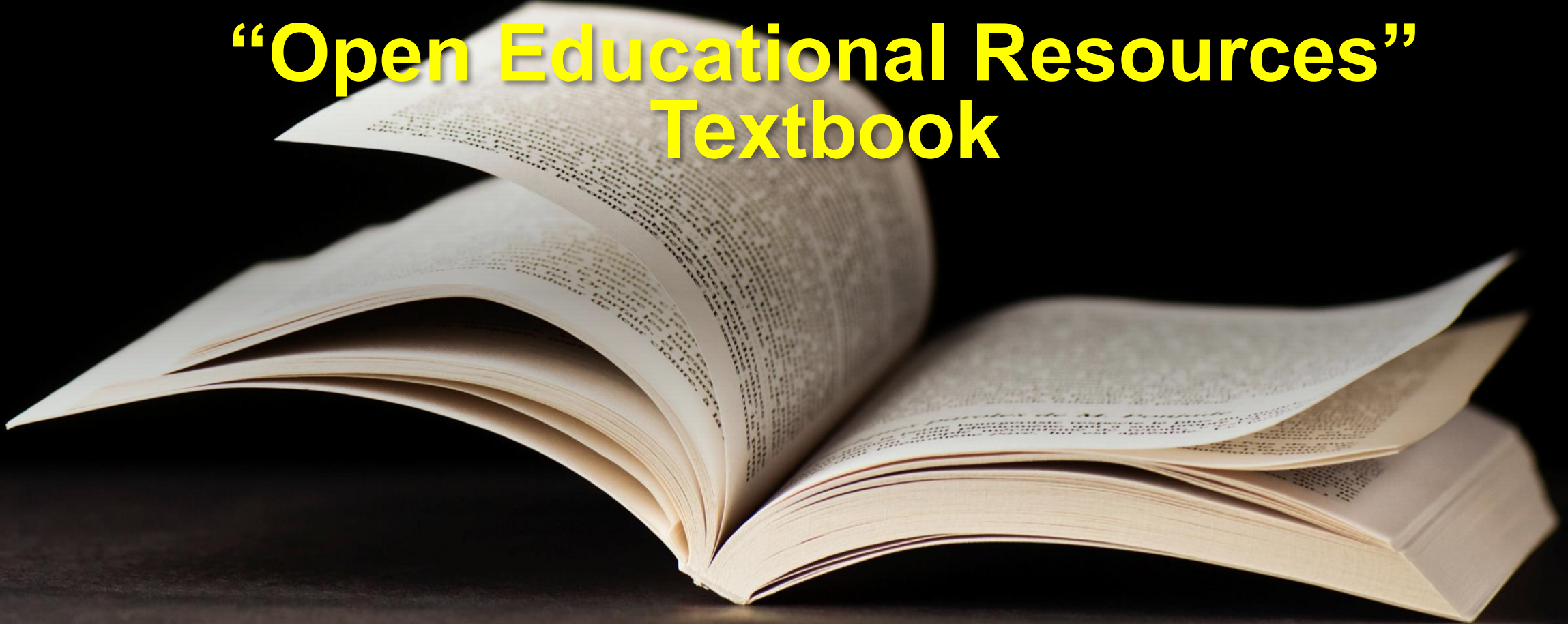


# Who Gets to Generate Knowledge: Co-creation of an “Open Educational Resources” Textbook



Yaprak Dalat Ward @ Fort Hays State University, USA





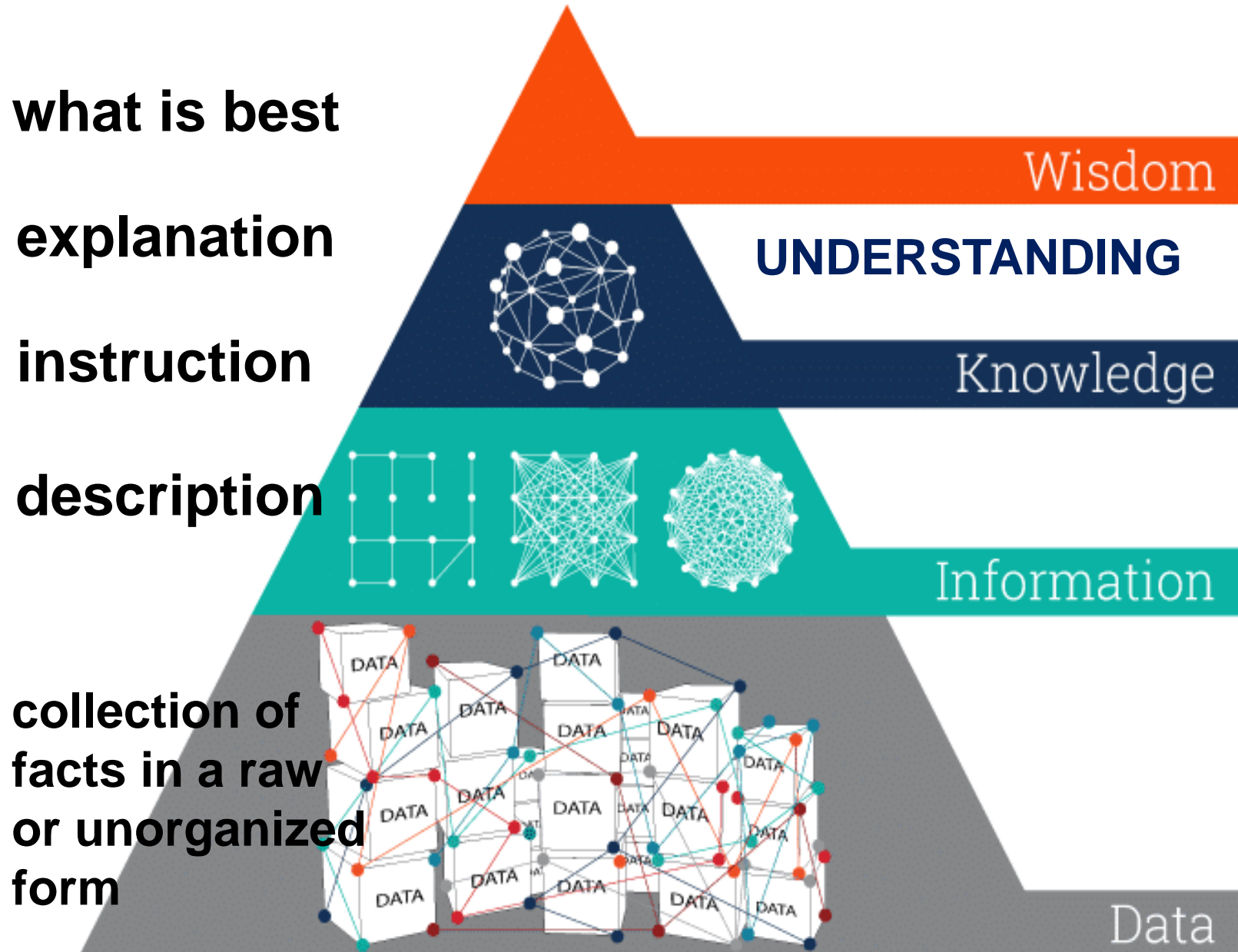
**"I could tell you my adventures - beginning from this morning.... but it's no use going back to yesterday, because I was a different person then" (p. 155).**

