



Makerspaces as open labs and experimenting communities

Approaches to makerspaces

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A photograph of two young girls sitting at a table in a makerspace. They are both wearing white long-sleeved shirts. The girl on the right is also wearing a red and blue baseball cap. They appear to be engaged in a project, with various materials and tools visible on the table. The background shows a workshop environment with a corrugated metal wall and a window.

Makerspaces as open labs and experimenting communities

Approaches to makerspaces – work-in-progress
-output from secondment at Makers, Sheffield
April 2017

Kjetil Sandvik, University of Copenhagen

- I have spent my first project secondment at the Makers in Sheffield.
- It has been the most inspiring month observing the work of Lisa and James Wallbank and having discussions on **making** and what we may consider the core features of a **makerspace** to be.
- This has resulted in suggesting that a makerspace just as much as being an actual space where people meet to be **makeative** is a specific mind-set – **makerspaceness** – that we bring with us and that will code whatever physical space we may inhabit a specific **makerspaced** way.
- Some of this thoughts, however preliminary and work-in-progress'ish, have been put down in these powerpoints.



A collage of numerous colorful rotary telephone cutouts scattered across a dark, textured background. The cutouts are in various colors including pink, yellow, light blue, and white. Some cutouts have text printed on them, such as "EX", "Face", "Ober", and "EX". The cutouts are arranged in a dense, overlapping pattern.

General questions

**Defining and conceptualizing
'makerspace'**

Why are makerspaces important?

- What is the question to which the correct answer is a makerspace?
 - James Wallbank



What is a makerspace?

- Also known as hackspace, Fab Lab...
- But with roots in workshop-spaces found in daycare institutions, schools, after/off-school institutions etc.*
- A place where you can **tinker**, hack and make
- Linked to the growth in the D-I-Y, maker movement
- *spaces – equipped with what we today call makerspaces (workshop facilities for wood work, mechanics and music and media production (the latter dating back to the introduction of video cameras and editing systems in the early 1980ies) – for teacher-led or self-organized maker activities.

While we can easily imagine someone tinkering with a screw driver and an old toaster, let's also consider how we could tinker with paint and brushes, paper cups and glue, an irrigation system, a 3-D printer, photo editing software (who's spent hours editing a photo book or playing with Photoshop?), and ideas. This last one, ideas, is an extra fun one. Imagine a room full of creative thinkers with some sticky pads and Sharpies, and you get a clear picture of people tinkering with ways to make the world a better place.

The core of makerspaces

- People (collaborating)
- Primary skills:
 - being creative, playful, imaginative, experimenting, seeing possibilities...
- Secondary skills:
 - handling tools and technologies



Old stuff or materials for making...



...the creative approach decides



Being creative



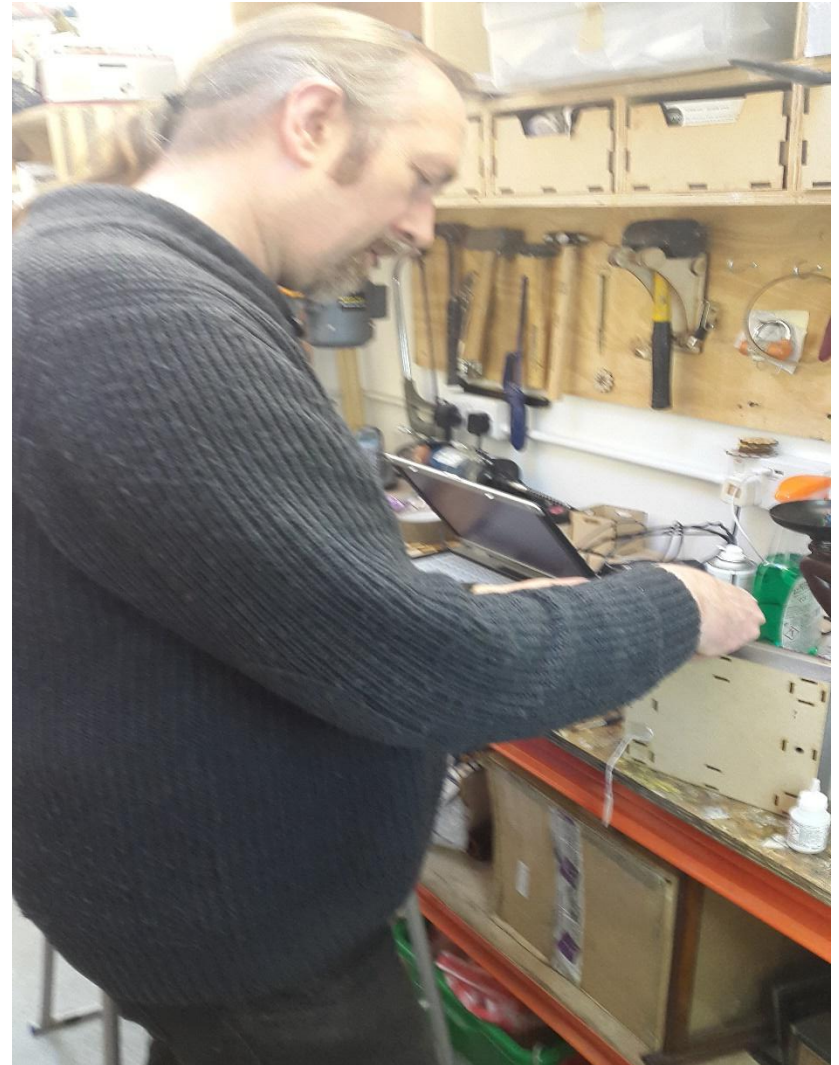
What are the prerequisites for making this?

