Flipping with Purpose:

Beyond Video Instruction

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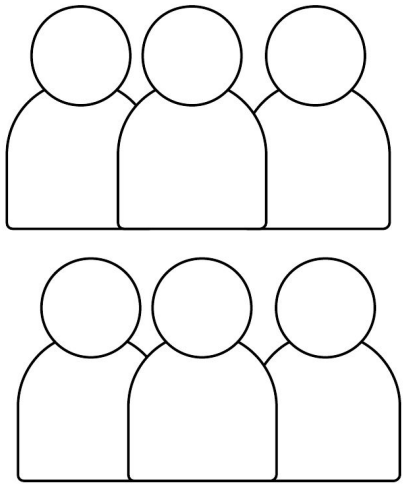
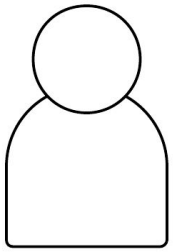
1983

ca. 1983:

Traditional Classrooms

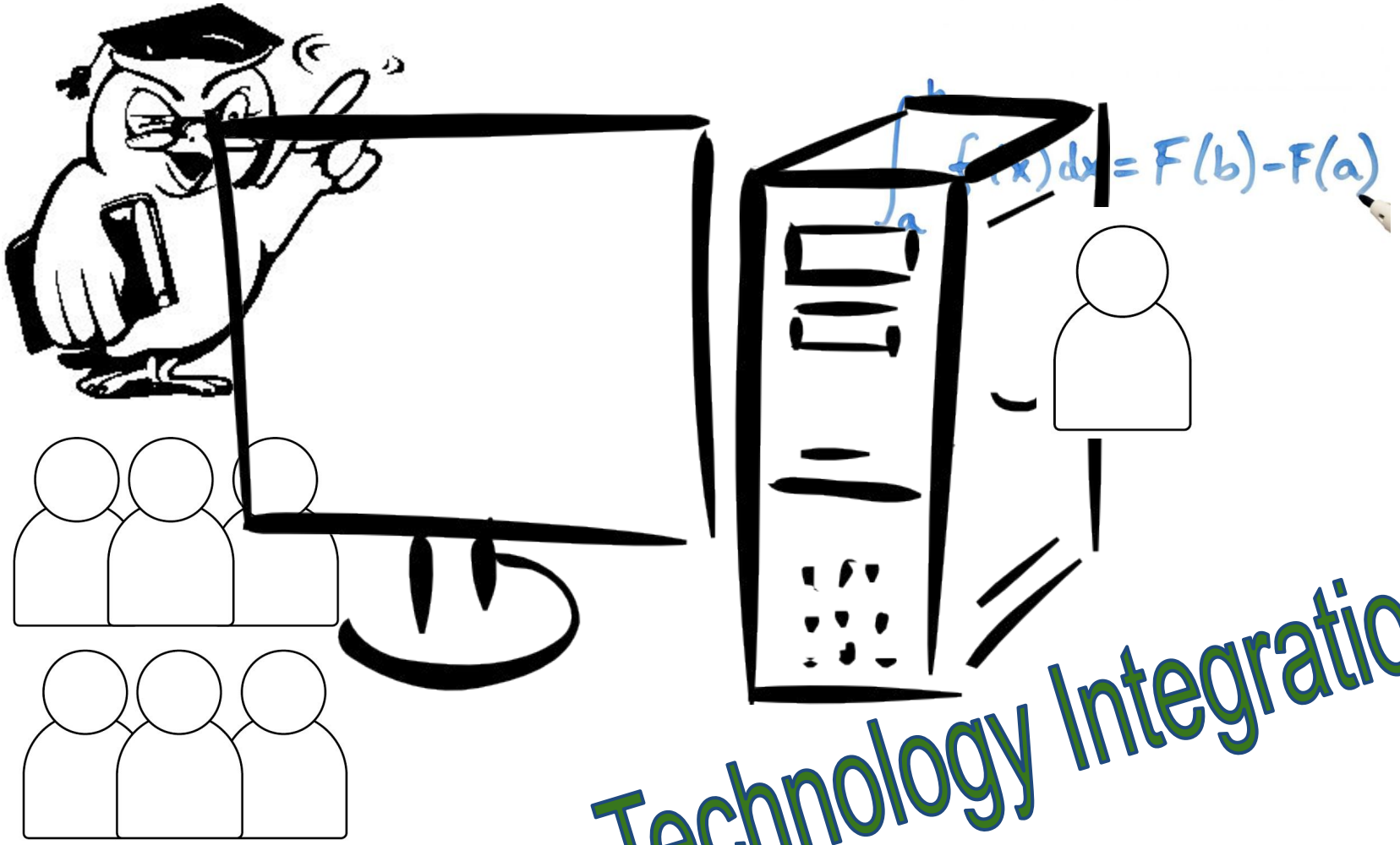


$$\int_a^b f(x)\,dx = F(b) - F(a)$$



ca. 2000:

Traditional Classrooms

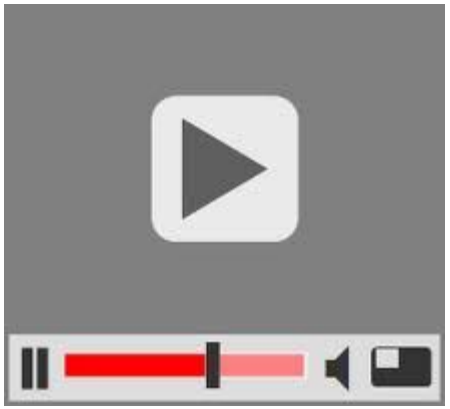


Technology Integration


1983
2013
Computer literacy
Personalized systems
Edutainment
Gaming
Tech
Coding
Integration
Internet safety
Teach via tech
Terms as meaningless as "flipped classrooms"

Since 2010:

"Flipped Classrooms"