# KNOWLEDGE?

- **Knowledge-that (Propositional):** Factual-information
- **Knowledge-how (Procedural):** How to perform a skill or task
- **Knowledge-by-acquaintance:** Familiarity gained through direct experience with people, places, or things



# From Data to Wisdom: DIKW Pyramid

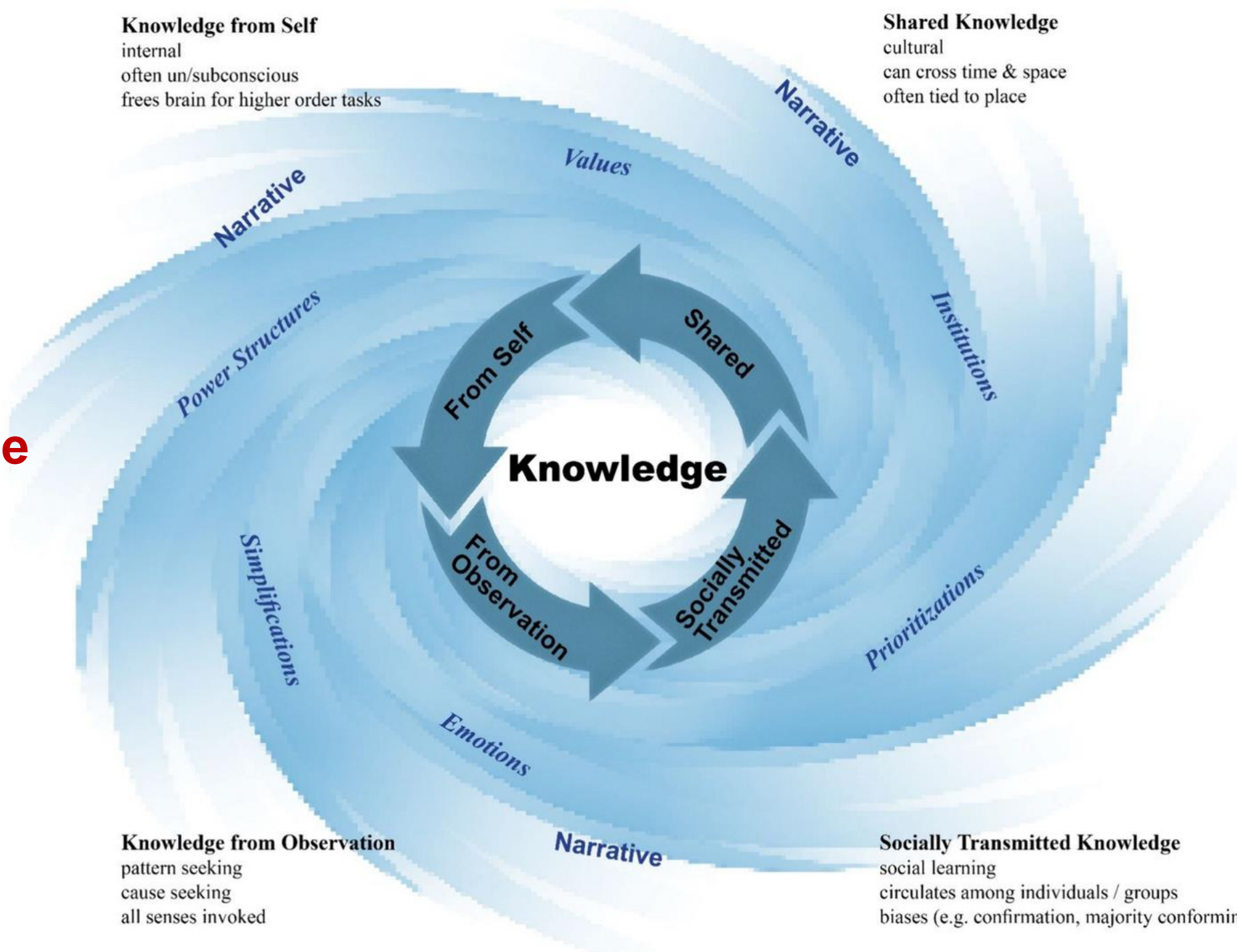


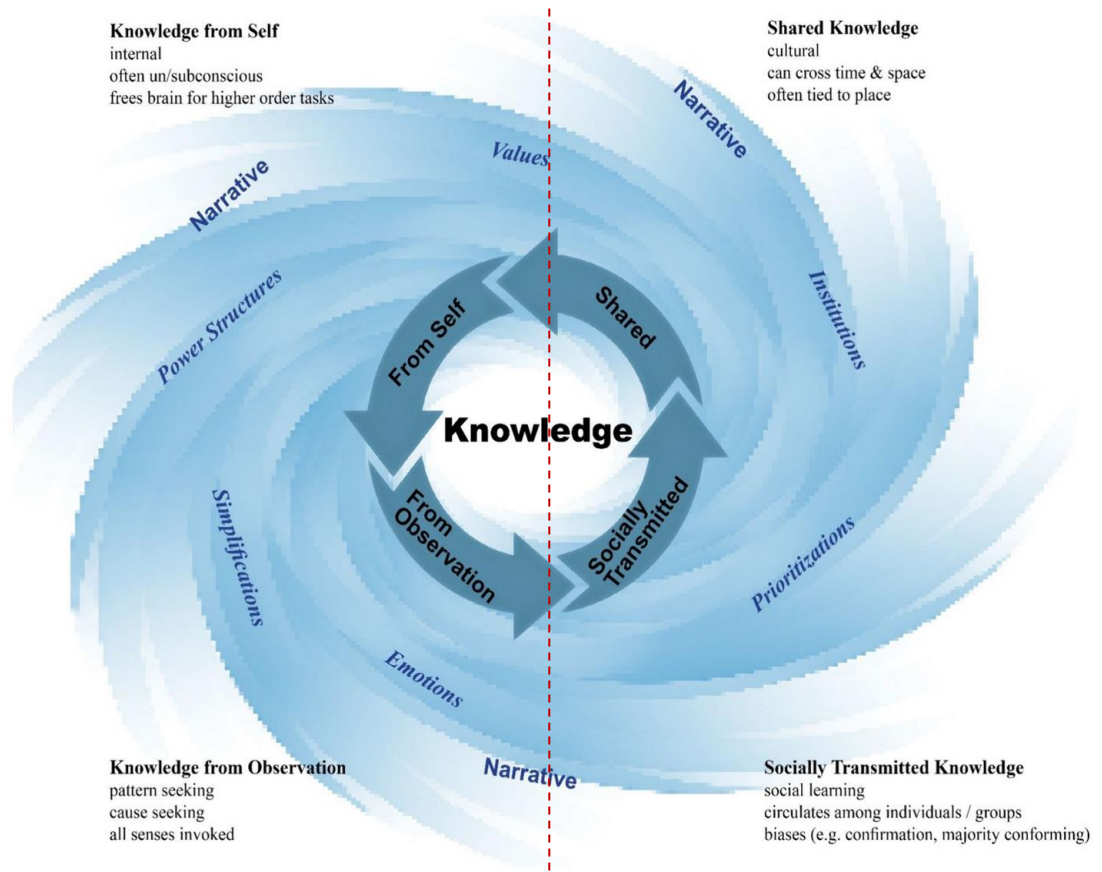
Each step up the pyramid answers questions about and adds value to the initial data.

# 4 Knowledge Sources

**Knowledge from Self**  
internal  
often un/subconscious  
frees brain for higher order tasks

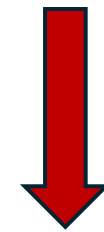
**Shared Knowledge**  
cultural  
can cross time & space  
often tied to place





# Shared Knowledge: (designed not assumed)

## Collaborative Process: *OER*



## Z-Course Model: *Educational Research*

# EVOLUTION OF THE BOOK: A HISTORY OF WRITTEN COMMUNICATION

JOURNEY FROM ANCIENT SCROLLS TO THE PRINTING REVOLUTION

3000 BCE



