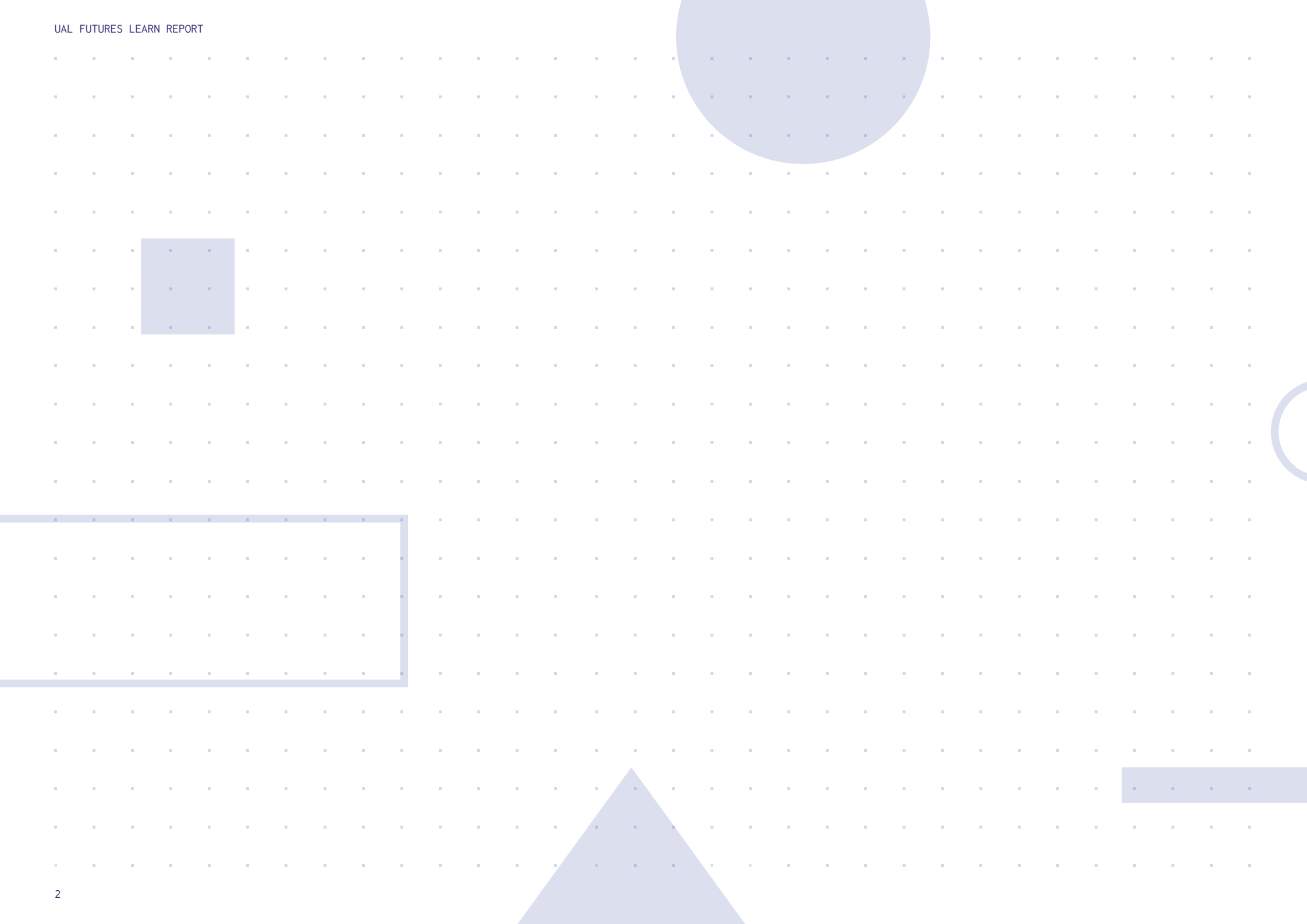




UAL Futures Learn Report

How might we co-design a digital creative toolkit
for University of the Arts London?





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Report Summary

University of the Arts London (UAL) is one of the world's most renowned institutions for education in arts, design, fashion and communication.

Delivering a transformative education that ensures students reach their full potential requires us to work in partnership with them, drawing on their natural enterprise and curiosity.

UAL Futures is an initiative responding to the challenges and opportunities digital technologies present for the creative and cultural sectors.

Funded by the Higher Education Innovation Fund, the project requires us to work in collaboration with creative partners to inform services, experiences and learning programmes that prepare students for successful careers in the digital creative industries.



The Challenge

In 2015 UAL Futures invited students, staff, alumni and creative industry partners to become co-designers and help us explore ways we can support digital creativity at UAL.

The project asked participants to respond to the challenge question: how might we co-design a digital creative toolkit for UAL?

Two UAL researchers were invited to design a series of workshops with the aim of;

- Exploring and identifying themes in the current digital skills and learning landscape.
- Identifying the needs and behaviours of students in relation to digital skills.
- Mapping students' creative journeys and ways they access and apply digital technology.
- Bringing students and creative professionals together to share insights, ideas and come up with solutions to the challenge of improving digital skills.
- Exploring how outcomes might be developed into income generating enterprise opportunities to enable UAL Futures to become sustainable.

The project had input from over 100 students, staff, alumni and creative professionals. In workshops we were also joined by speakers from the creative industries and education including the Tate, Hyper Island, Hirsch and Mann, General Assembly and UAL.

Findings

Six steps to learning

We have identified six key elements to digital learning. These broadly describe content, activities and experiences a student wishing to learn digital skills would benefit from having access to;

- 1. Defined knowledge** - gateway resources to define and demystify digital concepts and terminology will help students contextualize them around their interests.
- 2. Access to resources** - products that students or anyone wanting to learn digital skills needs access to (technology, tools, software, hardware, learning resources).
- 3. Access to learning** - activities and services that facilitate inspiration, learning and knowledge exchange (talks, classes, workshops).
- 4. Opportunities to apply learning** - projects and experiences that help students apply new knowledge and skills (prototyping, side-projects).
- 5. Access to people with knowledge** - teachers, mentors, technicians, but crucially peer networks.
- 6. Access to support networks** - communities where knowledge and experiences can be shared.

Recommendations

Based on student needs and informed by creative partners, these are our recommendations for ways UAL can approach the delivery of new content, services and experiences.

1. Defining and demystifying digital.

We would like to see UAL develop content and resources that unpack fundamental digital concepts for students. Short online introductions and offline classes that act as a gateway to understanding the skills, tools and approaches used within a digital creative context.

2. Networked knowledge.

We would like to explore ways alumni, industry mentors and peer networks can respond to student's need for access to expertise and support. A pool of people with digital skills and tech expertise would ease pressure on specialist technicians.

3. Platforms for exchange.

We would like to see UAL to develop systems, services and platforms that encourage peer-to-peer collaboration, skills-sharing and knowledge exchange and which reward participation.

4. Connecting digital at UAL.

We would like to see UAL explore ways of connecting and highlighting the many individuals, projects and initiatives happening across UAL in this area. This would help students access opportunities beyond their colleges and elevate the University's collective work in the digital space to the wider public.

5. Spaces to meet and make.

Participants consistently mentioned a desire for an open, physical environment to meet, make and collaborate. Shared UAL spaces that offer access to resources, activities and which help create community by facilitating collaboration.

6. Cross-disciplinary collaboration.

To mirror the changing nature of work in the creative industries UAL needs to provide opportunities for students to work on truly inter-disciplinary projects - and recognise their importance in developing digital skills and enhancing graduates' employability.

7. Shaped by students.

Solutions we develop should be built with students and graduates. UAL Futures champions should shape the project. And any digital products we develop, such as an online platform, should involve students in the process - to learn whilst making.

8. In partnership with industry.

Because they face the same challenges, perspectives from right across the creative and cultural sectors are crucial to help shape the way we support digital skills and creativity at UAL.