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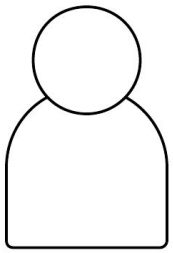
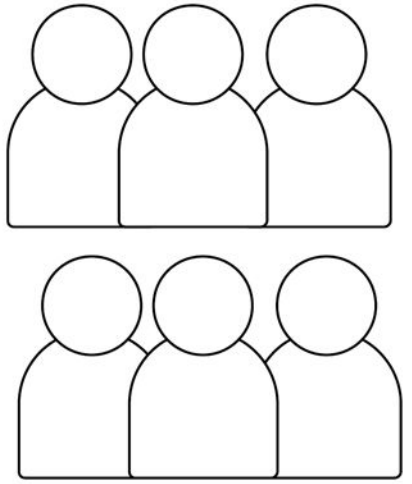
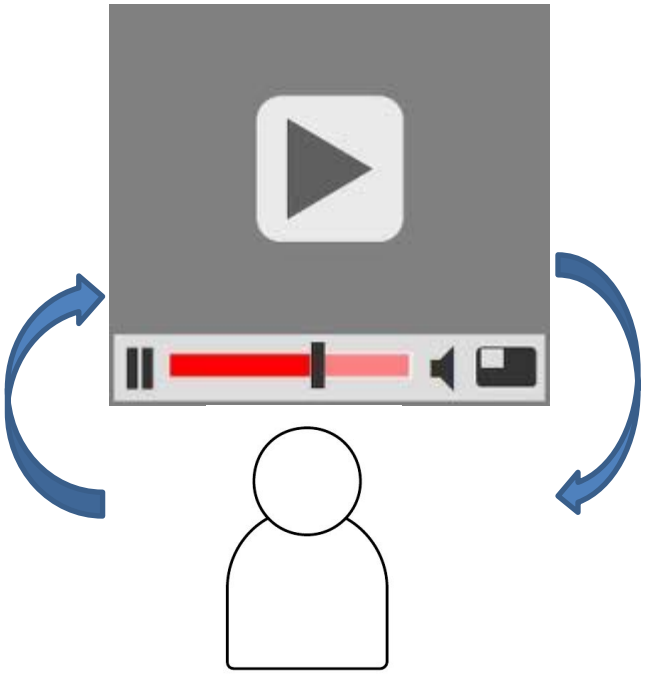
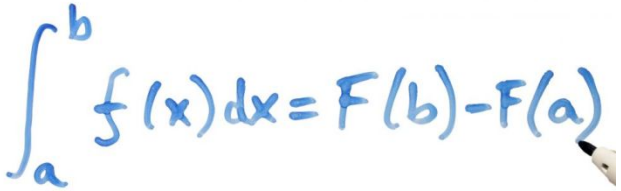


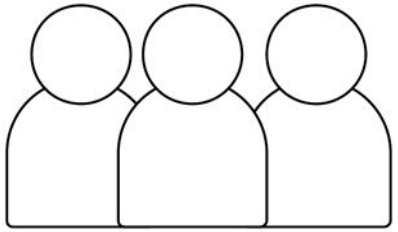


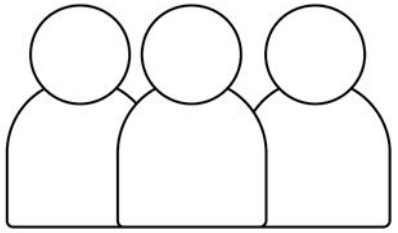
Advantages:

"Flipped Classrooms"









“Flipped” & Traditional Classrooms

New ⟶ Known

$$\int_a^b f(x)\,dx = F(b) - F(a)$$

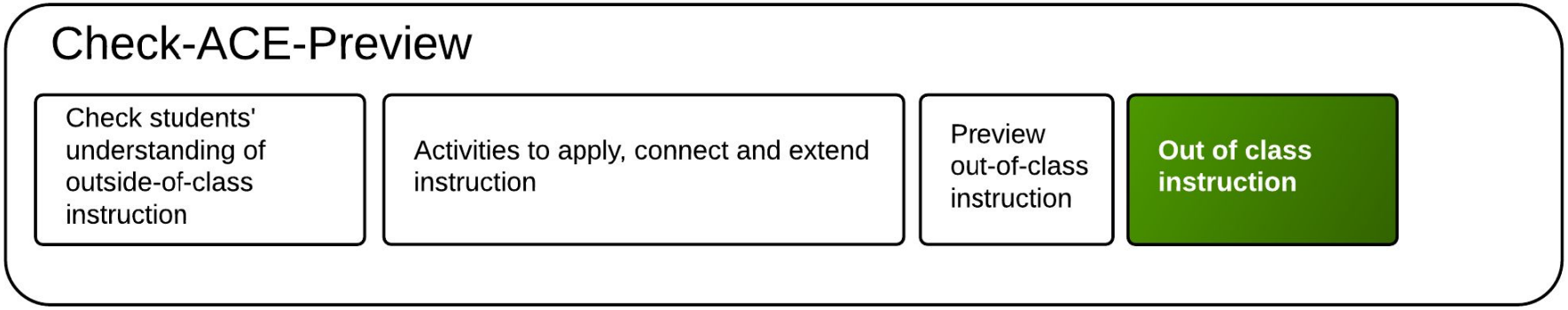
Part I: Six Models

Face-to-face / Blended / Online

Improve Extant Practices

Known  **New**

Part II: Tips & Habits



- Most like "flipped classrooms"
- Loose connection between video and ACE
- ACE is key

Check-ACE-Preview

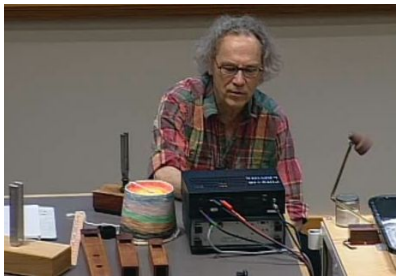
Check students' understanding of outside-of-class instruction	Activities to apply, connect and extend instruction	Preview out-of-class instruction	**Out of class instruction**

Check-ACE-Preview

Check students' understanding of outside-of-class instruction	Activities to apply, connect and extend instruction	Preview out-of-class instruction	**Out of class instruction**

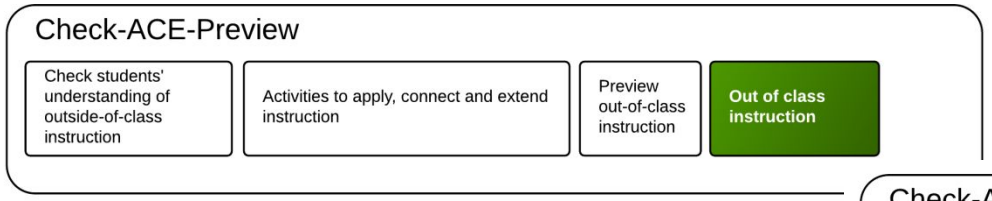
Sound… can we measure?