## PAPYRUS SCROLLS (ANCIENT EGYPT)

Earliest books were multiple sheets of papyrus bound together. Stored as scrolls.

2nd-4th century BCE



## PARCHMENT (ROMANS)

Romans created durable parchment from animal skins (sheep, goats, calves).

4th-2nd century BCE



## THE CODEX (ROMANS)

Sewing manuscript pages together. Birth of the familiar modern book structure.



2nd-14th century

## PAPER SPREADS (GLOBAL)

2nd Century: Emerge in CHINA (Han Dynasty).  
8th Century: ISLAMIC WORLD.  
14th Century: EUROPE.



海



6th-16th century



## MEDIEVAL MANUSCRIPT (MONASTERIES)

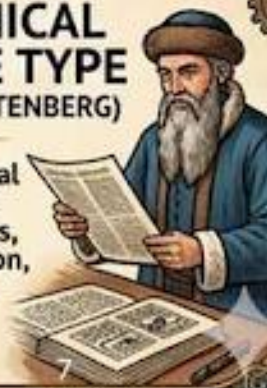
Monasteries were main centers  
Books were handwritten and beautifully decorated.

1448



## MECHANICAL MOVABLE TYPE (JOHANNES GUTENBERG)

First mechanical movable type. Identical copies, mass production, and speed far exceeding scribes.





Handwritten text in Leonardo da Vinci's characteristic cursive script, likely a page from his notebook (Codex, 1495-97, Milan).

