ONLINE/REMOTE TEACHING/ LEARNING

SYNCHRONOUS OR ASYNCHRONOUS

Supporting and maximizing Learning of Diverse Students in Online Learning Environment

DR. SAIQA AZAM

DISCLAIMER

Saiqa Azam is an Assistant Professor in science education.

Her research addresses teachers thinking/cognition/learning, pedagogical content knowledge, professional knowledge of practice, and pre-service teacher education.

LEARNING AND EXPERIENCE

Signal Hill

ONLINE LEARNING IS NOT EQUITABLE

“THE MOST UNIVERSAL QUALITY IS DIVERSITY”

(MONTAIGNE, 1588)

EXPERIENCE AND LEARNING # 1

Flexibility

can allow deep and meaningful learning

Photo Credit: https://www.yogaholics.com.au/

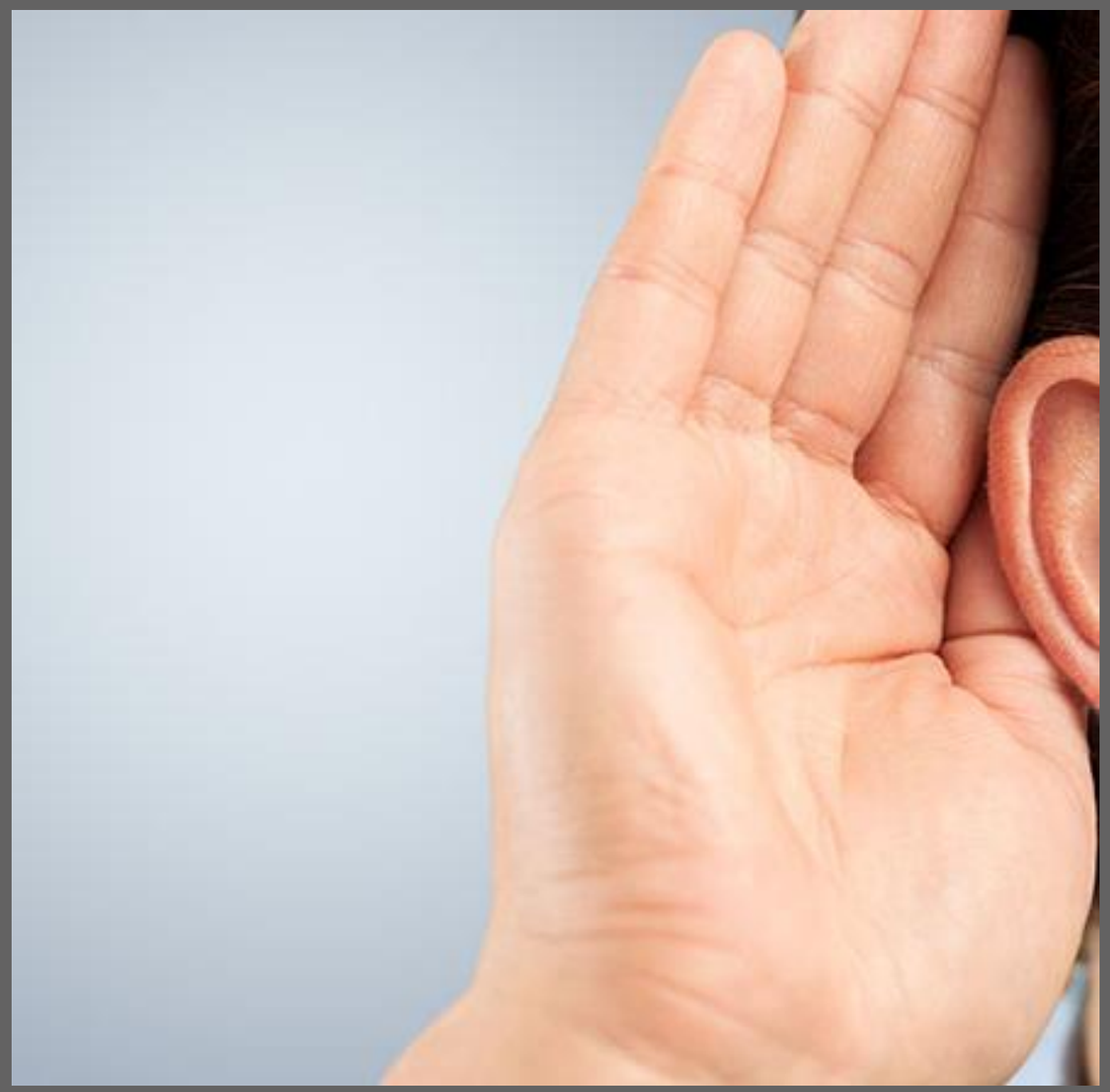
MEMORIAL UNIVERSITY

EXPERIENCE AND LEARNING # 2

Power Structures

Can hinder deep and meaningful learning

EXPERIENCE AND LEARNING # 3



Listening to students can help designing inclusive learning environment

Photo Credit: https://www.callcentrehelper.com/

LISTENING TO STUDENTS . . .

Fall 2020

Synchronous: 33 %

Asynchronous: 55 %

No Preference: 13 %

Winter 2021

Synchronous: 42 %

Asynchronous 49 %

No Preference 9 %

Source: MUN survey Fall 2020 & Winter 2021

TEACHERS CHOICES

The Synchronous vs Asynchronous debate is not productive

ASYNCHRONOUS

HYBRID - FLIPPED

SYNCHRONOUS

Photo Credit: https://www.facultyfocus.com/
https://www.chronicle.com/

MEMORIAL UNIVERSITY

HYBRID - FLIPPED CLASSROOM

Asynchronous

- Independent Task
- Home Activities/ Home Labs
- Assigned Readings
- Reading Reflections
- Online Discussion Forums
- Flexibility