To find out more contact l.whitehead@arts.ac.uk or visit ualfutures.tumblr.com

ual: university of the arts london **Futures.**

Introduction

Setting the scene

Section breakdown

- Opportunity and uncertainty of a booming digital creative sector
- Introduction to UAL Futures
- Introduction to the report
- About the challenge - what we're trying to solve
- Impact
- Approach: collaborative, co-designed, sustainable
- Project stages
- Breaking down the challenge question

Find out more about UAL Futures at www.ualfutures.tumblr.com. Sign up to the newsletter for latest news and events.

Opportunity and uncertainty of a booming digital creative sector

There has never been a more exciting time to be a creative student. Last year the creative industries contributed a staggering £77 billion to the economy in the UK and to a digital economy that is also one of the fastest growing in the world. The possibilities new technology presents for creativity are seemingly limitless.

Advancements in mobile technology, connected devices and the Internet of things, wearable technology, and big data are reshaping the creative landscape for our graduates.

This connected, complex and multi-disciplinary creative ecosystem brings opportunity but also increasing uncertainty.

Against this backdrop it is difficult for creative students to predict career paths, imagine future job roles and to know what digital skills are required to be successful in their chosen field.

How can knowledge of coding, data and user experience help students studying across arts, design, fashion and communication? What jobs can they expect to have in the future? What skills will they require?

How can creative educators meet employers' need for multi-talented graduates with a mix of traditional and digital skills and ensure students have the opportunity to explore the latest technologies?

Introduction to University of the Arts London

University of the Arts London (UAL) is one of the world's most renowned institutions for education in arts, design, fashion and communication.

We draw on and develop the natural enterprise and curiosity of our students, encouraging them to be the next initiators and innovators in their respective fields.

We place the challenges and opportunities of the creative and cultural sectors at the centre of our teaching, so that our students are well prepared for successful careers and can realise their full potential.

Delivering transformative education requires us to ensure that all our students can reach their full potential. It requires us to work in partnership with them to develop and deliver an education that is responsive, responsible, imaginative and inspirational.

Introduction to UAL Futures

UAL Futures is an initiative from UAL responding to the rate at which technology is transforming the creative industries and creative work for our graduates. With a growing discussion about the need for multi-talented people in the digital creative industries, we're asking how education and industry can work together to ensure graduates have the skills to thrive in a connected future.

Its purpose is to define the digital skills UAL students and graduates need to succeed in a digital economy; inform the delivery of UAL services and products that provide these skills; and to identify revenue generating enterprise opportunities.

The project is funded by the Higher Education Innovation Fund grant to UAL.

Introduction to the report

This report documents the initial stages of UAL Futures 'Digital Creative Toolkit' Co-Design Challenge. With this challenge UAL Futures have invited University of the Arts London's community of students, staff, alumni and creative industry partners to become co-designers and help us respond to the question: how might we co-design a digital creative toolkit for University of the Arts London?

The design research and co-design stages of the project are outlined here along with our findings.

The team:



Luke Whitehead,
Project Lead, UAL Futures
In his role as Digital Enterprise and Employability and Project Manager at UAL, Luke is responsible for leading research, events and partnerships that explore how digital technologies are changing the creative industries and what that means for our graduates.



Miriam Ribul,
Design Researcher and PhD student at UAL.
Miriam explores new models for design interventions at the intersection of collaborative and trans-disciplinary practice for materials research. Recent research engagements included TED's 'interconnected design thinking and processes' project with MISTRA Future Fashion and her funding award from COST, the European Cooperation in Science and Technology.



Joana Casaca Lemos,
Communication Designer and PhD student at UAL.
Joana is interested in practice-based communication design research and her PhD explores the role of an 'expanded practice' of communication design in sustainability and social innovation developed through collaborative methodologies with various stakeholders and participants.

Introduction

Setting the scene

Section breakdown

- Opportunity and uncertainty of a booming digital creative sector
- Introduction to UAL Futures
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- About the challenge - what we're trying to solve
- Impact
- Approach: collaborative, co-designed, sustainable
- Project stages
- Breaking down the challenge question

About the challenge - what we're trying to solve

Our aim is to offer solutions that will provide students and graduates with the practical skills, knowledge and connections to become natural innovators in the digital space.

We want UAL to develop learning resources, tools and experiences that expand students digital maker skills, employability in the digital creative industries, and understanding of the possibilities new technology presents for arts, design, fashion, and communication.

Impact

The findings of this report will inform the development of learning tools and solutions that form UAL learning programmes, to enhance digital skills and knowledge across the University.

In addition the project will identify income generating enterprise opportunities so that we can continue to develop UAL Futures activities.

Approach: collaborative, co-designed, sustainable

Our approach to the project has been collaborative, applying co-design, service design and design research methodologies.

This has included developing sustainable, replicable models for interactive workshops UAL Futures can continue to use and refine to generate insights that inform this project and future activities.



Project stages

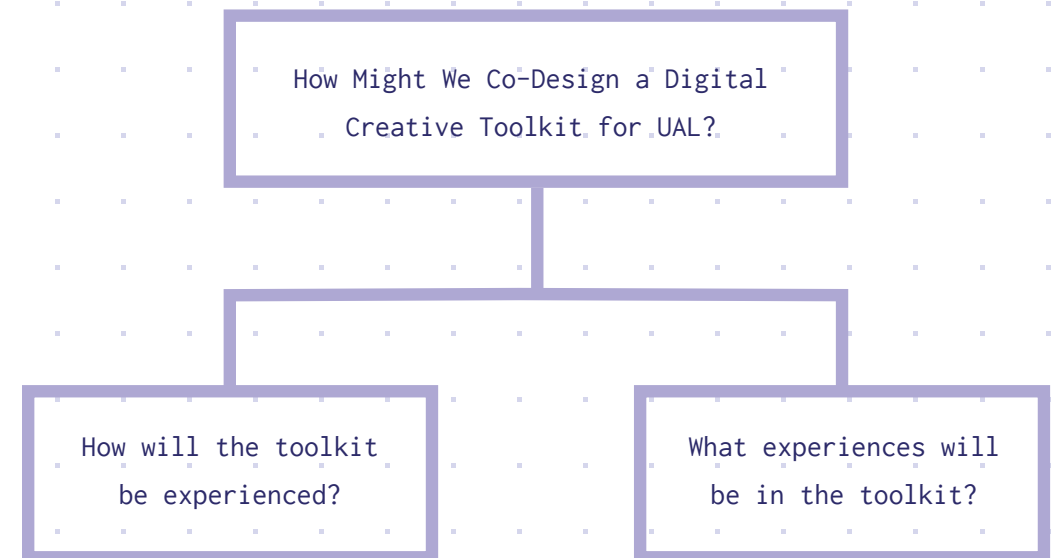
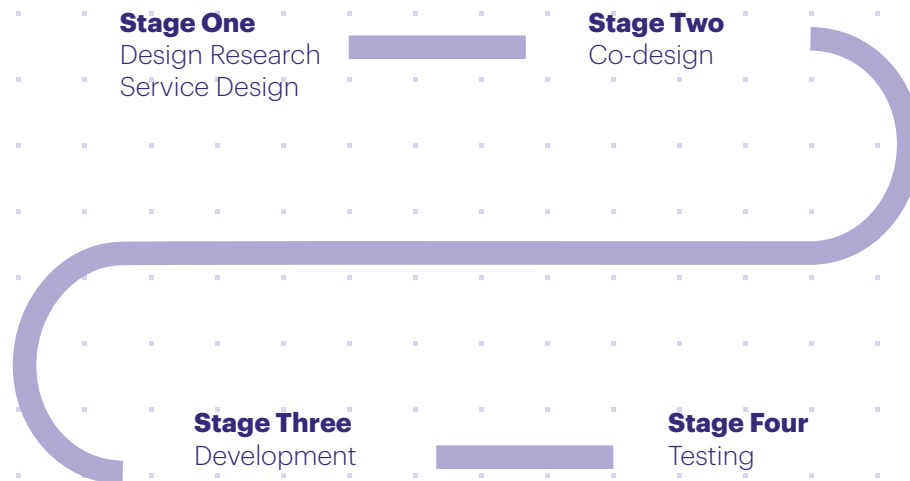
This report's focus is on the findings from stage one (design research) and stage two (co-design). Though we have begun to develop concepts and tested a number at UAL's annual careers festival, Artsmart in July.