**Internet  
moment of the  
15<sup>th</sup> century:**

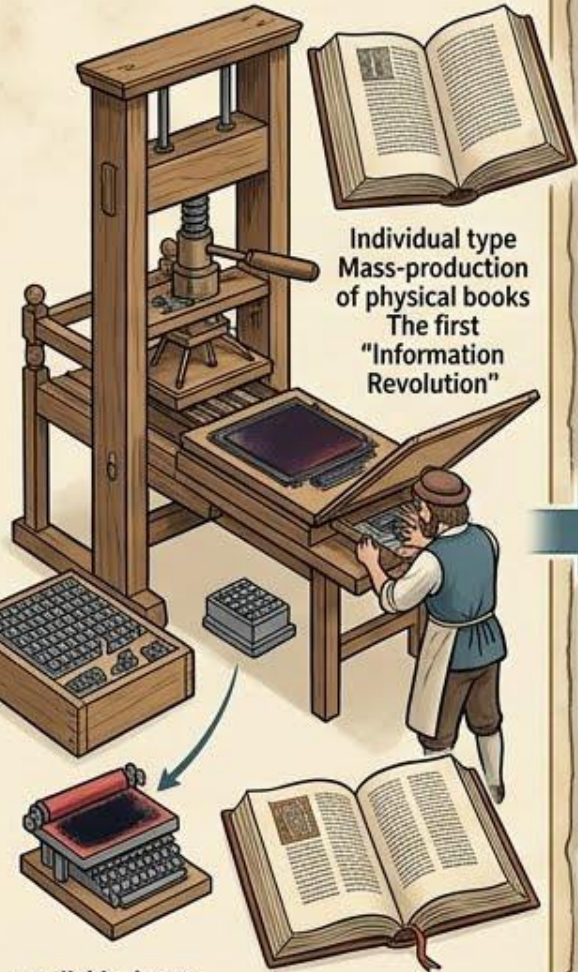
**Leap from  
Medieval  
Manuscripts to  
Movable Type**



*Imprimerie en Lettres, l'Operation de la Casse*

# The Evolution of Shared Knowledge: From Movable Type to Open Educational Resources

c. 1450:  
Mechanical Movable Type  
(Gutenberg Press).

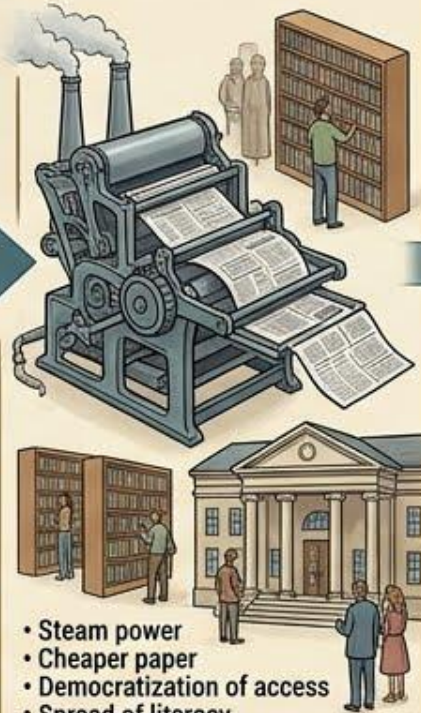


Individual type  
Mass-production of physical books  
The first  
"Information Revolution"

- Individual type
- Mass-production of physical books
- The first "Information Revolution"

c. 1800s–early 1900s:  
Industrial Printing &  
Public Libraries.

Steam power  
Cheaper paper  
Democratization of access  
Spread of literacy



- Steam power
- Cheaper paper
- Democratization of access
- Spread of literacy

c. 1800s–early 1900s:  
Industrial Printing &  
Public Libraries

c. Mid-20th Century:  
Mass Media &  
Photocopying.

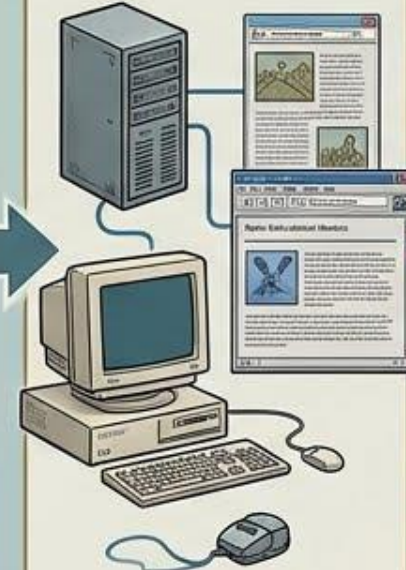
Photo duplication  
Broad dissemination of news  
Audio/Visual educational tools



- Photo duplication
- Broad dissemination of news
- Audio/Visual educational tools

c. Late 20th Century:  
Digital Text &  
The Internet.

Personal Computing  
Global Network  
Fast information sharing  
End of physical limitations

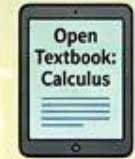


- Personal Computing
- Global Network
- Fast information sharing
- End of physical limitations

