

# Resident-as-Teacher Program for General Surgery Residents

Presenter Name

# Session 1 – Foundation in Education Theory and Goals

# Activity 1

- Survey
- Quiz

# Activity 2

- Group discussion

Teaching doesn't seem to be inherent to the culture of surgery. There were a few good teachers, but for the most part, students are seen more as a service to the team than as people who are present to learn.

# Teaching in Residency

- Residents spend 10-25% of their time teaching
- Residents believe teaching is one of their primary responsibilities
- Medical students report 30-40% of what they learn is taught by residents

# Teaching in residency

- Good teaching and role-modeling by surgical residents
  - Improves student's performance
  - Improves clerkship experience
  - Prompts students to apply for surgical residency

# Teaching in residency

- Well beyond medical students
  - Interns
  - Junior residents
  - Peers
  - Faculty
  - Patients
  - ...



# Regulatory Bodies

- Liaison Committee on Medical Education
  - Residents [...] who supervise or teach medical students [should be] **familiar with the learning objectives of the course or clerkship** and **are prepared for their role in teaching and assessment**
  - **Resources to enhance the residents' teaching and assessment skills [are provided]**

# Regulatory Bodies

- Accreditation Council for Graduate Medical Education
  - Teaching is a Milestone
  - In the first iteration
    - Practice-based Learning and Improvement 1 – Teaching
  - In the current iteration
    - Patient Care 2: Performance of Procedures – Teaches [...] operations to [...] junior residents
    - Practice-based Learning and Improvement 2: Reflective Practice and Commitment to Personal Growth – Coaches others in the design and implementation of learning plans

