

Moving Beyond Open Access to Digital Fluency: Opportunities to Create an Information Environment for Tomorrow's Scholars

Presented to “Ecosistemas de Conocimientos Abiertos”

October 25, 2017

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Exponential growth of devices and data

New generation of scholars

Upward trend in digital scholarship labs,
centers and institutes

Above all else - humans are innovators -
and we are in a new technology revolution

Why Digital Fluency Matters

Key Assumptions

01

Neither fully open nor closed information access environment

02

Many scholars and researchers without tenure

03

Adjustments in assessment and credit i.e. peer review and advancement,

04

Increased focus on ethics

05

Mix of private and public funding sources

Digital Fluency Defined

The ability to select tools, know what to do with them, explain why they work the way they do, and how scholars might adapt the digital research if the context were to change.

Today's Exploration

The nature of digital scholarship
in our lifetime

Scholars future preferences for
digital scholarship

Digital fluency and tomorrow's
information environment

The Nature of Digital Scholarship

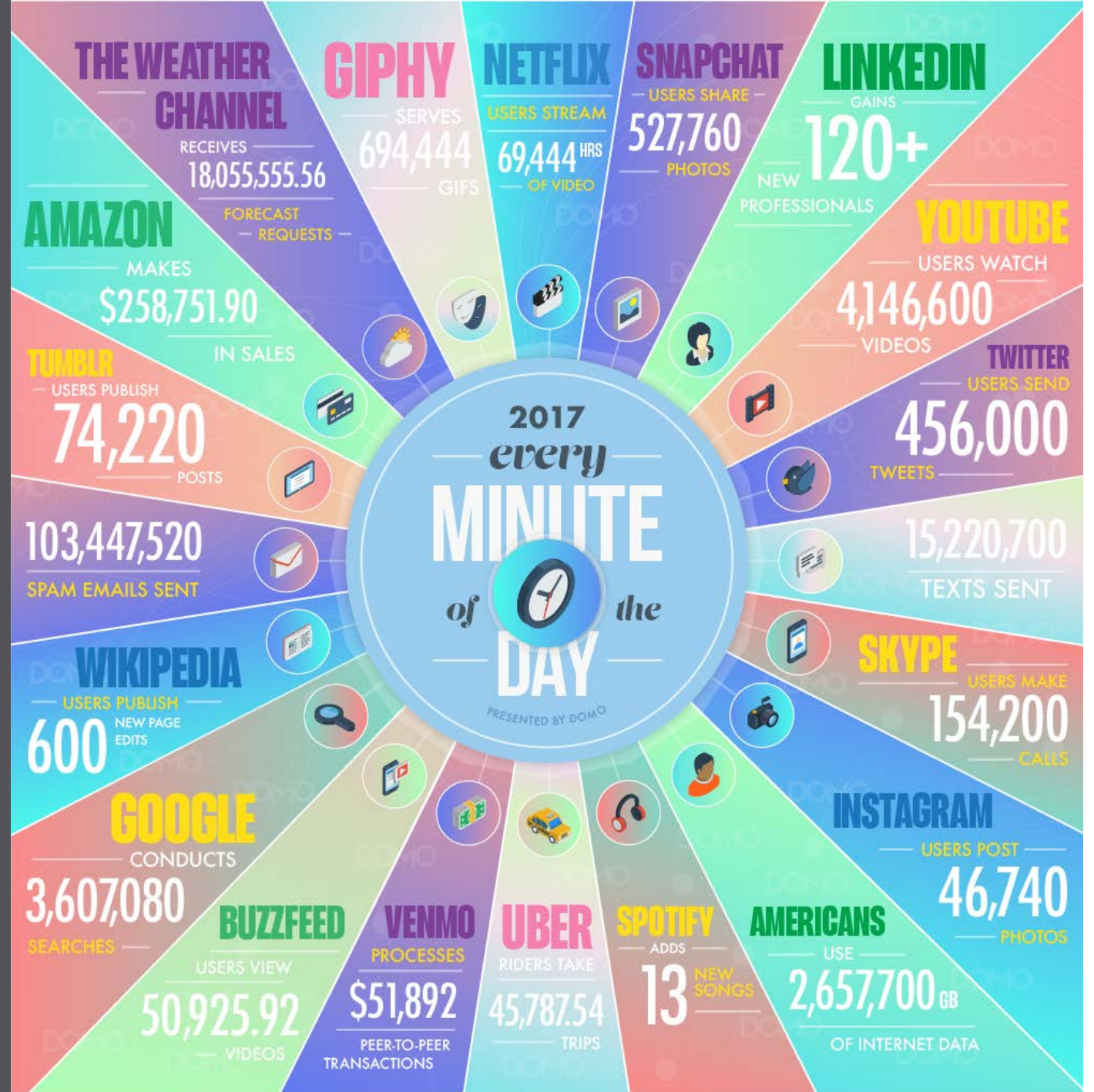
Scholarship Types

- The scholarship of
 - Discovery
 - Integration
 - Application
 - Teaching and learning

AND

- Generative scholarship

In Only 28 Years



FAKE NEWS

PROTECT
INTERNET
FREEDOM



Giant Equifax
data breach: 143
million people
could be affected

Controversy



The Next 28 Years

- Somewhere between Mars space probes and genetically modified astronauts
- Somewhere between Google Correlate and crowdsourced research
- Somewhere between pedagogical agents and immersive learning