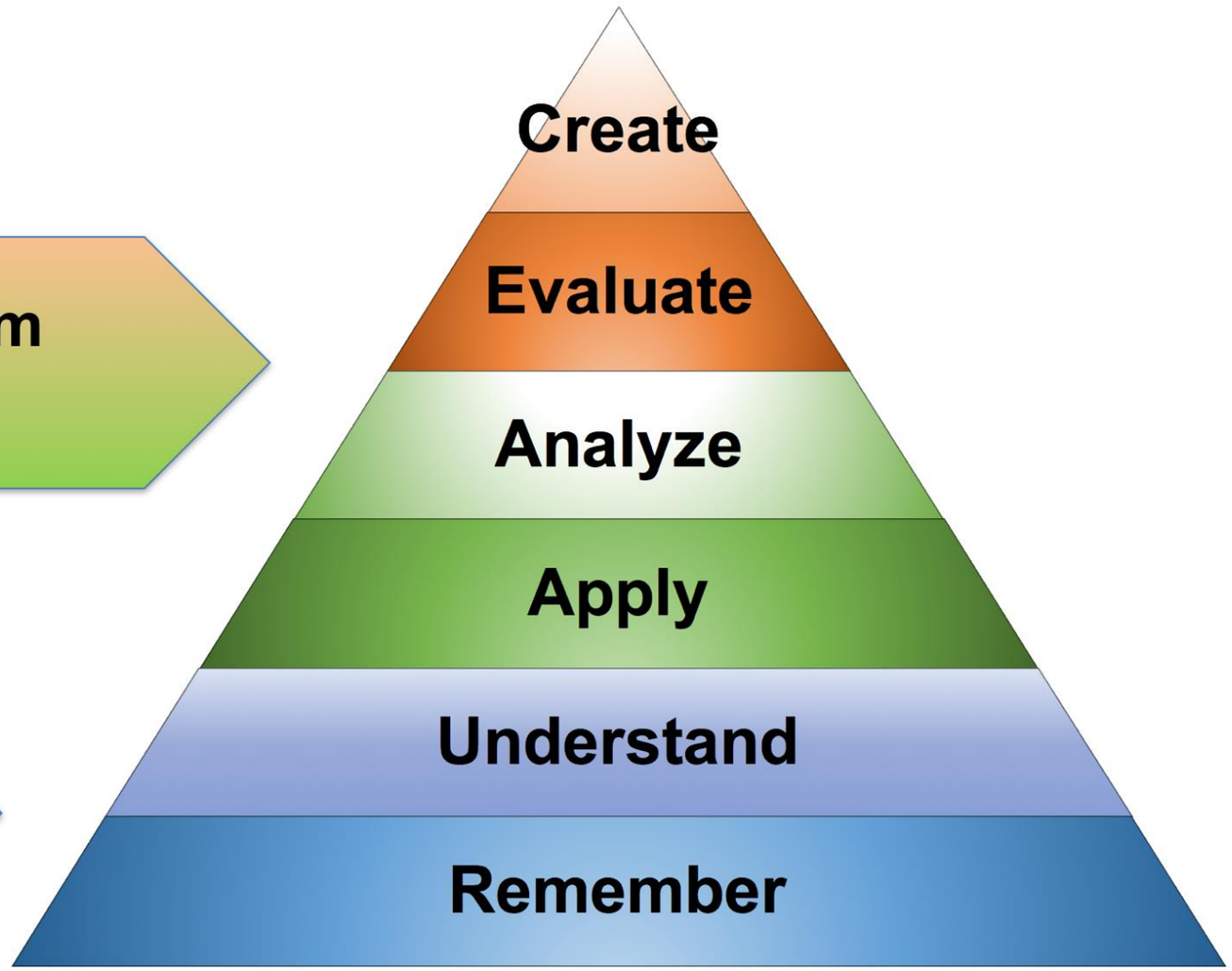
Synchronous

- Collaborative Learning
- Active Learning
- Deeper Discussion
- Discussion Boards
- Applications
- Evaluation
- Direct Instruction (if necessary)

