A quick and fun process for sharing learning resources

Report on the co-design process of Duct Tape University project

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Report on the co-design process of Duct Tape University project

as part of a self-study unit for a Masters in Computing

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Introduction

This report offers a narrative analysis of a co-design process undertaken to create a web-based repository for learning resources. The process involved numerous stakeholders and draws on diverse elements of theory and practice. Stakeholders include MMU, who are assessing this work, JISC who provided funding as part of the Summer of Student Innovation project and Community Arts North West who are the target user group.

Communities of practice can provide fantastic opportunities for rich user feedback when creating tools or services together. Wenger identifies them as a key component to the process of building social learning systems (2000).

The sharing of learning resources seems perfect activity to create greater communication between a community of practice of trainers. However, research in the context of the UK OER projects funded by JISC shows that there are tensions and barriers which can impede the effective exchange of learning resources, certainly in the form of OER (Littlejohn and Pegler, 2015).

This multimedia report makes observations on the potential for a co-design process to help the adoption of open sharing of learning resources. It also documents a process to put these practices into action through the co-creation of a web-based repository for a specific community of practice.

As part of the process, a large amount of data has been gathered in the form of photographs of the process, audio recordings of sessions and video interviews surrounding evaluation, design and dissemination. While, there is sufficient source material for a significant study beyond the remit of this report, the goal of this report is to briefly introduce the area of interests surrounding this project based on a review of relevant literature, to outline activities undertaken and to make broad observations on lesson learned and questions raised by the process.

This chapter is divided into four main sections, this introduction, a section on theory and the framing of the project,

an outline of project activities and finally a reflective summary.

This report takes the form of an ebook in ePub format. There is more information on the technical process of its creation in section titled the making of this report. A chief reason for choosing the ePub format is the possibility to include the audio, video and photos gathered on the projects blog in a self-contained format. The contents of this report are also online here: http://blog.ducttapeuni.org.

The focus of this report is to communicate the breadth rather than depth in any one area. The media contained in this whole document can be seen a resource to dip into the purpose being to convey a rich, impressionistic sense of the project.

This chapter provides a more traditional frame for the project. It intersperses citations to academic work using Harvard reference system and hyper-links to other chapters of this ePub.

Context of the project

Last summer, I wasinvited to be part of a team which planned and delivered a course on I.T. for artists through Community Arts North West. The subject matter is digital skills with a focus on graphic design, audio and video productions and web design skills.

The Msc project that I chose to complete in summer of 2014 had a focus on OER. An early in the planning process I started to think about the possibility of using CAN as a pilot group. There were however costs involved in convening participants in an accessible way.

The tipping point was being a successful applicant for the JISC summer of student innovation award (JISC, 2014). The focus of the JISC summer school project is to nurture ideas which have the potential to be converted into tools to be used by students and universities. A video of the pitch I gave and the accompanying text is shown included here.

The JISC award allowed me to pay for the time of CAN staff and venue, transport and food costs for participants as well as support in the documentation and design of the project. The process of bringing in JISC and CAN as stakeholders to the project added a significant about of complexity and time commitment but also provided me with valuable experience and networking opportunities.

General requirements of the user group

As part of most of the sessions for the 2013 Do I.T. course, we created a lab-based environment where students worked on a website designed to promote their work or to showcase their learning. This situative learning approach was judged to be key to the success of the programme.

Course resources and follow up work was available as written hand outs and via Google docs. In our tutor evaluations, while peer-learning was judged to be very successful, we wanted to improve on the aspect of the use of online resources for the next iteration of the course. The goal was set to move learners towards self-directed learning through contributing to a shared repository of online learning resources.

While Google docs was attempted as a way to do this last year, it never really took off. Students indicated that they felt it was tricky to use and had little to do with other activities on the course. It was not easy for them to find specific resources or group them by category or use in lesson. It was hoped that by starting a tool from scratch we could created a tool with a better fit for the group.

The Making of this Report

A report by Digital Futures in Teacher Education underlines the importance of e-text books in world of increasing mobile devices (DeFT, 2012).

This delivery of material has particular advantages for users who prefer to access materials on mobile devices. Pdf and word files are tricky to view on mobile devices compared to web pages and ebooks. This is linked to the concept of reflowable text (Haiguang et al., 2012).

This report endorses the position that outputting learning resources as epub documents is a key step to make text books accessible and to promote flexible authoring and publishing practices (Fletcher, 2013).