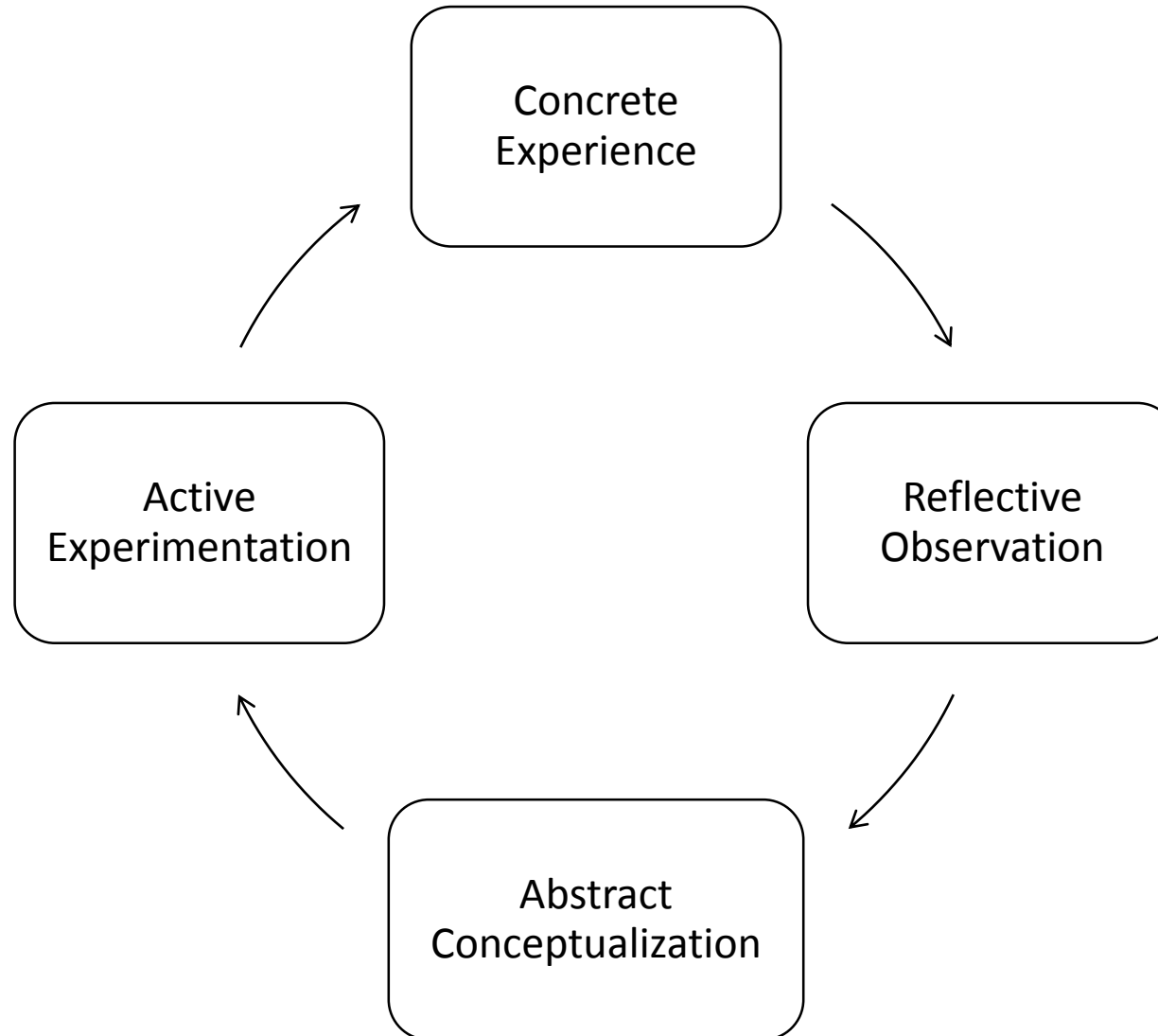
# Activity 3

- Review of adult learning theory and motivation

# Adult Learners and the Learning Process

- Learning –
  - Acquisition of KNOWLEDGE, SKILLS, and ATTITUDES

# Adult Learning Model- Kolb's Learning Cycle



# Principles of Andragogy

- ADULTS
  - have experience and knowledge
  - have established values, beliefs, opinions
  - expect to be treated as adults
  - want to know applicability of material
  - have a problem-centered approach
  - have different learning styles

# Harnessing how Adults Learn

- Build on previous knowledge
- Set expectations
- Create supportive environment
- Allow active participation
- Use a 'need-to-know' factor

# Motivation

- Motivation to learn is related to
  - The expectation of success
    - Define the learning context
    - Outline expectations for performance
    - Clarify goals
      - Your own
      - The learners'
  - The value of success
    - Assessment is a powerful motivator
      - Evaluate what is important
    - Provide feedback on progress
    - Build competence
      - Experiential learning
      - Entrustment



# Activity 4

- Clerkship curriculum review

# Medical Student Clerkship Curriculum

- Clerkship objective
- Role of the medical student
- Skills students are expected to be able to perform at the completion of the clerkship
  - Cognitive (i.e. gather a complete history; give an organized presentation)
  - Procedural (i.e. knot tying)
- Topics of instruction

# Resident Role and Evaluation of Resident Teaching

# Session 2 – Practical Tips for Teaching Outside of the Operating Room

# Activity 1

- Exploring the learning environment

# Learning climate - Tone and atmosphere of the learning environment

- Physical environment
- Organization
- Relationships
- Delivery of content

# Activity 2

- Clinical teaching models

# Micro-skills Model

- Get a commitment
  - Encourages processing of information
    - “What do you think?”
    - “What should we do next?”
- Probe for supporting evidence
  - Reveals knowledge base
    - “What led you to this conclusion?”
- Teach general rules
  - Allows transfer to other scenarios
- Reinforce what was done right
  - Rewards competencies
  - Comment on behaviors that can be consciously repeated
- Correct mistakes
  - Identifies areas for improvement
  - Help develop a plan for remediation



# Learner-centered Model SNAPPS

Ask learner to

- Summarize history and findings
- Narrow differential to two or three possibilities
- Analyze differential by comparing and contrasting the possibilities
- Probe preceptor regarding
  - Uncertainties
  - Difficulties
  - Alternative approaches
- Plan management for the patient's medical issues
- Select case-related issue for self-directed learning