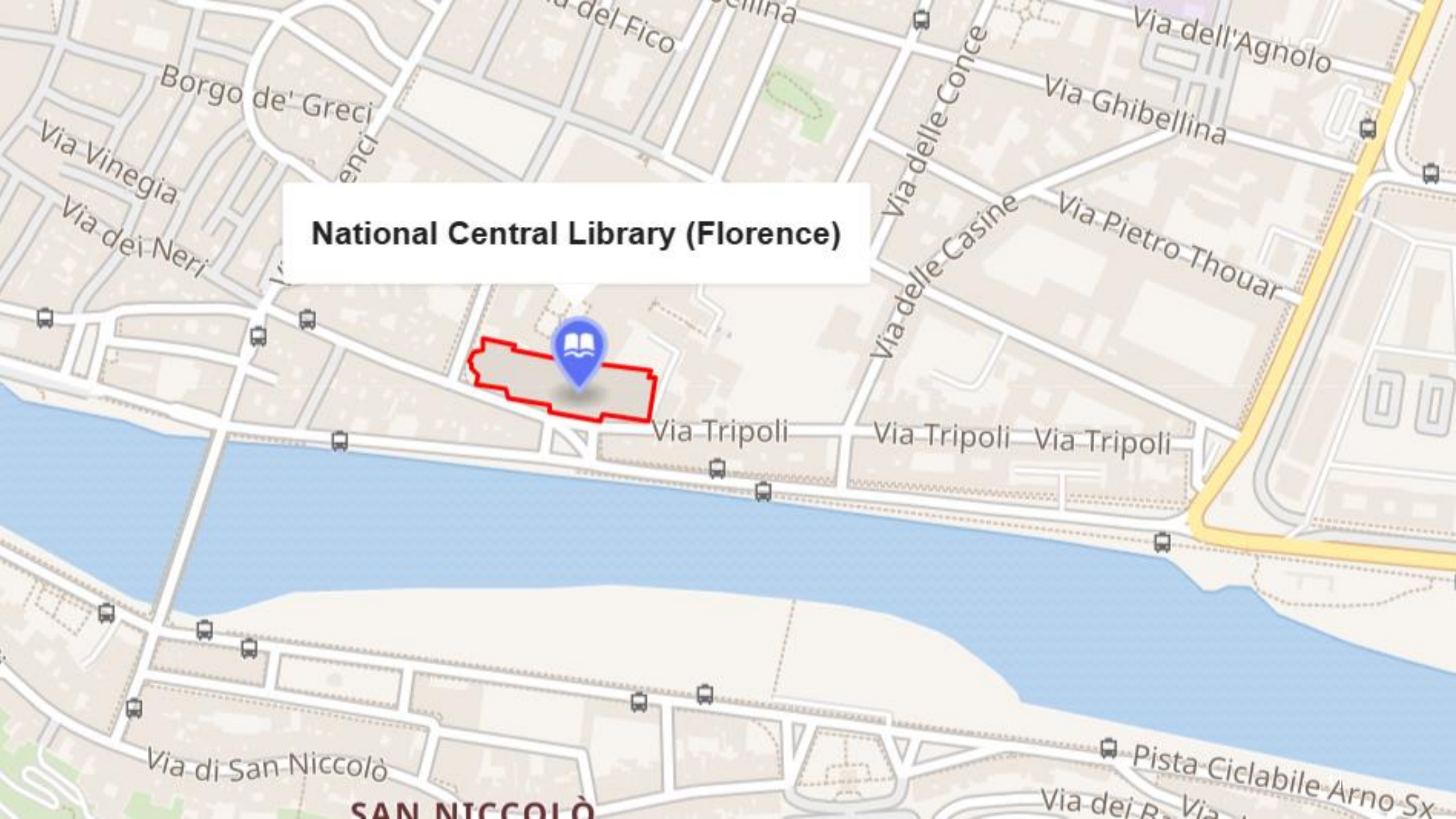
21st Century:  
Open Educational Resources (OER)

Open Educational Resources:  
Free, reusable, and remixable  
learning materials.

Digital Repositories  
Online Courses (MOOCs)  
Adaptive Learning  
Global Collaboration  
Education For All



**National Central Library (Florence)**



# OER - WHAT?



Founded: **2001**

CC licenses used on  
**tens of billions of  
works**

**Builders of the  
Commons:**

**“ Access to knowledge is not just a privilege, it is a human right. Sharing that knowledge is fundamental to the growth and progress of humanity.”**

# OER - WHAT?



**Open Educational Resources**



**Copyright**

“All rights reserved”

**Creative Commons**

“Some rights reserved”

**Public Domain**

“No rights reserved”

Image taken from the presentation [OER Basics](#) by Kelsey Smith - licensed under a [CC-BY 4.0 International License](#)



# OER – WHY



**Commercial textbooks:** <sup>Copyright</sup> “All rights reserved”

- access
- availability concerns (restricted)
- rising costs
- inequities

# OER - WHY?



**Creative Commons**  
"Some rights reserved"

**Public Domain**  
"No rights reserved"



# OER – HOW + WHO?

Open Educational Resources (OERs) provide teachers, learners, & others with legal permissions to engage in the 5R activities.

- 1 **REUSE:** Content can be reused in its unaltered form.
- 2 **RETAIN:** Users have the right to make, archive, and “own” copies of the content.
- 3 **REVISE:** Content can be adapted, adjusted, modified, or altered.
- 4 **REMIX:** The original content can be combined with other content to create something new.
- 5 **REDISTRIBUTE:** Copies of the content can be shared with others in its original, revised, or remixed form.



# OER – HOW + WHO?

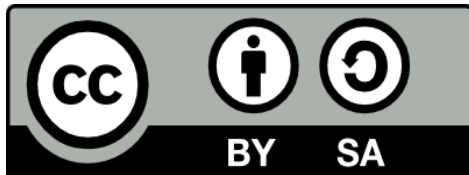
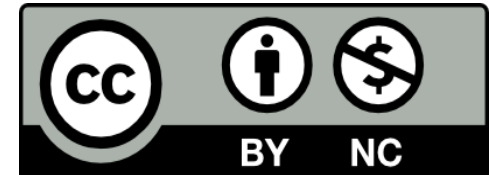


**four additions** can be remixed into **six different types**

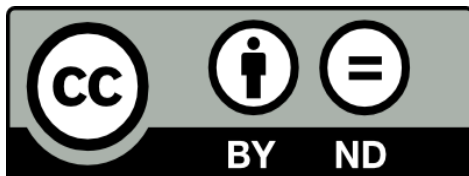
**licenses:**



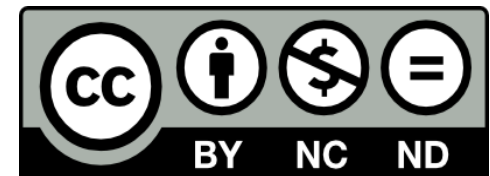
Attribution (BY)



Non Commercial (NC)



No Derivative Works (ND)



Share-like (SA)



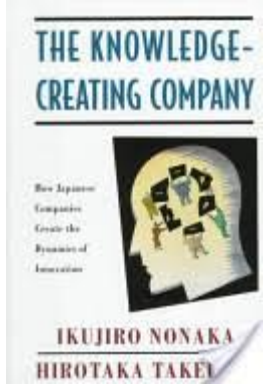
# QUALITATIVE

- **Case study:** real-life contexts.
- **Prolonged engagement:** 5 faculty collaboration (teaching course).
- **Theoretical Framework:** **SECI Model of Knowledge Creation.**

# Introduction

- **Significance:** Limited literature on faculty-driven knowledge creation. Textbook dissatisfaction.
- **Focus:** Social, relational, epistemological dimensions of OER development.
- **Research question:** How do faculty collaboratively create an open textbook, and how can this process be understood through the SECI model of knowledge creation?