Our intention is that the model and processes can be iterated and become part of a continuous development loop. As we develop and test ideas, feedback can inform further user-research and co-design.

Breaking down the challenge question

The challenge brief divided the question into two parts. The first focussed on the content and experiences that might enable students to gain digital skills and knowledge - the stuff in the 'toolkit.'

The second examined ways students might access and experience that content within a UAL context. This was important because it helped keep focus on the needs of users - primarily students - and to frame solutions within their experience.



Outcomes - Stage One - Design research

Workshop with UAL Futures team

Section breakdown

- The digital skills and learning landscape
- Creative technology trends
- What we learned

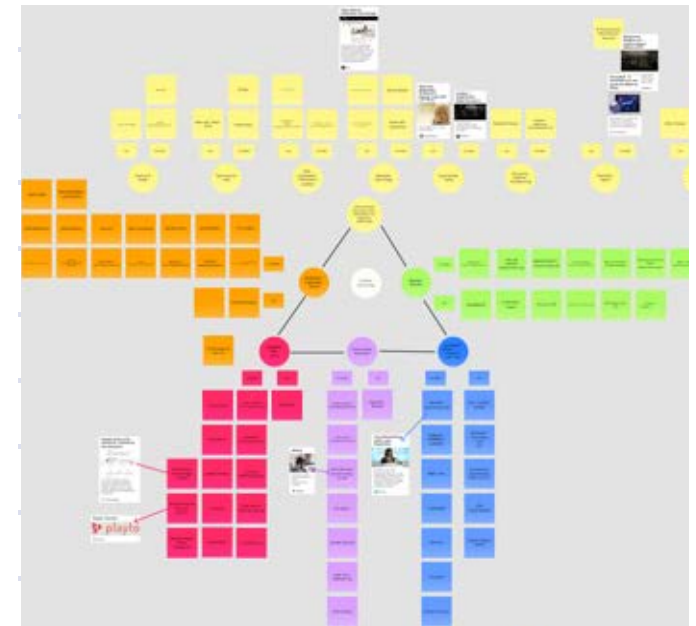
The digital skills and learning landscape

The first stage of our research involved mapping key themes and trends in digital technology - building on UAL Futures research on the digital skills landscape by identifying and grouping learning resources, tools and examples of the creative application of new technologies.

Listing examples of learning providers, resources, tools, technology and communities related to digital learning - both inside and outside UAL - we were able to build a picture of the digital skills and learning landscape.

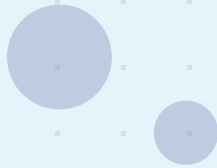
Guided by the questions "How do I learn?" "Where do I meet?" "How and where do I make?" we visually organised examples.

Grouping resources helped organise information into sections that could be applied to the structure of workshops, and define briefs for the co-design challenge itself.



Toolkit themes - Digital learning landscape

As we organised our research, six themes emerged helping us define the digital learning landscape



1. Communities of practice

- Cultures of practice using digital technology and interest groups formed around specific research questions, for example Girls in Tech and Hackathons.



2. Making spaces

- Physical spaces for prototyping and experimenting with new hands on tools, materials, techniques, for example Makerversity and Fab Lab.



3. Learning spaces

- Physical spaces to learn coding, digital skills and new approaches to using digital technologies in creative projects, for example Hyper Island and General Assembly.



4. Learning tools

- Online learning access to explore digital tools and learn new skills, for example Codecademy and Future Learn.



5. Making/tinkering tools

- Tools such as Arduino and Rasberry Pi which enable experimenting and prototyping.



6. Applications

- Applications of digital tech and skills to creative practices. For example wearable technology and augmented reality.

Outcomes - Stage One - Design research

Workshop with UAL Futures team

Section breakdown

- The Digital skills and learning landscape
- Creative technology trends
- What we learned

These are some of the trends we've identified along with examples. Ask for the appendix or see our blog for loads more. www.ualfutures.tumblr.com

Creative technology trends

Finally we identified examples of the applications of digital technology and skills to creative practices. Insights gathered via UAL Futures events, surveys, interviews and desk research identified key trends and themes in digital technology. For each trend identified we listed examples from within the UAL community and outside.

What we learned:

A student wishing to apply technology to a project, or to learn a new digital skill, would benefit from access to number of complementary resources, tools, and activities including:

- Events and communities where they can meet with people shared interests.
- Physical spaces to experiment with new tools.
- Physical learning environments to receive teaching, support and feedback.
- Access to online learning tools and resources.
- Access to tools, technology and software.
- Inspiraton of tech trends and new projects.



'Clouds over Sidra' - Chris Milk, follows a 12 year old girl in Jordanian refugee camp



Holition - Digital Creative studio - contributors to our WPP Retail Futures competition launch



Data

'The Altnet' - Sarah T Gold, CSM Alumni. The Altnet gives individuals control of their data



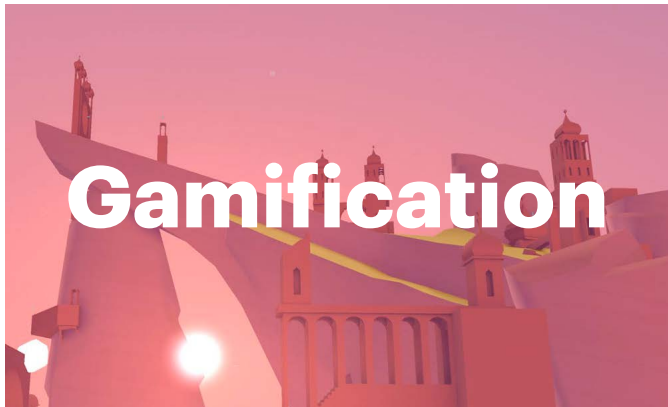
Wearable technology

Studio X0 - Operates at the intersection of science, music, fashion and tech



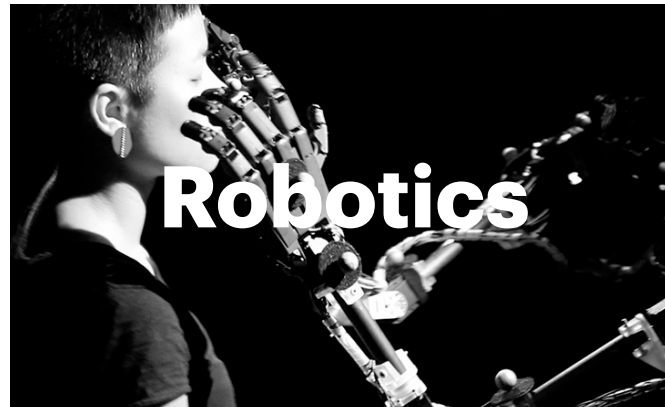
Interactive objects

Polyphonic Playground - Studio PSK - Exhibited at London College of Fashion at LDF 2015



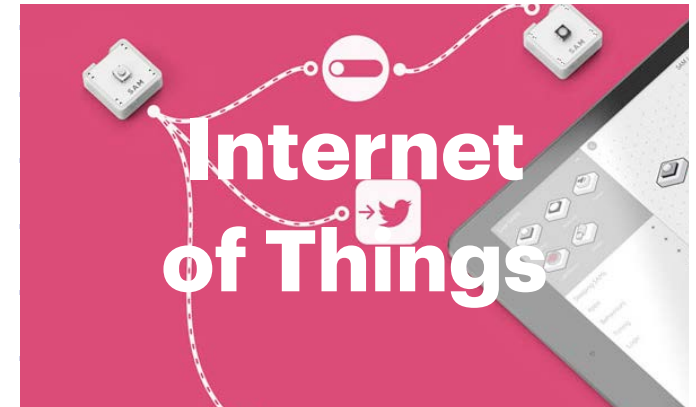
Gamification

'Lands End' - Ustwo - Virtual reality puzzle game



Robotics

Blind Robot - Louis Phillippe Demers - Exhibited at FutureFest 2015



Internet of Things

Sam Labs - Internet of Things DIY kit

Outcomes - Stage One - Speculative journey mapping

Workshop with UAL Futures team

Section breakdown

- Speculative Journey Mapping - how might a toolkit be experienced?
- What we learned

We're still collecting student journeys. If you would like to share your journey with us drop us an email.

