ACRL STS Information Literacy
Committee Chat

Active and Engaged Teaching in the Sciences:
Building a Community of Practice

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Topics for Discussion:

- Collaborative and Engaged Learning Practices
- Increasing the Impact of Library Instruction within the Sciences
- Active Teaching Techniques to Build a Community of Practice
Collaborative and Engaged Learning Practices
How do you learn how to teach?

Science instructors and librarian similarities

- Education degree – unusual
- Myth – introverted vs. extraverted
- Feedback – how to get it

The Accidental Teacher
Education jargon:

- Active learning - “instructional activities involving students in doing things and thinking about what they are doing”
  

- Constructivism – learners construct their own understanding – “social interaction plays a fundamental role in cognitive development” (Vygotsky http://instructionaldesign.org/theories/social-development/)
Project ACC Faculty Institute

- Increase Faculty Awareness of Engaged Learning Practices
- Implement Active Teaching Strategies
- Build a Community of Practice

CHEM Pilot – Active Learning
Programs at ACC—Communities of Practice

- Pedagogy Training 1-2 times per academic year with peers
- Faculty development – annual retreat, regular workshops, trainings
- HIL – hourly instruction librarian program- paid to learn how to teach
- Librarians teach at faculty training sessions for EDUC 1300 (college readiness)
- Metacognition
Metacognition: Next Gen Learning Model
Metacognition: Thinking about Thinking

Exit Tickets

● Today I learned…
● I want to know more about…
● What surprised me today…

Exit tickets help students think about what and how they learn
Benefits:
- Improved thinking skills
- Use of cognitive strategies
- Promoting conceptual change
- Reducing “illusion of knowledge”
- Improved goal setting - and getting!
- Overall academic success
Elements:

Awareness:
- Self-awareness
- Task-awareness
- Strategy-awareness

Actions:
- Strategy selection
- Goal setting
- Self-monitoring
Metacognition Strategies for Teaching

- Before a class – Is this similar to another class? What do I want to accomplish?
- During the class – Am I on the right path?
- After a class – What worked? What could be improved?
Growth Mindset

- Belief in your capacity to learn and grow
- Changing and improving the way people learn (Dweck)

Teaching ability can be developed

- Observing other teachers
- Team teaching
- Peer observations
Based on Gagne’s 9 Events of Instruction: ACC Framework

6 Components:
- Gains Attention of Class
- Provides Learning Objectives
- Concepts (build on prior knowledge, provide examples, definitions, organize info)
- Active Learning Activities (practice)
- Assessment (check for understanding)
- Teaching Presence (mindfulness)

Increasing the Impact of Library Instruction within the Sciences
Library Information Literacy in the Sciences

Discussion Q 1: Think about...

What classes are you teaching?
What are your takeaways?

Question:

Undergrad entry level science class – top student learning outcome?
Common answers

Students will learn:

- How to develop a topic
- How to search for authoritative information on this topic
- How to evaluate the information they find
- How to use this information ethically
- How to read a scientific article
Common ACRL Frameworks Explored:

- Authority Is Constructed and Contextual
- Information Creation as a Process
- Information Has Value
- Research as Inquiry
- Scholarship as Conversation
- Searching as Strategic Exploration

http://www.ala.org/acrl/standards/ilframework
Librarian Instruction in the Sciences

Discussion Q 2: Think about…

Are we teaching skills or concepts?
Librarian Instruction in the Sciences

Discussion Q 3: Think about...

How do you know students learned something during your instruction?

List example assessments in the chat box.
Sample Assessments:

● 3-2-1
List 3 new things you learned for this research project.
List 2 new things you will use in the future
List 1 question you still have or something you wish we had talked about

● Peer-Sharing: write down 2 things you learned, then share with peer
● Self-Evaluation: what grade would you give yourself for this project and why?