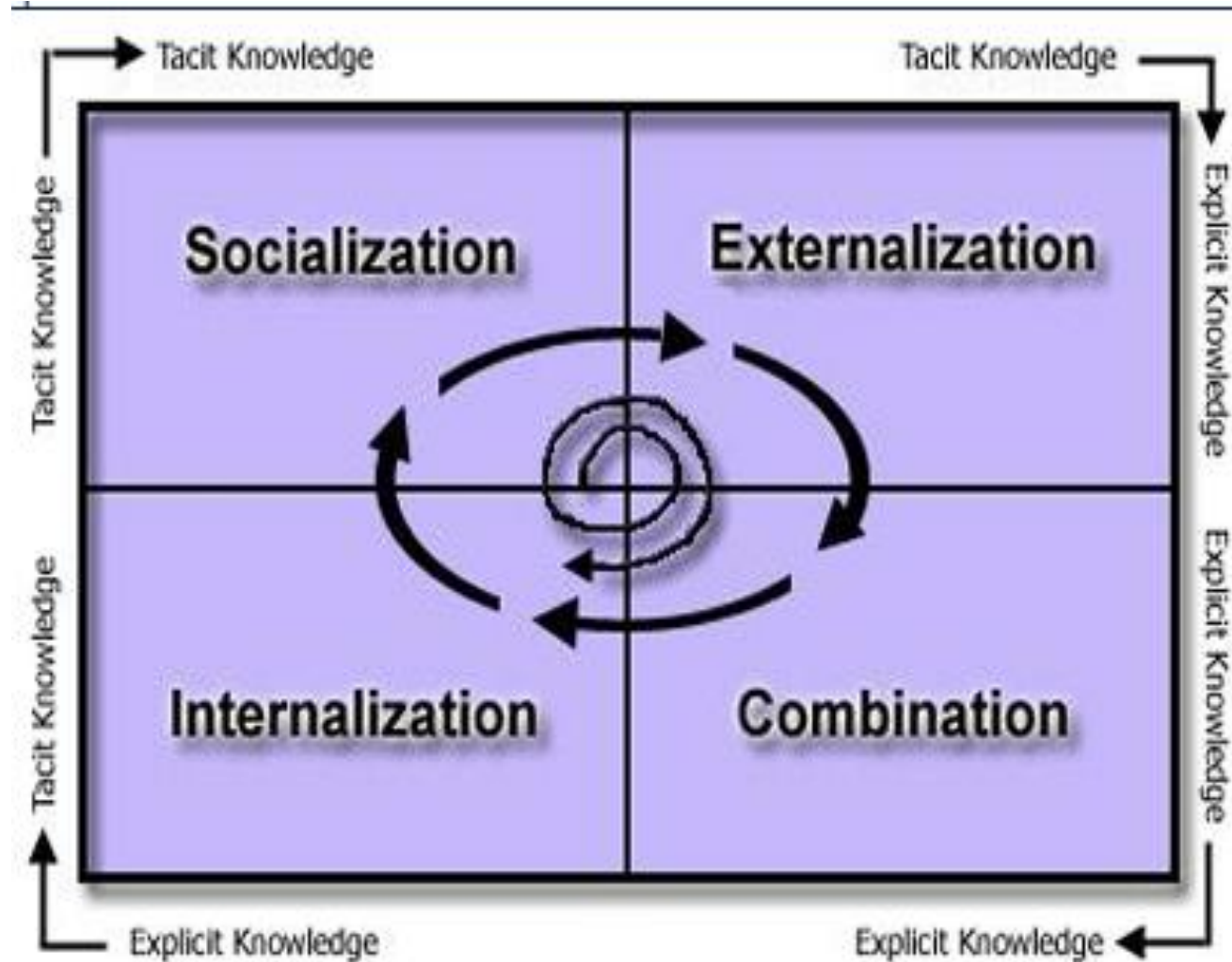
# Theory: SECI Model of Knowledge Creation



**Applied Widely:**  
Organizational learning  
+PD contexts: Individual  
expertise becomes shared  
knowledge.

**Recent Applications:**  
Educational settings: e.g.,  
Collaborative curriculum  
design and  
creativity-focused learning  
environments.

**This Study:** Dynamic  
interaction between tacit  
and explicit knowledge.  
Shared emphasis on  
interaction, reflection, and  
collective meaning-making.



**Spiral of Knowledge Creation**  
by Nonaka & Takeuchi (1995)

# SECI Model of Knowledge Creation: 4 Iterative Processes (sustained sense-making)

## 1. Socialization:

sharing *tacit knowledge* (f2f)