Creative approaches

- Creating things from scratch
- Adjusting, adding to, pimping existing things
- Combining, mixing, bricolageing things
- Ripping things apart and reassembling them in new ways (hacking...)
- Repairing things (learning how things work and not just how to work them...)

Technology as friendly helpers

- Technologies such as laser cutters and 3D printers are far too complicated for small children
- But they can – by way of teacher/pedagogue or tech-experts as interfaces – be turned into friendly helpers
- Communicating with the technology (e.g. the laser cutter): describing what the child wants it to do (e.g. make a cutting of a drawing) → experimenting with how much and how detailed the technology must be informed to do what it is wished to do will urge the child to play with concepts such as shape, texture etc.

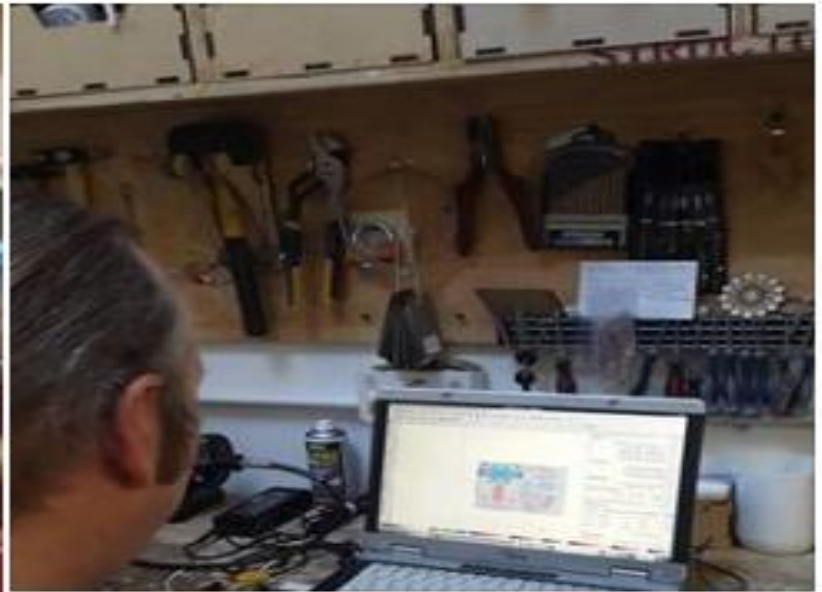




Kjetil Sandvik har tilføjet 3 nye billeder — her: [Makers.](#)

48 min. · Sheffield ·

James Wallbank and his marvelous laser cutter - making robots for a friend.



What is a makerspace?

- Makerspace as concrete space
- → making as something special, disconnected, add-on (e.g. STEM as extra-curricular activity with makerspace as its educational device)

OR

- Makerspace as mindset
- → making as the core method in the curricula:
- → learning as creation and play in all educational activities and subjects, be it science, technology, math or history, language, cultural subjects...

What is a makerspace?

- Institutional
- Formalized, fixed formats
- 'Fablab-ish'
- STEM/STEAM oriented
- Tech-oriented
- Learning goals-focused

OR

- User-centered
- Informal, emergent formats
- 'first we add people'
- Technology as means not goals
- → technology as friendly helpers
- Not strictly focused on learning goals: **LEARNING CANNOT BE AVOIDED**

What is a makerspace?

- James Wallbank: I came up with a list of spaces, which might help understand makerspaces - or makerspaceness.
 - Some of these are further away from makerspaces. Some are very close indeed. All of these have emerged in discussion around makerspaces.
 - It might be interesting to try to find axes or characteristics with which we could sort these spaces into categories. Which involve young people? Which involve education? Which encourage exploration?
- SCIENCE LAB
 - MEETING ROOM
 - CLUBHOUSE
 - CRAFT WORKSHOP
 - SCHOOL
 - UNIVERSITY
 - FACTORY
 - ART STUDIO
 - FAB LAB
 - REPAIR SHOP
 - BUSINESS INCUBATOR
 - MEDIA LAB
 - LIBRARY
 - COMMUNITY CENTRE
 - DESIGN STUDIO
 - CAFE
 - CO-WORKING SPACE
 - MAKERSPACE