● Reflective Writing – one minute paper
What would you do if you are assigned to write about a topic which you know nothing about?
BEAM Method

Evaluating Information

Using BEAM for assignment: group presentation

- Groups of 3-4 students
- Shared Google Drive Folder
- Each student finds BEAM info
- Student shares with group in Folder
- Group analyzes B articles, E articles, etc.
- Group synthesizes info into group presentation
- Group presentations with class questions
- Self-evaluations
- Group-evaluations
- 3-2-1
Active Teaching Techniques: Build a Community of Practice
Community of Practice

- Groups who share a passion for something they do
- Groups who learn how to improve with social learning

Talking about Teaching
Talking about Teaching

Discussion Q 4: Think about...

Shared practice – shared stories, repository of ideas

What are you working on?
Common answers:

- Reduce time spent lecturing
- More group work
- More active teaching techniques
- Assessment of learning
- Evaluation of teaching
- More concepts, less clicking around
Teaching Communities

- Librarians
- Librarians and Faculty
- Librarians and Researchers
- Journal Clubs
Active Teaching Techniques to Try
Digging Into Discussion

• Anonymous Discussion Points (index cards)
Digging Into Discussion

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- Tokens (poker chips, pennies) 3 per student, listen after spent
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Digging Into Discussion

- Anonymous Discussion Points (index cards)
- Tokens (poker chips, pennies) 3 per student, listen after spent
- Gallery Walk (large post-its) group work on display
- Each One, Teach One (each student shares a tip)
- Jigsaw (each group discusses a different idea + teaches class)
Jigsaw Example: Library Tutorials or LibGuides
Sample Tutorials from ACC

- Academic Honesty/Plagiarism
- Choosing a Topic
- Identifying Keywords
- Evaluating Information & Fake News
- Finding Background Information
- Finding Books and E-Books
- Finding Articles
- Finding Scientific Information
- Demystifying Research Articles
- Building Research Papers
Guided Notes may be used in Lectures

- Fill in the blanks

Two databases recommended for peer-reviewed articles about biofuels:

- __________________________
- __________________________
Guided Questions - Demystifying a Research Article:

Examples:

- How many people were surveyed?
- What were the results of the study?
- What areas did the authors recommend for further study?
- How would you redesign this research study?
### 6 Heads Are Better Than One:

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<th>The Optimist</th>
<th>Devil's Advocate</th>
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Appreciative Inquiry: Strengths-based approach

After a hands-on searching activity-

- Write a short paragraph about what you learned to do well today
- Use as an Exit Ticket to leave class

*** Documenting Excellence ***
From Sage on the Stage to Guide on the Side:
Snowball or Airplane Activity
Never Assume - Vehicles Version:

Average error rate = 80%
Assumptions...An Exercise for Group Work:

Four Corners:

1. Truck
2. SUV/Van/Hatchback
3. Sedan - 4 dr
4. Coupe - 2 dr
Concept or Mind Maps
Pass the Problem

1. Brainstorm Keywords

2. Pass the paper to another student - more keywords
Chalk Talk / Gallery Walk

**Nouns**
- Subject, objects
- (ing gerund)
- after preposition
- after articles (a, an)
- after modifiers (few, some, little, a lot of)
- after possessive words (my, her, their, Mary’s)
- after adjs: “the teacher”

**Verbs**
- after subject
- ing endings (swimming, running)
- before prep phrase
- infinitive (to + vi)
- do, does, did/had, have
- vi
- after modals
- as imperatives

**Adjectives**
- before noun
- after “be” verb
- after Adv (emotion)

**Adj → N.**
- care, small
- pain
- Power
- beauty → beautiful
- friend → friendless
- meat → meatless

**N → Adj.**
- (full/less)
- care
- small
- pain
- Power
- beauty
- clear
- clear
- liquid → liquify
- person → personify
Pause Procedure

- Lecture Bursts
  - Pause to Process
- Pair - Share: compare notes
  - Anonymous Questions
Discussion Q 5: Think about…

Which one do you plan to try next time you teach?
Questions?
Recommended Reading:


Thank you!

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