## 4. Internalization:

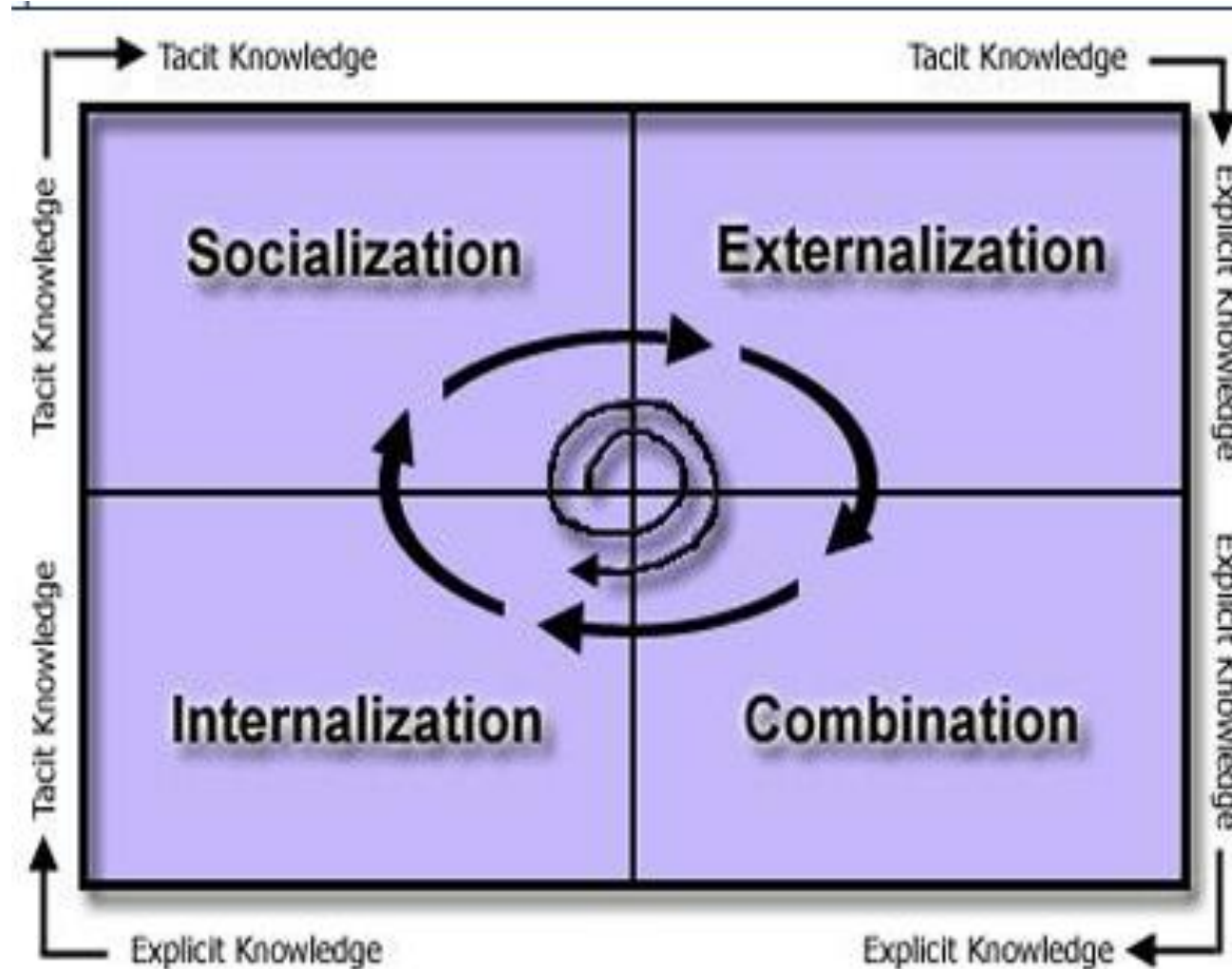
using, teaching with, and revising the OER

## 2. Externalization:

articulating ideas into chapters and outcomes

## 3. Combination:

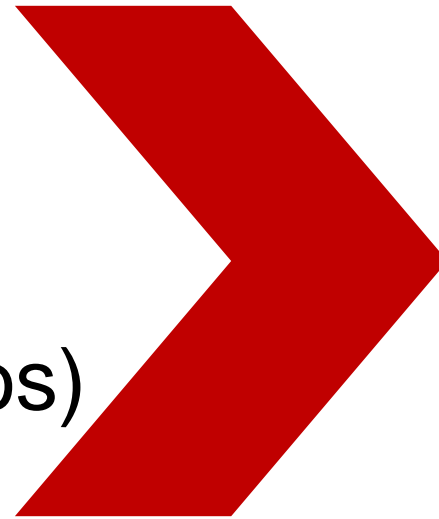
integrating content into a coherent textbook



Spiral of Knowledge Creation  
by Nonaka & Takeuchi (1995)

# Data Sources (prolonged engagement)

1. shared planning documents
2. draft chapters
3. reflective notes (analytic memos)



***triangulation***

# Data Analyses: Two Phases

**Initial analysis:**

**4 themes**

**Subsequent analysis:**

**4 themes interpreted through the 4 stages of the SECI model of knowledge creation**



# Data Analyses

- **Key-word-in-context (KWIC) Method:** Thematic approach.
- **Values Coding:** Interplay between/among thoughts, feelings and action.
- **Manual Coding:** *Member checking.*

# Initial Findings (4 themes)

- frustration, textbook misalignment, cost concerns, curriculum problems.
- what is research, needs, gaps, values of learning, curriculum agreements.
- we language, shared outcomes, alignment, editing each other's work.
- future revisions, feedback, adaptability, living materials, process.

T1: shared dissatisfaction as an agent for faculty collaboration.

T2: Negotiation of disciplinary and pedagogical assumptions.

T3: Emergence of collective pedagogical ownership.

T4: Open textbook as a living, revisable knowledge artifact.

# Subsequent Findings (SECI Model)

- **Socialization:** Conversations established a shared problem space and created conditions for mutual trust and intellectual risk-taking.
- **Externalization:** Negotiating shared language transformed personal teaching knowledge into collectively owned conceptual structures.
- **Combination:** Contributions integrated into a coherent textbook aligned with program outcomes and supported by open publishing infrastructure.
- **Internalization:** Faculty internalized the shared knowledge -classroom implementation, revision, and ongoing use of a living textbook.