Makerspace troublesome questions

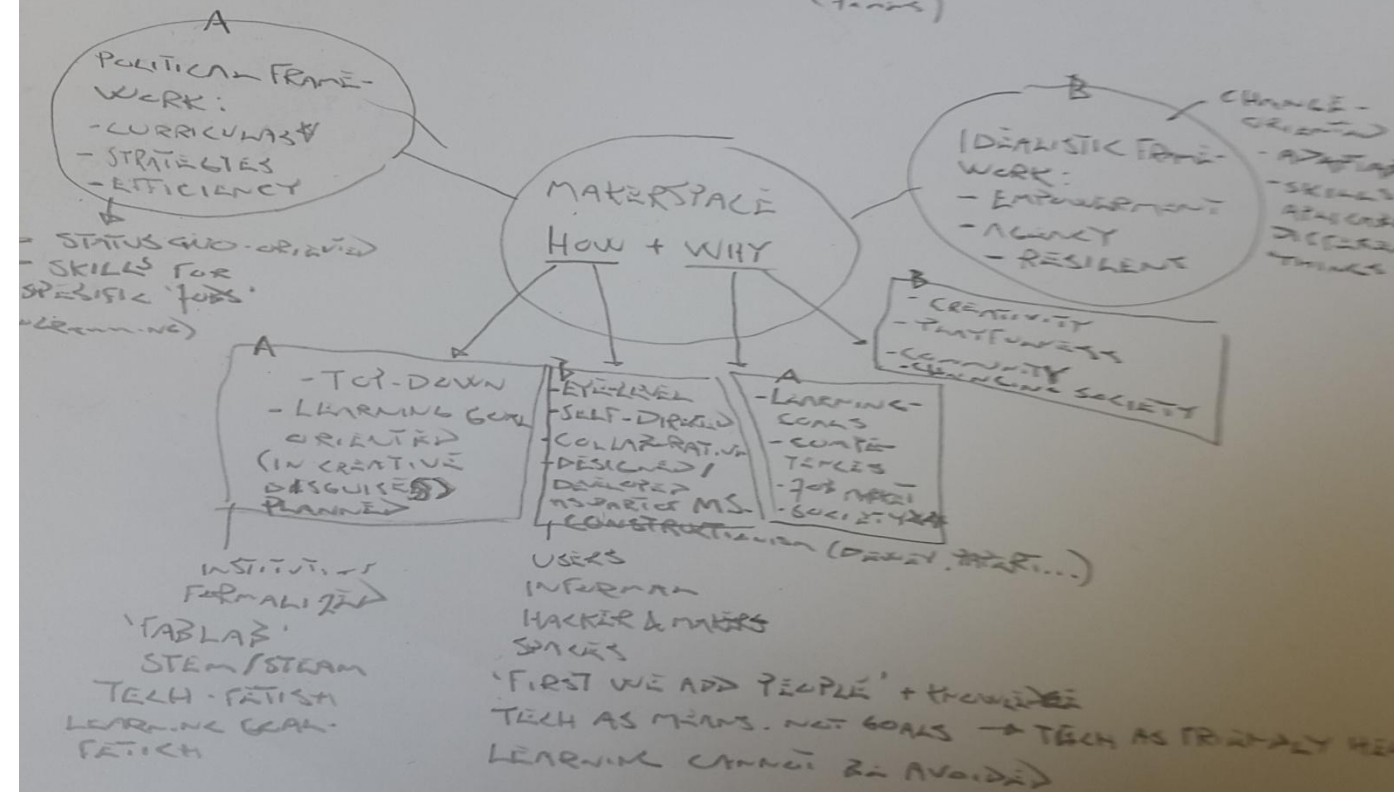
The dimensions of the makerspace:

- **Space/place:** Do makerspaces take place or create place/space: conquer and inhabit their own place/space? Are they specific spaces or is making a mindset we bring with us into a space and thereby code the space as a makerspace?
- **Time:** Do making define to fixed amount of time (we will be 'makeative' for one hour) or do making define its own time (the time needed for being 'makeative')?
- **Movement/direction:** Do making define to linear processes (inherent in strict goal oriented design of maker-activities: we should make this or that, we should learn this or that) or does it – as most creative processes – define to multi-linearity, circularity, abruption, diversions, getting momentarily completely lost...?