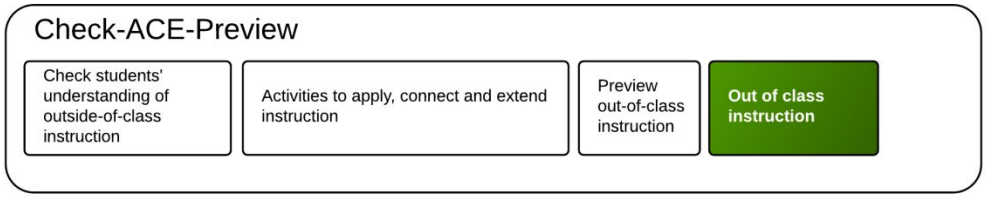
Here is what Walter will say…



Formative assessment…

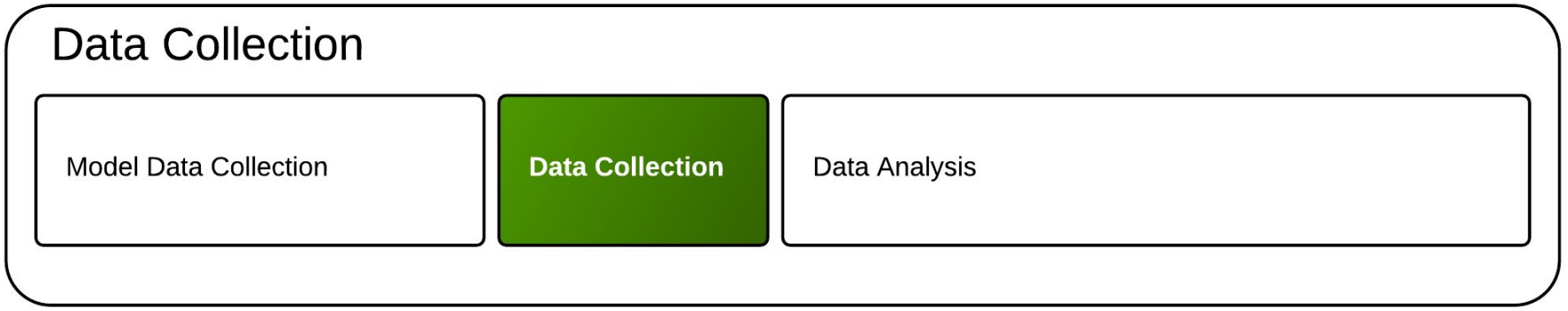
Design the experiment…





ACE: Cognitive Apprenticeships

Project-Based Learning
Healthy Test Preparation
Research
Design
Case Studies
Simulations
Games
Data Analysis

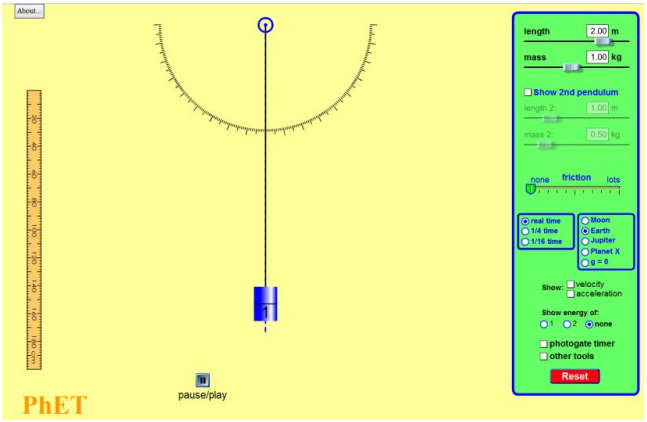


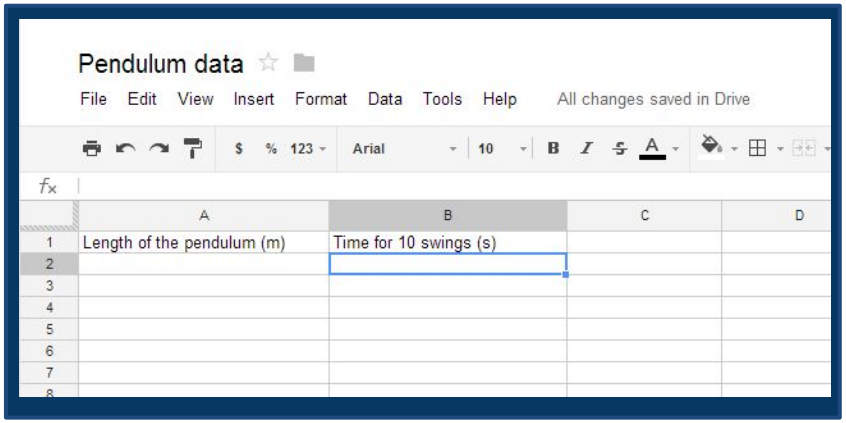
- "Drudgery" of collection is done independently
- Model the simulation
- Time for analysis