Speculative Journey Mapping - how might a toolkit be experienced?

The goal of this stage of our research was to frame opportunities within student experience.

Journey mapping is a service design method for exploring the key touch points a user has when interacting with a service - in this case students are the users, and the service or the journey is their UAL experience - or their potential UAL Futures experience.

We chose to mimic the journey of a student over a term or year - from enrollment, to getting a brief from a tutor, and the stages to the completion of a creative project.

Thinking about a student journey our aim was to identify the current touch points, stakeholders and key spaces where students interact. At each stage we considered what their needs were, and speculated how at different touch points there might be potential of engaging with digital technology or UAL Futures platforms, services or experiences.

The process identified various opportunities where UAL Futures and a digital creative toolkit might:

- Complement existing resources or develop new ones.
- Support teaching staff as well as draw from their expertise.
- Facilitate collaboration among students.
- Provide inspiration by showcasing alumni work.
- Make connections to industry, develop employability skills and identify employment opportunities.
- Build a network of alumni with digital skills.

What we learned:

- Key points where UAL Futures activities could interact with and support tutors, technicians, research groups and communities of practice.
- Touch points where UAL Futures could share work of students and graduates.
- Opportunities to grow networks of collaborators with digital skills [students, alumni, partners].
- Opportunities to connect with companies and employers to access the skills of students and alumni for freelance and employment opportunities.

DIAGRAM - The columns relate to different points in a student journey. Rows relate to ways students access resources and services at different times; their needs at these points; and an evaluation of how student needs can guide further research. The final two rows speculate on opportunities with ideas for ways UAL futures might impact on student needs during their life UAL.

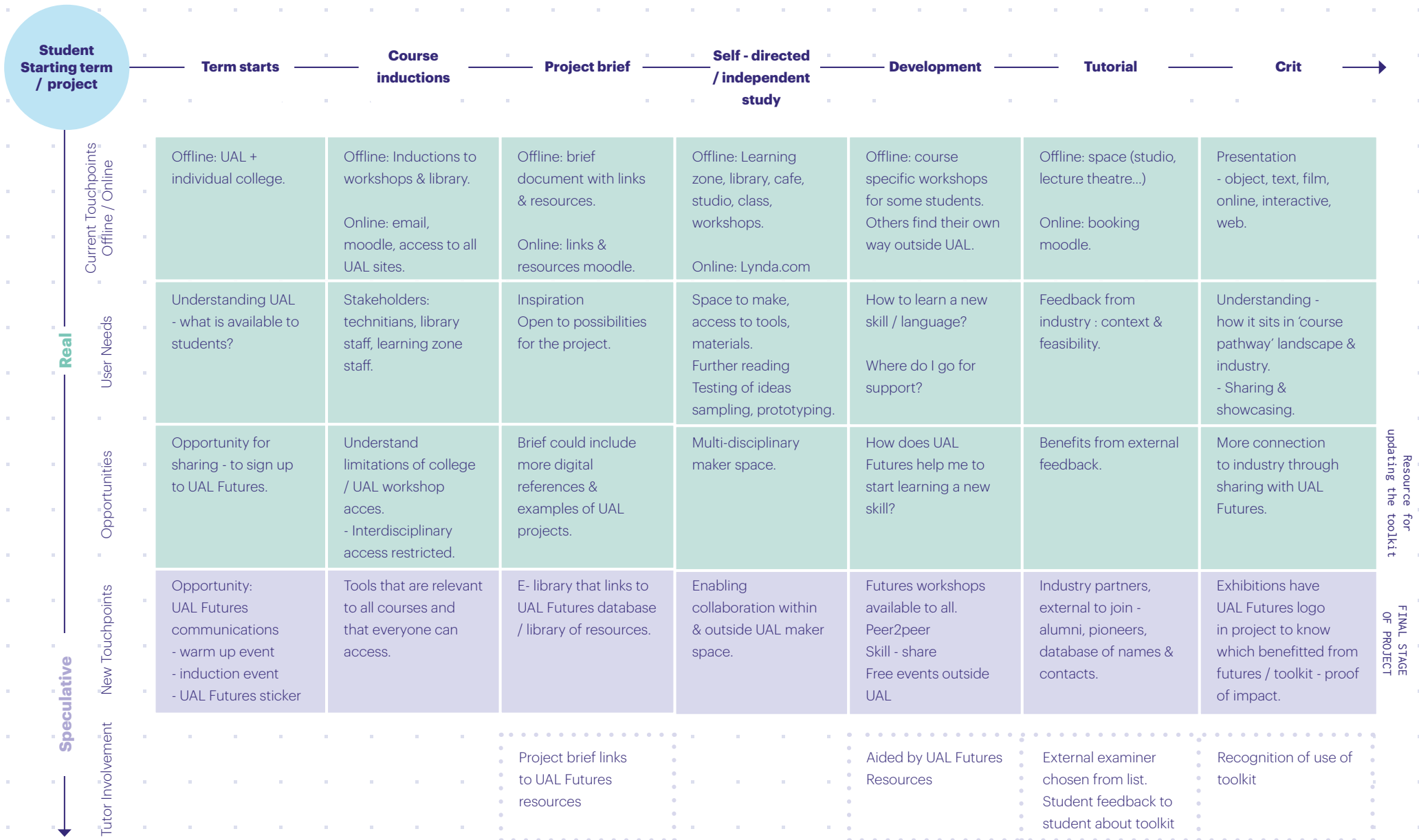
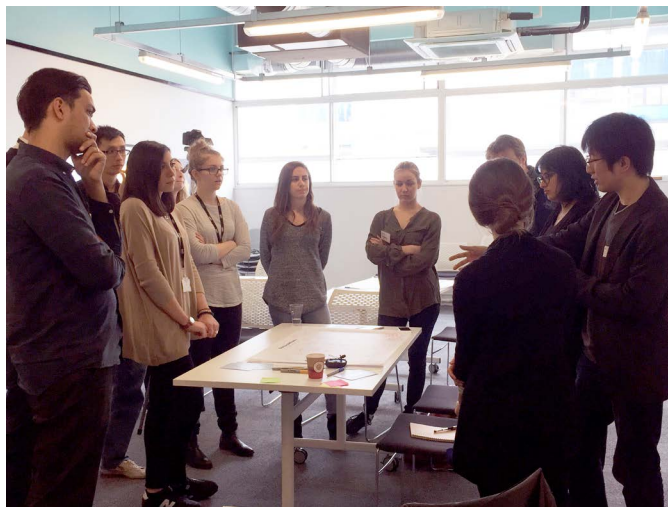


TABLE: This table reflects outcomes of workshops. In total we gathered data from 30 workshop participants through the journey mapping exercise. Key themes and findings are summarised in the table below.



		Real journey		Ideal journey	
		Offline	Online	Offline	Online
Technicians		Technicians feedback key to development of projects.		More technicians and support in development stage of project.	UAL community/network to know which technicians have which skills for digital tech.
	Workshops	Collaborative workshops		UAL wide, cross-discipline spaces for collaboration.	
Resources		UAL library, materials library.	UAL library, materials library, Lynda.com.		Online database and library for inspiration and research
	Collaboration	Finding collaborators within/outside of UAL through own contacts.	Through social media	In a meeting-making space of digital tech related work	Searchable database for people within UAL to collaborate with
Learning					Online tutorials, online learning, free software through UAL.

