Pen Lister, MSc MA MBCS FHEA, PhD Candidate,
University of Malta

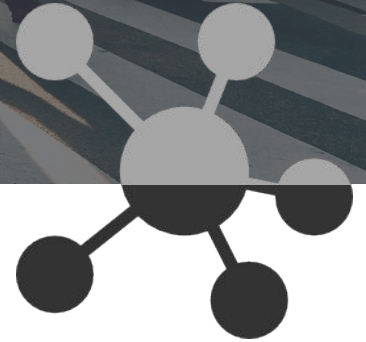# Designing for Digital Citizens in Learning Cities

Technology and ideas for citizen engagement

Link to these slides: **https://tinyurl.com/design-for-dig-citizens**
Link to fileguide and notes for further reading: **https://tinyurl.com/digit-talk**
Google Doc with links to examples **https://tinyurl.com/dig-citizen-links**
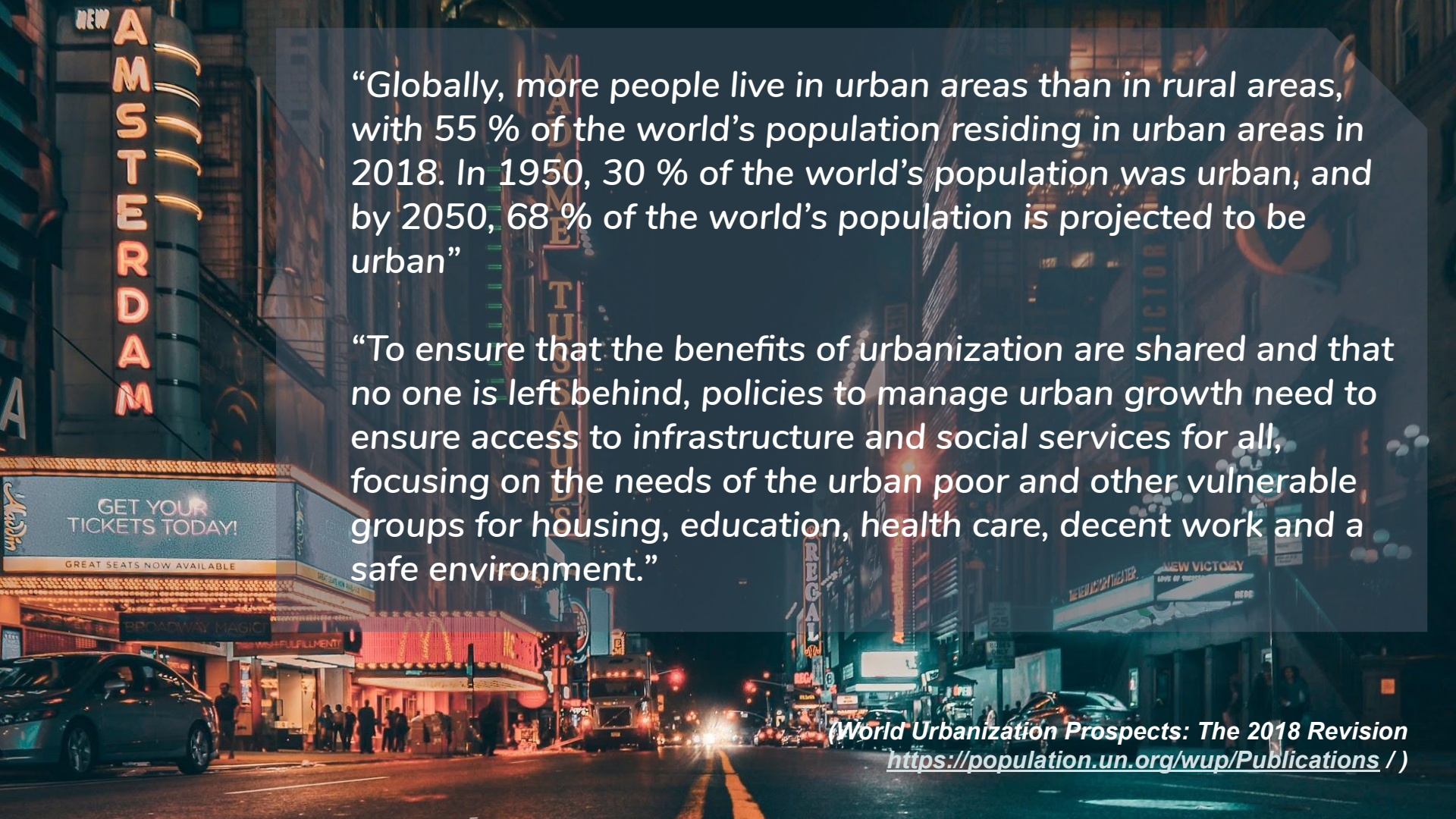
"In 2008, the world reaches an invisible but momentous milestone: For the first time in history, more than half its human population, 3.3 billion people, will be living in urban areas. By 2030, this is expected to swell to almost 5 billion. Many of the new urbanites will be poor. Their future, the future of cities in developing countries, the future of humanity itself, all depend very much on decisions made now in preparation for this growth."