# Conclusions

- Barriers eliminated.
- Alternative to commercial content.
- Confirmed previous studies on curricular coherence, collective pedagogical ownership, and supporting sustainable engagement with open pedagogy.
- SECI Model:
  - low-risk entry point for open knowledge practices.
  - openness alone does not produce knowledge.
  - structured interaction leading to shared, sustainable resources.

# Further Research

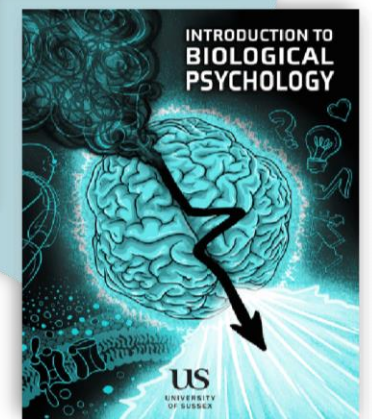
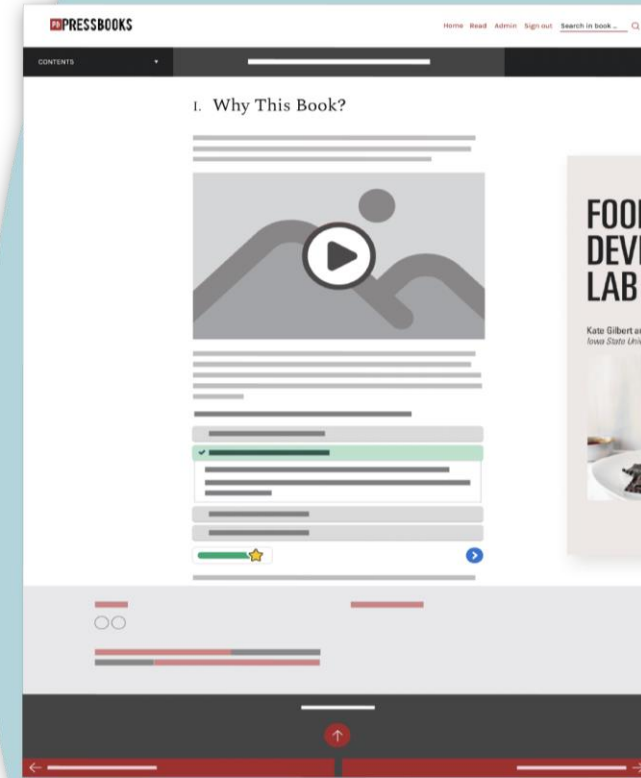
**Extend:** Comparative studies, longitudinal designs, or mixed-methods examining learning outcomes + faculty experiences.

**Additional inquiry:** Explore positionality, and institutional reward structures shaping participation in open knowledge creation.

# ADDENDUM

## PB PRESSBOOKS

- Publish with ease
- Adapt existing materials
- Incorporate interactivity
- Customize for user needs
- Share your content widely
- Collaborate with others



# ADDENDUM

## Available 1: FHSU Scholars Repository

### Understanding and Doing Research in Education & the Social Sciences

*Phillip A. Olt, Yaprak Dalat Ward, Kevin Splichal, Reade L. Dowda, and Elliot Isom*

The purpose of this book is to provide an **open-access, free textbook for initial learning about research** for students in the social sciences and related professional fields (such as education, social work, business, or nursing).

#### Keywords

research, social science, education, quantitative, qualitative, mixed methods

#### Creative Commons License



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#### Comments

For questions contact [ScholarsRepository@fhsu.edu](mailto:ScholarsRepository@fhsu.edu)

#### Recommended Citation

Olt, Phillip A.; Dalat Ward, Yaprak; Splichal, Kevin; Dowda, Reade L.; and Isom, Elliot, "Understanding and Doing Research in Education & the Social Sciences" (2025). *All Open Educational Resources*. 14.

DOI: 10.58809/CEPF8532

Available at: [https://scholars.fhsu.edu/all\\_oer/14](https://scholars.fhsu.edu/all_oer/14)

# ADDENDUM

## Available 2:



## Open Textbook Library



### Understanding and Doing Research in Education & the Social Sciences

[\(1 review\)](#)



Phillip A. Olt, Fort Hays State University

Yaprak Dalat Ward, Fort Hays State University

Kevin Splichal, Fort Hays State University

Elliot Isom, Fort Hays State University

Reade Dowda, Fort Hays State University

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Last Update: 2025

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Language: English

### Table of Contents

- Introduction
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- Values & Ethics of Social Research
- The Use of Literature in Conducting Social Research
- The Role of Theory in Social Research
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- Types of Quantitative Research
- Quantitative Data Analysis
- Preliminary Considerations for QUALitative Social Rese
- Types of Qualitative Research
- Qualitative Data Analysis
- Multiple and Mixed Methods Research
- Action Research for Practitioners
- References

[Opentextbooks](#)

# ADDENDUM

INTERNATIONAL CONFERENCE  
14TH EDITION



CONFERENCE  
PROCEEDINGS

Edited by  
**Pixel**

filo  
di diritto  
editore

International Conference  
**The Future of Education**

## Who Gets to Generate Knowledge: Creation of an “Open Educational Resources” Textbook

Yaprak Dalat Ward<sup>1</sup>

<sup>1</sup>Fort Hays State University, USA

### Abstract

Open Educational Resources (OER) have become indispensable in higher education as they address long access and restricted availability concerns, rising costs, inequities, and the availability of textbooks. While significant literature has documented OER adoption/adaptation, attention has been given to faculty-driven knowledge creation underlying OER development. The purpose of this case study was to document the collaborative process of developing an OER textbook for graduate-level educational research students. Using Takeuchi's SECI model of knowledge creation, the process involved faculty converting their tacit knowledge to explicit knowledge, creating an openly licensed text



**Thank you!**



**ydalatward@fhsu.edu**