to create new sustainable solutions.

A Textile Design Researchers' Design for the SDI Programme at H&M

The PL designed the SDI programme for H&M after an 18-month period of negotiation and planning with the company by using a 'T' shape. Adapting the Tim Brown shape (2009) – the 'T' was a construct to reach a broad audience through a one-hour presentation delivered six times (to more than 350 staff in total); as well as offering 30 staff from the 'New Development' (ND) team a practical experience of three workshops, each one being four hours long, over a six-month period.

The first stage was the negotiation and planning stage, which spanned September 2011 to March 2013. During this period the project was shaped via email exchanges, discussions and 'run through' sessions in Stockholm.

The second stage was the keynote lecture that ran from April 2013 to October 2013. This was a one-hour lecture given six times to a total of over 350 employees from the Buying Office in Stock- holm. TED's The TEN was used to landscape the terrain of sustain- ability for fashion and textiles within a high volume context using current and future industry case studies.

The third stage consisted of the workshops (April 2013–October 2013), which were a series of three four-hour sessions and one one-hour recap session (see Figures 4 and 5). Thirty staff attended the workshops – almost all from the ND team. Knowledge from the lecture was used in practice by redesigning existing H&M garments to create improved scores using a simplified Higg Index score sheet. The first five strategies of The TEN were used to direct staff within a workshop framework by adapting Idenk's 'Decision Making Diamond' (see Figure 2) following the process of:

- Pre-survey
- Framing the Question
- Exploring Options Creatively
- Evaluating and Agreeing
- Ensuring Through Implementation
- Post Knowledge Survey

Feedback loops during this stage included an online pre-survey; redesign worksheets; interviews; feedback forms; and email exchanges.

The final stage of the SDI programme (November 2013–May 2015) consisted of post-course testimonial statements, face-to-face interviews and an online survey.

Training the Ted Team with PH

During the H&M project period the PL worked with several experts and advisors on project planning, organizational and management methods, and reflective tools. The PL and PhD1 also practiced mindful meditation and yoga, and encouraged the rest of the TED team to use it to build their personal skills, in particular their sense of empathy and well-being. Other skills developed during this time included digital software like Prezi, to improve the ability to communicate using very sophisticated tools – befitting of designers talking to designers. The formal support and training, integrated learning (coaching and team membership) and process and personal skills, were all introduced by PH to the team through a range of interventions prior to and during the project period at H&M.

For the focus of this paper we are only reviewing this support work conducted with PH. Authors PL and PH first met when PH was running a three-day workshop for a global luxury fashion conglomerate where the PL was an expert speaker and participant. This contact led to a discussion of how far process consulting and facilitation skills could be of use to supplement the work of specialist and academic design researchers. These methods were seen as additions to their existing approaches for bringing about sustainable changes for a more ethical fashion industry. A ‘natural experiment’ emerged, starting with attendance of a group of UAL team members at formal training programmes in 2011 and 2012. In 2012 and 2013 there was some additional coaching support. This embedded assistance focused on helping the application of the taught ideas into a major national conference in June 2012 as well as client work through into 2013.

The five main participants who were part of the team learning and capability building completed a short email survey in autumn 2014. The responses were collated and illustrative comments are included below.

The 2014 survey asked participants to think back and reflect on the support they received from PH during the team training sessions. Question one asked them to recall what support they received from PH and to be specific.

‘These courses took us completely out of our comfort zone and into new territory but the atmosphere created by PH and team was always supportive and open … and fun!’

Facilitation Training, a one-day session in Cambridge in 2010 – **‘**I think the overwhelming feeling for me was that I felt that a missing piece of a puzzle had been found. This day gave me tools, methods and references that gave me more confidence to take this leadership to the next level, which were facilitating occasions with more complex industry stakeholders.’

‘Learning in a group about the barriers to communicating complex ideas effectively.’

‘Learning tools and methods to capture and visualize complex data. Turning barriers into opportunities, and question fanning, in particular.’