2007, The United Nations Fund for Population Activities (UNFPA)
https://www.unfpa.org/urbanization

"Globally, more people live in urban areas than in rural areas, with 55 % of the world's population residing in urban areas in 2018. In 1950, 30 % of the world's population was urban, and by 2050, 68 % of the world's population is projected to be urban"

"To ensure that the benefits of urbanization are shared and that no one is left behind, policies to manage urban growth need to ensure access to infrastructure and social services for all, focusing on the needs of the urban poor and other vulnerable groups for housing, education, health care, decent work and a safe environment."

(World Urbanization Prospects: The 2018 Revision
https://population.un.org/wup/Publications /)

This talk discusses concepts of digitisation in contexts of learning cities

How we support citizens for digital skills and literacies to access and benefit from increasingly digitised public service infrastructure, employment requirements and general quality of life

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There are four sections to these slides.

1. **Introduction**
   Defines terms and terrain
2. **Background**
   Learning cities
   The Digital Competence Framework
3. **Approaches and Examples**
   Designing Inclusive Digital Solutions & Developing Digital Skills
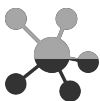   Apps and ideas for getting creatively involved
4. *Further considerations*
   (Recommended books and websites to support critical awareness)

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↳ 1. **Introduction**
   a. What is digitisation?
   b. What is a learning city?
   c. Learning cities and social change
   d. Problems and benefits of digital society

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What is digitisation? (Aka digitalisation)

"Digitalisation is understood as 'the way in which many *domains* of social life are restructured around digital communication and media infrastructure' […]" (Wildemeersch & Jütte, 2017, citing Brennan & Kreis, 2014.)

What is a **learning city**?

help people participate more in society… "participation in digitally mediated collaborative activities in UK cities vary widely by age, ethnicity and social condition, with the wealthy and educated benefiting the most"

(Winden & Carvalho, 2017, p. 12)

Consider:

What is a culture of learning?

How does digitisation affect citizens in daily life?

How can we support social change for digitisation?
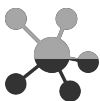
How do we prepare citizens for digitised life?

Is a smart city a learning city, if so, how?

> **Winden & Carvalho, CITIES AND DIGITALIZATION (2017)**
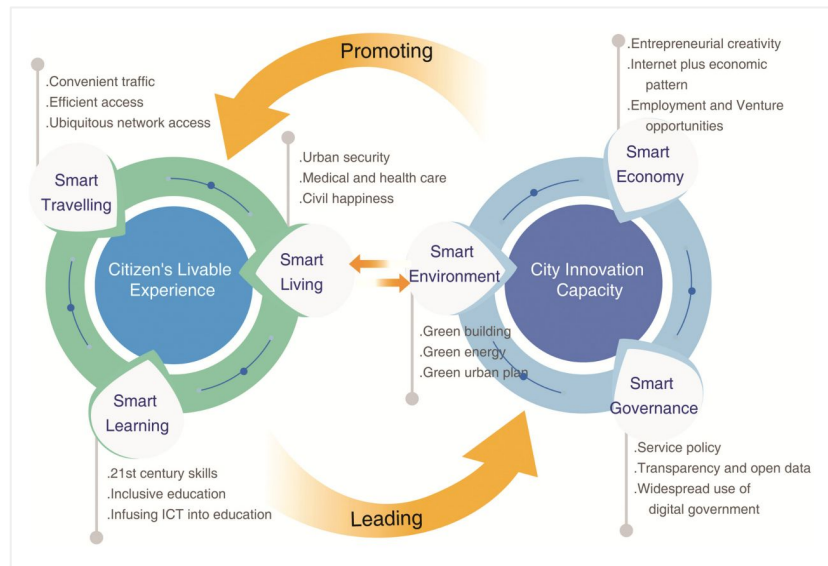> https://drive.google.com/open?id=1c4XuFIDzeEh7L3LowD0nKV5XEr6y0aMP

Should a city *be* a learning city?

"*Digital skills are in great need*, but the education system – on all levels – is slow to adapt, and also further education is needed to empower and update employees with digital skills. *Cities need to actively drive the change* in this respect… " (Winden & Carvalho, 2017, p. 14)
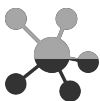
Is a **smart city** a learning city?

"Advocating 'smart learning' plays a cultural leading role for stimulating vitality for urban innovation and it also provides scientific support for citizens' livable experiences. In fact, it is the ultimate target of smart city construction to let humans have better urban living environments." (Huang et al., 2017)

Read the paper:
https://drive.google.com/open?id=1HeuduG5YDgtkJOinEdx2H64coXqTdOjW

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Social change and the learning city

"Social change may include changes in nature, social institutions, social behaviours, or social relations…" *Wikipedia*

The **ERASMUS + #FutureLabAE project** is based on two pillars - democracy and digitalization … and will last for approximately three years… [...] focus of the project around democracy and digitalization … based on the idea that Adult Education has a role to play in tackling the way these two issues are being dealt with; and … to shift their approach … to a more change-oriented one, in order to promote social change.

https://eaea.org/project/future-lab/

EAEA
@EAEA2020

Follow

#FutureLabAE project prepares adult educators for two of the main challenges that Europe currently faces: democracy and digitalisation. The @EUErasmusPlus project partners gathered in Paris for a kick off meeting. #adulteducation

1:55 PM - 15 Jan 2019

4 Retweets 13 Likes

EAEA
@EAEA2020
European Association for the Education of Adults
Brussels, Belgium
eaea.org
Joined January 2012

Tweet your reply

What are the issues, implications, considerations and dangers of digital life?

