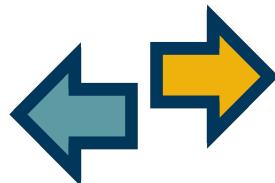




Relationship to Learning



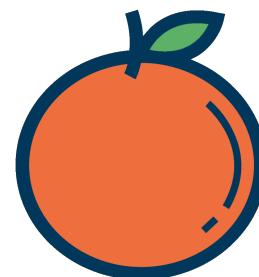
The ability to extend what has been learned in one context to new contexts



+



+



$$1 + 1 = 2$$

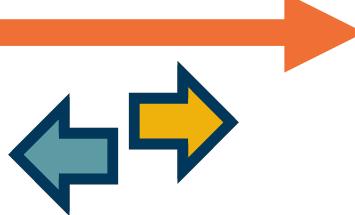
$$1 + 1 = 2$$

Transfer



If initial learning
is weak

Learning
Transfer



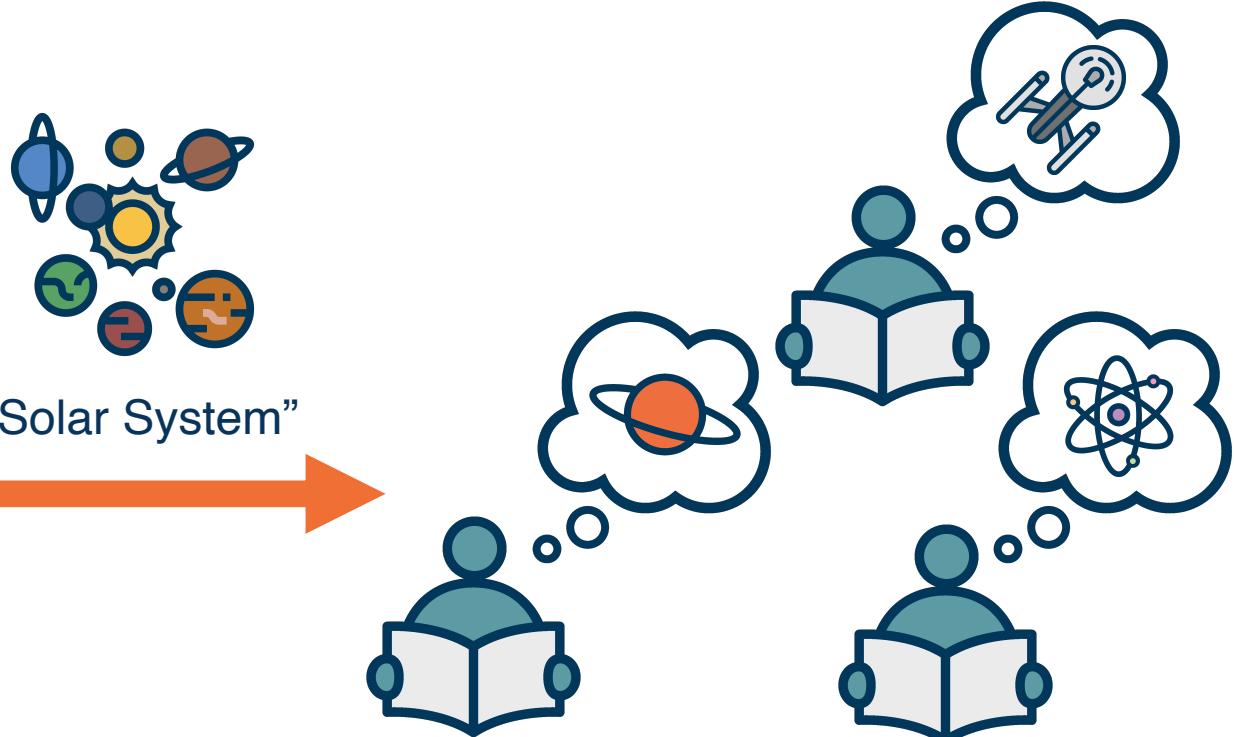
- ❖ Understanding, not memorizing
- ❖ Motivation to learn
- ❖ Time to learn
- ❖ ...



