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# Encouraging ‘young digital citizenship’ through co-designed, hybrid digi-tools

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**Abstract:** This paper presents findings of a case study, co-design and constructive design research project which explores hybrid digital / physical methods and tools to engage young people in the design and planning of their neighbourhood. This sits within the context of radical changes in the National Planning Policy Framework (NPPF 2011) and Localism Bill (DCLG 2011), which demand new levels of democratic participation in local decision-making and the collaborative design of place. It also tends

to issues and theories of how communities (civic and academic) consider the use of digital / physical objects and processes in helping to cure the disengagement of youth in the local politic and developmental decision-making (Bachen, Raphael, Lynn, McKee & Philippi 2008, 2010 and Carpini 2000, Gant & Duggan 2013).

The project explores the co-designing and making of hybrid digital / physical engagement and communication devices resulting in a ‘community techno-tapestry’. The case study demonstrates the communication value of physical digi-tools when seeking to both engage young people in envisioning their future neighbourhood and in mediating their ‘shared vision’ to the community and stakeholders.

**Keywords:** Community; Envisioning; Technology; Co-design; Participatory Design.



CRAFTED TIMBER FRAME INSPIRED  
BY TRADITIONAL TAPESTRY LOOMS.  
OVER-STICHTED AND QUILTED COTTON

IT'S MAGIC!!



COMMUNITY COMMUNICATION /  
ENGAGEMENT OBJECTS...



THE INCREDIBLE  
TALKING TECHNO-TAPESTRY!!

CREATED USI





## Context and the problem

The Localism Act (DCLG 2011) and the most sweeping changes in planning policy in a generation (NPPF 2011) have both enabled and demanded new levels of participation by communities in their local decision-making. One of the key mechanisms for this is the development of new statutory Neighbourhood Plans. These neighbourhood plans are intended to enable communities as the ‘architects and designers’ of their neighbourhood (Gant and Gittins 2010) and once ratified they form the statutory legal planning reference for that community.

Young people arguably have the most to gain, or lose, in determining the future of their communities through this legislation – however young people are notably disengaged and disenfranchised from the process of local politics or neighbourhood design and are rarely offered a platform or mechanisms for local decision making. Equally how do they effectively engage and respond to the abstract notion of ‘what do we want our future to be like’ and how do they create and communicate such ‘visions’ to other stakeholders?

Despite the current coalition government’s commitment to ‘give communities direct power to develop a shared vision for their neighbourhood and shape the development and growth of their local area,’ (Gov.uk, 2014), there is a conflict between what communities are being

entitled to do and what support they receive for doing so. Several issues concerning the lack of resident’s involvement are noted, with one being the lack of tools that provided people with the skills to do what was being asked of them (Cornwall, 2008). Communities are being asked to create a ‘vision’, that is, to carry out the activity of envisioning in order to produce a ‘vision’ which encapsulates the future they hoped for, for their community, or in other words, the thing that precedes the change (Hanzl, 2007).

So the future of communities is to be determined by communities themselves and there are now over 1000 neighbourhood plans being undertaken in the UK (GOV.uk A). One key issue with this is that the natural leads in ‘accepting the baton’ of devolved decision-making and neighbourhood plans are town and parish councils but in many areas these are representative a very limited demographic and age range.

## The aims and the questions

The aim of the project is to use collaborative, constructive design methods to address issues of collaborative youth engagement, creativity and communication in constructing shared visions for their neighbourhood within the specific and emerging context of new, statutory neighbourhood planning processes and legislation. When considering the potential for engaging and empowering young people and the tools for ‘envisioning’ that may help capitalise on this opportunity or gap in provision, accessible



technology is one of the obvious mechanisms to consider. Young people could be perceived to embrace mobile and social network technology as an integrated part of their lives rather than deciding to adopt or grow usage of it, being what is termed as 'digital natives' (Prencsy, 2001). This is recognised by the CTRP, noting the importance of revitalising the way government and citizens interact by means made possible by developments in technology (CTRP, 2010), by using the techniques and devices people are comfortable with. Likewise the use of physical artefacts within place can also form part of an interaction across and between community members and form a hub for debate, communication, exchange and dialogue.