Data Collection

Model Data Collection | **Data Collection** | Data Analysis

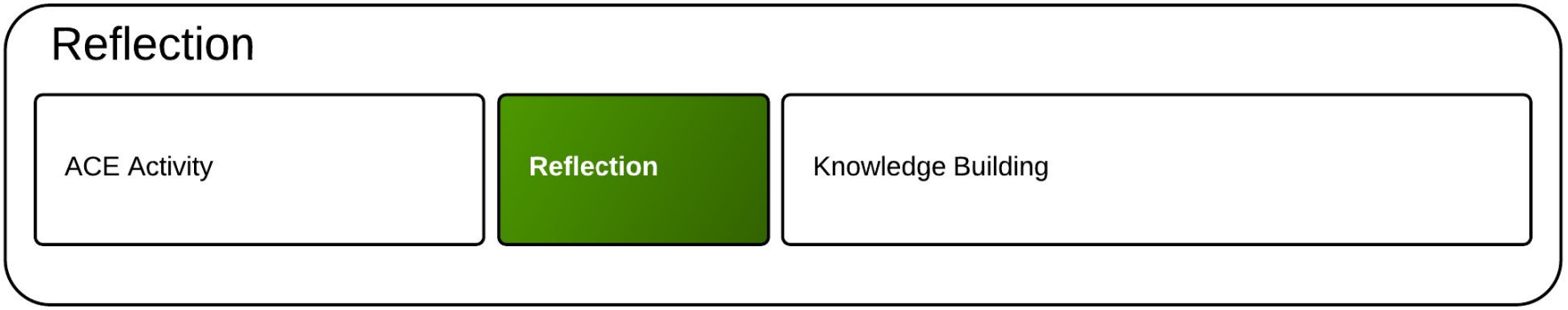
Known



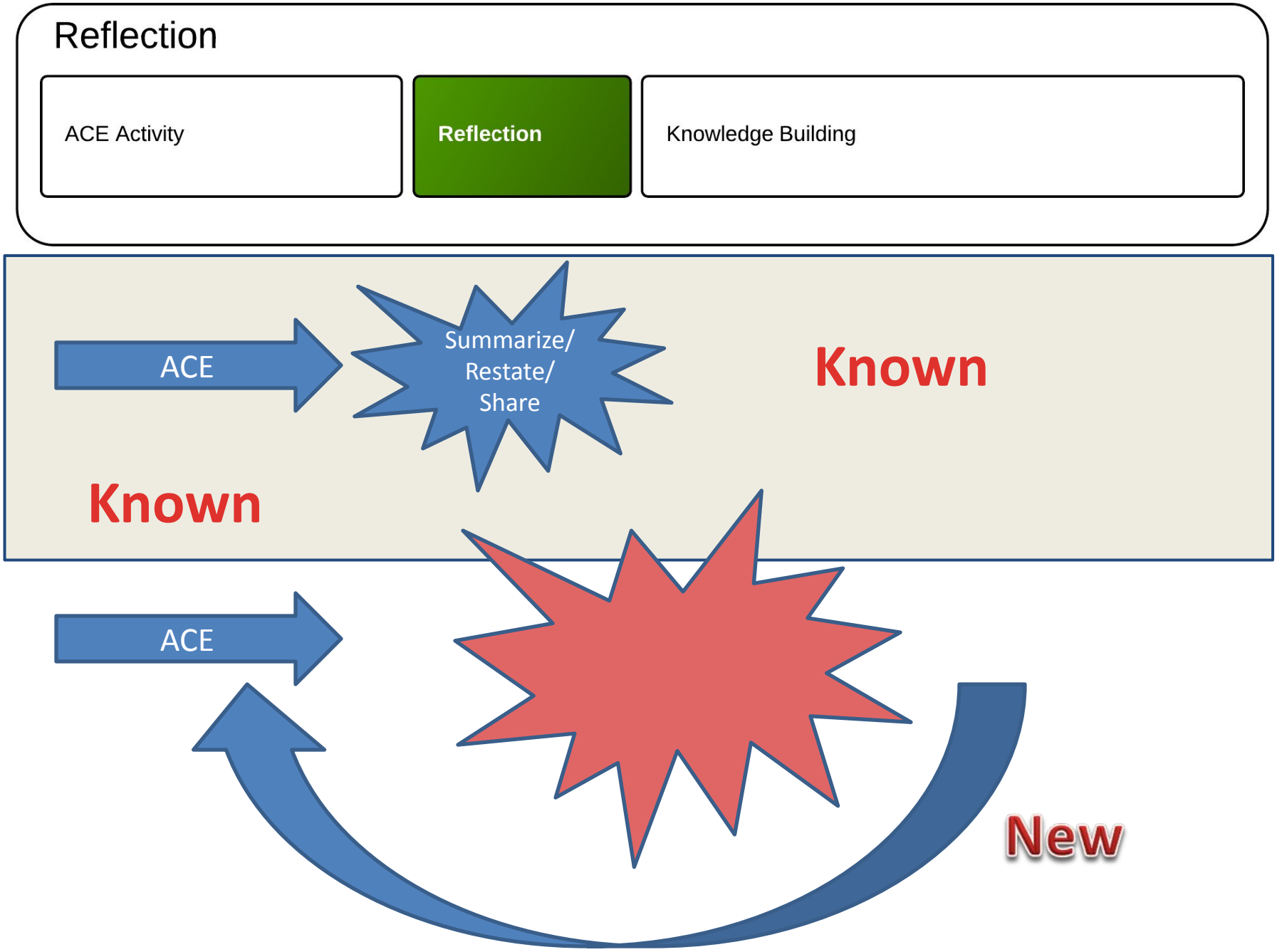


New

$$T = 2\pi\sqrt{\frac{L}{g}}$$



- ACE is loud
- Scaffold the reflection
- Close the loop


Reflection
ACE Activity
Reflection
Knowledge Building
ACE
Summarize/
Restate/
Share
Known
Known
ACE
New

Reflection

ACE Activity	**Reflection**	Knowledge Building

1) Wicked content
- Multiple defensible answers
- Perspective matters
- Ill-defined
- No rules