Initial Learning

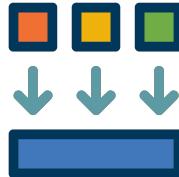


Prior Knowledge

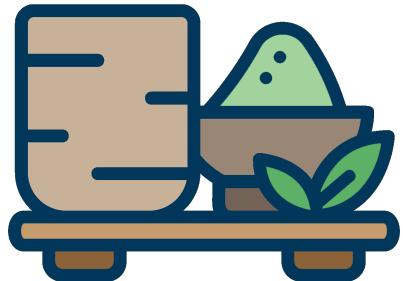


Initial Learning

Prior Knowledge



The ability to abstract representations of knowledge
that can be applied to many contexts



How to make matcha tea

1. Sift matcha powder
2. Add hot water
3. Whisk the tea

???

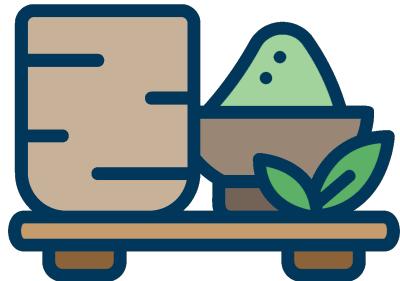


Not generalizable

Abstraction



Active process rather than a passive end-product
of the learning process



How to make matcha tea

1. Sift matcha powder
2. Add hot water
3. Whisk the tea

Revise tea-making
process knowledge



???