I gave a presentation as part of a session entitled " eBooks: the learning platform of the future? " at the 2014 Cetis

conference (Kraan, 2014). My presentation and the opening presentation outline the technical and social advantages to the use of using open, web-based standards as a base for creating learning resources.

This chapter was written in Libre Office using the Zotero citation manager in a manner similar to most dissertations. It was then uploaded as a blog post to http://blog.ducttapeuni.org.

The entire contents of the blog were then exported as an xml-rc file and then imported into the pressbook.com system. This allowed the contents to be ordered and converted to an epub file. Additional hyperlinks to media and other supporting blog posts as epub chapters were added.

This epub file was then downloaded and additional media was added, using the Sigil software, allowing the playing of audio and video for epub3 compliant devices and playing of online video.

Video files were converted from their original formats to mp4 file format using h264 video codec and aac audio codec at suitable rates to optimise file sizes for inclusion in epub and potential distribution via the Interent.

A similar process is outlined in a three part lesson that I prepared for the Mozilla's 2014 Teach the Web series (Fuzz, 2014).

Challenges, co-design and community solutions surrounding OER

Studies show specific factors complicating OER adoption within a University context (Littlejohn and Pegler, 2015, p. 58). These factors included focusing on short term goals, value of context and academic reputation and a tendency for projects to become inwardly looking and thus preventing the sharing back of resources to the wider community. While the context of this pilot project outside of the University context removes some of these factors, others remain as challenges to be overcome.

The issue of ownership of education is if relevant to the field of OER. Who owns education is a disputed territory but recent disruption is starting to level the playing field (Hassler, 2014). Students share resources informally and this can be disconnected from a more formal learning experience The use of OER has been likened to an iceberg: Only the tip of it is visible (White and Manton, 2011).

The process of creating a learning resource for a community should involve the end users in the design process to increase the communities sense of ownership of the resource.

Professionals are more likely to reuse OER if they are part of a community of practice which recommends resources to peers and disseminates them (White and Manton, 2011). In initial stages of education, students greatly appreciate resources and supplementary materials that have been collated by tutors (White and Manton, 2011). However, relying on such expert advice is not in-line with a constructivist approach to learning.

Connectivist learning theory places great importance of co-production of learning material s as a learning experience in itself and on the importance of design to facilitate peer-learning approaches (Weller, 2011, p. 94).

Research based on activity theory indicates that construction and modifications of learning resources can act as a mediating artefact around which teachers and students share experiences about how they learn (Littlejohn and Pegler, 2014).

The authors use activity theory as a lens to examine inherent tensions in this area. In doing so they classify OER repositories as tools. For this co-design process we can see the creation of the repository as an mediating artefact or tool. The repository is a needed tool providing a well-organised home for OER which are themselves mediating artefacts. It is hoped that the process of building and using the repository will be a valuable activity to increase learning in participants.

A similar process is recommended by a JISC study on reuse to "provide opportunities for students to share, discuss and critque the online resources that they have found themselves" (White and Manton, 2011, p. 25).

Sustainability of OER projects is a great challenge and one which goes beyond how their production costs are met to cover issues like community models of collaborative development (Downes, 2007). While the sustainability of OER projects is without doubt context dependent, such a community model of production can be seen to a promising way to address the challenge of how to encourage and the use, adaptation and ultimately the sustainability of resources (Wiley, 2006).

Another way to address some of the challenges surrounding productions costs are to investigate processes of accelerated production. A methodology known as Book Sprints aims to create a book or research output in 3 –5 days with diverse participants (Baker, 2014). Although to the initial focus of the process on creating a book, the process "regards the learning process equally as important as the written product" (Baker, 2014, p. 19).

Impact of facilitation on co-design

Baker's recent study of the process of Book Sprints shows its roots as a mix of the approaches of code sprints and hackathons and that of 'Unconferences' (Baker, 2014, p. 12). The study goes on to recognise the importance of facilitator in this collaborative process. Some of the key roles and qualities of the facilitator in Book Sprints are outlined as:

- Requires an understanding of the elements of a book sprint (concept mapping, structuring, writing/reviewing, restructuring) and how to pattern them.
- An understanding of pace: how and when to cue elements or directions.
- The ability to communicate effectively and authoritatively to a group.
- The ability to read the nuances of group communication and dynamics and subtly manage them when a hierarchy

or a conflict might exist, or where energy might be forming around a particular idea.