# Activity 3

- Role-play

# Activity 4

- Mini-lectures

# Mini lectures

- What they are
  - Interactive lectures
  - Based on visuals
  - 1-3 minutes
  - Covering a single topic
- Topic selection
  - Reflect on clinical service
  - Use topics you are asked to present
  - Recurrent problems/questions
- How
  - Write down learning objectives and critical facts
  - Develop figures
- Deliver
  - Be brief
  - Share your memory aids

# Activity 5

- Reflection piece

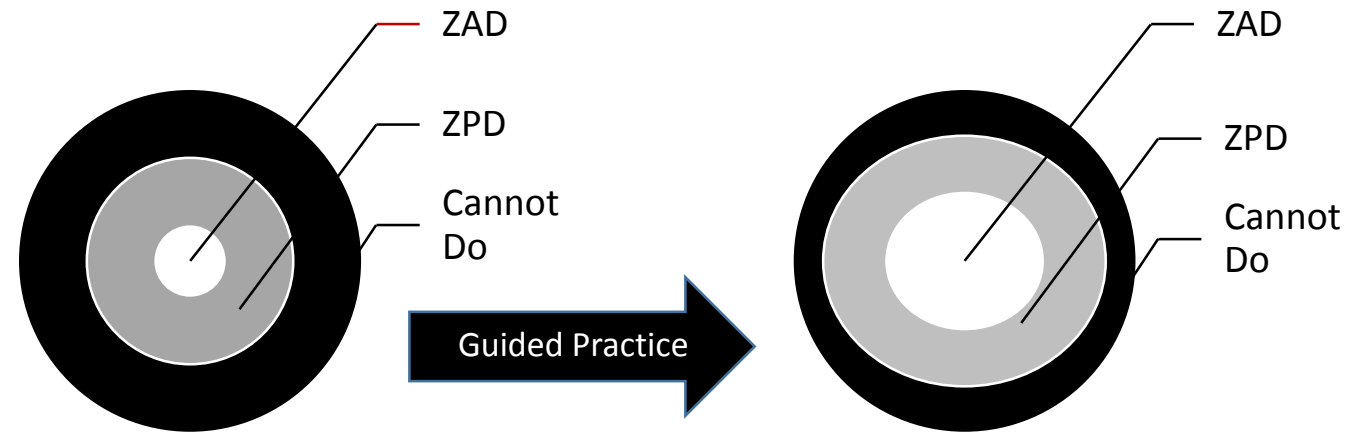
# Session 3 – Practical Tips for Teaching Procedural Skills and Teaching in the Operating Room

# Activity 1

- Review of theoretical framework of skill development

# Vygotsky

- Zone of Actual Development (ZAD)
  - Skills already developed or achieved
- Zone of Proximal Development (ZPD)
  - Skills attainable through guidance and collaboration





# Cognitive Apprenticeship

- Learning through guided experience
  - Transfer of 'expert practice'
  - Expert performance is made explicit

# Cognitive Apprenticeship - Content

- Domain knowledge
  - Factual knowledge
  - Information needed to understand and complete the task
- Strategic knowledge
  - Tips and tricks
  - Heuristics