‘Learning that consultants are there to support the learning, reflection and insights of others, and not necessarily answer the specific questions – offer knowledge – was reassuring.’

‘In this case he helped us to refine the design of the sessions and the materials. In particular probably the “homework” aspect.’

‘The tools we designed were all felt to be very useful, but we needed more time to test them, and understand them more fully, to really be the researcher and facilitators we aim to be.’

Question two asked the respondents to recall what they were thinking at time, noting different reactions to different interventions:

‘As a consequence, it highlighted how training situations in a physical space with verbal and spontaneous interaction created a more engaging dynamic than online-based training, where the technology requires a test run through to make it work smoothly.’

‘In the consultancy session, my big take-out was the “tools for thinking” – I really felt I wanted to research more of these kinds of tools as a follow up and have done to a small degree … but need to do more.’

‘In the facilitation session the “role-play” element seemed more useful as it involved running a “real” mini session with the group. … I felt I learned loads from this and from watching others do the same. It was incredible to see how many different styles worked. My key take-out for this session was “be yourself!”’

‘The consultancy training was great, as it made tangible a role I am intrigued in but have little experience of. Having done the PhD though I can see it would be even more beneficial now, as I am clearer about what knowledge/value I can bring to an organization, and this is where I would like to focus the next part of my career.’

‘The facilitation training I also enjoyed as I am fascinated by the role of a facilitator and how the role was perceived outside an educational context. The methods we were being introduced to also felt beneficial, because up to this point we had been operating intuitively as educators who had ended up in research and begun to use workshops as a research method.’

‘Tools are great – you need a bag of them to give you confidence when striking out with these projects. The sessions with PH have definitely driven us to place more importance on our own tools, and see them as part of the team.’

Question three asked the respondents what they would say about the training now, overall and specifically?

‘Specifically: The big outcome for me was a “Question Coding” exercise in which the subject of our research is framed as a series of questions, translated into specific problems followed by barriers to solutions with some specific suggestions to act on each barrier. It felt like a breakthrough for me in terms of re-framing the research questions as practice-led actions, resulting in objects as evidence of the thinking. It also serves as a system to communicate a way to identify and solve problems that are otherwise intractable.’

I believe that the training program achieved that the skills and information were absorbed subconsciously through the exercises and direct application, and that I since used these skills in facilitation and consultancy situations. Generally: It opened my eyes to the subtle interventions I could include to any session I design and started a journey of continued self-learning and research into tools for thinking.

‘Specifically: It made me aware of the importance of rhythm and in particular variation of tasks within a consultancy framework. This has been something I have referred to again and again in planning both teaching and industry workshops.’

‘Overall, and in retrospect, I see the Idenk training as crucial to the contexts we ended up in with the Mistra Future Fashion (MFF project).’ This has become one of the key questions of my PhD project – what new skills and methods do textile/ fashion designers need when they go into new contexts for the sustainability agenda. And how do we translate crafts/design- based knowledge into value for organizations?

Finally, respondents were asked what one word summarizes how they feel about the training now? The words were: empowered; experienced; energized; enlightened; and upskilled.

The main observations from this reflective process were that:

- The three formal training interventions (Brilliant Thinking, Facilitation and Consulting) are the best remembered.
- The formal support was of value – though it took a while for that to be appreciated by some.
- The integrated learning (through coaching support as part of team membership) is less well recalled – though when prompted some of the methods that were introduced more informally (e.g. pre-sur- vey and analysis, personal workbooks, printed posters, evaluation cards, after action review) are recalled favourably.
- The process and personal skills are a useful addition to the 'kit' bag of the contemporary designer.

The training was well received and widely felt to be of benefit; leaving the designers feeling 'empowered', 'experienced', 'energized', 'enlightened', and 'upskilled'. The authors argue that this is good for productivity, well-being and morale, and enables designers and researchers to work in teams. Such training for design researchers could be on offer in design research organizations; or perhaps even preferably, readers could look to collaborate externally. Although not covered by the paper, the influences of this collaboration worked in both directions; PH was in turn inspired by the way in which the project team worked, particularly in their development and use of visual tools.