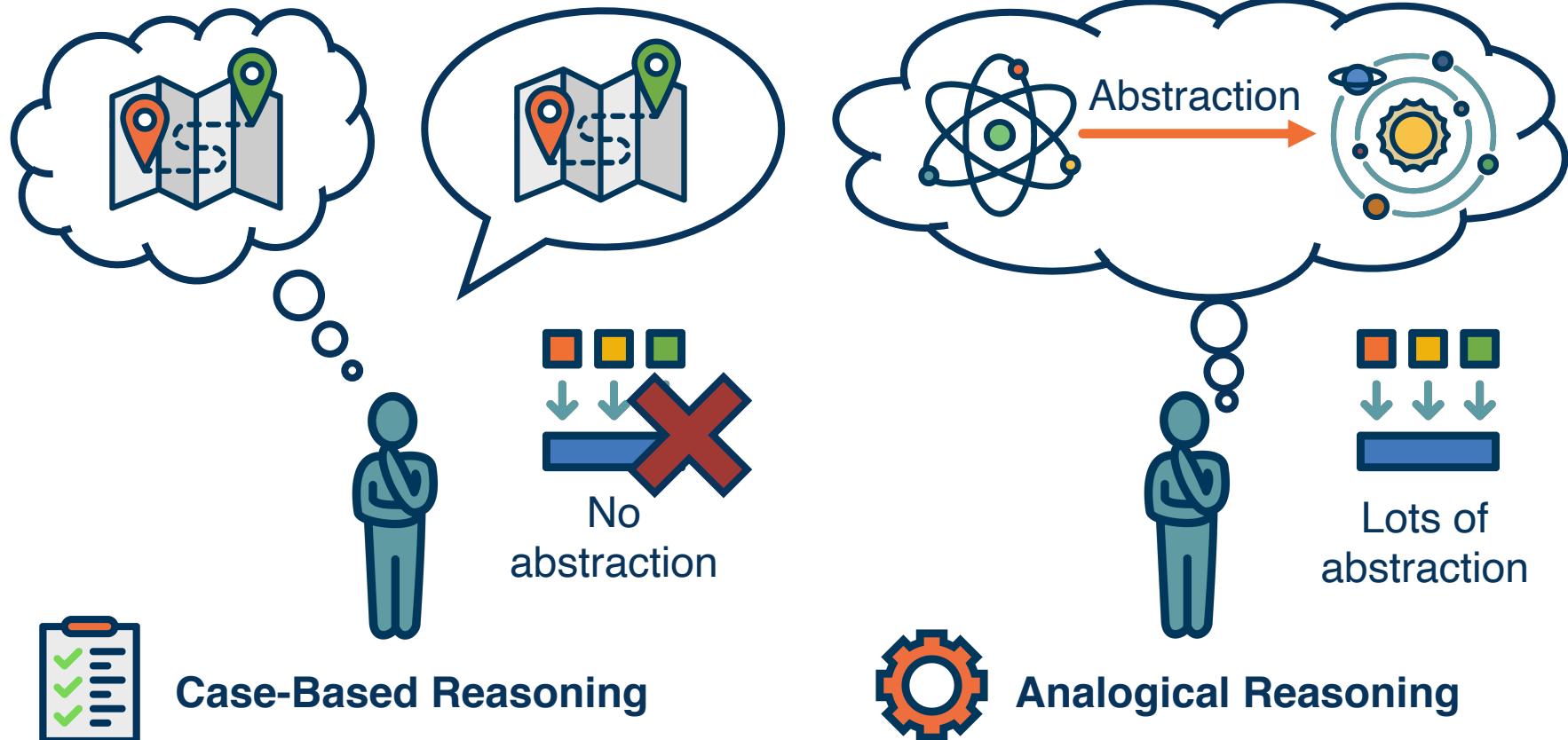


Not generalizable

Dynamic Process

Reflection:

Can you think of a learning transfer process that you encountered using the terminology that we just introduced? What is the prior knowledge, initial learning process, abstraction, and dynamic process in this case?



Case-Based Reasoning and Analogical Reasoning

Michelene Chi, PhD



Arizona State University

Image: <https://news.asu.edu/20190205-solutions-michelene-chi-asu-regents-professor>

ICAP System

- I Integrative
- C Constructive
- A Active
- P Passive



Golden Heart
Award

P

Passive Learning



Highly useful for
communicating factual
knowledge

A

Active Learning



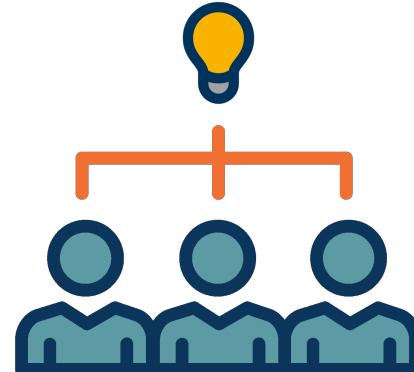
Learners are actively engaged in the learning process and assessing their own learning



Harder in online learning!

C

Constructive Learning



Learners construct their own knowledge



Even harder!