While some of these roles are clearly specific to a writing process, others can be applied more generally to other co-design processes. Indeed, many collaborative processes highlight the role of facilitator as joker or dynamic force to guide the group to reduce inequalities of input and encourage sharing of experience and exploration of new areas.

The influence of the facilitator in the process of co-design cannot be divorced from process even if they try to minimise their impact on the resulting content (Buur and Larsen, 2010). Buur and Larse also cite the importance of improvisation using the work of Johnstone (1979) and Boal (1985) as an inspiration.

Implementation of Process

Scope and overall shape of the project

Time constraints were the key limits in terms of what could be achieved for this project. It was clear that the activity of creating a tool and framework for OER categorisation based on pedagogical use must balance the large scope of possibilities with a practical approach to create results within the allotted timescale of two months. There was also a technical limit in place. I was using this process to learn the Django framework, and as such was unwilling to commit to areas of coding which were unknown to me in scope.

It was decided that the OER resource created should act as both a source of materials for teachers and as a resource for learners to reinforce and enhance their real life learning.

The project was divided in to two phases. The first phase would build team spirit and gather general user requirements in terms of functionality and general design. The second would aim to further refine design and to make other key decision about implementation.

Planning and support as part of the JISC SOSI process

The JISC summer of student innovation project brought together participants in a series of three day workshops to inspire and guide the creation of the relevant tools.

The goal of the SOSI project is to support and incubate tools which could be rolled out to UK educational institutions. A report on how the process helped to shape the outputs and presentation of the project is available here.

A fuller exploration on the outputs of this project and how they matched the objectives of the SOSI programme is covered in the conclusion of this chapter.

Week by week report

As part of the project a week by week report was kept by the team. These reports are rich in photo, audio and video documentation. The following section contains a brief summary of activities that occurred and links to the more detailed posts.

Week 1: Intro, What's in the Bag & The Big Picture

Not all participants were familiar with each other or familiar with the aims of the project. T he process for getting all participants in the process up to speed and creating a sense of camaraderie formed the focus of the first session. The first activity of the first session drew on a drama game called Columbian hypnosis designed to increase group and self-awareness of participants (Boal, 2002, p. 51) .

Other activities are described in a write up of week one here.

Week 2: Enter meta-data & Duct Tape Wireframe

The process for deciding a metadata schema was something that needed to be carried out as part of the first phase of the project. The subject had been in introduced the previous week using the What's in the Bag activity.

The key end activity of this week was to create a wireframe diagram of a web page containing full details of a learning resources.

A full write up of the activities of week two of the process is here.

Week 3: Rate my Repository and Street-art Wireframe Designs

The process of designing a list view involved going back to the streets armed with monster chalk. The 'Rate my Repository' game was a way to fully explore the possibilities offered by other similar websites.

Week three is summarised here (video clips are included)

Week 4: What's Next & Design and Details

The process of choosing how to categorise resources by educational use sparked a lot of rich debate and sharing of

practice. I also opened up the process of planning the session to participants.

Week 5: Learning and Teaching, Testing & Evaluation

Week five saw us testing the input form of the tool and wrapping up our discussions on how we teach, as well as evaluating the co-design process.

Reflections on the co-design process

This report has described the context and implementation of co-production of a tool for Community Arts North West. This tool is a the time of writing active and in use by the community at the following URL: http://doitacademy.flossmanuals.net/

No in-depth conclusions are drawn from this process, as this report is offered as an impressionistic, observational record. However, I would like to end with the following reflections from the perspectives of different stakeholders involved.

Participation of the CAN pilot group

Many argue that OER repositories can gain increased sustainability through active engagement of communities of practice (Downes, 2007 ;Wiley, 2006). I do indeed hope that this would be the case for this particular community and that the advantages of the use of such an OER repository are experienced by CAN and associated groups offering community-based education of digital skills.

More evaluation is needed as part on the ongoing process of the use of the tool by the group but a couple of observations stand out.

Being part of the co-design was quite intense and quite a lot of hard work was put in by all involved. To then start from scratch researching and adding learning resources is an additional effort and challenges. it would be of interest to develop specialist interfaces or 'skins' to allow repositories to build on the contents of a core repository.

We wanted to explore if the production of a tool to share OER (a valuable output in itself) would also act as a vehicle to share teaching practice. This can certainly be said to be the case, with rich discussions emerging on teaching practice as part of every session.