What are the benefits of digital life?

How do we prepare society for digital life?

What is digital literacy?

Jane Secker on literacies:
https://diglitunpacked.wordpress.com/2019/01/20/the-continuing-trouble-with-terminology/

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Problems

- **Privacy** of citizens
- **Ownership** of data
- **Use** of data
- **Sharing** of data
- **Access** to apps and Internet
- **Digital skills** of citizens

#datasociety
#data
#ethics
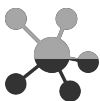*#edtech*
#digitalisation

Benefits

- ○ **Empowerment:** of citizens in local decision making
- ○ **Communication:** between citizens & decision makers
- ○ **Information:** access to facts & data
- ○ **Skills:** for digital employment and civic life
- ○ **Sustainability:** local environment initiatives *and* efficient citywide resource use

↳ **2. Background**

       a. UNESCO Global Network of Learning Cities

       b. UNESCO Skills for a Connected World (EC)

       c. Digital Competence Framework

UNESCO Global Network of Learning Cities

DEFINITION: A **Learning City** is a city which effectively mobilises its resources in every sector to:

- promote **inclusive learning** from basic to higher education;
- re-vitalise learning in families and communities;
- facilitate learning for and in the workplace;
- extend the use of **modern learning technologies**;
- enhance quality and excellence in learning; and
- foster a culture of learning throughout life.

Unesco Key Features of Learning Cities, 2013

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UNESCO Global Network of Learning Cities

1. Wider benefits of building a learning city
2. Major building blocks of a learning city
3. Fundamental conditions for building a learning city

Key Features of Learning Cities, UNESCO, 2013. The Framework of the Key Features of Learning Cities; *A list of key features and measurements*

View the features tables here:
https://drive.google.com/open?id=1WKN4Rv09NMw-QHj-3_eIhpeIaI5QSZ7k

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UNESCO Global Network of Learning Cities

https://sustainabledevelopment.un.org

Generating enthusiasm is crucial to the success of a learning city. The more people and organizations that react positively to the idea of a learning city and engage with it, the better its chances of flourishing are.

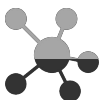Unesco Key Guidelines for Building Learning Cities, 2015

View the document
https://drive.google.com/open?id=1_ZAbwxvoKO8DkjaYHmmNRucB-lf2SQzW

Organize a learning festival in places where people gather. Make this a joyful event and invite all relevant organizations to exhibit their courses, products and materials and offer hands-on activities that encourage all citizens to get involved.

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UNESCO Skills for a connected world

"Digital skills have moved from 'optional' to 'critical' and need to be complemented with transversal 'soft skills' such as the ability to communicate effectively in both online and offline mediums."

Skills for a connected world: report of the UNESCO Mobile Learning Week 2018

View the document
https://drive.google.com/open?id=1zXRgN-hXGXeDbAR-BnUKgjlikYwP6LVs

"During [...] discussions, participants noted that often the challenges in using technology stem from a lack of teacher skills."

"… the 'percentage of youth and adults who have achieved at least a minimum level of proficiency in digital literacy skills' is one of the indicators of progress towards achieving SDG4."
(https://sustainabledevelopment.un.org/sdg4 & https://www.un.org/sustainabledevelopment/education/)

"The representative of the Smart Learning Institute of Beijing Normal University, China, argued that the key challenge is to make digital skills mainstream."

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European Commission Digital Competence Framework
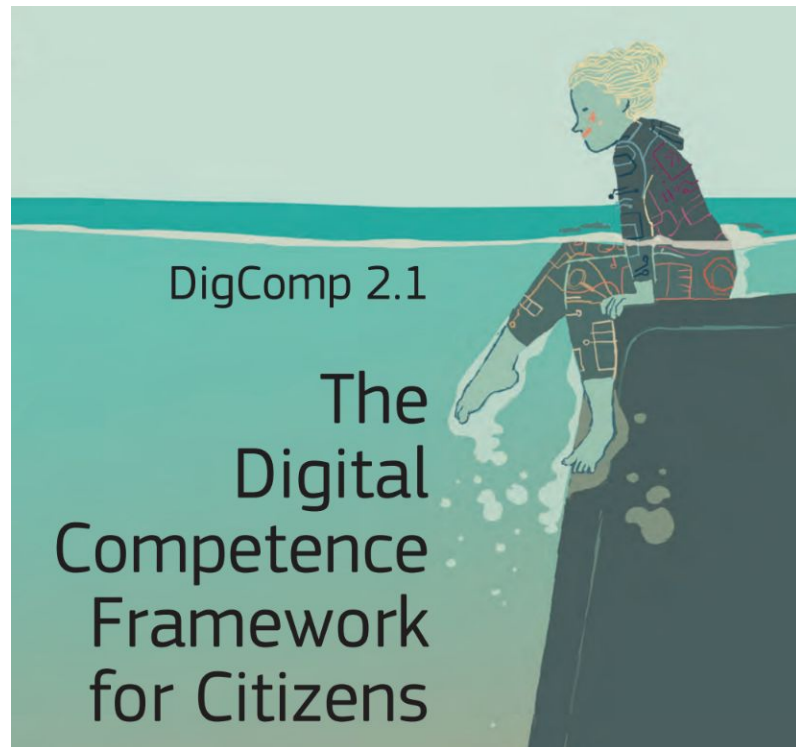
21st century Skills and Competences:

"Creativity, entrepreneurship, learning-to-learn, digital competence and other 21st century skills and competences are emerging as more and more important for innovation, growth and participation in a digital society and economy…"
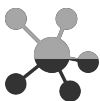
Learning and Skills for the Digital Era:
https://ec.europa.eu/jrc/en/research-topic/learning-and-skills

DigComp 2.1
https://drive.google.com/open?id=1CaIjQEZPlQsHE---9ZgqOdkAKn90TFOd

DigComp 2.1

The Digital Competence Framework for Citizens

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European Commission Digital Competence Framework

1) Information and data literacy: To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.

1.1 Browsing, searching and filtering data, information and digital content
1.2 Evaluating data, information and digital content
1.3 Managing data, information and digital content

2) Communication and collaboration: To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.

2.1 Interacting through digital technologies
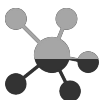**2.2** Sharing through digital technologies
2.3 Engaging in citizenship through digital technologies
2.4 Collaborating through digital technologies
2.5 Netiquette
2.6 Managing digital identity

DigComp 2.1 https://drive.google.com/open?id=1CaIjQEZPlQsHE---9ZgqOdkAKn90TFOd

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European Commission Digital Competence Framework

3.1 Developing digital content
3.2 Integrating and re-elaborating digital content
**3.3** Copyright and licences
3.4 Programming

3) Digital content creation: To create and edit digital content. To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.

4.1 Protecting devices
4.2 Protecting personal data and privacy
4.3 Protecting health and well-being
4.4 Protecting the environment

4) Safety: To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.

5.1 Solving technical problems
5.2 Identifying needs and technological responses
5.3 Creatively using digital technologies
5.4 Identifying digital competence gaps

5) Problem solving: To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.
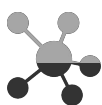
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European Commission Digital Competence Framework
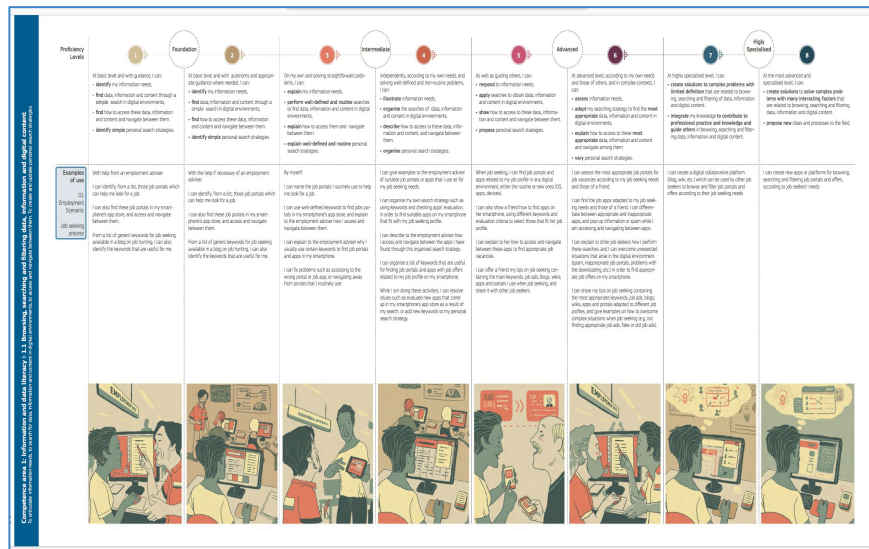
Fig 1. Jobs and Employment Example [click to enlarge]
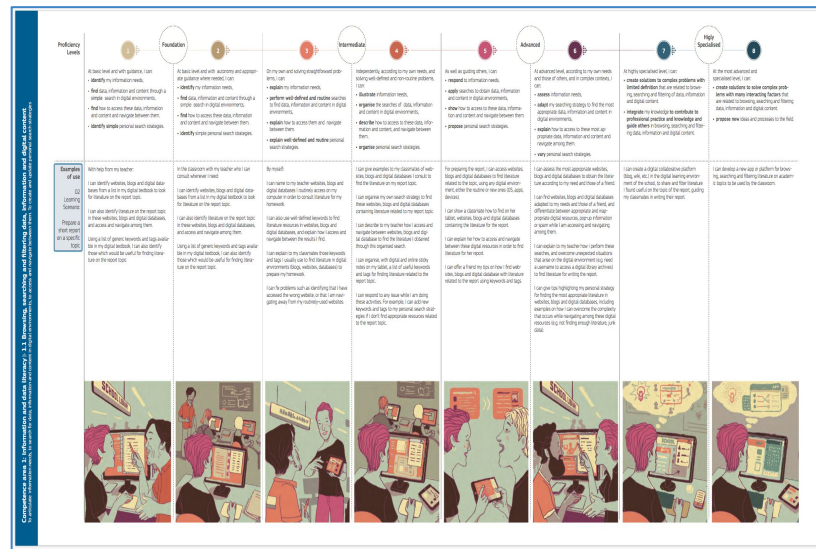
Fig 2. Learning Example [click to enlarge]