I Integrated Learning



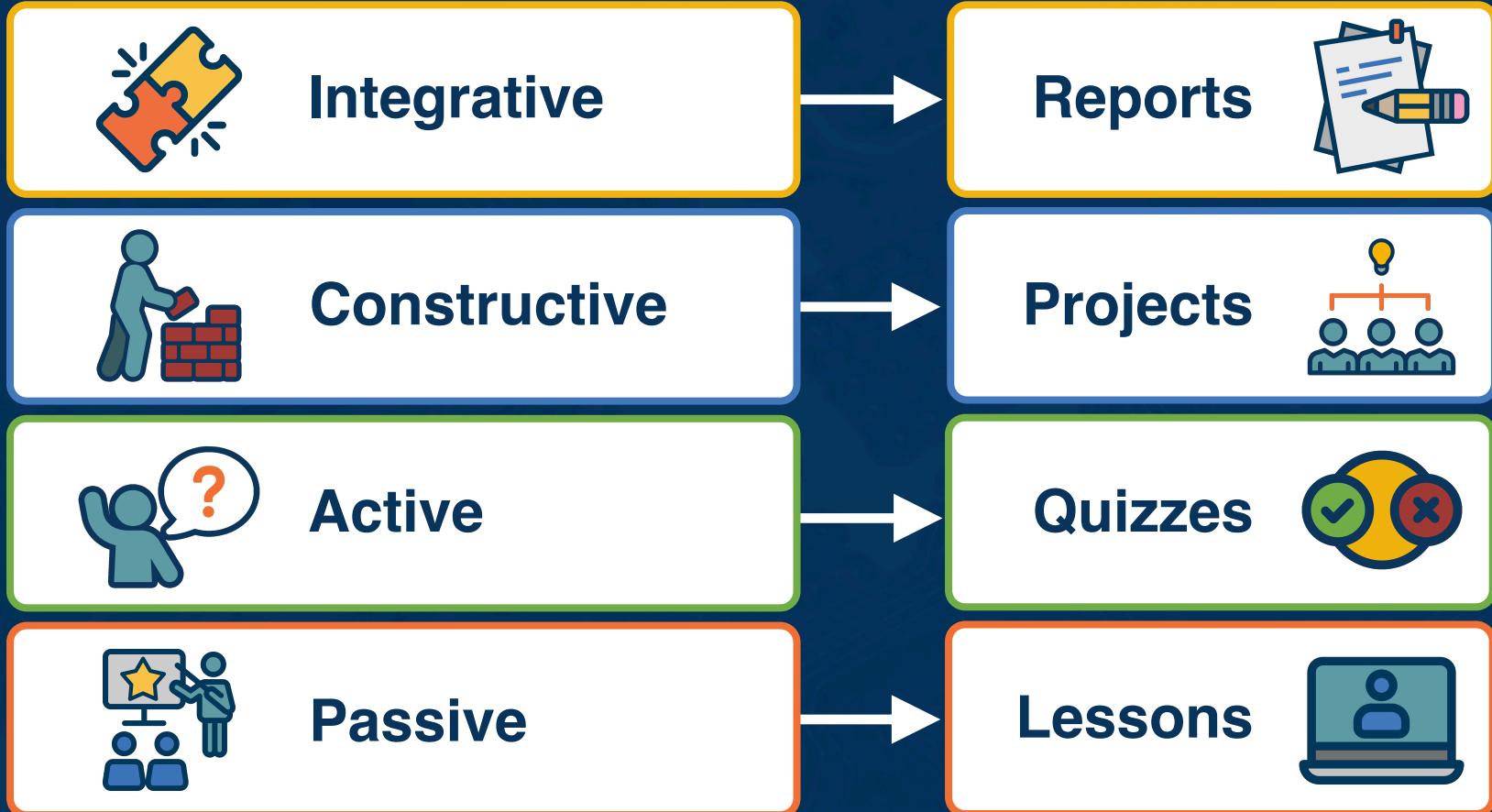
Prior Knowledge



Integrate new knowledge with prior knowledge



New Knowledge



Reflection:

What other learning activities have you encountered that leverage elements of the ICAP system?



Cognition Plus
View

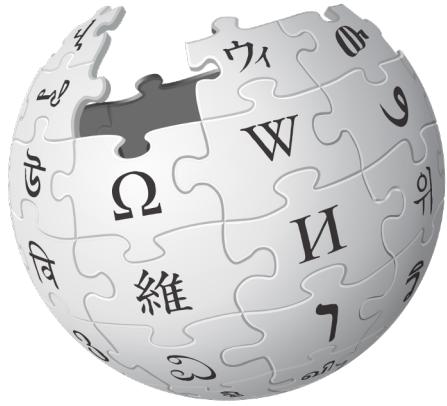


Interpretive View



Situated Social
Practice

Social Process and Situated Approaches



WIKIPEDIA

The Free Encyclopedia

Image: www.wikipedia.org



Bryant, S. L., Forte, A., & Bruckman, A. (2005, November). Becoming Wikipedian: transformation of participation in a collaborative online encyclopedia. In *Proceedings of the 2005 international ACM SIGGROUP conference on Supporting group work* (pp. 1-10).

How to Become a Wikipedian?