Results at H&M: Designers Inspiring Designers through Textiles and Visual Communication Tools

New Textile and Visual Communication Tools for H&M

The questions we have been considering is what new skills and capabilities do textile designers need to inspire sustainable design innovation in large fashion corporations and how these skills might create a new 'T' for textile designers? In this section we primarily use images and captions to demonstrate and reflect upon the way that the team worked at H&M, and in what way this was influenced by the support given by PH.

Feedback from the H&M Participants

Researcher PhD2 interviewed SDI participants to find out if the TED team being designers themselves made a difference to the participants – who were all from the Buying Office, specifically the ND Team (perhaps the most creative of the design teams at H&M):

'It's good. It was also like high technology. I mean the team is really inspiring, very energetic and normally the other education we have here is with people from H&M, internal courses and so on. It's nice to get another view of things.'

Yes … she has some knowledge of course about the production chain. I think for really doing our job more sustainable here it would be so good to have somebody actually watching our production chain from the inside and sometimes with our research … because our production chain is maybe

not so different from any other companies. But in a sense it's … to find that there are actually tools for us.'

PhD2 also asked them about the visual tools like the 'Now Wall', and overall if the course was inspiring:

'Yes, the Now Wall we had in the kitchen so I think everybody saw it …'

'Yes, really good to have it physically and not only digital. Digital, I think people seem to forget; it's always better to have something physical to look at. It creates a buzz more than a digital version.'

'I think they make you think in a way that maybe it wasn't the set things that we were talking about but just the mindset.'

What did the H&M participants take away from the SDI course? 'It refreshed your mind and also think once more, I think that's what I got from the workshops …'

'What I got back was mainly to think one more time when we are doing decisions, a reminder I think.'

'… It did increase the discussion. I mean we discussed it over the table after.'

'… For me it's a lot about finding a really good way of working where I can save some time to do some reflections sometimes about the collection …'

Conclusion: The New 'T' for Textiles is an 'I'

This paper seeks to find an appropriate mix of skills – a revised 'T' shape – for sustainable textile design researchers to aim for, bearing in mind that sustainability and the systemic change that is required will demand that we approach the field with a greater sense of our 'whole selves' so that we, others and the planet may 'flourish' (Ehrenfeld, 2008; Ehrenfeld and Hoffman, 2013).

As textile designers are most often female, this paper speculates that there are certain 'feminine' qualities of textile designers that may be of value when working in sustainability contexts. Igoe claims that textile designers, more than other design disciplines, are involved in a design process that draws on subjective and emotional aspects of the designer. This focus suggests textile designers demonstrate some of the 'soft' skills that are associated with a person's EQ required for interpersonal skills in organizational and management contexts, including empathy and listening.

We maintain that the 'T' shape is still relevant for textiles; we conclude that we need both the broad (horizontal 1) knowledge of design and industry; as well as a set of specialist in depth textile knowledge and skills (vertical 1). Yet we also need a deep knowledge of design for sustainability for now and for future scenarios, as TED's The TEN maps out (vertical 2). To embed this knowledge and use it effectively – both for ourselves for our own personal and professional growth - to make our ideas impactful, useful and relevant, we need another horizontal element if we are to aspire to real systemic change (horizontal 2).

Thus, we arrive at a new T for textiles: the 'I' (see Figure 6).

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Biographies

Rebecca Earley is Professor of Sustainable Fashion and Textile Design at University of the Arts London (UAL). She has been a lead researcher at Textiles Environment Design (TED) since 2000 and Director of the Textile Futures Research Centre (TFRC) since 2010. She researches sustainable design strategy, curates exhibitions, creates materials, models and prototypes and mentors other designers and researchers to explore TED's vision of a more sustain- able industry and culture. Becky works with organizations to embed sustainable design research within the corporate culture. Recent clients include H&M, VF Corporation, Puma, DAFI, Sustainable Fashion Academy (SFA) and Zero Waste Scotland.