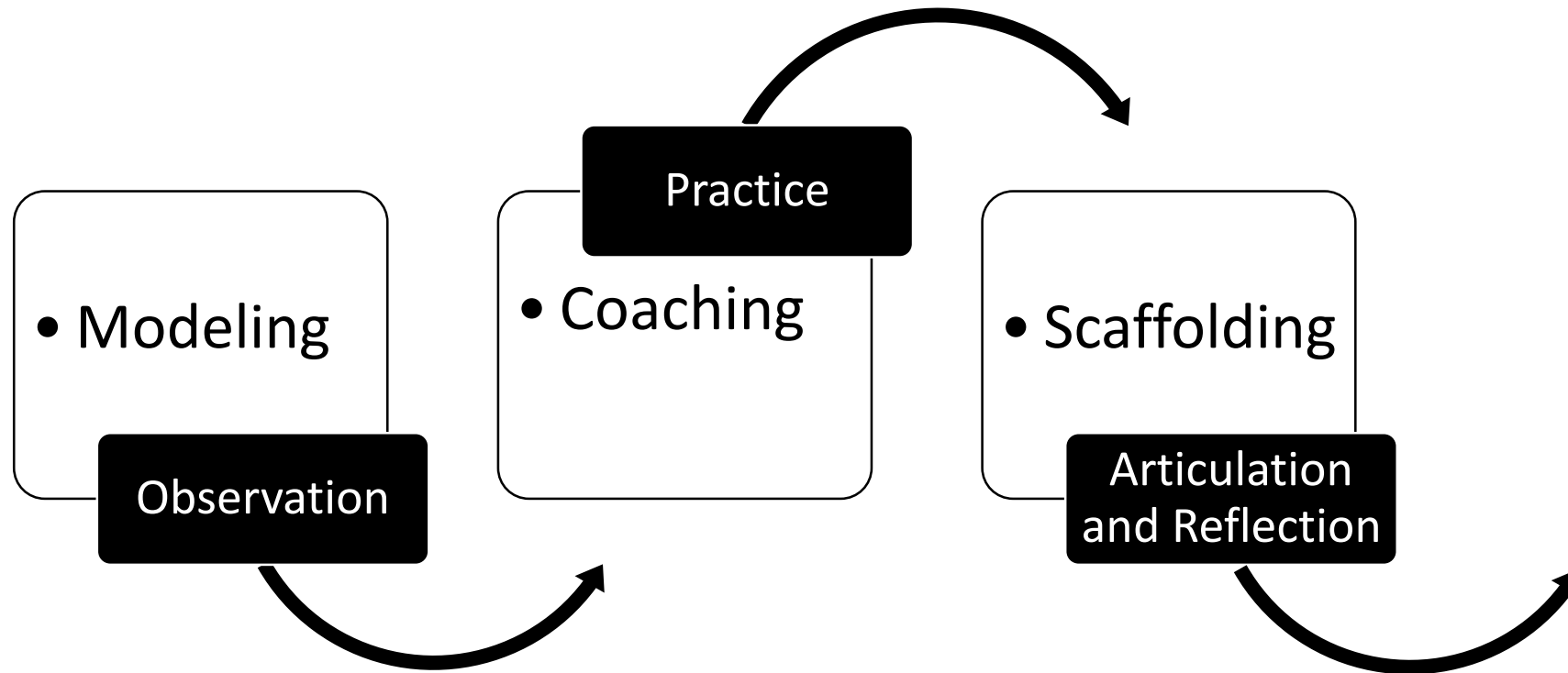
# Cognitive Apprenticeship - Context

- Situated
    - Real world experience
    - Active
    - Authentic
  - Community of practice
    - Integration
  - Proximity
    - Peripheral participation
- ➡ Guided participation

# Cognitive Apprenticeship - Sequence

- Provide an overview
- Break down tasks
- Match tasks to ability level
- Increase task complexity and diversity with increasing experience

# Cognitive Apprenticeship - Methods



# Complex Learning Theory

- Develop a Mental Set
  - Read; Review; Reflect
- Deconstruct Complex Tasks
  - Identify components
- Vertical Transfer
  - Develop; Build
- Deliberate Practice
  - Repetition
- Graduated Responsibility
  - Observe -> Assist -> Lead

# Activity 2

- Demonstration of skill teaching

# Activity 3

- The Briefing – Intra-operative Teaching – Debriefing Model



# Briefing – Intraoperative Teaching – Debriefing

Stage	Step
Briefing	Set learning objectives
Intraoperative Teaching	Teaching Anchored in discussed objectives
Debriefing	Reflection Rules Reinforcement Correction

# Activity 4

- Reflection piece

# Session 4 – Feedback and Evaluation

# Activity 1

- Discuss examples of comments to medical students in evaluations
- Review features of high quality feedback
- Review formative and summative evaluation

# Feedback is

- Information about performance
  - Informative
  - Neutral
  - Based in observable (and changeable) behaviors
  - Guide for improvement