Model sketching during conversations with James Wallbank

THE PROPOSED NEEDS STUDY CURRICULUMS

WHAT IS THE QUESTION TO WHICH THE CORRECT IS A MAKE-SPACE (FRAME)



MAKE-SPACE AS CONCRETE SPACE → DISCONNECTED, ADD-
 vs
 MAKE-SPACE AS MINDSET → IN THE MIDDLE

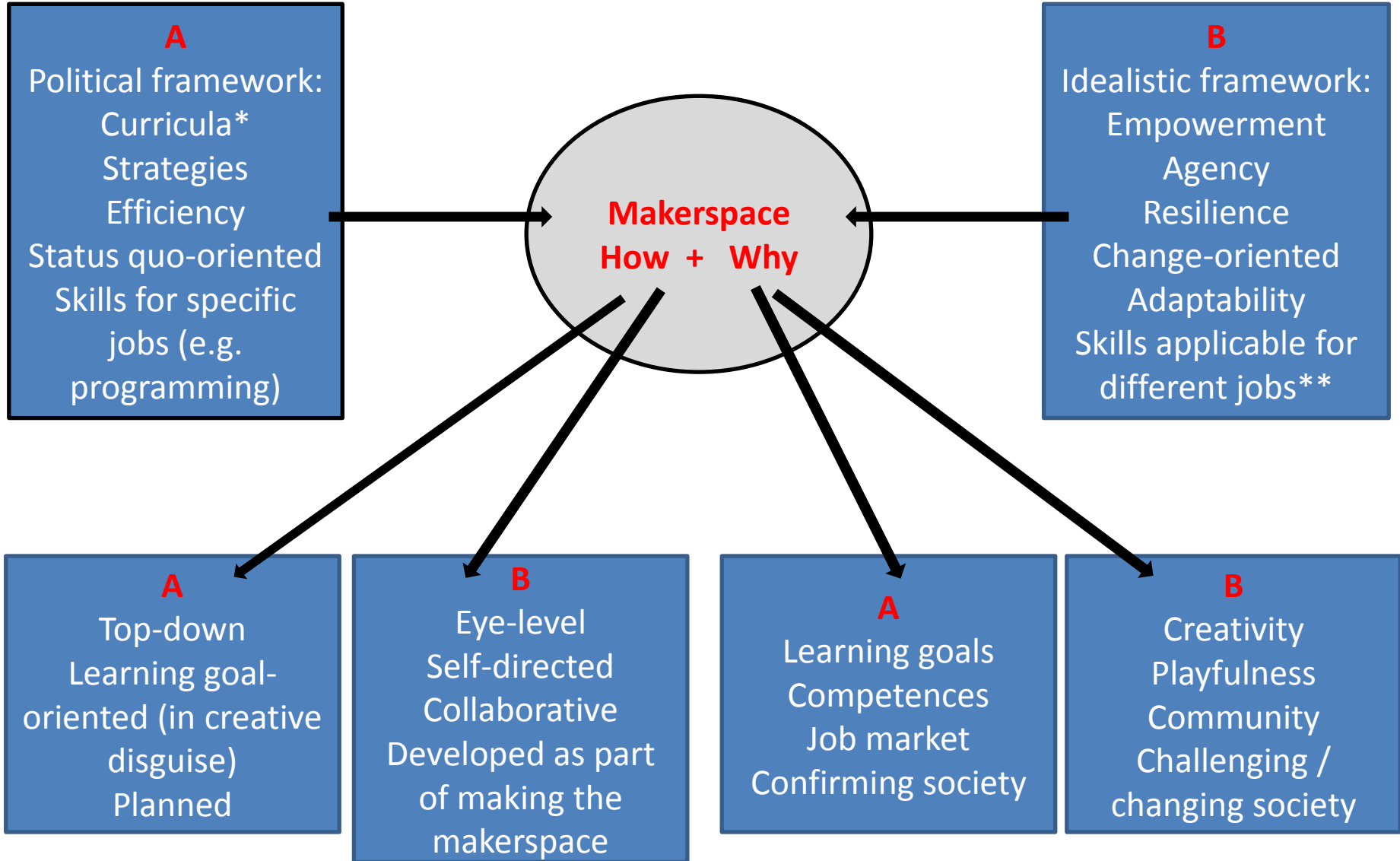
*** + STEM
 ↳ M.S.

SCIENCE TECH WITH
 LEARNING AS
 CREATION AND PROY
 HISTORICAL LOGIC ...

Finished model

- for now...

