



Knowledge & Mapping

MIS3506 – Spring 2026

Lavin

Upcoming

Exam 1

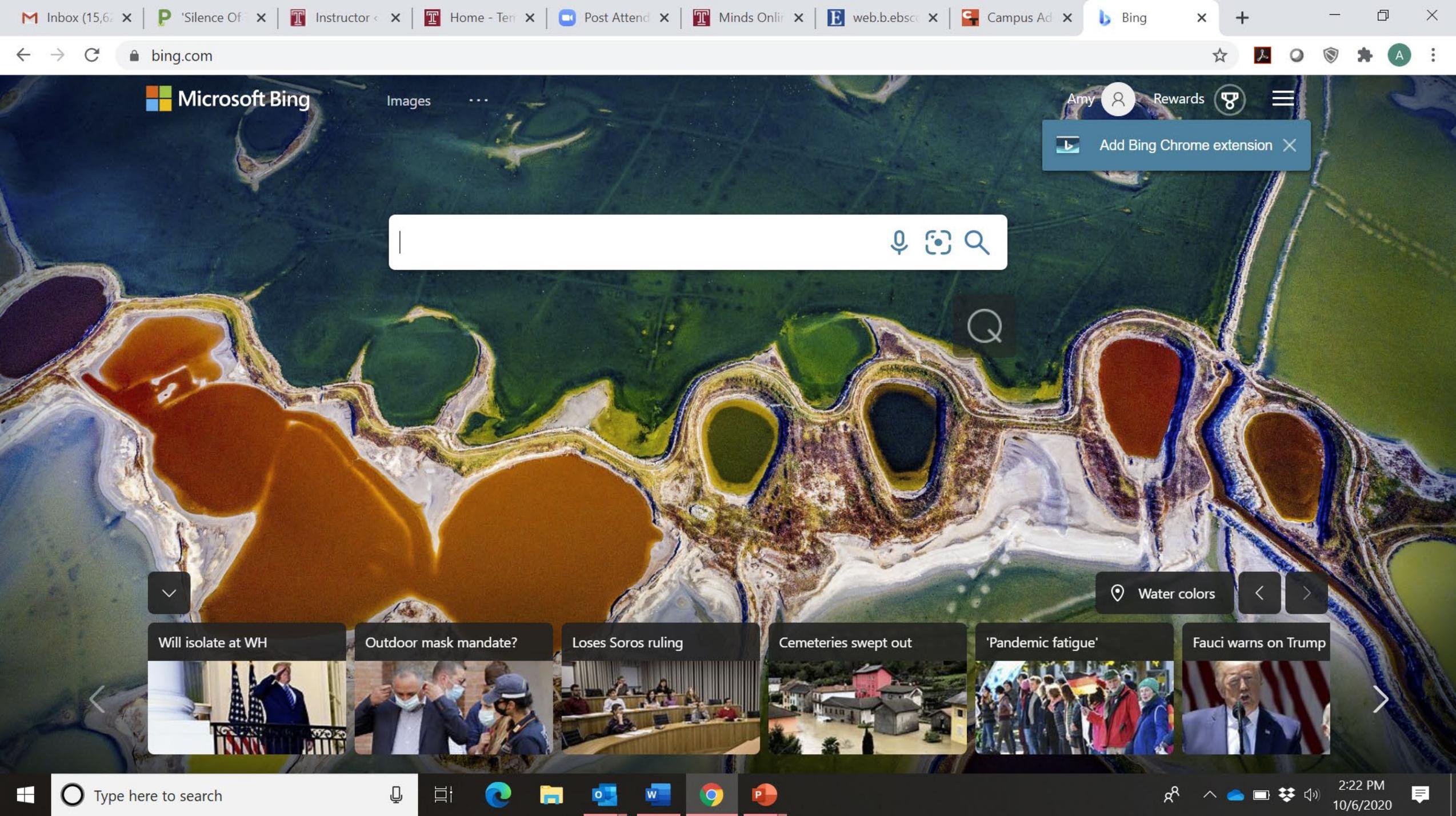
23 Feb.