2) Original structured articulation
- Protocols
- "Non-Google-text" answers

3) Rethink time or 1 < 3
- React - Respond to others - Reflect

4) Discussion as source

http://mwcc.edu/ctl/title-iii-work/collaborative-learning-protocols/

- "Flipped classrooms"
- Video sets the context for ACE
- ACE is key

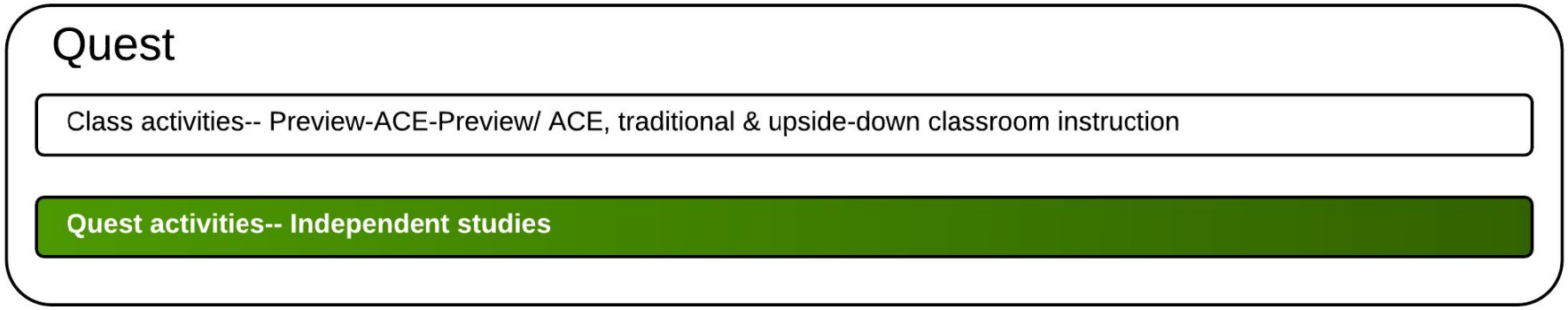
Experience/ Context

Video/ research/ reading/ surfing

ACE Activity

Find three poems…

Rewrite them…

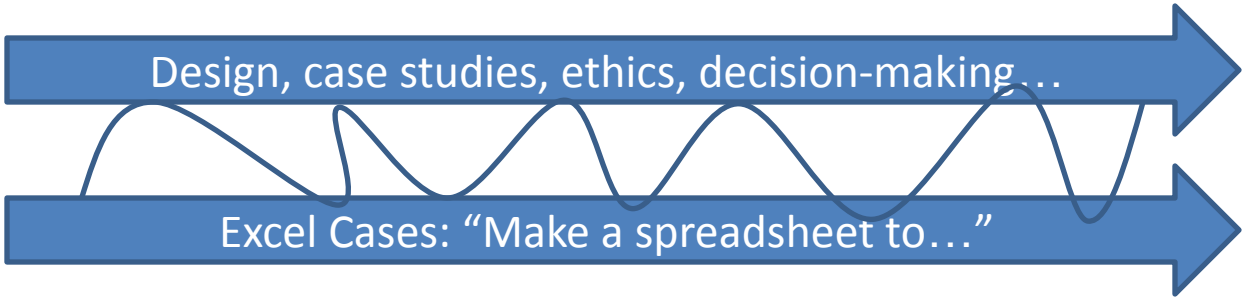


- Operationally independent threads
- "Connection depends on the connection"

Quest

Class activities-- Preview-ACE-Preview/ ACE, traditional & upside-down classroom instruction

Quest activities-- Independent studies



Worked Examples

Class activities-- Preview-ACE-Preview/ ACE, traditional & upside-down classroom instruction

Worked examples-- accessed on an "as needed" basis

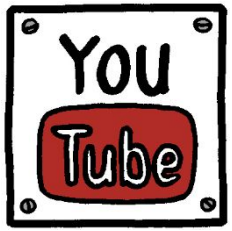
- Modules
- Consistency over sections/ programs
- Find help (commercial or colleagues)

Worked Examples

Class activities-- Preview-ACE-Preview/ ACE, traditional & upside-down classroom instruction

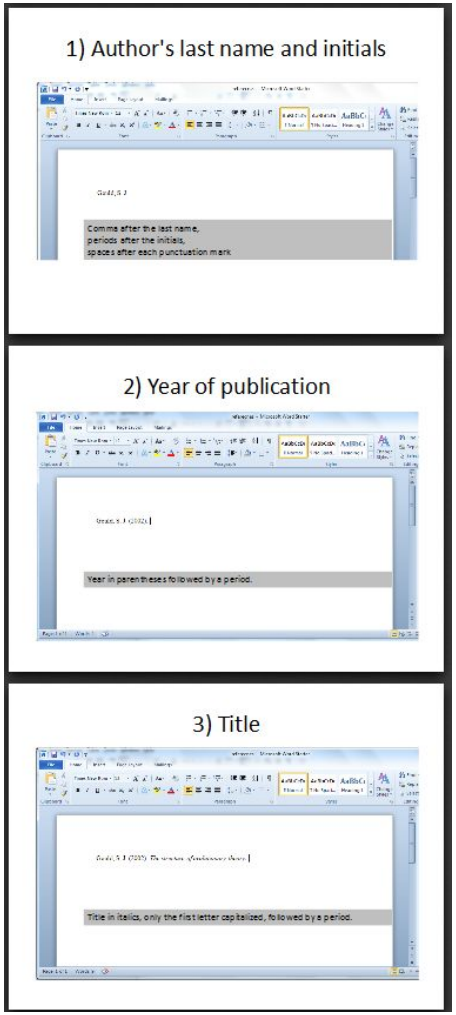
Worked examples-- accessed on an "as needed" basis

Collaboratively curate and create your collection



<u>Remember Principles of Multimedia:</u>

User controlled natural voice explaining a graphic and caption is better than text



Summary Part I: Six Models

To Proceed "Known to New"