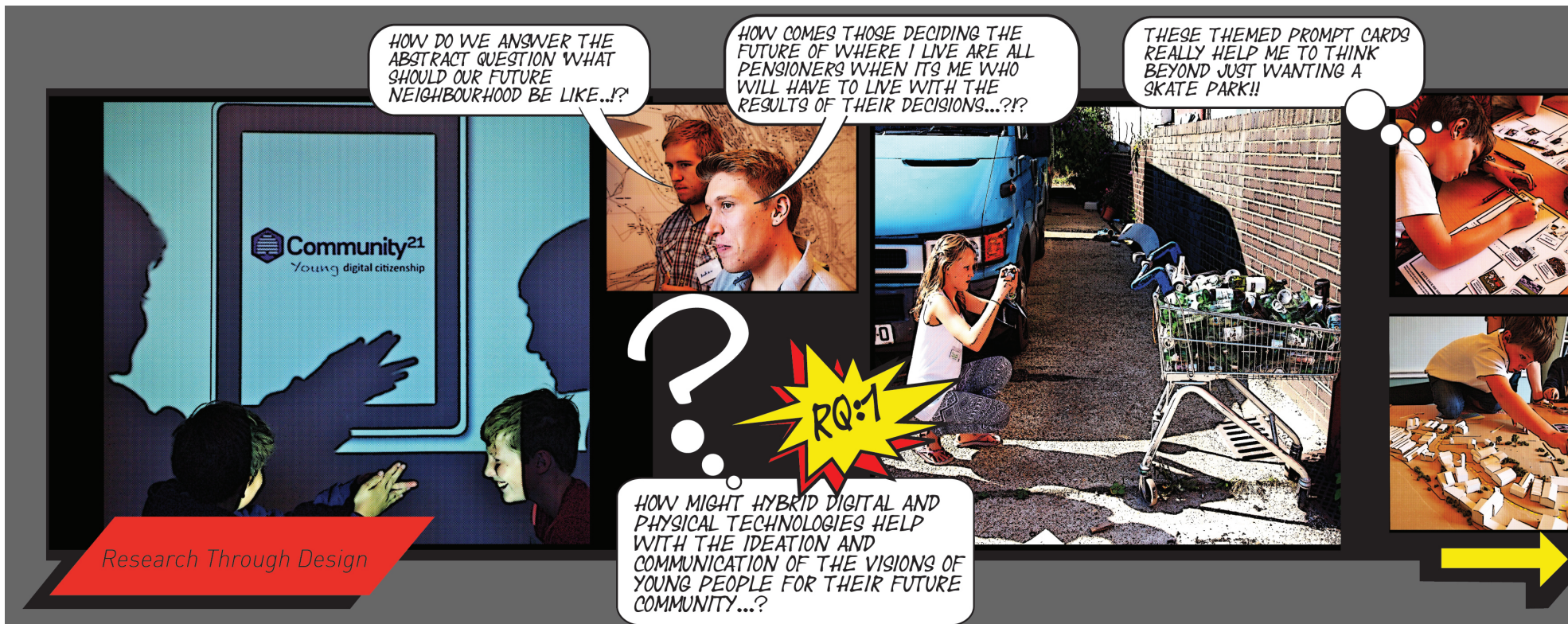
## Research Questions

- What is the role and value of accessible, hybrid physical / digital tools in enhancing the participation of young people in the co-design of new statutory neighbourhood plans?
- And how might it help in the creativity, elicitation, ideation and communication of the opinions and 'visions' of young people in relation to the community in which they live?

## The research through design process, case study community and constructive methodology

The nature of this project considers the participation and the collaboration of individuals in forming a vision and thus the process for research through design also engaged in practices of participatory and collaborative design when determining what the tools might be. Groups of young people ranging in age and gender and community practitioners were deployed with design researchers to co-determine the key issues that may impact on the design of tools.