Clara Vuletich is a printed textile designer and a researcher in sustainable textile design exploring ideas of material reuse, digital craft techniques and social design. Clara was part of the team that has developed TED's The TEN, a set of ten sustainable design strategies for fashion/textile designers. Alongside this, Clara is a designer/ maker, producing hand and digital printed textiles, wallpapers and garments. Clara has lectured within the UK and in Australia, and exhibited her textile work at venues including Audax Textile Museum, Holland and TENT London and is currently a Visiting PhD Fellow at University of Technology Sydney (UTS).

Phil Hadridge has many years of experience helping groups in the public, commercial and voluntary sectors address the issues they face in interesting and useful ways. As a facilitator, he helps the people who know a business improve that business. He is experienced working at all levels, including

challenging the boards of leading organizations to be productive, supporting teams to work well and assisting groups struggling with conflict to understand and move forward. Phil's passion lies in helping others work with what inspires them, while maintaining a focus on implementation and outcomes.

Kirsti Reitan Andersen studied her BA at the English department, Aarhus University, and graduated with a Master degree in 2006 from the European Studies department. She recently completed a PhD at Copenhagen Business School specializing in cultural theory and analysis. After graduation Kirsti was employed as a research assistant at the Danish Design School and following this she worked as a Research and Project Manager at the Copenhagen Institute of Interaction Design (CIID) for 5 years, where she worked with innovation processes, people-centered design, rapid prototyping, and fundraising, both taking part in consultancy and in research projects.

Figures

Figure 1: The horizontal and vertical attributes of the 'T' shaped textile designer, according to Brown (2009).

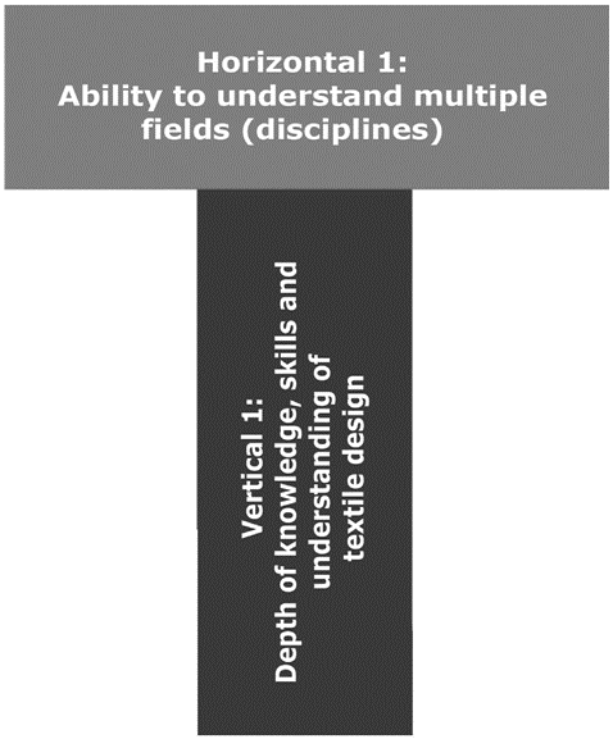

Figure 2: The PL using PH's Decision Making Diamond gave clear themes to the three H&M workshop sessions, which focused on framing the question, creative explorations, and evaluating and agreeing.