1. Check – ACE –Preview
2. Data Collection
3. Reflection
4. Context/ Experience
5. Quest
6. Worked Examples

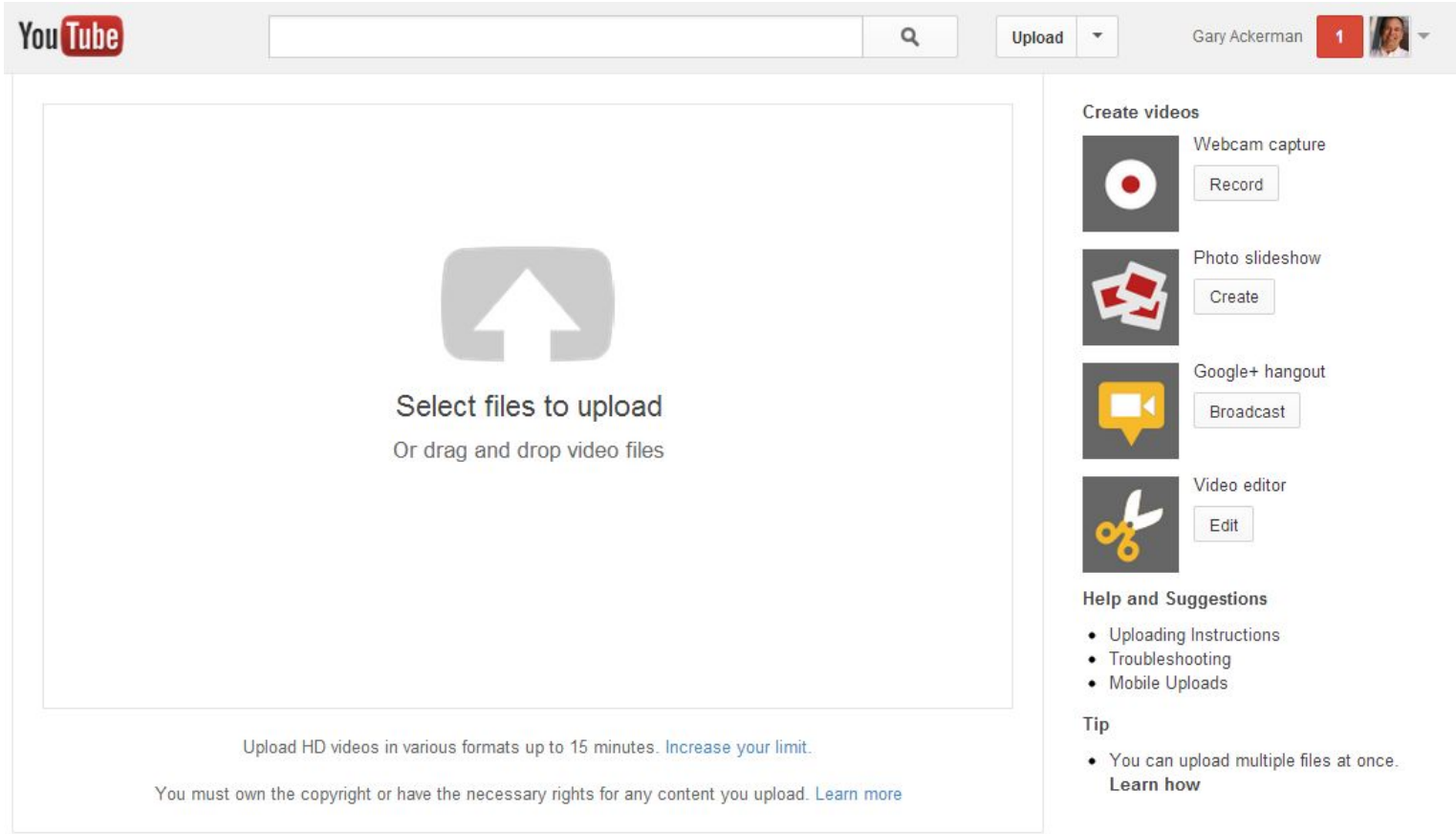
Part II: Tips & Habits

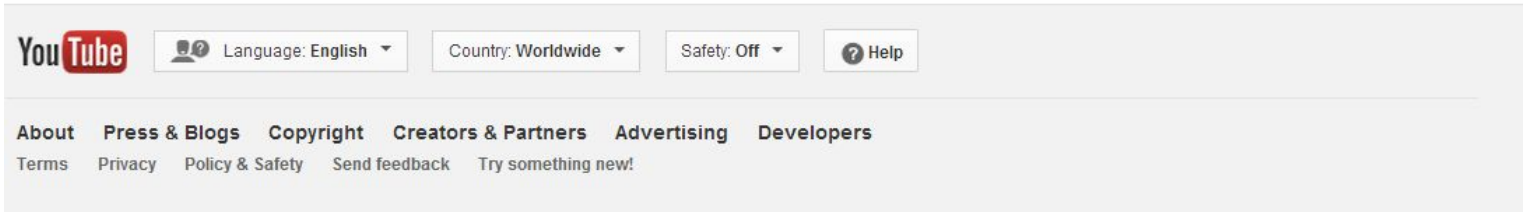
Essential Technology - 1 of 3

Well-used *system-wide* virtual classrooms:

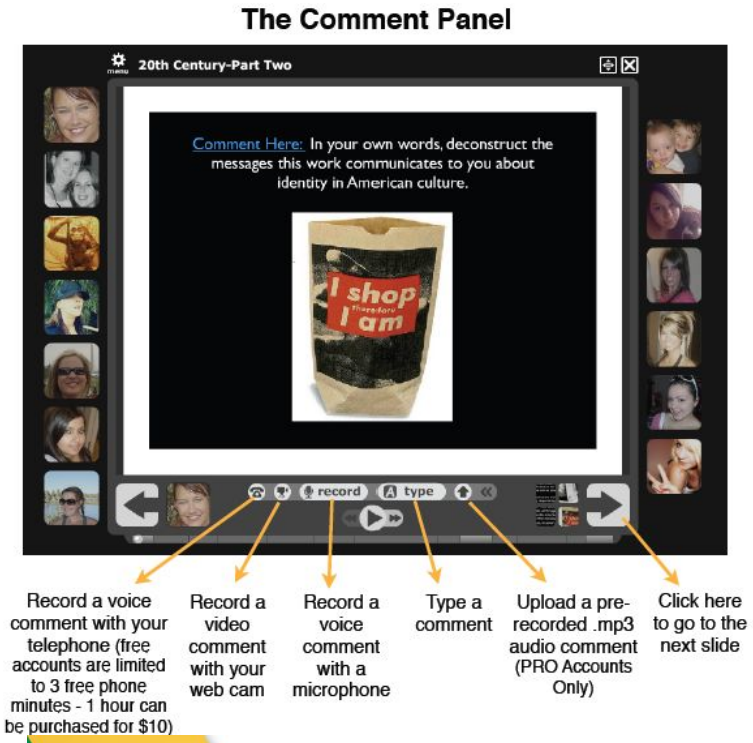
- Formative assessments
- "Easy Tests" become Quests
- Management of Worked Examples
- Blogs, Wikis, Discussion Boards for Permanent Reflection
- "Video Everywhere"