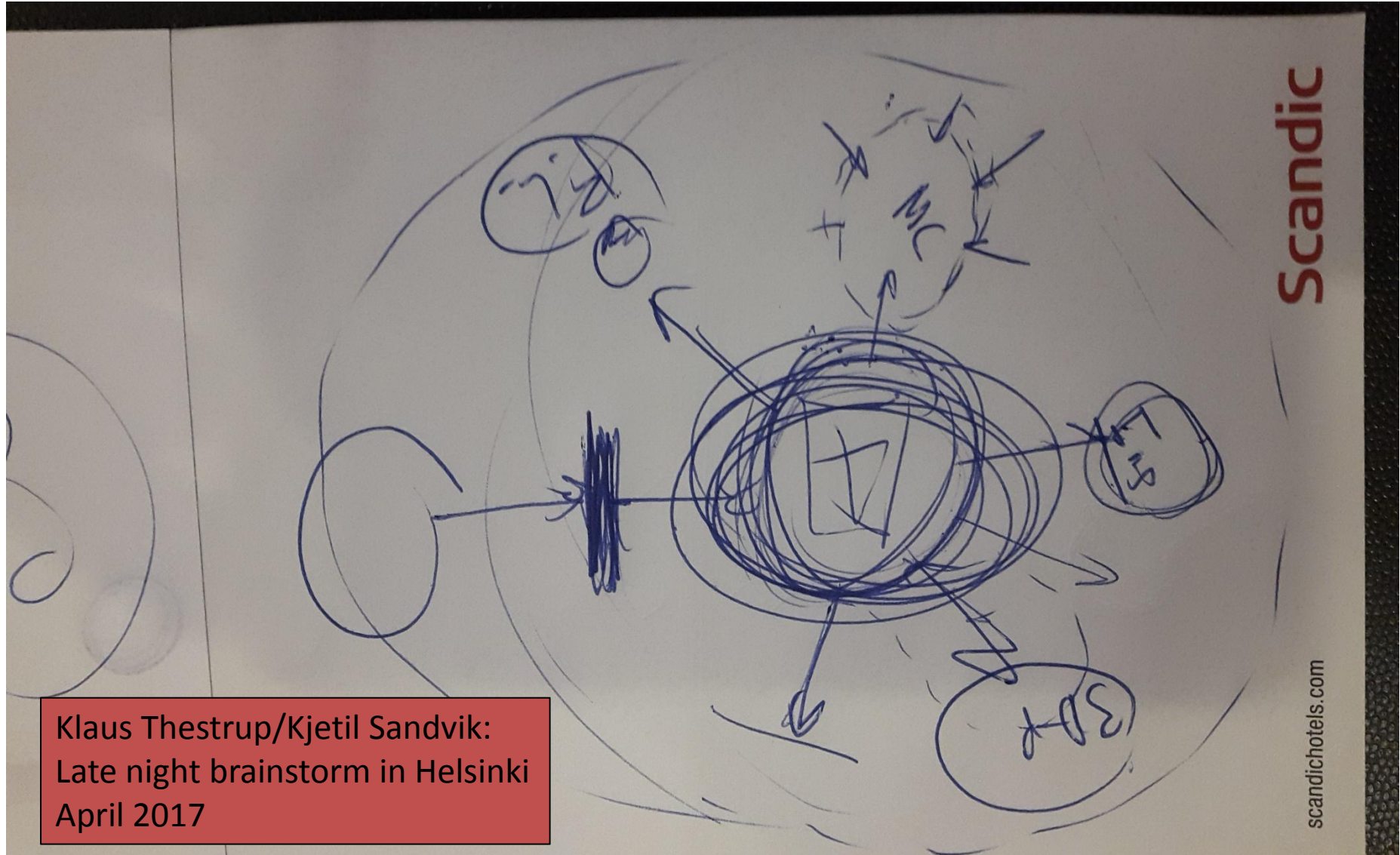
*the project will benefit from studying curricula in the various project countries