HIGHER ORDER THINKING

Classroom Activities

Pre-Classroom Content



Bloom's Taxonomy

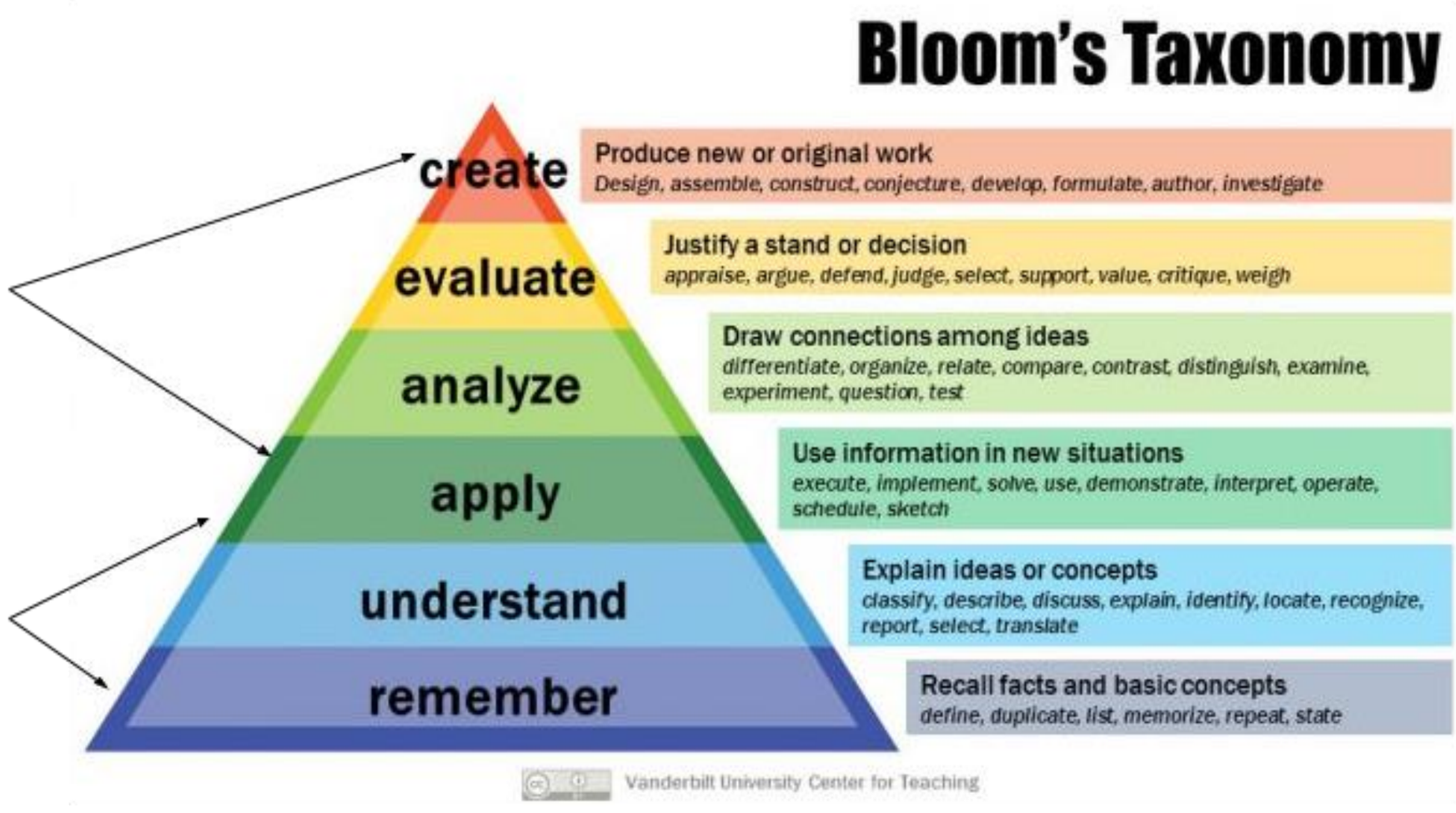
HIGHER ORDER THINKING

Synchronous

Asynchronous

Focus of group time in flipped model

Focus of individual time in flipped model



Source: https://rtalbert.org/

STUDENTS WITH VARIED LEARNING ABILITIES

- **Students with disabilities expressed preference for synchronous discussions.**

- **Greater comprehension was self-reported in the synchronous condition.**

- **Performance on test of conceptual understanding was better in asynchronous condition.**

- **Cognitive demands were higher in the synchronous condition.**

SOURCE: DAHLSTROM-HAKKI, ALSTAD & BANERJEE (2020)

HOW LEARNING OCCURS . . .

CONSTRUCTIVISM IN SYNCHRONOUS AND ASYNCHRONOUS

STUDENTS LEARN . . .

. . . by constructing their own ideas and knowledge.

In a learning environment (Online or Face-to-Face; Asynchronous or Synchronous) that promotes:

- **Independent Exploration (Cognitive Engagement)**
- **Collaborative Exploration (Social Engagement)**

MEMORIAL UNIVERSITY

EXAMPLES:

HYBRID- FLIPPED CLASSROOM

Example 1 (click to open in a new browser)

Example 2 (click to open in a new browser)