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European Commission Digital Competence Framework
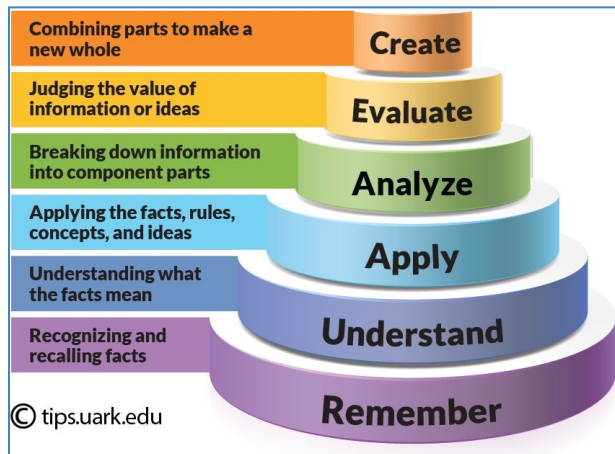
Fig 4. Blooms Revised Taxonomy
(*J Shabatura, tips.uark*)
[click to enlarge]

Fig 3. Keywords for Proficiency Levels [click to enlarge]

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↳ 3. **Approaches and Examples**

   a. Designing Inclusive Digital Solutions & Developing Digital Skills

   b. Digital Competences Development System

   c. Ideas for digital urban engagement:

   - **Augmented Reality**
   - **Map and location apps**
   - **Social Media stories**
   - **Community geo-art**
   - **Urban feedback**
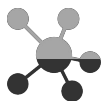
Designing Inclusive Digital Solutions & Developing Digital Skills

Considering low literate users

- User digital and information literacy
- Tailor content to the users understanding
- Offer good help guides and support
- Offer training for key service platforms

Inclusive
design
for all

Unesco & Pearson Design Guide full document
https://drive.google.com/open?id=12PrrJE51pcClAFcHoujqA3slABcgtGfy

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Designing Inclusive Digital Solutions & Developing Digital Skills

Theory of change

Acknowledging the barriers to greater inclusion … UNESCO proposes a theory of change.

If designed for low skilled and low literate people, digital solutions provide an entry point into digital activities… **then** … their digital skills improve over time … **which** enables them to use technology to contribute to improving their livelihoods … **which is likely** to raise motivation and confidence to use technology more deeply…
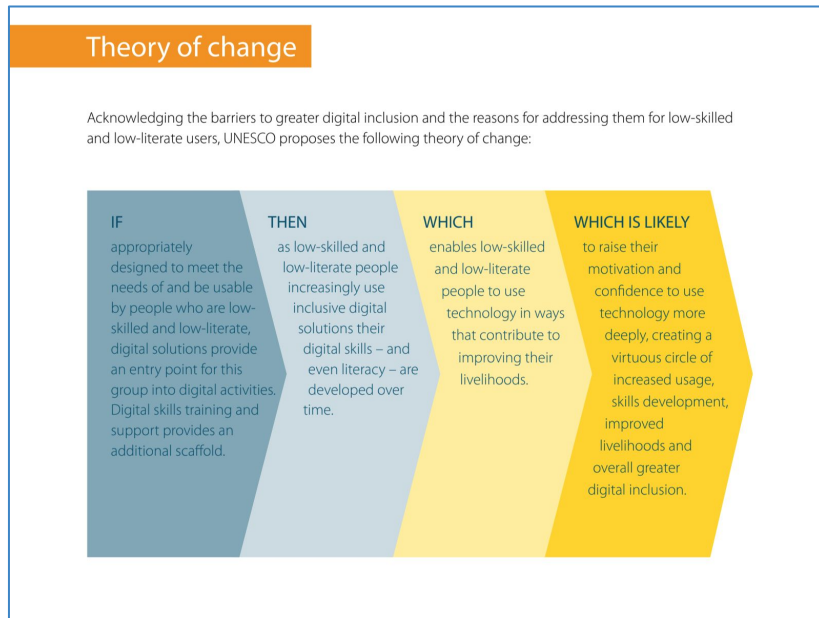

Fig 5. Unesco Theory of Change [click to enlarge]

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Designing Inclusive Digital Solutions & Developing Digital Skills

… for users with low levels of digital skills and literacy, it is crucial to gain a deep understanding of the target users...

… understanding users' access and comfort levels with technology is critical to designing appropriate solutions for them...

... information needs of target users should be identified... The challenge is to best meet those needs with content that is understandable, relevant and delivered in a usable form...

… Digital solution design can best serve low-literate and low-skilled users by using appropriate media mixes, input methods and UI approaches...

… a real need to provide training and support to low-skilled and low-literate users as they encounter digital solutions for the first time...