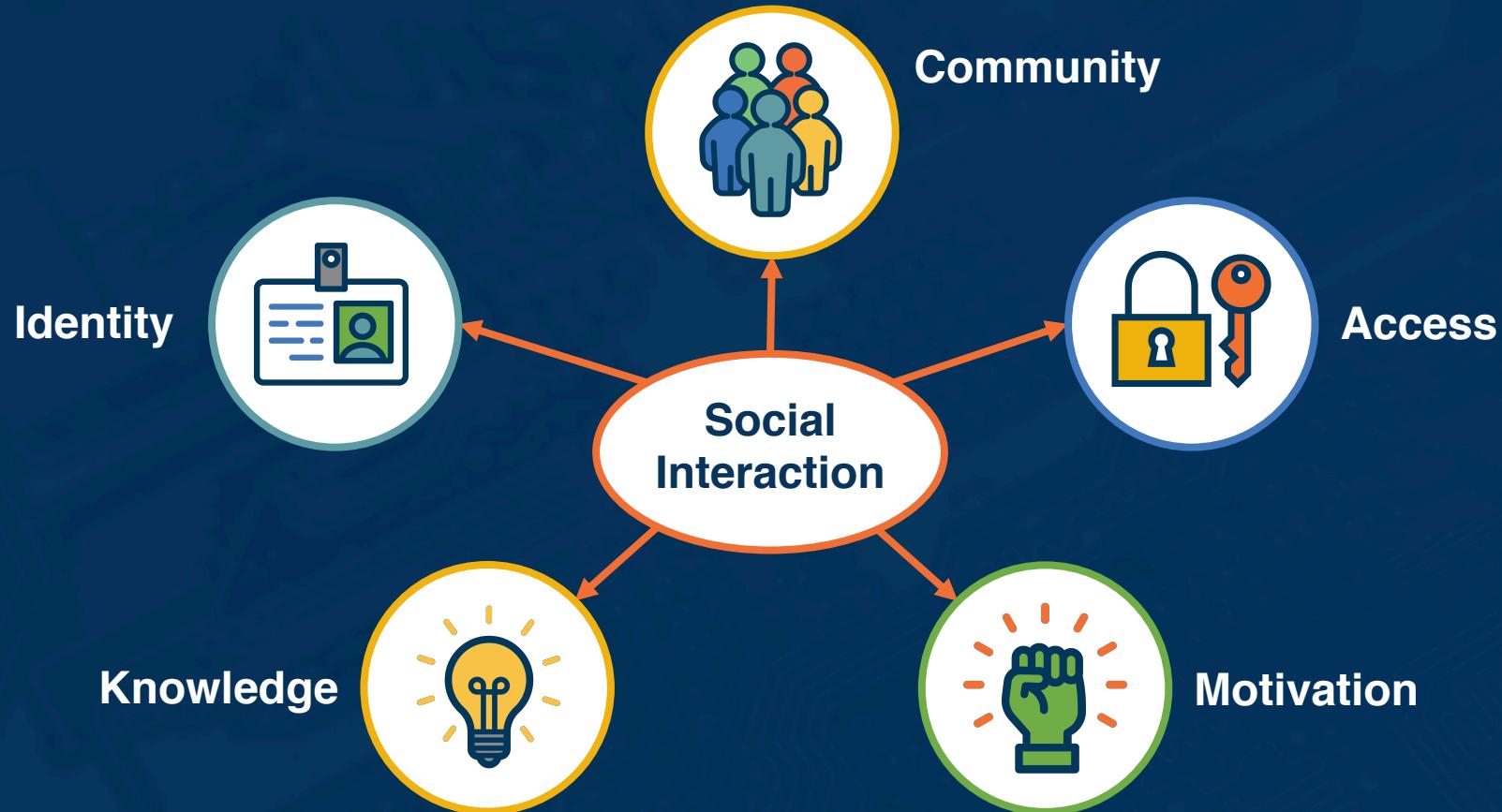
Yucatec Mayan Midwives

Image: <https://www.theyucatantimes.com/>

Alcoholics Anonymous Meetings



Communities of Practice



Legitimate Peripheral Participation (LPP)

Reflection:

What are some other examples of communities of practice or LPP that you can think of?



Central: Professors, Faculty,
Senior PhD students

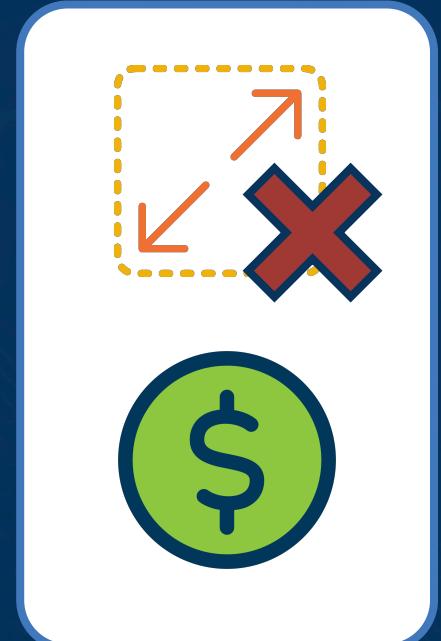


Peripheral: Junior
PhD students, Master
students, Undergrad

**Other
Countries:**



Research Lab as an Example



Not scalable and
too costly

Putting LPP in Practice

Motivation



Emotion



Fundamental Role of a Teacher