Outcomes - Stage Two - Co-design

Introduction to co-design stage

Section breakdown

- Introduction to co-design stage
- Re-defining themes to guide co-design
- Co-design workshop summary

Introduction to co-design stage

The design research stage of the project mapped the digital skills landscape and resources both inside and outside of UAL - identifying the needs of students and opportunities for UAL to find solutions. The co-design phase invited external collaborators to share insights and inform the design process.

Creative industry partners and alumni joined students and staff in two one-day co-design workshops. Informed by insights from our research they generated ideas and concepts for content, services, products, activities and events that could comprise a 'digital creative toolkit' and explored how it would compliment the UAL experience.

Re-defining themes to guide co-design

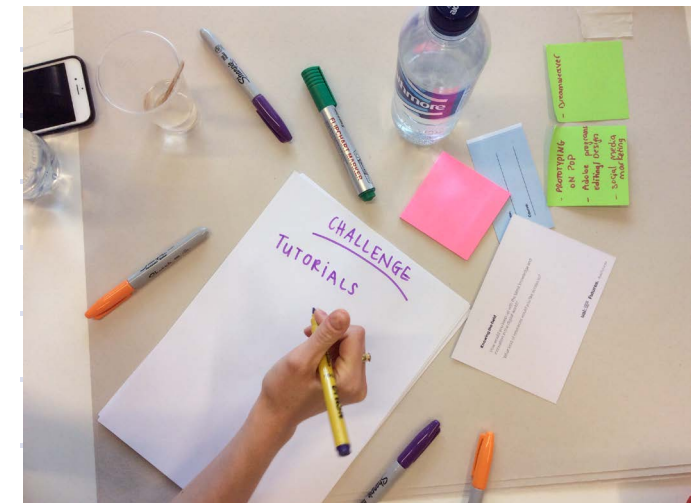
In preparation for the co-design workshops we identified themes that emerged in the journey mapping exercises with students and staff. We clustered keywords from the journey mapping data into overarching themes, and attached quotes from the workshops against them. From this process six themes emerged - thinking, resources, learning, prototyping, collaborating, connecting. These became the sections of the toolkit.

Co-design workshop summary

In interactive prototyping sessions participants responded to mini-briefs based on insights gained from our research and workshops with students and staff.

In each workshop participants were divided into six teams. Each group explored a different theme based on outcomes from earlier journey mapping workshops with students.

Working together teams sketched potential solutions to their particular challenge. They were then asked to paper prototype or demonstrate their chosen concepts.



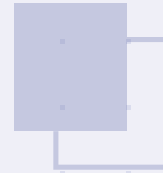
Toolkit themes - Co-design workshops

In the co-design workshops each team was given a brief to respond to challenges relating to different themes



1. Thinking

Tools for THINKING and PLANNING that develop soft skills and that are key to project development: For example business model canvas, service design tools, innovation methods, etc.



2. Resources

Tools for accessing RESOURCES and knowing the latest digital tech landscape: For example: e-libraries, platforms, etc.



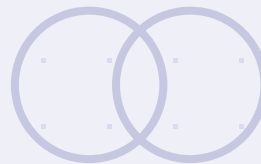
3. Learning

Tools for LEARNING new skills and pushing your boundaries: For example mentoring, online learning, workshops, etc.



4. Prototyping

Tools for PROTOTYPING through hands on making and experimenting: For example Arduino, Raspberry Pi, Fab Labs, makerspaces, etc.



5. Collaborating

Tools for COLLABORATING and building your community: For example meetups, multidisciplinary collaboration, online networks, communities of practice, etc.



6. Connecting

Tools for CONNECTING and for sharing and showcasing your work: For example exhibitions, social media, platforms, key industry events, etc.

Co-design workshops

Concepts from the co-design workshops

Section breakdown

- Resources
- Collaborating
- Prototyping
- Connecting
- Learning

Concepts from the co-design workshops

Here we have described and reflected on some of the most interesting concepts from the co-design stage. There were many great ideas, which are listed in the appendix.

Group: Resources
Concept: FLUX.COM

Description

Flux is a website with key features structured around awareness of new tech skills; new ways to search and access to language.

To provide awareness of digital concepts the group proposed a 'timebox' learning model of 30 seconds, 60 minutes and 30 days depending on commitment to a topic and required learning outcomes. The entry point would be easily digestible digital 'trailers' covering the basics and signposting to other resources.

To search the site, content would be tagged in a new way - by what you make, not the skills you learn. So a search for either 'data visualisation' or 'animation' might both turn up Javascript as a suggested skill.

Sharing features would include real-time updates of what people were learning to create and include a live glossary of terms - to define the language the community is using to describe digital skills.

What we think

All of these features offer solutions to the common anxiety of a student or indeed any learner - am I learning the right thing? The focus on access to the basics and creative outcomes respond to student worries about having time to learn new skills and not understanding the value of knowledge they're not sure how to apply.

How it might develop

At UAL's careers festival, Artsmart, students built a prototype for a 'Futures Glossary' - a website that provided brief introductions to digital concepts, with definitions, examples of projects and links to further reading.

Group: Collaborating.
Concept: Crowdsourced Tech Workshops.

Description

A bottom up approach to short courses and workshops helping students to develop specific skills. Students create a profile and offer lessons in digital skills. When a minimum of 10 students sign up and pledge a small amount of money the lesson goes ahead, with learners bringing along active projects. The platform categorises skills into advanced and basic, creating a portfolio of different workshops available. It also maximises participation of the student body through the crowdfunded sign up.



What we think

By harnessing a pool of knowledge that exists and is available across UAL this concept could help ease pressure on specialist technicians. Being student-led, UAL does not profit from these workshops but the positive is that it helps students sponsor their own projects. It could also help UAL identify talented students who might become short course tutors, technicians or associate lecturers.

How it might develop

With appetite from students willing to share skills, this concept could be tested without the need for a dedicated platform, if the reward (monetary or in kind) for the teacher was subsidised by UAL at first. Building crowdfunding features into a platform where money was exchanged between students could prove difficult. However, exploring other UAL specific currencies like printing or art shop credits could be an interesting alternative.

Group: Prototyping

Concept: Mobile Makerspace

Description

A mobile makerspace on wheels, that could travel between UAL colleges. Digital making and prototyping requires a physical interaction with materials to enable the actual making of things. This concept would enable students to access and experiment with materials, such as Arduino and 3-D printing they might not otherwise have immediate access to. There could be specific days where the mobile units travel to specific departments, or research hubs, to allow different disciplines to interact with the materials.

What we think

The mobile unit would be a great response to a familiar finding of this project - that there is not enough open workshop space at UAL for all students. This solution would help address that problem in all colleges.

How it might develop

A number of companies such as Little Bits and Sam Labs offer easy to use electronics kits, that enable people to prototype connected devices. These could provide an opportunity to test the concept - before adding wheels and bigger bits of kit such as 3-D printers.



Co-design workshops

Concepts from the co-design workshops

Section breakdown

- Resources
- Collaborating
- Prototyping
- Connecting
- Learning

Group: Connecting
Concept: UAL Spark (formerly UAL Tinder)

Description

UAL Spark is skill-swapping app for students based on the dating app Tinder. UAL Spark centered on students connecting with other students, whether from UAL or from other universities and finding matches based on skills and interests. It's built on a simple matchmaking and dating app principle. You sign-up, create a profile, say who you want to collaborate with and start swiping.

What we think

One of a number of concepts from the co-design and journey mapping workshops that focussed on skill-sharing and dating models. Similar concepts suggested included ideas for matchmaking tools for peer-to-peer skill swapping and matching students to graduate mentors.

How it might develop

At Artsmart we developed a prototype of UAL Spark, which allowed students to sign-up, create a very simple profile and find matches. The prototype was a great way for us to test the concept and gather feedback and ideas. Created in a matter of days, the site still featured a profile picture. Feedback we got - and hoped for - was that first impressions should be of student work, not a picture of them.