25 Feb.

Project 1



Search bar with microphone, image, and search icons



Water colors < >

Will isolate at WH

Outdoor mask mandate?

Loses Soros ruling

Cemeteries swept out

'Pandemic fatigue'

Fauci warns on Trump





www.ARNGREN.net

Teknologi & Gadgets

[el-biler til barn](#) [Index](#)

(Fra 07.11.2004)
< Frithjof i sin Fly-Bil

Search [el-retur](#)
[Slik Betaler du](#)



Drone-Bike
Løfteevne: 8kg
kr. **19.998,-**



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Solcelle-pakker
Nyhet!
6.998,-

Se alle våre el-Kjøretøy til Barn og Ungdom. Norges største utvalg

el-biler til barn Nyhet!

12V
24V
48V

4WD fra kr. **1.798,-**

3-hjul Cargo-el-Bike

Ingen alders-grense

el-scooter

PEDALS

Alle Produktene på denne siden lagerføres hos ARNGREN i Oslo. Se Lagerkoden etter Prisene (lev. 2 - 5 dager):

- Er på Lager
- Kommer før 3 uker
- Lengre enn 3 uker

- Elektriske-Kjøretøy
- Elektrisk-ATV - Roboter
- el-biler til barn/ungdom
- Solcelle-produkter
- Forbruker Elektronikk
- Batterier & Ladere, etc
- Fjernstyrte produkter
- Disko-Lys - Rakett

3-Hjuls el-sykkel

Avatar-Gunship. Er det beste Helikopteret noensinne!

Nyhet!

kr. **299,-**

El-ATV til Barn & Voksne. fra kr. **3.998,-**

el-ATV **el-scooter**

BMW-i8

El-Biler til Barn, Ungdom & Voksne

elsykkel

Fatbike-1500w

Roboter Elektronikk

Video Video **el-ATV**

Fotball-Trener

fra kr. **2.598,-**

Elektronikk

Elektrisk-Scoter

Fra kr. **9.998,-** (300)

G-Tog

el-Bil ; Cross-Rider

Nyhet **4WD**

fra kr. **89.998,-**

4WD

el-moped med skilt (16 år)

19.998,-

el-ATV med skilt (16 år)

79.998

el-bil (16 år & moped-Lappen) fra kr. **34.998,-**

el-bil kr. **89.998,-**

el-ATV

el-jeep 9998,-

Ta alltid ut 230Vac Adapteren når du ikke er tilstede, eller sover

Fatbike-500w

el-sykkel

m/Oljestyrt

Lyd, Røk, Lys

Kraftig Hjuls

Nyhet!

RC Tank i Metall (55 cm)

Elektrisk-ATV 6000 watt kr. **59.998,-**

EL-Scoter 5000 watt kr. **29.998,-**

Styreenhet & Fordelere til Bil

RC Fly-Båt

70 cm lang

El-Bil; Comarth

2WD/4WD. 2 eller 4 hjul

fra kr. **89.998,-**

Knowledge

- In the Head

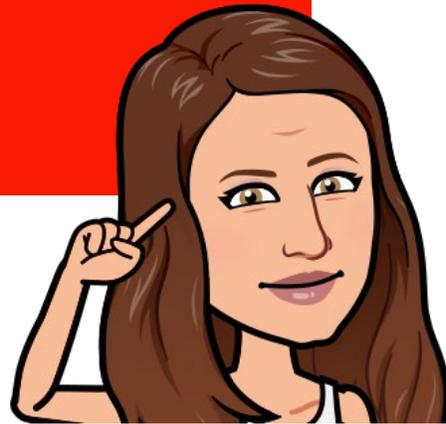


- In the World



Internalized information that users recall to perform tasks

Knowledge



■ *In the Head - Characteristics*

- Memory
- Efficient – Readily available
- Requires Learning
- Ease of use at first encounter is low
- Designer has freedom – better UX

Information provided in the environment – operate without prior memorization

Knowledge



- *In the World - Characteristics*

- Information is Perceivable
- Interpretation substitutes for learning
- Less efficient if you have to stop to learn
- Ease of use at first encounter is high
- Can be ugly – requires a deep skillset

Knowledge



- *In the World*
 - *Knowledge Of (Easy!)*
 - Declarative Knowledge
 - Facts and Rules
 - *Knowledge How (Not so Easy!)*
 - Procedural Knowledge
 - Tacit Knowledge

Tradeoffs



If the user doesn't have it
memorized... could take a
while to interpret needs



First impression could be
tricky



Lack of freedom for the
designer

How can you as the designer improve the User's Experience armed with this knowledge?