# Feedback should be

- Planned
- Identified
- Delivered in a safe space
- Started with learner self-assessment
- Specific
- Actionable
- Manageable
- Verified
- Followed up

# Formative Evaluation

- Formative evaluation helps guide learning and instruction by providing immediate student feedback while learning happens
  - Frequent
  - Low stakes
  - Identifies strengths and weaknesses
  - Monitors progress

# Summative Evaluation

- Summative evaluation establishes what has been learned
- Infrequent
- High stakes
- Measures mastery of material
- Benchmarks performance
- 'Dean's Letter'



# Evaluation

- Formative evaluation
  - What learner does well and needs to work on
  - Based on direct observation
  - Coupled to action plan for improvement
- Summative evaluation
  - What learner can do relative to what is expected
  - Based on multiple observations
  - Reflect the goals of the learning opportunity
  - Documents mastery and deficiencies

# (Hidden) Benefits of Evaluation

- Extrinsic
  - Assessment drives learning
- Intrinsic
  - Testing enhances learning

# Activity 2

- Observation and evaluation

# RIME

- **Reporter**
  - Good interpersonal skills
  - Gathers and communicates clinical findings
  - Information is accurate and reliable
- **Interpreter**
  - Prioritizes problems and generates differential diagnosis
  - Selects follow up tests
- **Manager**
  - Decides when and what action needs to be taken
  - Demonstrates appropriate technical skills
  - Considers resources
  - Considers patient preferences
- **Educator**
  - Educates self and others
  - Critically applies knowledge to care of specific patients

# Mini Clinical Examination Exercise (mini-CEX)

- Evaluation of clinical skills on 9-point Likert scale with anchors Unsatisfactory (1-3), Satisfactory (4-6), and Superior (7-9)
- Skills
  - Medical interviewing
  - Physical examination
  - Humanistic qualities/professionalism
  - Clinical judgement
  - Counseling skills
  - Organization/efficiency
  - Overall clinical competence
- Free-format comments

# Activity 3

- Role playing exercise

# Activity 4

- Approaching the difficult learner

# Difficult Learner

- A learner who does not appear to be eager, willing, or able to learn



# Managing the Difficult Learner

- Subjective
  - What made you think there is a problem?
    - Tardy?
    - Aggressive?
    - Slow?
    - Disinterested?
  - Has anyone else observed the problem behavior?
- Objective
  - Document specific problematic behaviors
  - Document specific instances when behavior(s) occurred
- Assessment
  - What is the possible explanation for the problem? Learner? Content? Teacher?
- Plan
  - Gather more data, including speaking to the learner
  - Provide feedback on what has been observed and suggestions for improvement
  - Get help...

# Diagnosing the Difficult Learner

- Cognitive
  - Knowledge deficit
  - Dyslexia
  - Communication problems
  - Lack of effort
- Affective
  - Anger
  - Fear
- Valuative
  - Expects a specific role
  - Does not value rotation/work/teacher
  - Conflicting principles
- Environmental
  - Not time sensitive
  - Not patient-satisfaction oriented
- Clinical
  - Depression
  - Anxiety disorder
  - Illness, medial or psychiatric
  - Substance abuse