Group: Learning

Concept: What's my next step?

Description

An app and game involving a series of open questions - steps - to facilitate, prioritize and focus learning. A way of gamifying a student journey it could take the form of an app or activity between students meeting in groups.

What we think

One of a number of concepts developed to help students navigate the overwhelming amount of information available to them regarding tech skills. It responds to the challenge set by students of 'what do I need to know, and for what?'



Speakers

The importance of industry contributors

At every UAL Futures event we invite industry professionals and staff to present their practice. We feel this is essential in galvanising the community, inspiring students and confirming how important digital skills are to contemporary creative education.

Due to the constant rate of change in new technologies we felt it vital to keep a strong link with industry throughout this project to make sure we were on the right path.

For students it's an incredibly valuable link to industry that offers opportunities for future employment.

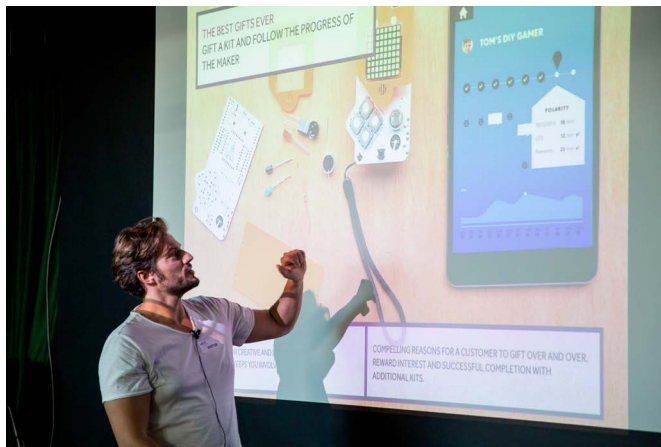
We hope these relationships will continue to grow and support the UAL Futures community.



Luca Damiani & Kat Braybrooke - Tate Digital
"Remixing the web - creative hacking at the Tate"



Erik Rodin - Hyper Island
"Benefits of collaborative design"



Michael Johnson - Technology Will Save Us / Hirsch and Mann



Matt Cooper-Wright - IDEO
"The design process at IDEO"

If you're interested in speaking at future events please contact Luke at l.whitehead@arts.ac.uk



Chris Follows - CCW Chelsea Jam
 "Digital practice at University of the Arts London"



Lynne Murray - Digital Anthropology Lab,
 London College of Fashion
 "The Future of Retail - Digital practice at
 London College of Fashion"



Tom Box - BlueZoon
 "Producing a virtual reality music video"



Tommy Howard & Marcus Belcher - Holition
 "The Future of Retail - augmented reality"



Kate Pincott - UX designer, LCC Alumni
 "How technology is shaping the role of the
 designer"



Fred Deakin - Professor of Interactive Digital
 Arts at UAL "The necessity of collaborative design
 processes"

Key findings

Findings, themes, opportunities

Section breakdown

1. Defining digital skills
2. Demystifying digital concepts
3. Networked knowledge
4. Shaped with students
 - a. Peer-to-peer networks and crowdsourced knowledge
 - b. Teachers and mentors
 - c. Futures champions
 - d. Building digital products
5. Supported by the creative community
6. Connecting and showcasing digital at UAL
7. Embedding UAL Futures around student journeys
8. Inspirational environments to meet and make
9. Platforms for knowledge exchange
10. Cross-disciplinary collaboration

Findings, themes, opportunities

Responding to the challenge together, students, staff, alumni and creative professionals have offered a wide range of innovative concepts. In our key findings we have identified themes and areas of opportunity for UAL to develop solutions that support digital creativity.

1. Defining digital skills.

Defining the terminology associated with digital skills and creating a shared glossary of digital terms would help students better understand technical language and be a gateway to understanding.

Each of the workshops described in this report included an activity that asked participants to think of digital skills that are needed in their discipline, and skills that they would like to learn.

Participants' interpretations of digital skills varied depending on experiences and discipline. Students were more likely to list softwares such as Adobe or use the broad term 'coding' without necessarily being able to define it. Professionals were more likely to talk about specific tools and those with technical backgrounds were able to identify specific coding languages.

The diagram (next page) shows how we have begun to cluster data on digital skills. We have not attempted to analyse this data in detail.

The aim was to frame participants' understanding and get a consensus on what we mean by digital at the beginning of workshops. The data will be looked at by academics in future workshops to explore how we approach developing resources and define fundamental topics, concepts and themes.

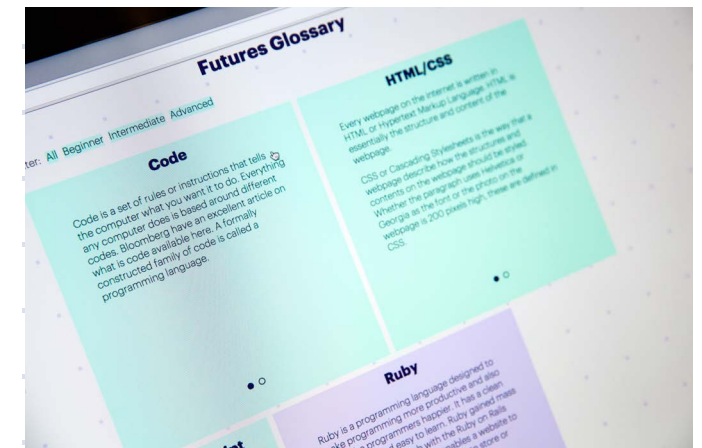
2. Demystifying digital concepts.

Faced with the possibilities of digital technology, students' first challenge is simply knowing *what they need to know*. There is too much to learn. And a perceived pressure on students to know it all - which is sometimes coupled with a false assumption that as millennials, they know it all intrinsically.

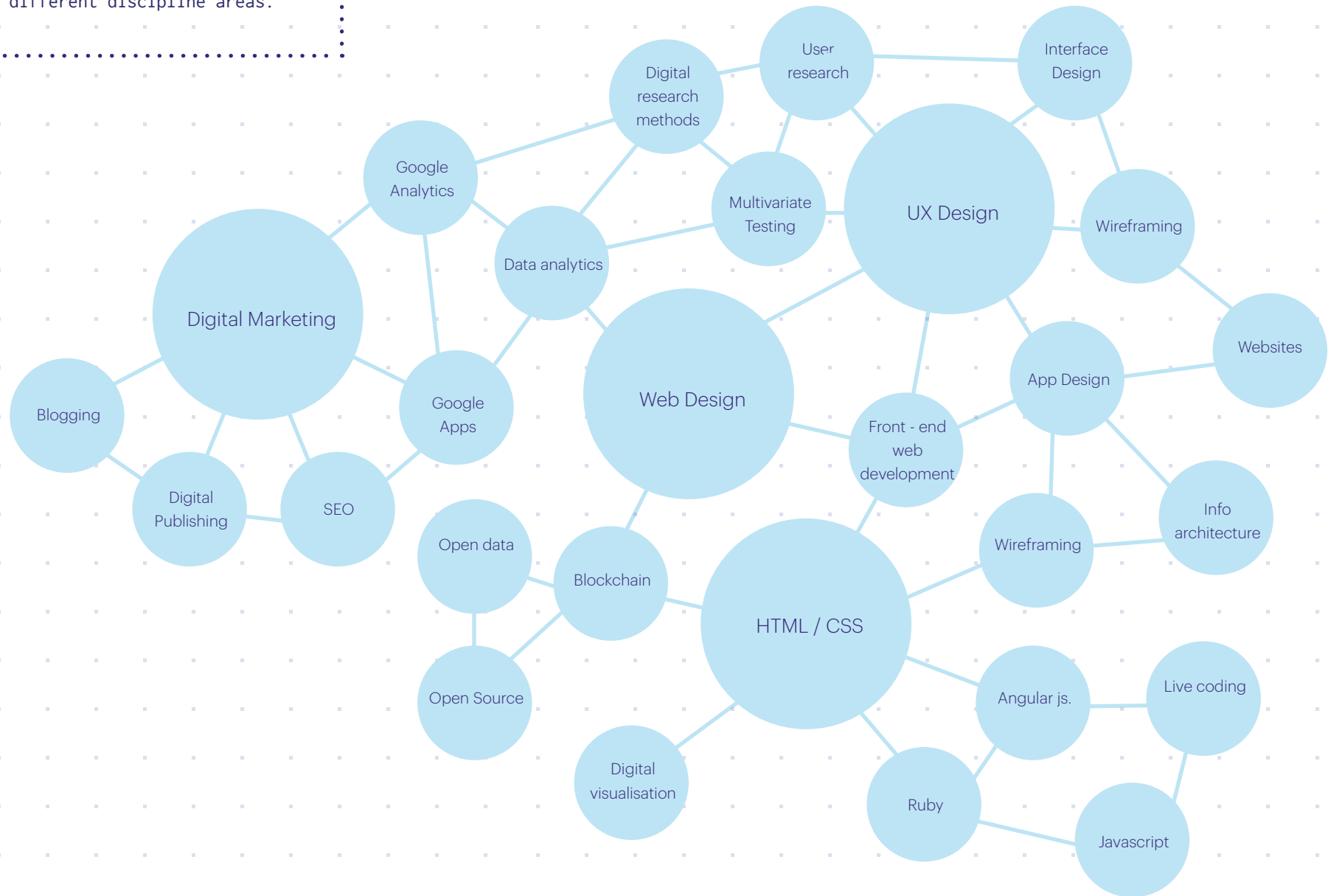
Many students expressed an awareness of broad digital trends and a desire to learn and apply skills like coding, but did not know where to begin or how they related to their discipline. Others lack awareness of what's possible and what technology is out there.