**Skills for the future

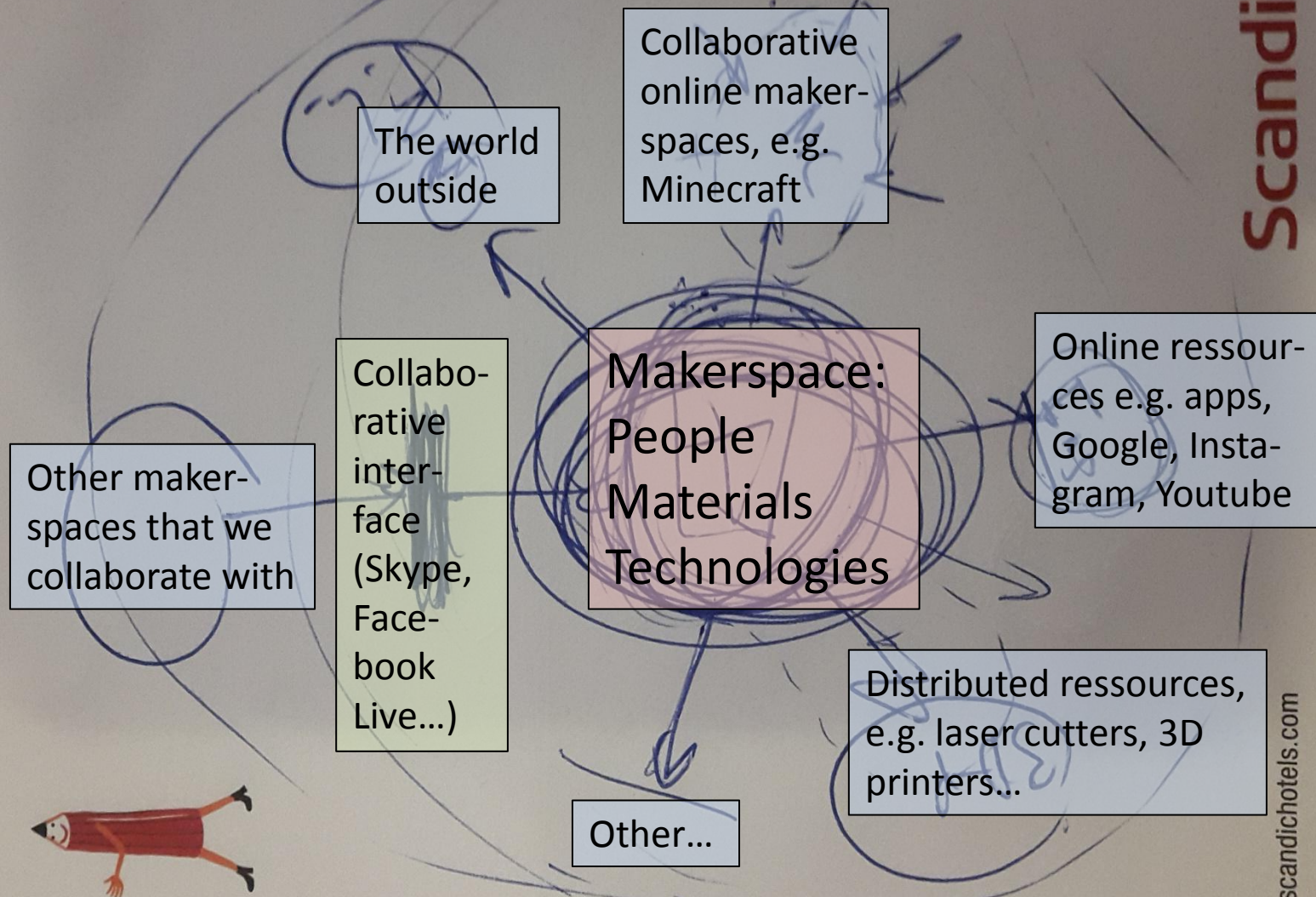
- World Economic Forum predicts that half of the jobs we know today, will disappear within the next 20 years.
- The majority of children starting in school today will as grownups work in jobs that do not exist yet and the jobs we already know will change fundamentally.

Makerspace model

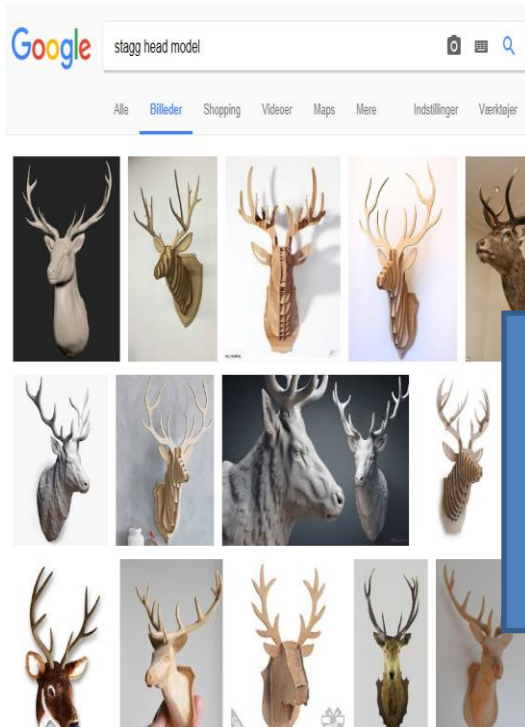


Klaus Thestrup/Kjetil Sandvik:
Late night brainstorm in Helsinki
April 2017

Makerspace model unfolded



Playing and learning with/through (digital) technologies as separate activities or integrated in the playing and learning environment as such



Creative process:
from finding
inspiration online
to laser-cut stagg's
head



Having fun: just like sharing a book, playing on the computer can be a lovely close time together.

Learning how to behave on the computer or online: playing together for 10, 15 or 20 minutes and then going to do something else interesting shows children that there are lots of laughs and fun to be had off line as well. Variety is the spice of life for young children.



Our children really enjoy learning and playing together on the interactive whiteboard and computer.