# Session 5 – Additional Skills and Curriculum Review

# Activity 1

- Review of each session

# Educational Theory

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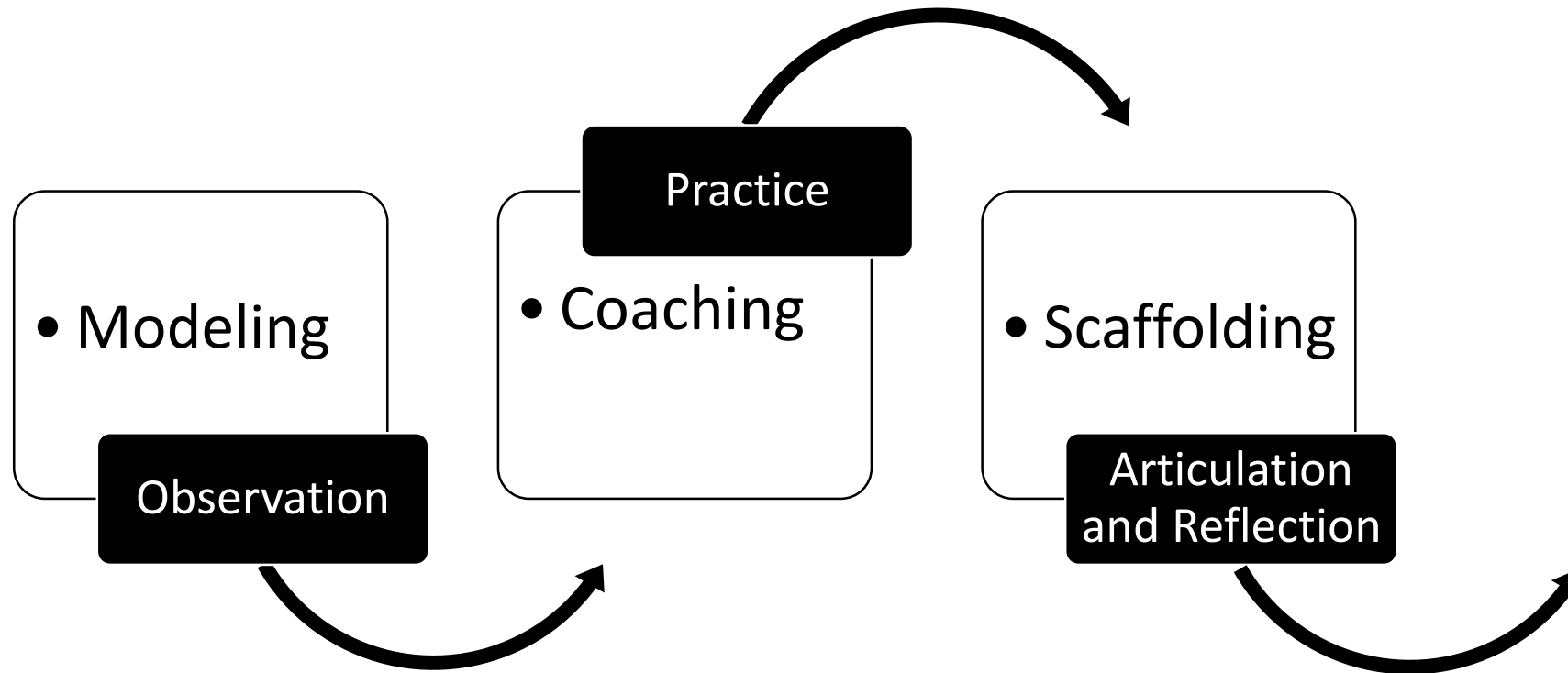
Technical Skills

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# Activity 2

- Review of entrustable professional activities (EPAs)
- Review of reading on teaching competencies and education-specific EPAs
- Reflection piece

# EPA Definition

- “Unit of professional practice that is independently executable, observable, and measurable in their process and outcome, and can be entrusted to the unsupervised execution of a [practitioner]”

# Educational Competencies

- Medical Knowledge
  - Teach content
  - Teach prioritization
  - Assess progress
  - Allow for graduated responsibility
- Learner Centeredness
  - Value learners
  - Foster a conducive learning environment
  - Identify learners' challenges
- Interpersonal and Communication Skills
  - Communicate your goals and expectations
  - Discuss learners' goals and expectations
  - Determine learners' prior knowledge and experience
- Professionalism and Role Modeling
  - Inspire learners
  - Set standards
  - Follow up on assigned tasks
- Practice-based Reflection and Improvement
  - Reflect on educational practice
  - Develop goals
  - Seek opportunities for skill development
- Systems-based learning
  - Utilize education resources
  - Interact with colleagues
  - Identify teaching resources
  - Build/adapt curricula

# Reflection

“Sustained and intentional process of identifying and checking the accuracy and validity of our own teaching assumptions.”

Informed by

Students

Colleagues

Personal experience

Theory

# Activity 3

- Survey