We'd like to see UAL develop content and resources that define and demystify fundamental digital concepts for students - essential introductions that can unlock the immense potential of the digital world and help contextualise digital skills and technology around student's individual interests.

During the co-design workshops a number of groups focused on content that can act as a gateway to understanding the applications and possibilities of technology, demystifying the skills, tools and approaches used within a digital creative context.



DIAGRAMS: These diagrams were created collaboratively using Mural.ly. They map the skills collected in co-design workshops 1 and 2 into different discipline areas.



Key findings

Findings, themes, opportunities

Section breakdown

1. Defining digital skills
2. Demystifying digital concepts
3. Networked knowledge
4. Shaped with students
 - a. Peer-to-peer networks and crowdsourced knowledge
 - b. Teachers and mentors
 - c. Futures champions
 - d. Building digital products
5. Supported by the creative community
6. Connecting and showcasing digital at UAL
7. Embedding UAL Futures around student journeys
8. Inspirational environments to meet and make
9. Platforms for knowledge exchange
10. Cross-disciplinary collaboration

Broadly these fell into two categories of content or experiences that achieve learning outcomes at different levels.

Online introductions to digital concepts - brief definitions of concepts that outline the meaning of terms, history, context and application in creative practice and industry settings, and signposts to further resources.

Online/offline workshop/exercises to unpack digital concepts - short classes which explore concepts further, with practical exercises and a clearly defined learning outcomes.

3. Networked knowledge.

Access to knowledge, and specifically access to people with specialist digital and tech skills was a discussion point throughout the project - people who can help explain new concepts, cement learning, or help students through difficult points on a learning curve.

Students have highlighted that feedback from technicians is key to the development of projects and expressed a need for more skilled technicians. With an increasing number of students recognising the need to explore new technologies in their practice, there are only so many specialist technicians, who are understandably concentrated in digitally focussed courses and departments.

We would like to explore ways alumni and industry mentors can fill this gap by creating a network and database of alumni with digital skills and tech expertise.

Recent graduates in particular, who are using the latest tools, and have recently learned new skills could be an invaluable and empathetic source of support for students.



A global Skype relay

A number of ideas in our co-design workshops focussed on mentoring - often presented as 'mini-mentoring' - appreciating the fact that experts are often time-poor, but that students often need task specific support.

As part of UAL's annual Artsmart careers festival in July we tested a concept for 'mini-mentoring' with a Global Skype Relay - when alumni and professionals from UAL's global network gave 30 minutes of their time to mentor students online. Other mentoring concepts we've heard include matchmaking mentor apps, or coffee shop mentoring.

4. Shaped with students.

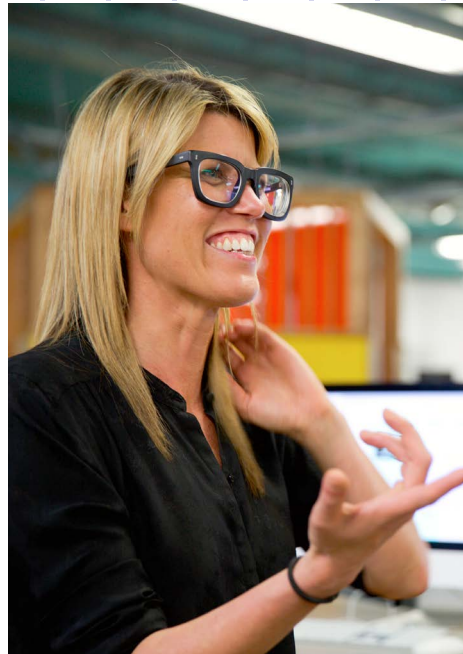
The solutions we develop in response to this challenge need to be built with students and graduates. There are a number of ways we would like to do this (and related concepts from the co-design stage).

a. Peer-to-peer networks and crowdsourced knowledge.

We want to develop systems/networks/platforms that encourage peer-to-peer collaboration, skills-sharing and knowledge exchange and which reward participation.

b. Teachers and mentors.

We want to deliver classes and workshops for students and graduates, by utilizing the expertise of those individual students and collective courses that are pioneering in their use of tech. Giving opportunities to the many graduates who have expressed an interest in teaching.



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c. Futures champions.

We want to recruit UAL Futures champions to become ambassadors, and to help shape the project and communicate with fellow students. Providing incentives, such as training, mentoring, opportunities to attend events, create connections and learn new skills.

d. Building digital products.

Any digital products we develop, such as an online platform for UAL Futures, should involve students in the process - with students and graduates learning about technology whilst making - in a transparent way, with the process documented and the learnings shared.

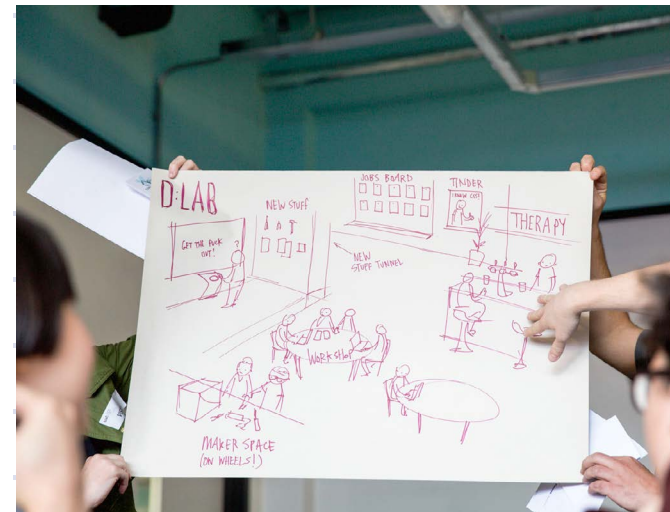
5. Supported by the creative community.

A feature of the project has been the valued input and support from the creative and tech communities many of whom are facing the same challenges. Perspectives from right across the creative ecosystem are crucial to help shape the way we support digital skills and creativity at UAL. Partnerships are vital to the success of the project and concepts that we develop.

6. Connecting and showcasing digital at UAL.

There is a lot of great digital activity at UAL, at a college, course and individual level, but it's not connected. Bringing digital together and highlighting projects and individuals will help elevate this important area of activity.