These processes form participatory interactions for learning what people do, say and make (Saunders, 2002) and utilise the participatory methods associated with collaborative digital development as well as participatory spatial planning. These ways of knowing and making are devised through co-operative, experimental systems development, characterised by active user involvement throughout the prototyping processes closely coupled with use scenarios (Gronback, 1997). This is a constructive, co-developed and object-orientated design and realisation (Beyer & Holtzblatt 1997, Kensing & Blomberg 1998) composed of parts, functions, processes and forms organised to create a hybrid tool that fits the design situation. Constructive design research entails the construction of an artefact, product, system or media, which takes centre place and becomes the key means of constructing knowl edge, in this case the digital tapestry. The



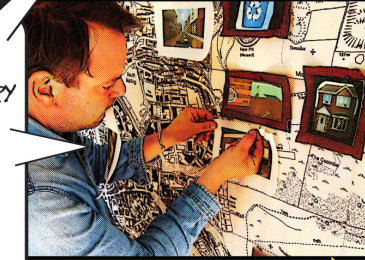
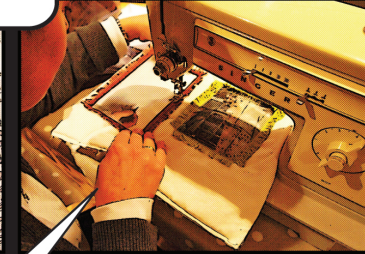
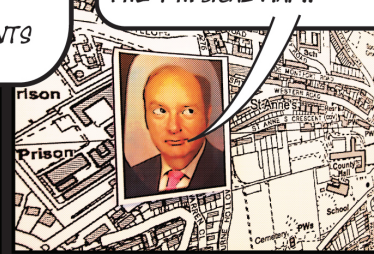
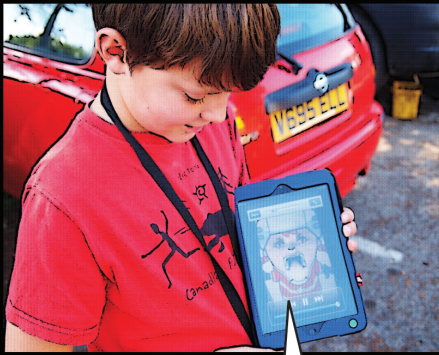
value lies in the construction and also the 'doing things', where observations made possible through viewing people interacting with the artefact in a specific environment (Koskinen et al, 2011), which enables problems to be identified and discoveries to be made, that may have otherwise have gone unnoticed.

The collaborative team of young participants, youth development practitioners, community planners and design researchers identified issues of (dis) engagement, logistics and process as important. In a 'post-post-it-planning' scenario, the team identified urban and rural planning

methods that utilised both people-to-people and digital and physical interactions. While the influx of smart phones, web 2.0, and digital mapping tools (Google Earth, GIS and 3D-modelling), have opened up new ways of understanding, experiencing and co-designing space, allowing the augmentation of reality and the virtual exploration of environments and communities (Mitchell, 2000; Foth & al., 2008; Al-Kodmany, 1999; Brail and Klosterman, 2001; Wrona, 1981), digital application can also be considered a 'double sided coin of accessibility and exclusion' (McCall & Dunn, 2012). Therefore examples of more traditional approaches used by rural and urban planners and agencies such as Planning for Real,



GIS MAPPING, GEO TAG, SKETCH-UP, COMIC STRIP & MOOD BOARD APPS



TOOL ATTRIBUTES NEED TO:  
- COMMUNICATE ANONYMOUSLY  
- BE ACCESSIBLE  
- CONSIDER AGE RELEVANCE  
- COMMUNICATE WITH STAKEHOLDERS  
- TRANSLATE INTO TANGIBLE DEVELOPMENTS  
- BE FUN AND ENGAGING!!