PLAN → DESIGN → DEVELOP → IMPLEMENT → MONITOR

Design with all the users, focusing on their needs and context

Focus on users' digital skills and competences

Ensure the clarity and relevance of content for low-skilled and low-literate users

Use appropriate media and tailor user interface for low-skilled and low-literate users

Provide initial and ongoing training and support

Constantly monitor, measure and improve

Fig 6. Guidelines for phases of project lifecycle [click to enlarge]

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Designing Inclusive Digital Solutions & Developing Digital Skills

Foundation skills, such as literacy and numeracy

LOW   HIGH

Digital skills and competences

LOW   HIGH

Transferable skills, such as critical thinking, collaboration and creativity

LOW   HIGH

Subject knowledge

LOW   HIGH

Reasons to focus on the digital inclusion of low-skilled and low-literate people:

- ○ Supporting literacy development;
- ○ Increasing usage and uptake;
- ○ Supporting development and inclusion

Digital Citizens in Learning Cities: Approaches and Examples

Designing Inclusive Digital Solutions & Developing Digital Skills

Design & Development considerations

■ Design with the users, focusing on their needs and context

■ Focus on users' digital skills and competences

■ Ensure the clarity and relevance of content for low-skilled and low-literate users

■ Use appropriate media and tailor user interface for low-skilled and low-literate users

■ Provide initial and ongoing training and support

■ Constantly monitor, measure and improve

Unesco & Pearson Design Guide full document
https://drive.google.com/open?id=12PrrJE51pcClAFcHoujqA3slABcgtGfy

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Digital Competences Development System

"Employment and digitalisation: Adult education is key when it comes to improving employment prospects and ensuring prepared citizens in the digital world."

"Digital Competences Development System (DCDS) project aims to establish a framework that will provide the low-skilled adult European population with the basic digital and transversal competences needed for employment, personal development, social inclusion and active citizenship"

View the webpages
- https://eaea.org/why-adult-education-2/employment-and-digitalization/
- https://eaea.org/our-work/projects/dcds/

DIGITAL COMPETENCES DEVELOPMENT SYSTEM

EAEA: European Association for the Education of Adults

Digital Competences Development System

DCDS is completely aligned to the European Digital Competence Framework for Citizens – DigComp and thus promotes its adoption in Europe...

View the Project website
http://www.dcds-project.eu/
Read the report
https://drive.google.com/open?id=1Oktq81lGkIjc49y_JMfYitqj9319hVsK

"What is the profile of those EU citizens who are at risk of digital exclusion and what are the key motivation drivers for them to enrol in a digital upskilling pathway?"

DIGITAL COMPETENCES DEVELOPMENT SYSTEM

- Improving basic digital competences of adults with low digital skills
- Putting Digital Competence Framework (DigComp) into practice
- Self-assessment tool
- Blended (online, offline, and face-to-face) training approach
- Integrated modular online learning environment
- Gamification features
- Flexible and tailored learning pathways
- Validation of basic digital competences

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Digital Citizens in Learning Cities: Approaches and Examples

Using digital to engage citizens - examples
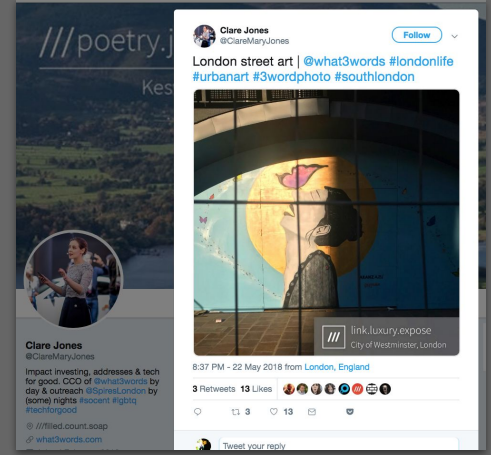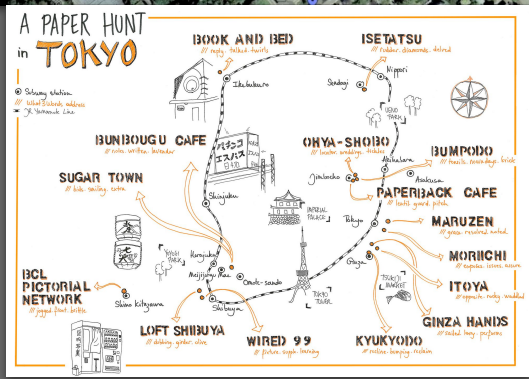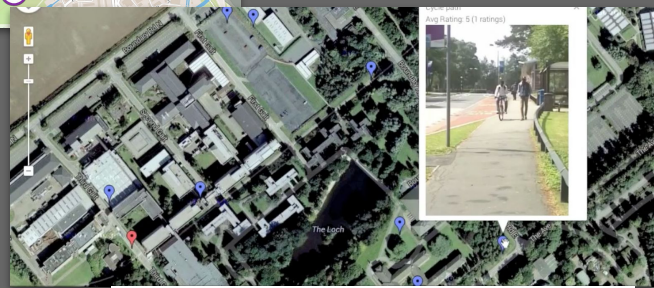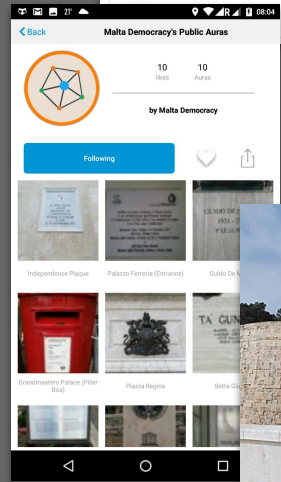
Ideas for **digital urban engagement**:

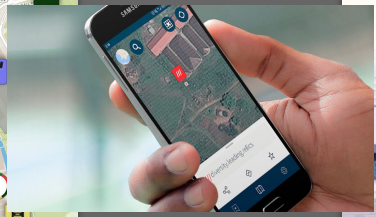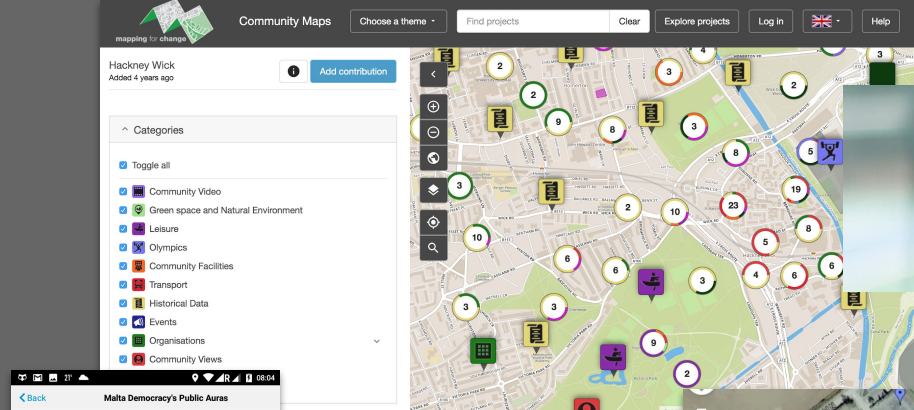Augmented Reality
Map and location apps

Social Media stories
Community geo-art
Urban feedback

Some ideas for how these technologies can be used to engage citizens and indirectly support their digital skills literacy development.
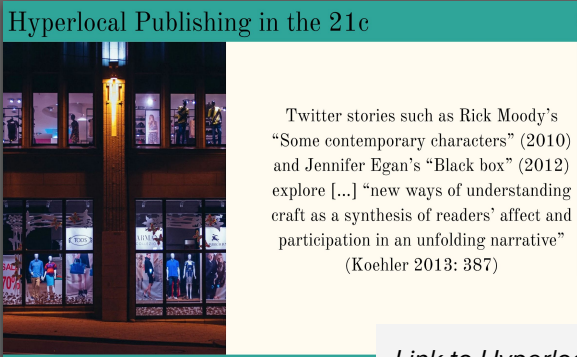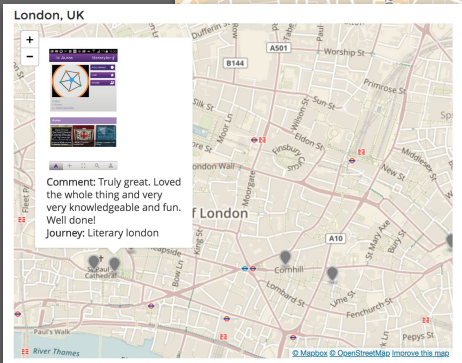
What3Words
Google Lens
HP Reveal

Twitter Ambient Literature
Smart learning journeys
Community mapping

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///hillside.drum.requires
San Pawl il-Baħar, Saint Paul's Bay

The Death and Life of Great American Cities
Book by Jane Jacobs

Do it; scenarios of the revolution
Book by Jerry Rubin

Transvaal daisy
Plants

Gerbera L. is a genus of plants in the Asteraceae. It was named in honour of German botanist and medical doctor Traugott Gerber | who travelled extensively in Russia and was a friend of Carl Linnaeus... Wikipedia

Statue of Liberty National Monument

What3Words
3WordPhoto
Google Lens
HP Reveal
DBPedia
Places
Geoflow
Geme.io
Mapillary
Edmodo
Google
MyMaps
Twitter

Google Doc with links to examples
https://tinyurl.com/dig-citizen-links

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Community Maps — Hackney Wick

Google Doc with links to examples
https://tinyurl.com/dig-citizen-links

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London, UK

Comment: Truly great. Loved the whole thing and very very knowledgeable and fun. Well done!
Journey: Literary london

© Mapbox © OpenStreetMap Improve this map
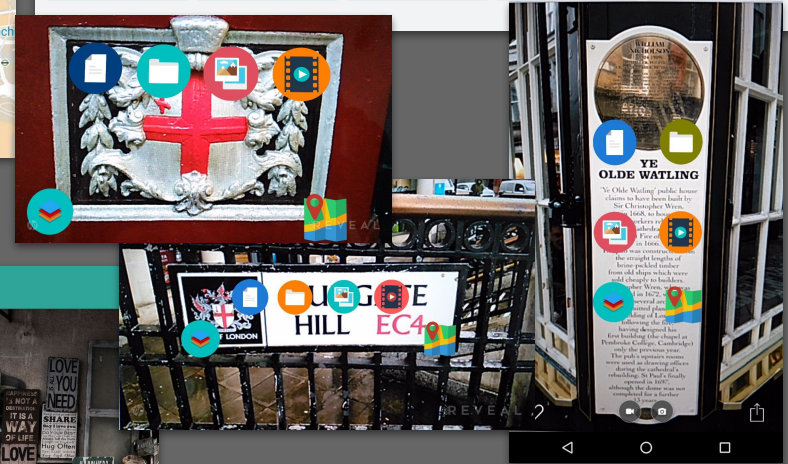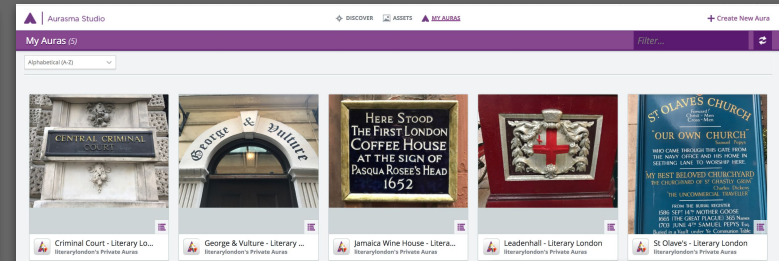
Hyperlocal Publishing in the 21c