What We Take With Us

1. Digital disruptions are a given
2. Technology innovation adoption is highest when it meets human expectations
3. Most humans capacity for learning is slower than many machines.
4. Constraints and tensions will always exist

Scholars Future Preferences for Digital Scholarship

Future Scholars: Millennials and Gen Z

Quality	Millennials	Generation Z
Optimist/Realist	More optimistic.	More realistic: 77% expect to work harder than previous generations.
Collaborative/ Independent	More collaborative.	More independent: 69% would rather have their own workspace than share it
Digital Pioneer/ Digital Native	Social media, instant messaging, smartphones, search engines, devices.	Ubiquitous connectivity, highly curated global information 24X7, on-demand video,
Public/Private	Use social media to make their thoughts, opinions and more public.	More private. Chose Snapchat
Digital-Only/ Face-to-Face	Pioneered digital communications.	74% prefer to communicate face-to-face with colleagues.
Formal Education/ Online Learning	Question whether education was worth it or not.	Will pursue on-demand or just-in-time learning solutions, or seek employers for on-the-job training.
Job-Hopping/ Role Hopping	Impatient with career stagnation	75% interested in multiple roles in one place
Global Spectator/ Global Citizen	The first real-time global generation	Interact with their global peers with greater fluidity than any other generation.

Future Scholars: Idea Generation

Idea Generation

01

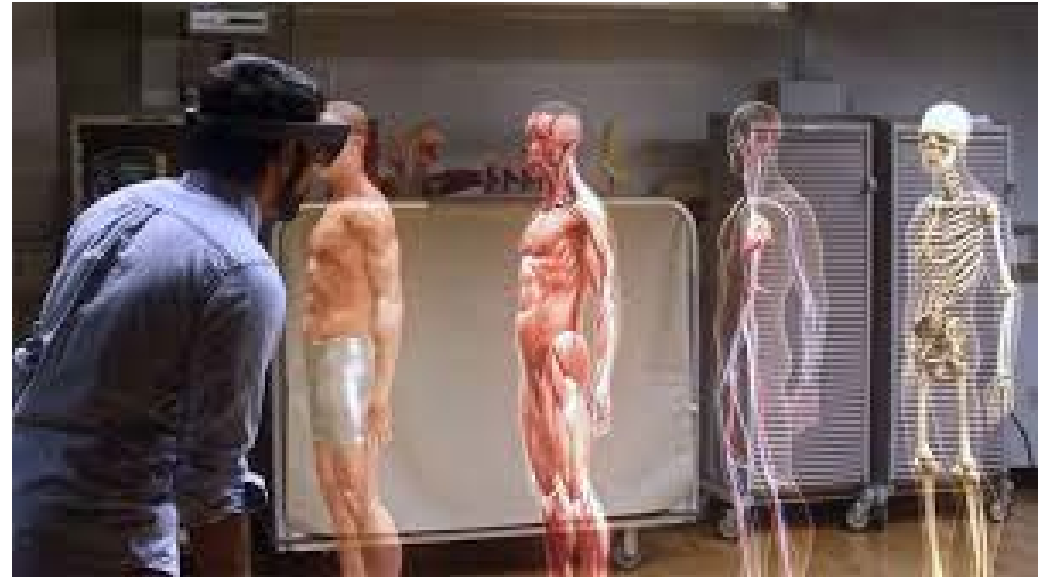
Smart and
connected
laboratories

02

Interdisciplinary
networks

03

Human-machine
relationships



Smart and Connected Laboratories



SAFETY:

Fire alarms automatically contact rescue services and warn other residents

Sensors monitor for loud noises like gunshots and call the police



REAL-TIME DEMOCRACY:

Electronic surveys and online voting

Easy-to-collect input on how to spend public funds



VEHICLES:

Monitor driver alertness

Car-to-car communication to predict and avoid traffic jams



MOBILITY:

Bike and car sharing

Parking apps

Needs-based public transportation



HOMES – SECURITY AND AUTOMATION:

Public-service apps help find perfect balance of comfort and savings

Monitor home while on vacation

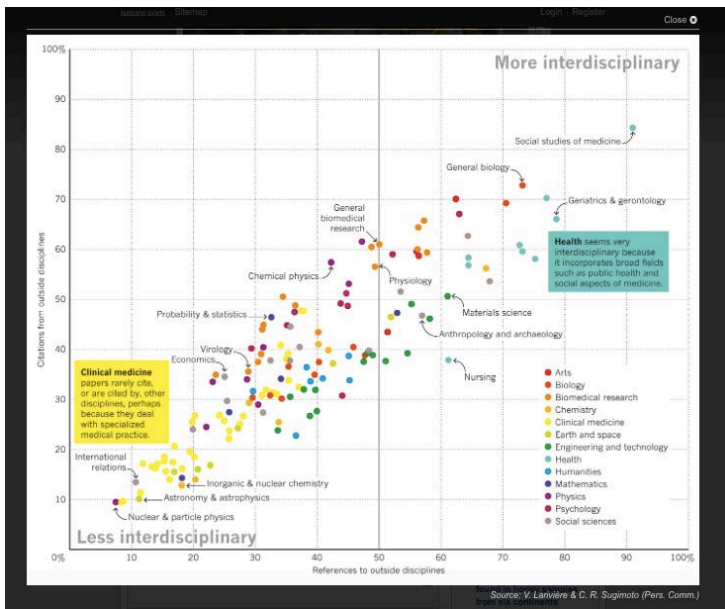
Anonymous consumption comparisons with neighbors



OFFICE BUILDINGS:

Green and healthy

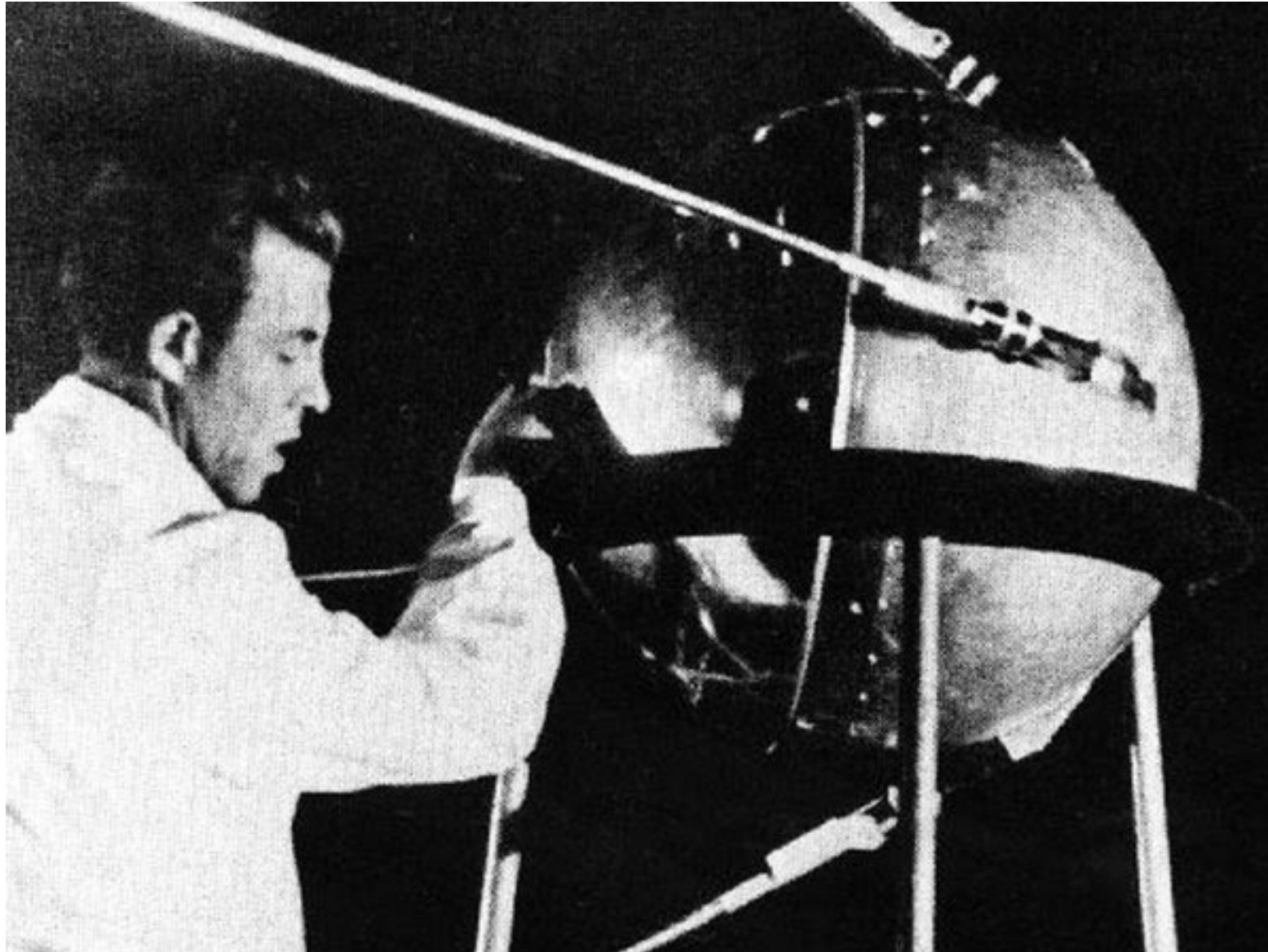
Can produce more energy than they consume



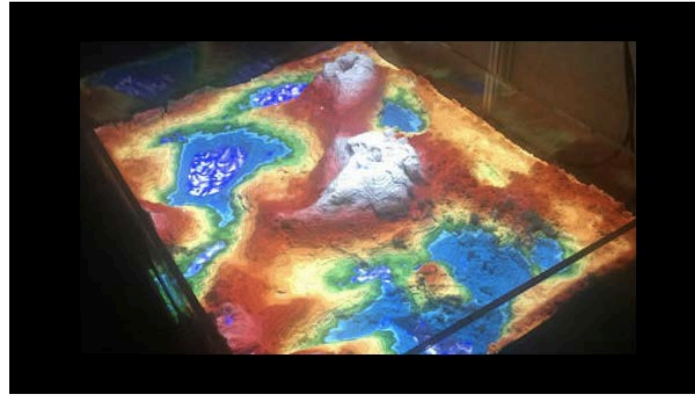
Interdisciplinary Networks and Global Interdependency