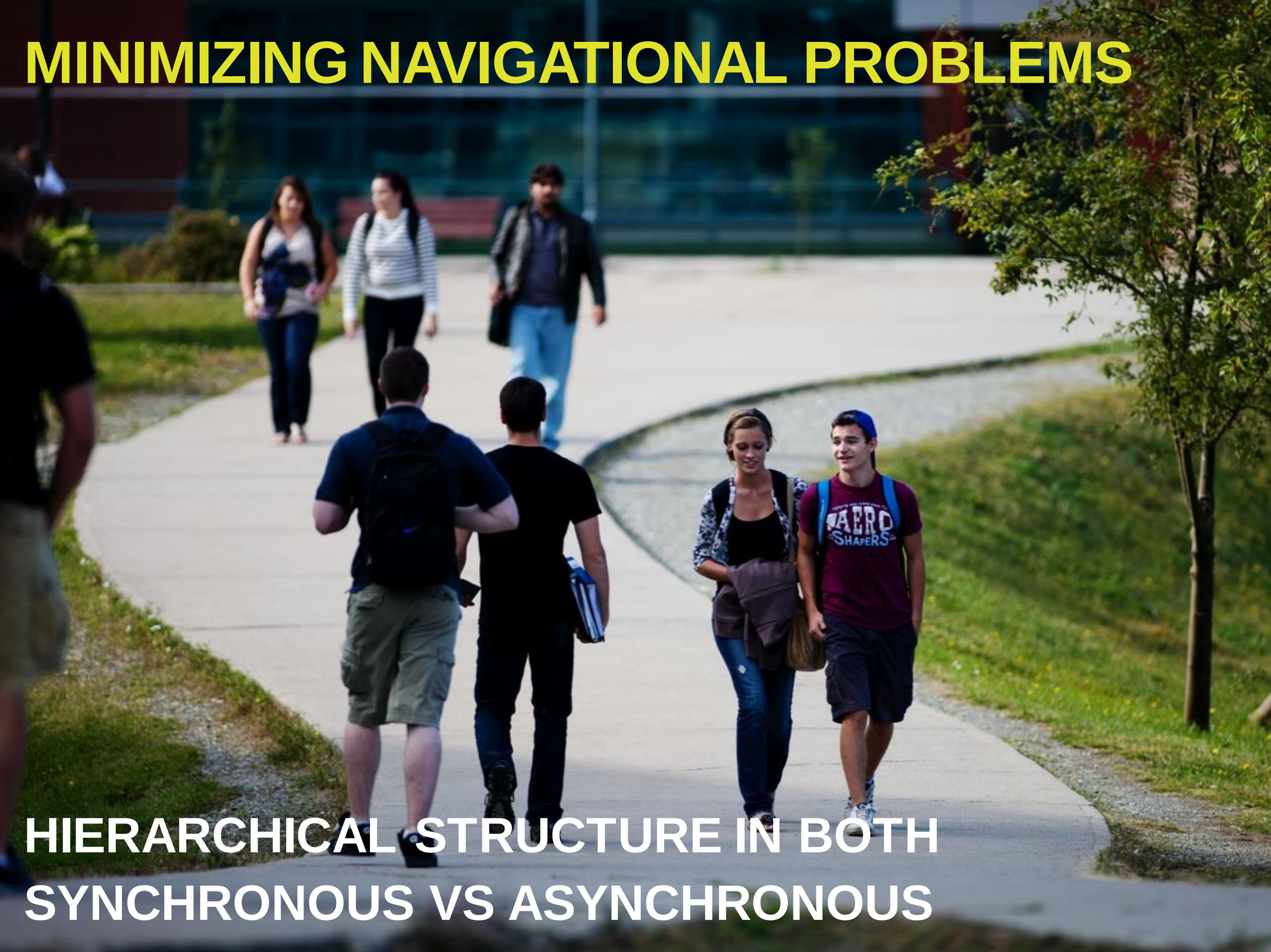
Science Education Courses

MEMORIAL UNIVERSITY

COGNITIVE SUPPORT . . .

SYNCHRONOUS VS ASYNCHRONOUS

MINIMIZING NAVIGATIONAL PROBLEMS



HIERARCHICAL STRUCTURE IN BOTH SYNCHRONOUS VS ASYNCHRONOUS

USE TOOLS TO ALLOW ENGAGEMENT AND COLLABORATIVE LEARNING:

- BREAKOUT ROOM ACTIVITIES
- PADLETS [HTTPS://PADLET.COM/DASHBOARD]
- GOOGLE FORM [HTTPS://WWW.GOOGLE.CA/FORMS/ABOUT/]

UDL

PROVIDES COGNITIVE SUPPORT