AMAZING 'MORPHO' ANIMATIONS  
ALLOW US TO CREATE TALKING  
CHARACTERS EMBEDDED IN  
THE PHYSICAL MAP!!

....INSPIRED BY HISTORIC  
'COMMUNITY COMMUNICATION'  
OBJECTS SUCH AS TOTEM POLES,  
NOTICEBOARDS AND THE TAPESTRY  
OF THE BATTLE OF LEWES  
THE TEAM SET TO WORK  
TURNING THE PAPER MAP INTO  
AN AUGMENTED  
TECHNO-TAPESTRY!!!

PRINTED ON COTTON, QUILTED  
AND OVER STITCHED TOGETHER \\  
THE ANIMATED YOUNG PEOPLE'S  
STORIES MAGICALLY APPEAR FROM  
THE CLOTH WHEN VIEWED  
THROUGH A SMART DEVICE!!

## DIGITAL VS PHYSICAL VS DIGITAL + PHYSICAL...

COMPARATIVE PHYSICAL VS DIGITAL AND HYBRID  
METHODS WERE TESTED AND EVALUATED FOR 3D  
MODELLING, MOOD BOARDING, IDEATION, STORYTELLING,  
CHARACTER ANIMATION AND MAPPING...

The Princes Foundation and Locality, including physical tools such as interactive models, hand drawn physical maps and Lego in engaging stakeholders (Sanoff, 1978), were looked at simultaneously, to ascertain the limitations and advantages of both approaches, and potential merging possibilities.

Central to the concerns of the research team were also the ethical considerations when working with young people and eliciting their ideas and opinions and the politics of accessibility to technology. Importantly productive processes of 'envisioning' would need to translate into useable,

practical information that could 'feed into' the neighbourhood planning process itself (in effect be of use).

The co-design team identified the need for facilitation and communication tools with the following features:

- Communicative (but anonymous so as to help with both privacy, confidence and social concerns).
- Accessibility of technology (acknowledging the politic and disparity between access).





- Ease and speed of use and feedback, interactivity and fun to use (Davis & Gardner, 2013).
- The capacity to communicate with those who need to receive the information (the community and stakeholders).
- The importance of prompts and questions and their ability to stimulate ideation and creativity, without leading.
- These processes should help prompt 'deeper' thinking (including techniques that facilitate Dewey's notion of 'empathic projection') (Fesmire, 2003).

The case study community (the historic, County Town of Lewes in East Sussex) was undertaking a Neighbourhood Plan and had specifically identified the lack of young people's engagement with the process – the team met with Town Councillors and gained agreement to work with them during the research.

Workshops and an eight-day summer school posed physical and digital methods in comparable experiments for envisioning, modelling, location based tagging, mapping and communication of ideas. The participants and practitioners soon evaluated and identified the value of freely available

animation apps (Morpho, Chatterpix, Talking-photo) when contextualised and appropriated to processes of representing 'ideas issues' – these we refer to as 'Talking Heads'. When using thematic characters as prompts as a means to develop deeper, more reflective or expansive thoughts, young people adopted a range of objects to animate. From beef-burgers, recycling bins to trees, cars or animals as well as different people the thematic nature of the characters enabled the anonymous, funny and engaging representation of their ideas.

Physical maps were identified as a useful and engaging object when negotiating and facilitating discussions around the geography of the neighbourhood (Wates, 2014). The team sought to hybridise the two through the use of augmented reality and in particular the use of the Aurasma app. This enabled the success of the instant animations and characterised opinions to be woven into the geography in a way that enabled individuals and groups of people to experience it as a tangible, interactive object in situ. The Aurasma app hybridises a live image of the map and the moving animation forming one composite moving media image.

Having successfully experimented with embedding the augmented 'mophos' onto a 'prototype' paper map the team referenced tapestries and other 'community objects' as 'totems' and a focus for community interaction and / or storytelling.

The context and historic importance of a 'once in a generation' neighbourhood plan and the need to engage both those with the 'visions' and those needing to receive them suggested investment in a crafted iteration of the augmented map as an augmented reality tapestry.