Human-Machine Relationships



Future Scholars: Research Expression



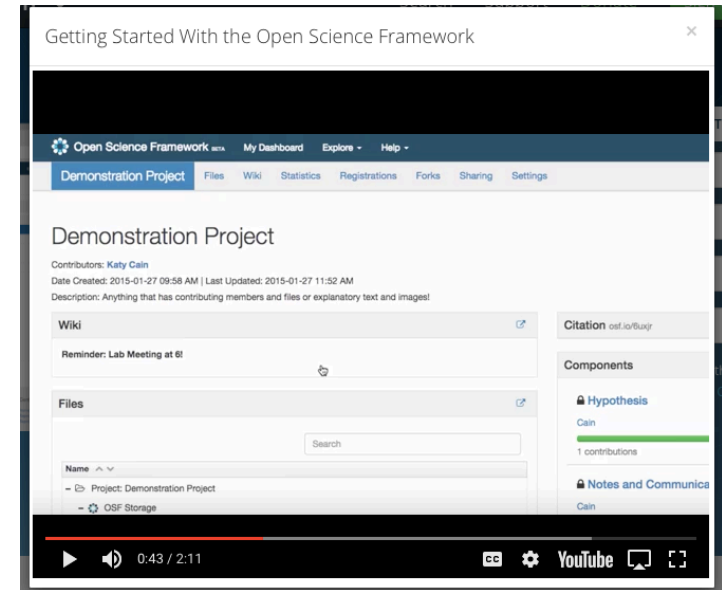
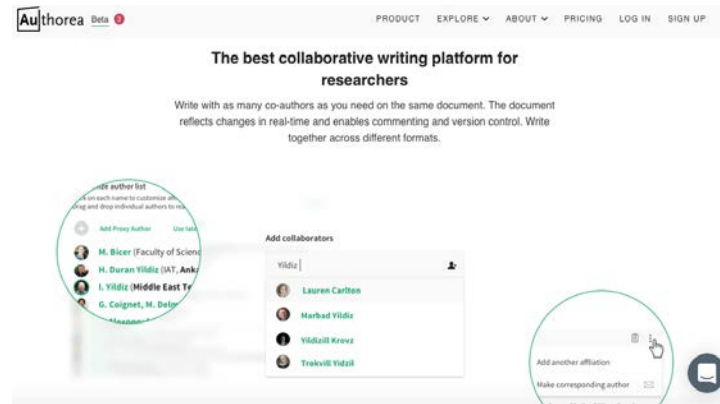
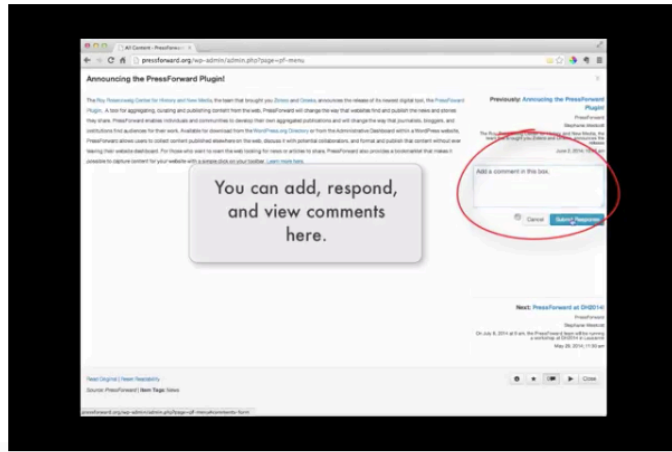
Students at Bayside STEAM Academy use an Augmented Reality Sandbox to learn about topography and how the climate affects terrain. (Courtesy of SBUSD)



Preferred Expression

Future Scholars: Authoring and Publishing

Reading and Nominating Content



Collaboration

Digital Fluency in Tomorrow's Information Environment

Research Competencies

Degrees of mastery of Artificial Intelligence, robotics, sensor technologies, systems of connected devices

Ability to design research protocols with new technology capabilities

Design, even develop, and have the ability to use research authoring and publishing platforms **PLUS...**

Ability to learn new technologies and their impact on research

Critical thinking on complex topics through a digital lens

Strong communication skills across disciplines, among generations, with external partners, including community members

Understanding of ethics, intellectual property rights, information rights, and contracts

Our Mission

Collaborative partners who understand, advise, and create opportunities for everyone to benefit from knowledge from the past, present and future.

Our Role

- Collaborative partner in a world of labs
- Collective curators of the world's knowledge
- Trusted coach and advocate

Our Role: Collaborative Partner in a World of Labs



American Panorama

Atlas of United States History

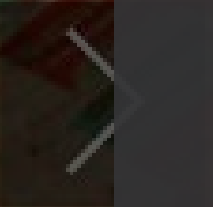
Research Partner

- Lab leader
 - Knowledge curation innovator + research methodology savviness+ technology savviness + rights savviness + policy savviness
- Lab Connector
 - Library Labs + Discipline/Interdisciplinary Labs + Institutional Labs + Geographic Labs + Universal Labs (and everything in the network)
- Lab Team Member
 - Participant in development and iteration

Our Role: Collective Curators of
the World's Knowledge

Curation Conditions

- Complexity
- Scaling
- Authority
- Sharing
- Erasure
- Persistence



Open Issues

- Morphing forms and formats
 - Morphing institutional roles
 - Collaboration and collective agreements
 - Preservation
 - Reproducibility
 - Perceptions of authoritativeness
 - Economic sustainability
 - Collective agreements
- ...and many more

Our Role: Trusted Coach and
Advocate

Learn to learn

- New digital scholarship methods
- How best to coach others in their adoption.