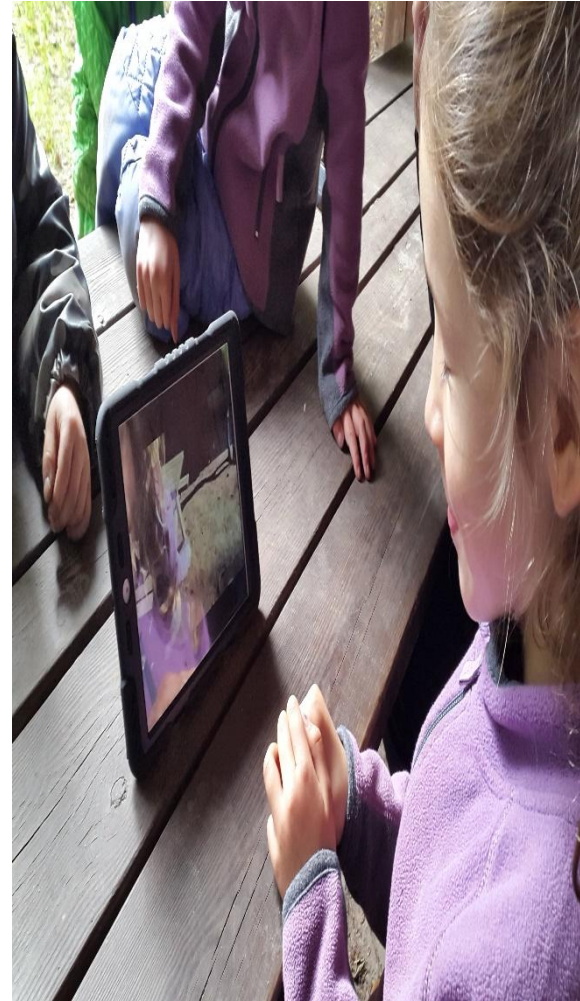


≠

OR



Digital media/technologies as just another toy in the toy-box and just another pedagogical tool in the toolbox



The Sheffield-project

- **co-creation of new** pedagogies and learning environments, including the **development of digital tools and solutions** that offer children avenues for **digital learning**.
- The digital literacy and creative skills of young children will be developed through **participation in makerspaces** in **formal educational settings**.
- the project will involve a **range of approaches to making**, including e-textiles, play with conductive play dough and paint, the design and creation of 3D printed artefacts and e-books, and the creation of objects for Virtual Reality play.
- The activities will foster the development of **digital literacy** and **creativity**, and will enable the integration of knowledge across areas including literacy, science, technology and the creative arts.
 - From the MakEy website, my emphasizes

Industry-partners: what are their roles

IGNITE IMAGINATIONS
A Community Arts Organisation

HOME WHO WE ARE WHAT'S ON NEWS GET INVOLVED BLOG SUPPORT US CONTACT

SUCCESSES

"I would like to be a part of any other project like this. I think these types of projects should be continued. Ordinary people do not have an idea of what art and engineering is. So this type of project adds colours to the dull lives of people living in society."

- Parent, Tinsley Meadows as part of "Back Then" Art and Engineering project

BEFORE NOW
A Children in Need funded project spanning three years looking back on what life was like before now.

BACK THEN
A Group of 60 volunteer artists worked with professional artists and a community group exploring the relationship between art and...

GROWTH
Workshop with 14-25 year olds

Ignite Imaginations @ignitesherf

Startside

Om
Billeder
Anmeldelser
Synes godt om
Videor
Begivenheder
Opslag

Udvalgt til dig

Kontakt Ignite Imaginations

Få opdateringer fra Ignite Im...

Samfundsorganisation i Sheffield 4.8 ★★★★★

Inviter dine venner til at synes godt om denne side

Ignite Imaginations provides high quality arts activities in areas where there is little opportunity to engage.

1756 synes godt om James Wallbank synes godt om dette

35 personer har været her

Makers @makersontheedge

Startside

Om
Billeder
Anmeldelser
Synes godt om
Videor
Opslag

Udvalgt til dig

Kontakt Makers

Se de nyttigste anmeldelser af

Shopping og detailhandel i Sheffield 5.0 ★★★★★

Inviter dine venner til at synes godt om denne side

Locally made crafts, collectables & curiosities. We also host fabulous, fun CRAFT WORKSHOPS including crochet, collage, needlefelt and lasercutting!

679 synes godt om Kristin Dyrhøjer og 2 andre venner synes godt om dette

104 personer har været her. Lisa Gail Wallbank og 1 andre venner

MAKERS

HOME WOR

Lasercutting First Steps

Find out what a laser cutter is, how it works, and how you can use one to make two-dimensional and three-dimensional shapes. We'll go through the whole procedure of preparing and cutting a design, and review the materials that cut best.

Watch our lasercutter in action and discover the software you'll need to make your own designs. This short introduction is a great way to find out more, helping you to take the next steps. This introduction qualifies you for £10 off the cost of your next full day laser workshop!

Institutions: how can they be co-creative

Broomhall Nursery School
@broomhallnursery

Startside
Om
Anmeldelser
Billeder
Synes godt om
Videoer
Begivenheder
Opslag

Udvalgt til dig
Kontakt Broomhall Nursery School
Synes godt om denne side for

Broomhall Nursery School provides an Ofsted Outstanding learning through play experience for children aged 3-5 years.

81% svarrate
225 personer synes

Monteeney Primary School
Monteeney Crescent, Sheffield, S5 9DK. Tel: 0114 2467316

Home Posts Our School Classes Parents & Carers Statutory Information

eLearning
Find Out More

Immersive Classrooms
At Monteeney Primary we are developing

SCSP Steel City Schools Partnership

Principal
Monteeney Principal Mrs Clare Hayes

Norfolk Community Primary School

HOME ABOUT US KEY INFORMATION NEWS & EVENTS PARENTS PUPILS RESOURCES

Welcome to Norfolk Community Primary

WELCOME

Our Attendance Target is 96%
This weeks attendance is 93.5%

1st May 2017
May Day
1st May 2017

4th May 2017
Nursery Trip to the Butterfly House
4th May 2017

Welcome to Norfolk Community Primary School Website.