UAL Futures could act as a space to showcase projects and initiatives from around UAL. This could act as a destination for recruiters and companies interested in working with students.



From a learning perspective it could highlight learning opportunities that students say they are unaware of or unable to find at different colleges.

7. Embedding UAL Futures around student journeys.

For learning programmes and resources we develop to be a success, it will be crucial that Futures activities are visible and accessible to students, woven around key moments in their creative journeys at UAL and professional life once they graduate.

The journey mapping workshops have identified moments and recurring pain points where Futures activities have the opportunity to impact.

We need to work with students and courses to look in detail at when and how we can have most impact.

When do students need inspiration, when do they need workshops, when could they use a mentor or collaborator? And how do we support them once they graduate?

8. Inspirational environments to meet and make.

Solutions focussed around physical makerspaces were a theme that developed throughout the process - in student workshops and in a number of co-design concepts.

Participants consistently mentioned a desire for an open, physical environment to meet, make and collaborate.

Ideas focussed on 'messy making' spaces, open to all, where students and staff could explore new technology, free from the pressures of their courses.

Others imagined a structured space that could include events and encourage exchange with external partners - a kind of Google Campus for UAL.

What they had in common was that they responded to number of challenges including lack of making spaces, access to workshops, collaboration, knowledge exchange.

9. Platforms for knowledge exchange.

An online platform can connect many of the solutions offered and act as portal for users to access and explore opportunities.

Participants suggested ideas and concepts for digital platforms that responded to a single challenge or proposed features that combined a number of themes.

These included ideas for platforms to improve access and signpost to resources, facilitate connections and collaboration, crowdsource knowledge and showcase inspiring projects.

With other concepts, a website or app was proposed as a way to compliment offline activities such as mentoring, events, learning activities such as classes and workshops.

Students felt current online options at UAL were restrictive or difficult to navigate. Creating a new platform would be a challenge. Ideally we would approach it by having students build it.

10. Cross-disciplinary collaboration.

Students consistently mentioned a desire for more collaboration across courses and colleges at UAL. Even those students who had worked on collaborative projects and highlighted their enjoyment, still expressed a desire for opportunities to work further from their comfort zone with students from other disciplines.

Students liked the idea of tools to help foster collaboration, connections and learning. And the co-design stage concepts included matchmaking tools, to enable peer-to-peer skills-swapping and collaboration, and matching students to graduate mentors.

The co-design stage also highlighted a theme for extra-curricular collaboration, with suggestions for volunteering opportunities and placements in industry working on interdisciplinary projects. And even a free period in the year for everyone at UAL to work on collaborative side-projects.

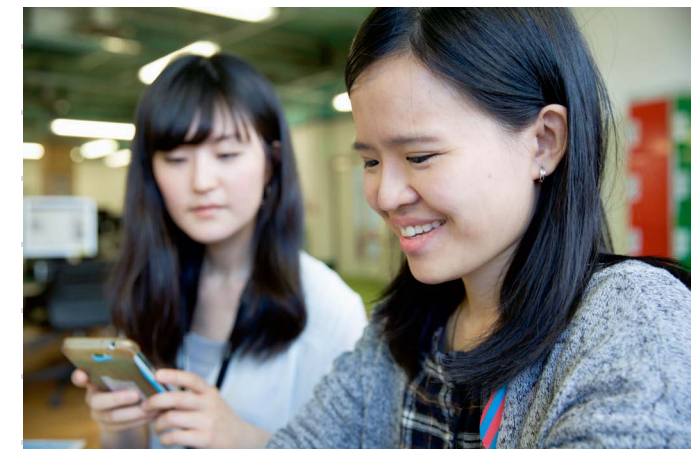


UAL currently doesn't have mechanisms to facilitate collaboration. And we'd like to explore innovations that attend this need.

To mirror the changing nature of work in the creative industries UAL needs to provide opportunities for students to work on truly inter-disciplinary projects - and recognise their importance in developing digital skills and enhancing graduates' employability.

Our research into applications of technology in creative practice, show that as digital creative projects become more sophisticated, requiring many collaborators with different and varied skill-sets, the lines between creative disciplines become increasingly blurred.

Delivering content that dissects digital projects and examines the people, skills, tools and connections that made them, will help graduates determine where their skills might slot into interdisciplinary teams. It could also help students understand who they need to collaborate with and give them the confidence to reach out.



Conclusion

Finally, we have identified four themes that represent areas of actionable opportunity for UAL.

A digital foundation for UAL

We would like to see UAL develop content and resources that define and demystify fundamental digital concepts for students - essential introductions that can unlock the immense potential of the digital world and help contextualise digital skills and technology around student's individual interests and ideas.

A mix of online content and practical workshops that can act as a gateway to understanding the applications and possibilities of technology - demystifying the skills, tools and approaches used within a digital creative context.

A digital foundation that equips students with the tools to think, imagine, experiment, prototype independently, but also to learn and share collectively.

A digital foundation accessible outside the curriculum, but which also fits with student journeys, complimenting and enhancing work on their courses.

By designing learning experiences that provide opportunities to explore a variety of skills and technology, we can give student's the context and confidence to decide their future direction in digital (even if they choose to stay analogue).

A digital foundation for all

By developing resources and tools as a UAL wide initiative, bringing together expertise from each college, we can create consistent content that can be customized and scaled for different audiences. Short courses in digital creativity, or professional training for industry can generate income which

goes back into resources for students - creating a sustainable model. Adapting resources for U16's or international audiences, can help widen UAL's sphere of influence and attract new students to the University.

A foundation delivered with the UAL community

Within the UAL community there are pockets of students, staff and graduates doing incredible things in the digital space. By drawing on this expertise we can inspire others. Many students and graduates have expressed interest in sharing their knowledge - with support these pioneers can become educators.

Building a community and a culture

We would like to see UAL develop a clear strategy for building a community celebrating and supporting digital creativity. Using the disciplines of design to build an open, creative, organic culture, with systems that reward participation and collaboration. A community that highlights interesting projects and allows new forms of digital creativity to percolate and rise providing inspiration for others.

Knowledge as currency

A community in which knowledge is the intrinsic social currency, and where accomplishments in

learning new skills and sharing existing knowledge are equally valued and rewarded. We'd like to see UAL explore ways to curate, crowdsource and connect knowledge. And create systems which encourage and facilitate knowledge exchange with UAL (Peer to peer, student-to-student, staff to student, cross colleges and disciplines) and outside UAL (Knowledge transfer - student to industry, staff to industry, across disciplines and industries).

Joining students on their journey

We would like to work in collaboration with courses as well as UAL departments such as Careers and Employability and the Teaching and Learning Exchange to find the best solutions at key touch points in a student's' journey. This will help us explore how students might progress within the community, toward a digital foundation. We must work with employers to determine their needs and see how learning and progression might be recognized by the creative community, and lead to employability.

What's next?

This research represents a proposed way forward for UAL Futures' work. We hope the findings will inform UAL's response to the challenges we have highlighted and encourage the creative community to work in partnership with us to develop solutions beyond the project's funding term ending in July 2016.

Here are some ways we've made a start...

Prototyping and testing.

In July UAL Futures took over The Digital Space at London College of Communication for UAL's annual careers festival, Artsmart.

In just a few days a team of students transformed the space with interactive installations, activities and talks, including prototypes based on concepts from the co-design stage of the project.





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Students that came along were able to test concepts including collaboration app, UAL Spark, a 'Futures Glossary' website introducing digital concepts, and a Global Skype Relay that matched students with alumni from Barcelona, Berlin, Tokyo Singapore and Iceland.

We're excited to think what students could build given time, support and in partnership with industry.

Defining Knowledge

We have begun to work with academics to define the fundamental knowledge areas and digital concepts that we'd like to develop into learning resources.

Futures Talks and Newsletter

The findings will inform our UAL Futures Talks events series and weekly newsletter. So subscribe now ;)