Partner

- Understanding discipline methodologies,
- Translating for interdisciplinary work

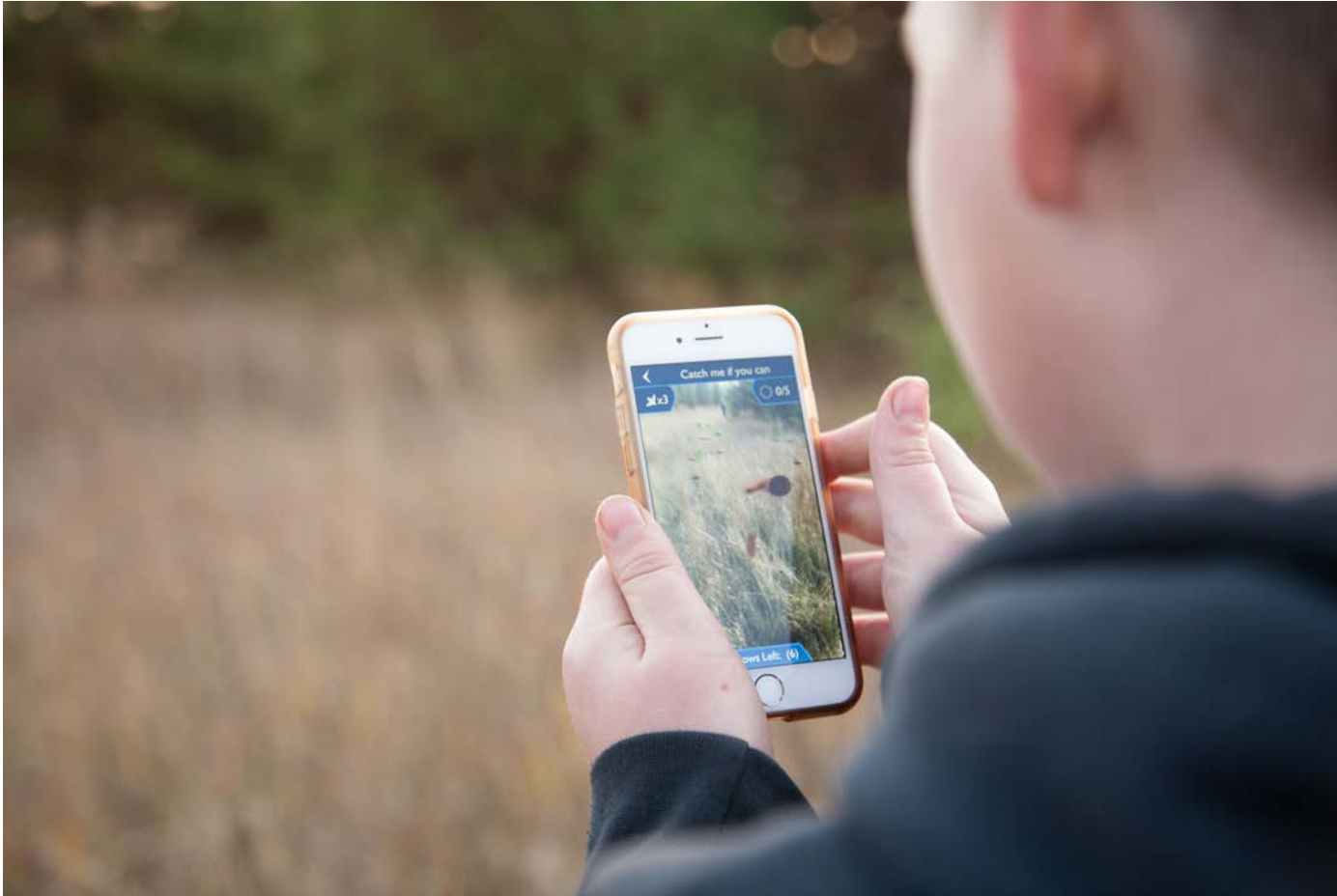
Coach

- Coaching on platform use, collaborative authorship and publishing

Advocate

- Intellectual property rights
- Information and digital rights
- Ethical use of new technologies

Our Competencies



The
Future

Muchas gracias