- Put cues in the design
- Effective mapping
- Understand cultural constraints
- Find the middle ground
- Signifiers, constraints and mappings
- Good conceptual model

Balancing **Knowledge in the Head** for faster more efficient user by repeat users with **Knowledge in the World** to make systems intuitive for new users can greatly enhance the UX and usability

Constraints

- **In the World – Natural Constraints**
 - Restrict behavior
 - Physical features
 - Right tighty/lefty loosey

- **In the Head – Cultural Constraints**
 - Reading in different cultures
 - Behavioral constraints/Restrictions on behavior
 - Colors

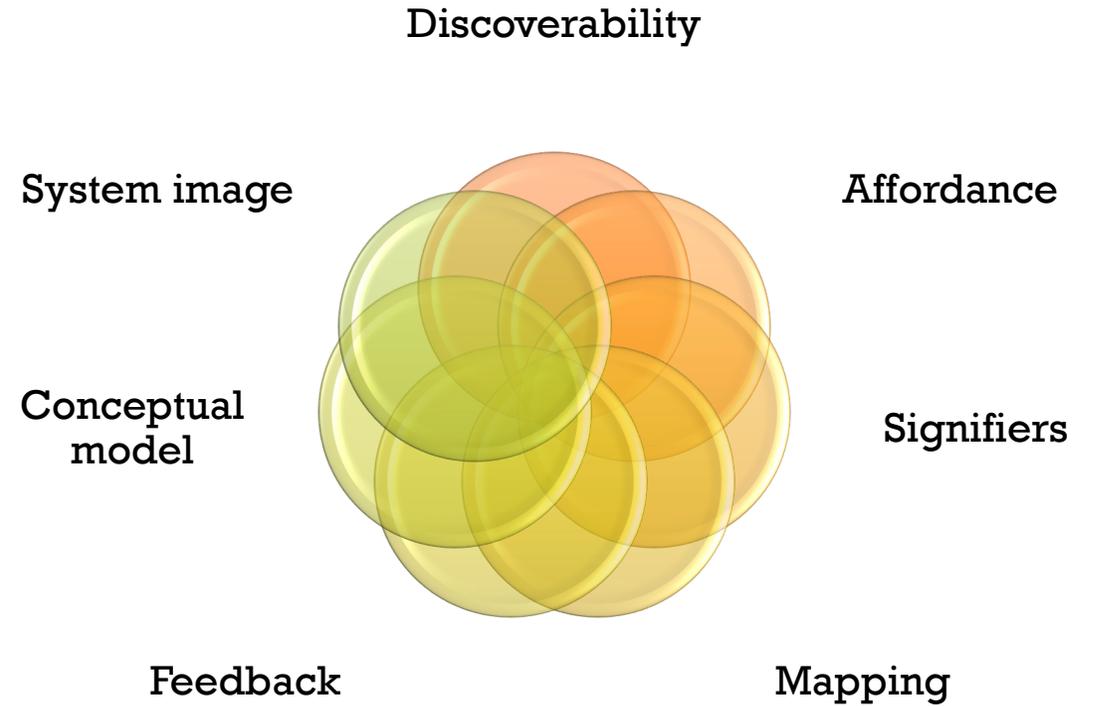
Knowledge in the world: Constraints



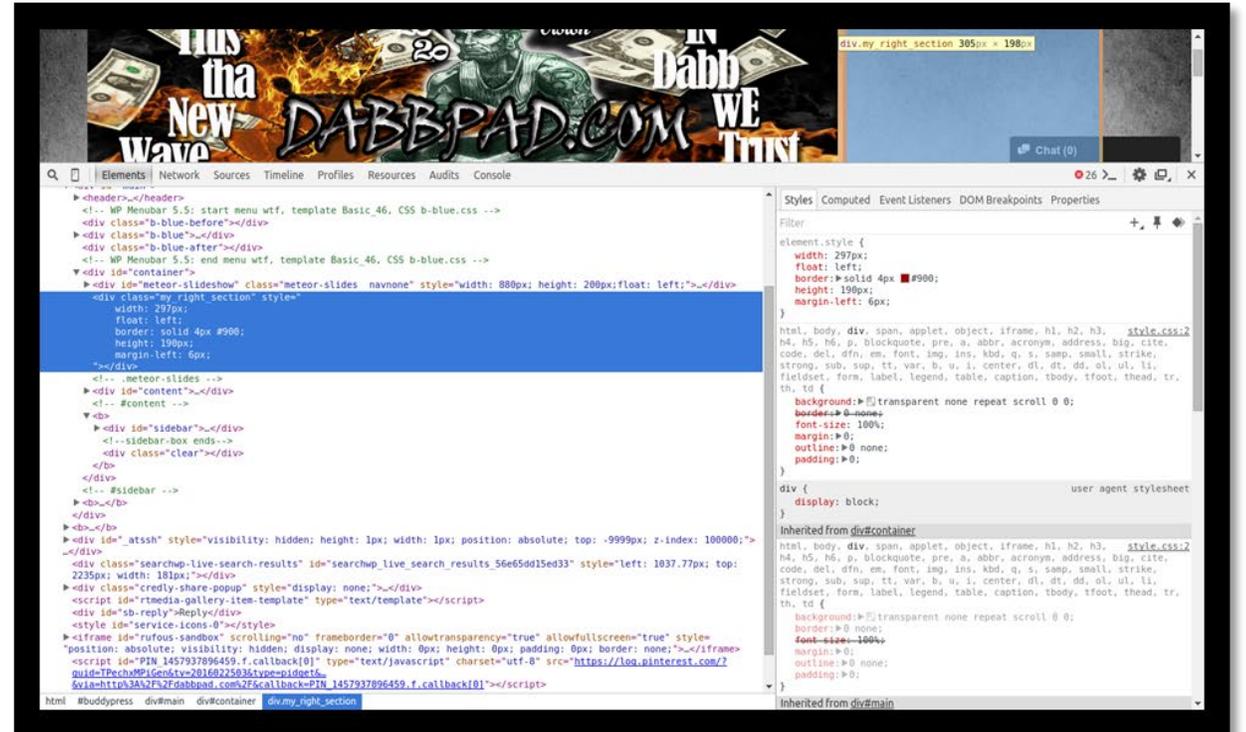
Mapping

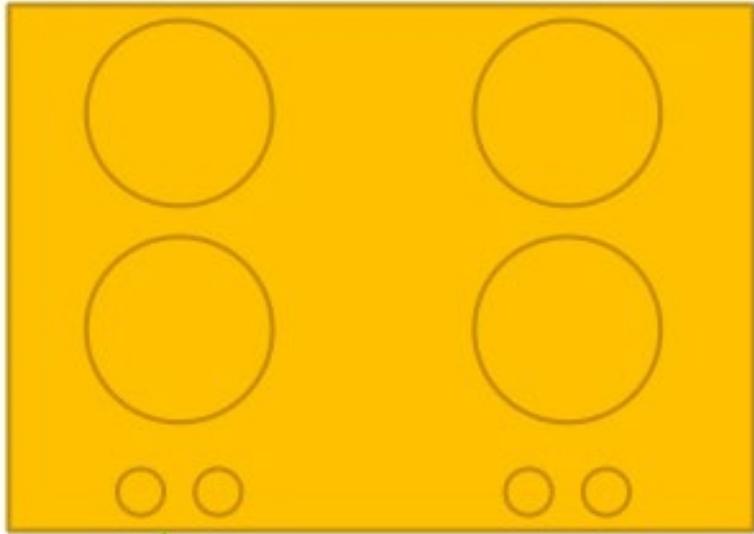
Relationship between the elements of two sets of things