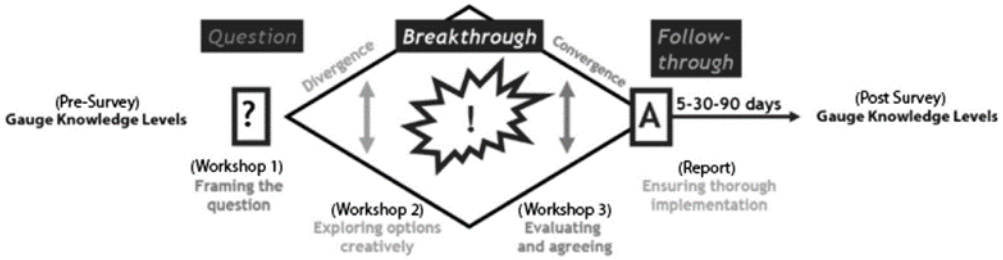

Figure 3: The workshop tasks focused on the team and the participants and their 'textile designerly ways of knowing', using garments and textiles in a hands-on way throughout to inspire H&M to embed sustainable thinking in their everyday work. PH supported the team in formalising this approach and designing visual tools to help map the outcomes.

Figure 4: The 'Now Wall' at H&M happened in the moment during workshop one, when the participants had been asked to 'code' sustainable industry innovations in terms of being usable 'now', 'near' or 'far'. H&M wanted the participants to feel empowered by what they could implement now, so the 'Now Wall' took their selection and formed a display by the coffee machines that stayed up for several months.

Figure 5: The Barriers to Opportunities workshop poster created by the team for H&M, inspired by the Question Fanning work with PH. The exercise at H&M lead by the PL asked them to consider the barriers they all experienced in being more sustainable as a company, and to then use their creativity to come up with innovative solutions that offered the company a new opportunity.

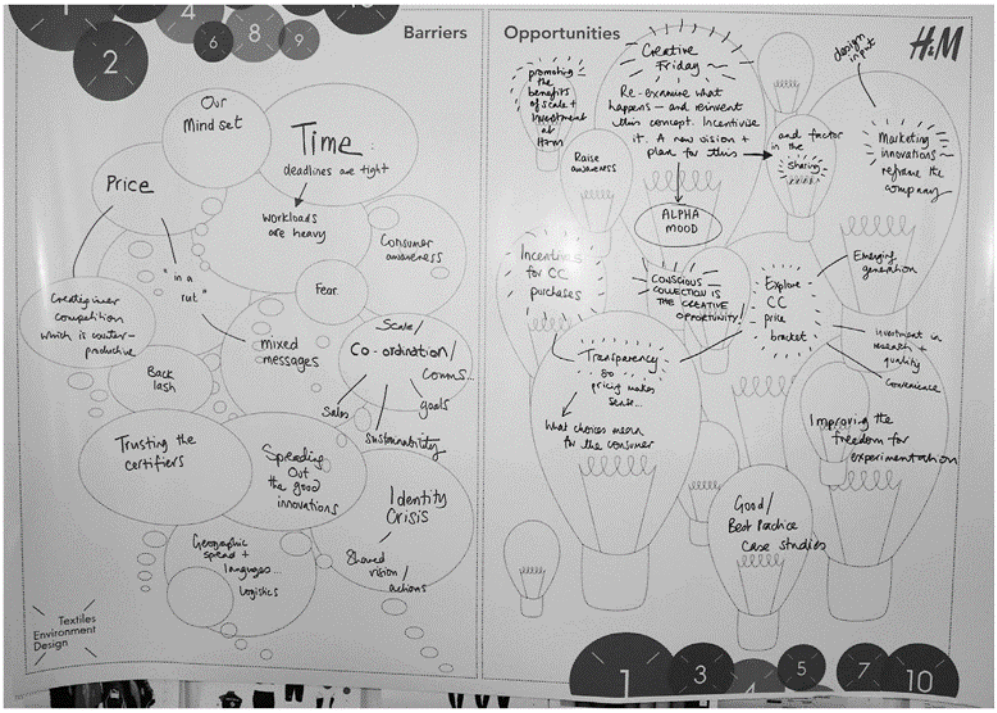

Figure 6: The ‘I’ shape of the sustainable textile designer; adding two more bars to allow for in depth sustainability knowledge and the unmapped attributes of the textile designer, the self, and empathy.