We are really proud of our school and want to show you all the great work we do every day. We like being here- and we hope that our website shows you why. We use it for:

- Celebration of our achievements
- Up-to-date news of exciting events

Please enjoy looking at our website and we hope to meet you soon.

Broomhall Nursery School

About Us

Happy children, growing and learning together, is what Broomhall Nursery has excelled in since we opened in 1930. The oldest nursery in Sheffield, we are one of only two stand alone nursery schools in the City funded by the Local Authority. Staffed exclusively by teachers educated to degree standard and level 3 qualified early years practitioners, the children here enjoy a learning through play experience that Ofsted describe as "outstanding".

Most of our committed and skilled staff team have been with us for many years, which is testament to the friendly, happy and engaging environment at Broomhall. We pride ourselves in providing a safe, supportive, creative and joyful environment in which your child can explore and discover the world. Individual and group achievements are celebrated and respect and care for all are unrivalled.

Some of our families have been with us for four generations with parents wanting their children to share the happy times and first class learning opportunities they themselves enjoyed at Broomhall.

Our Nursery School occupies a large and once grand house set in beautiful, extensive walled gardens on the edge of the City Centre. It's a great environment for children to explore and enjoy with equipment to climb and balance, a large sandpit in which to dig and build, places to hide, seek, scoot, pedal and drive, raised beds in which to plant, tend and grow and mature trees for shade and dappled sunlight.

We are often able to offer children a place at Broomhall immediately. You can download an [application form](#) here or you can call us to arrange a visit to look around.

Application Form
Click [here](#) to download our application form in Word Format which you can complete and then email back to us.

"Teachers and support staff are skilled at turning activities into learning opportunities and making learning almost irresistible."
Ofsted 2014.

Home » Immersive Classrooms

Immersive Classrooms

At Monteeney we employ as many strategies as we can to help engage and excite children with their learning.

One approach we have started to develop is the use of "Immersive classrooms". This is the idea that when children come into their classroom, they will be fully immersed in the subject or topic they are learning about. So if the children are learning about rainforests and the environment, their classroom will be developed to look like this area of the world. If we are learning about the Romans, then the classroom will reflect elements of Roman life.

This approach has been proven to help children feel more part of their learning and also works as a great "hook" to excite children about their current topic. Here are some examples of recent immersive classrooms at Monteeney

Classroom Immersion At Monteeney Primary School

Norfolk Community Primary School
@NorfolkCPS

Startside
Om
Billeder
Begivenheder
Synes godt om
Anmeldelser
Videoer
Opslag

Status
Skriv noget på denne side...

Grundskole i Sheffield
3.0 ★★★★★

Inverter dine venner til at synes godt om denne side

This page will keep you up-to-date on any events or news related to the school.

78 personer synes godt om denne side, og 78 personer følger den

0 personer har været her

Where can the Sheffield and the Aarhus project meet?

- Creation of new practices* is central to both projects
 - In Aarhus the project is not only about formal educational setting, but about the possibilities for learning through play and creativity
- Using a variety of media/technologies is part of both project
 - In Aarhus: no ambition of designing new technology, but appropriating existing (and open-sourced freeware) technologies (benefit: cheap both concerning design and support, easy replaceable, cross-connectable instead of stand-alones)
- Cross-disciplinarity!!!
 - In Aarhus there is no basic difference between the participants: research team consists of academics, pedagogues, workshop designers and devisers, and most of all: of children!**
- *Central question concerning the core logic of a makerspace: is its primarily goal to make things or to be making?
- **How do we engage the various participants in creating new practices and environment – the very makerspace which can be used by the institutions? How do we create a communal understanding of what making and makerspaces are, how can we develop a ‘maker mindset’ (MAKERSPACENESS) together with the teachers/pedagogues – and together with the children?

Center for Research in Early Childhood Education

Our Practice

Early childhood is defined as birth to eight, and early childhood education is defined as happening in and across many spaces – preschools, schools, homes, communities, clubs, hospitals, on- and off- line, forest schools, playgrounds and the outdoor spaces.

Key themes that are explored in our work include:

- Learning, pedagogy, curriculum, assessment
- Play – traditional and digital: blending on-line and off-line play
- Children's lives, perspectives and experiences
- Professionalism and professional knowledge

In each of these themes, our research creates pathways for impact and engagement where we work with many different groups, communities and organisations.



Corresponds with the objectives in the Danish project

On the importance of being playful...

- The question may not be how to learn to be playful but how to learn not to be not-playful.
 - Kjetil Sandvik