A device is easy to use when the set of possible actions is visible

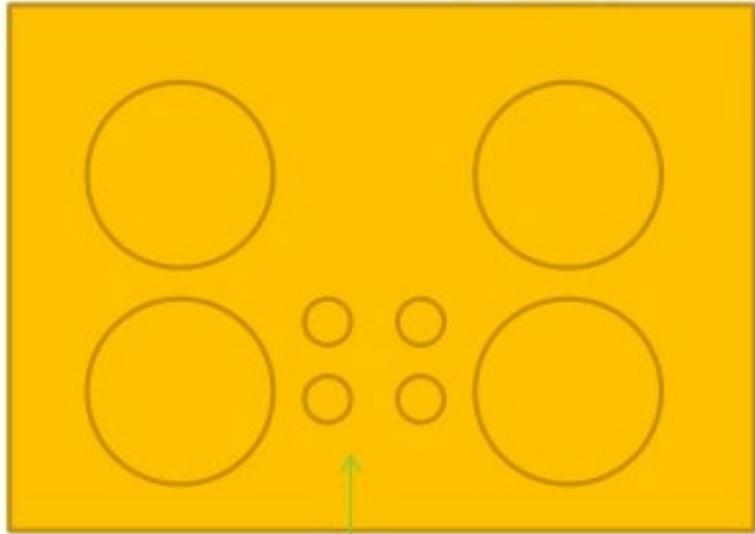


Mapping Examples



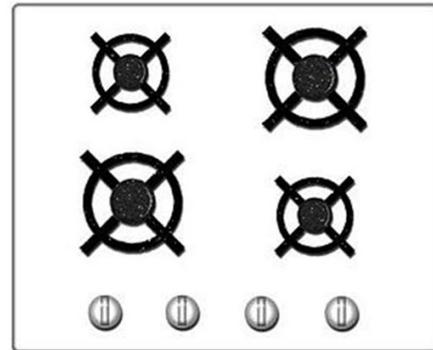


Requires memory or cognitive processing

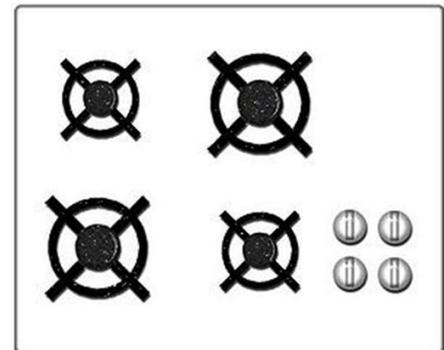


Knowledge is embedded in the interface

Poor mapping



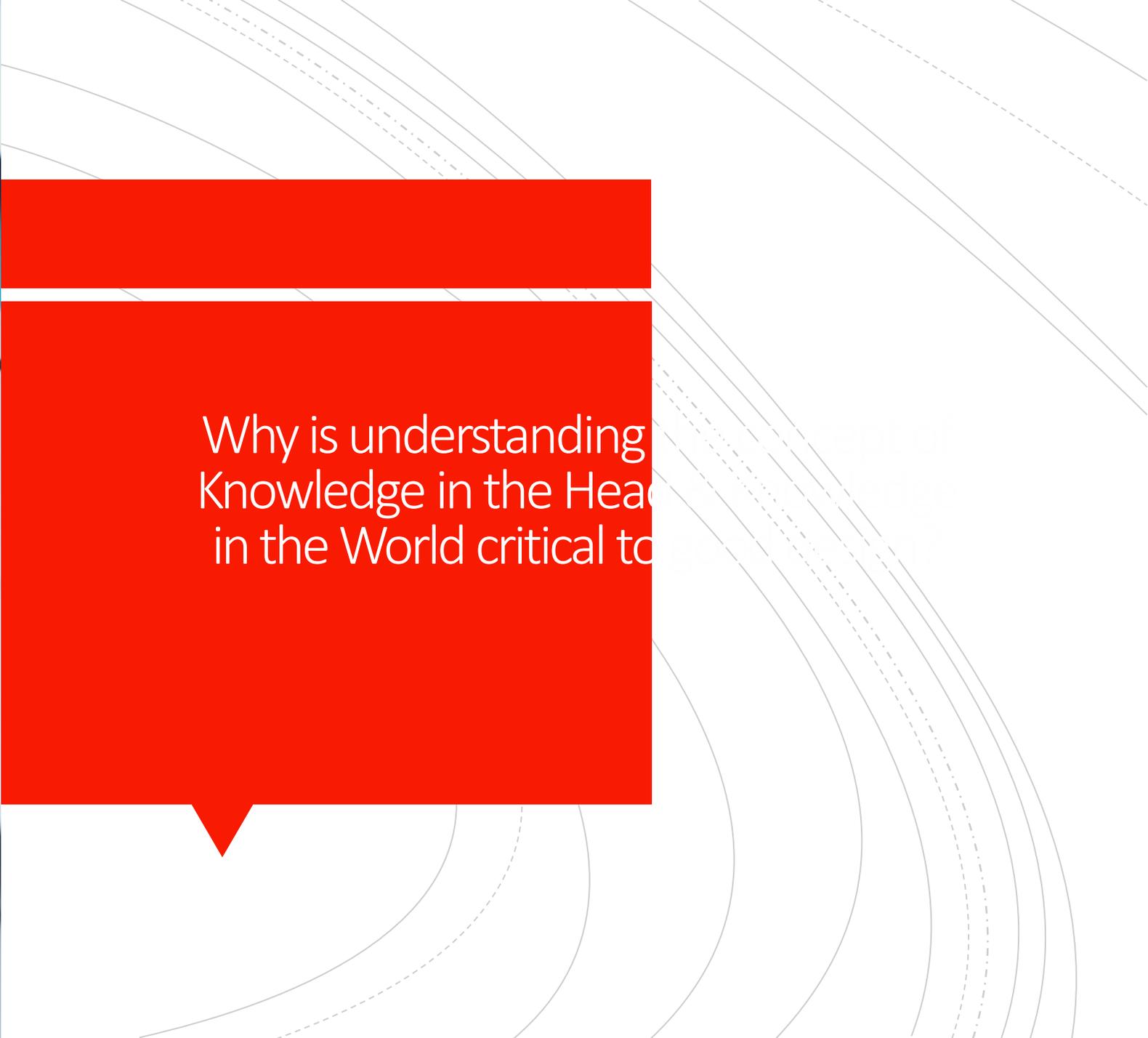
Good mapping



Best: Controls are mounted directly on the item

Second Best: Controls are as close as possible to the object being controlled

Third Best: Controls are arranged in the same spatial configuration as the object being controlled



Why is understanding
Knowledge in the Head
in the World critical to

ICA

Exploring Knowledge Domains:

In the Head vs. In the World

Objective: The objective of this activity is to explore the concepts of "knowledge in the head" (individual knowledge) and "knowledge in the world" (externalized knowledge) through various examples and discussions. This activity aims to deepen the understanding of how knowledge is acquired, stored, and utilized both internally and externally.

1. Brainstorming Session (10 minutes):

1. Divide into small groups of 3-4 students.
2. Using index cards, brainstorm examples of knowledge in the head and knowledge in the world. Think broadly across various domains such as science, history, culture, technology, etc.

2. Sharing and Discussion (15 minutes):

1. Each group should share one example of knowledge in the head and one example of knowledge in the world.
2. Discussion around the examples provided. Discuss the advantages and limitations of each type of knowledge.
3. Consider:
 1. How does knowledge in the head differ from knowledge in the world in terms of accessibility and reliability?
 2. What are some examples where knowledge in the world enhances or complements knowledge in the head?
 3. In what situations is knowledge in the head more beneficial than knowledge in the world, and vice versa?