Referencing the famous Battle of Lewes Tapestry, housed in the town hall, a large constructed textile utilised digital printing onto cotton, which was quilted and stitched to reinforce and add further texture the map image. The 'auras' / visual triggers for the animations forming the augmentation for the textile were also fabric printed and stitched onto the map. The team referenced traditional tapestry weaving looms when constructing an armature to hang the artefact and assembled it in wood enabling it to stand erect and be robust enough to be installed publicly in the Town Hall. The freely available and multi-platform nature of the Aurasma app mean the content and the unique way it retains a connection to the textile whilst playing the animation results in an object that potentially becomes both a practical, ideation, engagement and communication process but also cultural in its use and appreciation as part of a milestone community event.



## Evaluation and conclusions

To create a 'vision' of a neighbourhood's future requires 'envisioning'; a process that includes the undertaking of several stages, including deep reflection to form opinions on what currently exists, identifying the perceived good and bad aspects, Ideation – to imagine and create alternatives to negative aspects of the community and the externalisation of these ideas in order to communicate them with others to generate deliberation and discussion (Wates, 2014; Sarkissian & Hurford, 2010; Ziegler, 1991, 1996).

What the hybrid physical/digital tapestry offers to this process is its ability to encapsulate/embed all these different stages within one artefact, whether the media was created by digital or traditional means, and contextualise them within the location. In its co-construction, the hybrid physical/digital map shapes/leads the envisioning process, incorporating tools and technologies that went far beyond the current methods of engagement and consultation. Tools that were tailored to young people, tools that excited, engaged and amused younger people, and tools that elicited creativity and ideation in ways traditional techniques don't appear to, while producing considered and useful contributions regarding the future of the place they live.

One of the key lessons from the project was that young people were particularly excited by the prospect of simply using technology when compared to just analogue methods and that this could be further enhanced through the development of tasks or approaches which required the use of technology to complete them. This was most evident where the output generated was something which could not have been generated through traditional techniques or any other means e.g. Talking Heads or Augmented map/tapestry.

The ability of the map to draw together the various outputs from the activities and present these to any potential audience is obviously beneficial for any community planning exercise. It allowed outputs from the other tools (Treasure or Trash and Talking Heads) to be combined and presented in an engaging way, which linked directly to the locations which were being discussed and on which views were being expressed. The reception to this was overwhelmingly positive and although there may be challenges for groups in terms of the resources required to be able to replicate it, it does represent a centrepiece for the other engagement techniques, with the additional benefit of presenting these spatially via the map. (Dr Simon Kiley, author of the Young Digital Citizenship evaluation report for Nominet Trust 2014 and head of research for Action in Rural Sussex).



Aspects of the project, including the augmented map have been successfully presented to Town Councillors and subsequently a joint event is planned (Jan 2015) to present the tapestry as a central focus for the town's planning process and public engagement. In relation to the key concerns that any tool would need to elicit, engaging visions that could 'translate' to stakeholders (be useful), the Town Council's suggestion that the topics presented through the tapestry could define key thematic debates and subgroups of the planning steering group suggests that this is indeed happening.

The research led to the formation of a constructed 'toolkit' of 'digi-tools' applied to the Community21 website where it will be used openly by communities and forms part of the use policy for the Rural Community Council as a facilitation agency for neighbourhood plans across the region.

The full extent of its value and role is yet to be fully evaluated as part of its longerterm use and installation as a public artefact – this will form part of on-going doctoral research and is at dependent on the pace of the case-study neighbourhood planning team and their timetable. However the positive evaluation of users and the adoption into community engagement agency practices suggest there is a role for this type and iteration of an augmented, hybrid object and that the enhancement of it in the form of a 'crafted, community artefact' may also exceed the team's expectations.

## The exhibit

We will exhibit our Tremendous Talking Tapestry and aim to use it to deliver the paper though – accessing key content on the tapestry though the augmented interface on an iPad.

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