While, it has not been possible to yet evaluate the process of tutors and students evaluating learning resources and selectively incorporating them into self-directed learning. There has been commitment from the tutors of the next Do I.T. course that they will incorporate this process into the design of the course.

Notes on Facilitation

As the facilitator for the majority of these session I wanted to share some thoughts on the effectiveness of the activities carried out and the general motivations behind them.

A common theme that I encountered when planning the sessions was a tension between designing participatory activities designed to increase group communication and have fun and the need to decide on key technical infrastructure and design elements. A retrospective analysis shows that in general, sessions alternated between those which prioritised communication and those which had a heavier technology focus.

A frustration felt by all participants was that fact that nearly all of us had to drop in and out of sessions due to holidays an other commitments. I tried to deal with this by using catch-up activities. These activities also functioned as a way of evaluating the on-going process, re-enforcing learning in certain areas and generating audio and video documentation.

This retrospective analysis seemed to really help participants to fully grasp how the divergent elements of process fit together. Although, at times, as a facilitator, it felt like we were covering the same or similar ground a lot.

At times it was difficult to be both facilitator and technical lead on this project. I tried to be open about the limitations of the scope of the project at the same time as trying to incorporate as much of the functionality as possible from the pilot group. Time constraints made this very tricky. I also tried to share with the group when I was aware that I was in danger of trying to steer them in a particular direction. At times I set a group task and removed myself from the discussion as a way of avoiding this. I think that I was generally successful in this aim and there are certainly decisions that were made that I wouldn't have thought of without the input of the group.

The use of the urban environment as a canvas for creativity was something we carried forward from our work on the Do I.T. training course in the summer of 2013. This created some great experiences and lends a fantastic flavour to the documentation of the project that many observers have commented on. The process of collectively deciding locations to use for our street art and the experience of negotiating with shop owners and passers-by was a great team building

exercise and one that I would recommend for any facilitator who is bored of the use of flip charts as a vehicle for collaborative planning.

JISC participation

From the point of view of the JISC SOSI project, what were the key take-away? Here are some quick thoughts.

- Accelerated co-design is possible and can be a good team communication experience if you've got key skills of facilitation and use an appropriate code framework with short cuts (in this case Django & Bootstrap for web development).
- LRMI metada as a frame work to guide a project like this is a really useful design technique – above and beyond it's original use as a way of increasing discoverability.
- Institutions can profit from years of experience of co-design and co-creation experience that are present in arts / community based organisations like Community Arts North West.
- OER are everywhere. The process of creating a repository to bring together disparate learning resources and integrating its use into a training course increases the possibility of constructivist learning happening.

In some ways, the messages from the JISC mentors appeared a bit mixed. Throughout the process most of the JISC team of advisors seemed much more drawn to the co-design process that we were embracing and experimenting with that with the technology or tool itself. However, at the end of the programme, the focus returned to evaluation of the projects as tools which could be potentially developed and marketed as education technology products.

While there is some innovative use of LRMI metadata in this project and use of modern web-technologies, these fall more under the area of good practice rather than a new product. This balance is reflected in the following elevator pitch for the project.

> As part of the Summer of Student Innovation Duct Tape University worked with Community Arts North West (CAN's) to create a web-based repository for Open Educational Resources focused on digital media skills.
>
> The tool created is technically innovative. It uses LRMI metadata to help search engines find resources allows custom search engines to filter resources by educational use.
>
> But the main focus of Duct Tape University is not the technology. It's not just what we do it's how we do it.
>
> We use our diverse skills to deliver in technology, design and facilitation to deliver a rapidly accelerated co-design process which maximises the involvement of end users.

This quick and fun process increases the accessibility and sustainability of what we create.

> Educators are talking a lot about how they can use MOOCs (Massive online open courses). But we think they should be working with QUAAACS. **QUAAACs** are **Q**uick **U**ser-led **A**ccessible **A**daptable **A**cademic **C**ommunities.
>
> A co-design process means developing a tool which which reflects the needs of the group and increases their sense of ownership over the tool. The co-design process makes the tool accessible and sustainable.
>
> The most exciting thing about this project is that it has brought together a teach of experienced facilitators, designers, coders and community educators in a way that adds up to more than the sum of its parts.
>
> We are keen to work with Universities and other educators and research institutions to apply this process to other areas. So get in touch!

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