Twitter stories such as Rick Moody's "Some contemporary characters" (2010) and Jennifer Egan's "Black box" (2012) explore [...] "new ways of understanding craft as a synthesis of readers' affect and participation in an unfolding narrative" (Koehler 2013: 387)

Hyperlocal Publishing in the 21c

Catch the textual run-off of the streets; the graffiti, the branded litter, the snatches of conversation. Cut for sign. Log the data-stream. Be alert to happenstance of metaphors, watch for visual rhymes, coincidences, analogies, family resemblances, the changing moods of the street. (MacFarlane 2005: 3).

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Smart Learning Journeys - historical, cultural, creative, art, photography, writing, video, audio, social media... AR, maps, gamified, scavenger hunts...

Link to Hyperlocal Publishing slides: https://goo.gl/a4YqSE

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↳   4. **Further considerations**
         a. Being critically aware of the issues:
              i.   Books and webpages to read
              ii. Further links and resources
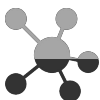
Digital Citizens in Learning Cities: Critical voices

Being critical, reading about the issues from various perspectives is vitally important. Checking up-to-date sources from across relevant disciplines is key. Reading these books is a good start.

Platform Capitalism: Nick Srnicek https://www.amazon.co.uk/Platform-Capitalism-Theory-Redux-Srnicek/dp/1509504877

Platform Society: José van Dijck https://www.amazon.co.uk/Platform-Society-Jos%C3%A9-van-Dijck/dp/0190889764

The Smart Enough City, Putting Technology in Its Place to Reclaim Our Urban Future : Ben Green
https://mitpress.mit.edu/books/smart-enough-city

Artificial Unintelligence, How Computers Misunderstand the World: Meredith Broussard
https://mitpress.mit.edu/books/artificial-unintelligence

Intertwingled, Information Changes Everything: Peter Morville
https://www.amazon.co.uk/Intertwingled-Information-Everything-Peter-Morville/dp/0692225587

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Summary

- Digital literacy for work and citizen participation
- Focus on those with lower job skills, access or experience with technology
- Lifelong learning
- Create a culture of enthusiasm and engagement
- Bring learning into everyday life
- Access for all to learning
- Empower our citizens
- Improve quality of life
- Enhance local communities
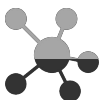- Encourage community engagement

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Questions to ask yourself
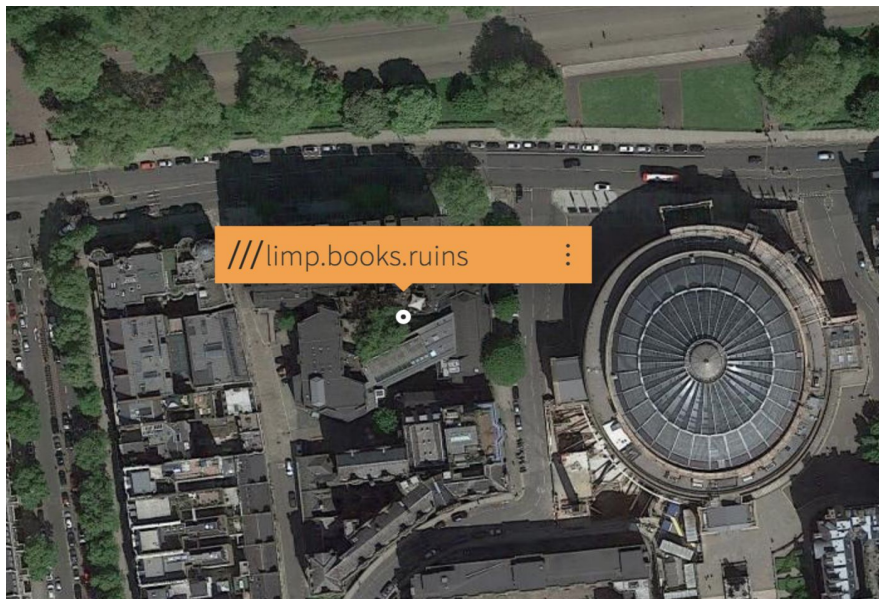
- How do we put these ideas into practice?

- How can we be creative?

- What are we trying to achieve?

- How can we prioritise?

- What are the obstacles?

- How can I best contribute?

- What about funding?

- What's already going on my my locality?

- *When can I start?*

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