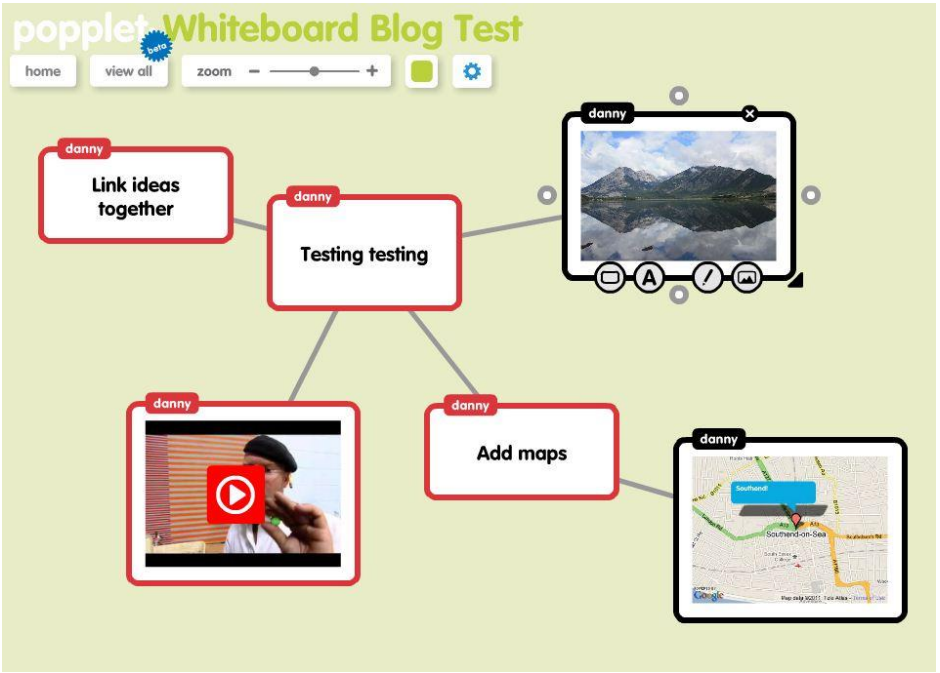
Essential Technology - 2 of 3

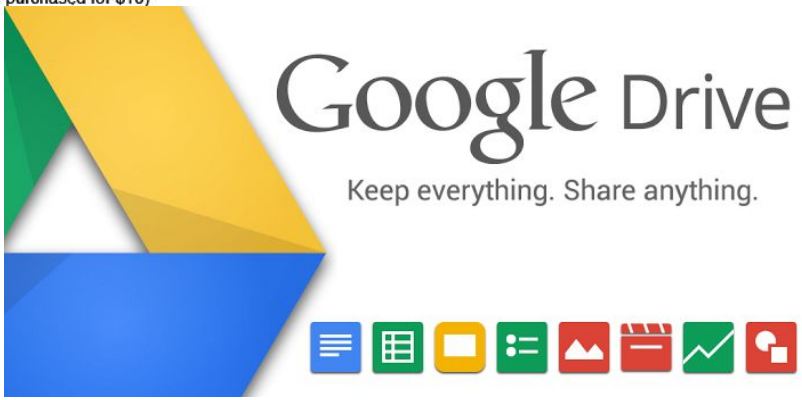




Essential Technology - 3 of 3







https://drive.google.com
http://www.popplet.com
http://www.voicethread.com

Essential Teacher Habits

When using video instruction:

- Vocabulary to reflect others
- Avoid "fixing the mistakes"

Reflect on Practice:

- Improve ACE
- Embrace active learning
- Refine prompts

Telling isn't Teaching

Essential Collegiality

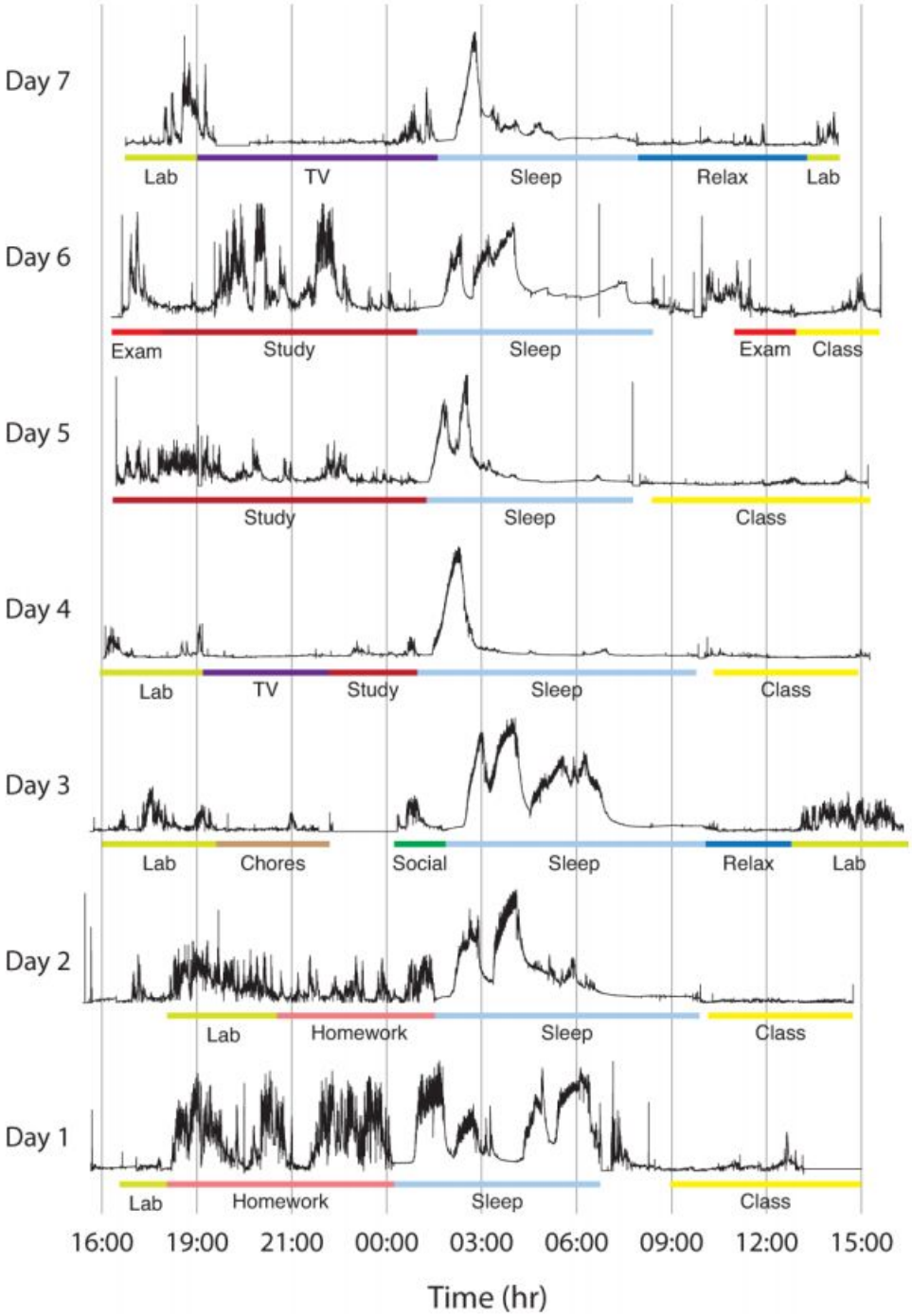
Find and vet resources

Common tagging

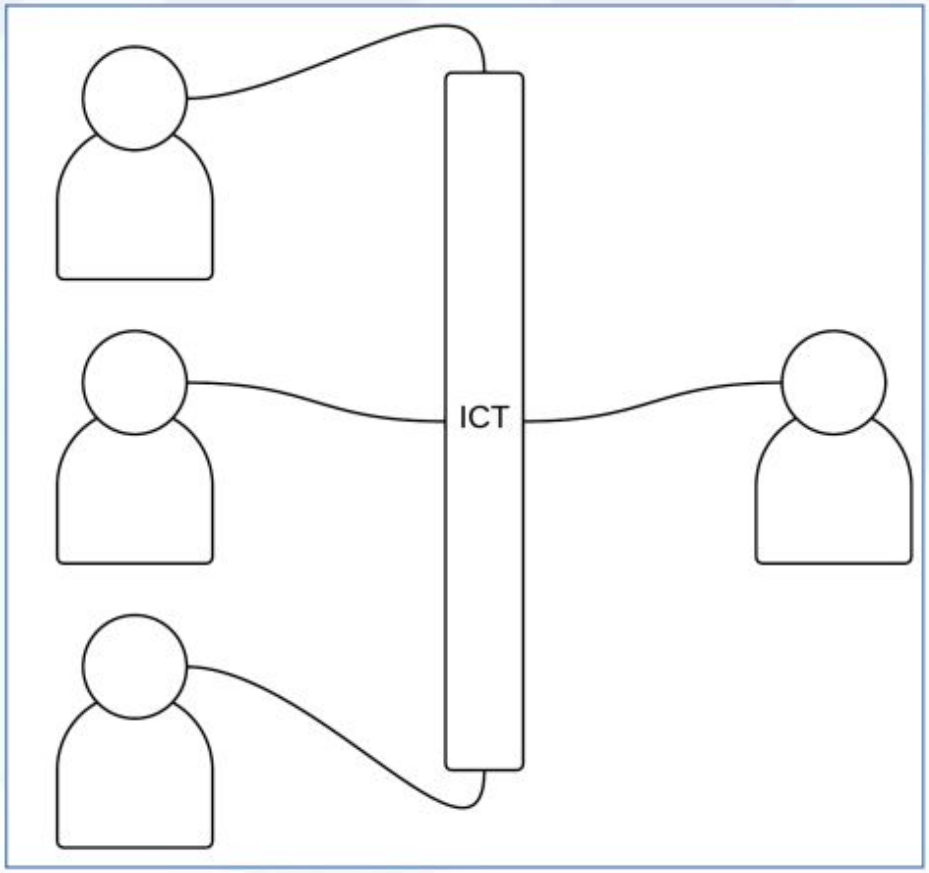
Learn EverNote or SpringPad (or similar tools)

ACE activities

Discussion prompts


Day 7
Lab
TV
Sleep
Relax
Lab
Day 6
Exam
Study
Sleep
Exam
Class
Day 5
Study
Sleep
Class
Day 4
Lab
TV
Study
Sleep
Class
Day 3
Lab
Chores
Social
Sleep
Relax
Lab
Day 2
Lab
Homework
Sleep
Class
Day 1
Lab
Homework
Sleep
Class
16:00
19:00
21:00
00:00
03:00
06:00
09:00
12:00
15:00
Time (hr)

The Challenge



- Text-based
- Information-friendly
- Permanent
- Non-intuitive

Resources

ACE-ing Curriculum:

- Authentic Learning for the 21st Century (from Educause)
- Scardamalia, M., & Bereiter, C. (2006). Knowledge building: Theory, pedagogy, and technology. In K. Sawyer (ed.), *Cambridge Handbook of the Learning Science* (pp. 97-118). New York: Cambridge University Press.
- The Nature of Learning: Using Research to Inspire Practice