Learning Objectives

• Compare and contrast the differences between a teaching paradigm and a learning paradigm.
• Construct learner-centered learning experiences.
• Assess the effectiveness of learning experiences.

Introductions/Icebreaker

• Turn to the person on your left/right and introduce yourself.
• You have 1 minute to ask:
  – What rotation do you precept?
  – What organization are you from?
  – How long have you been a preceptor?

Getting to Know You Better

With a show of hands:
• How many of you are new preceptors (<1 year of experience)?
• How many have precepted for 1-5 years?
• For >5years?
• How many of you have a teaching degree?

Self-Assessment

• On a scale of 1 to 10 (10 being best), how would you rate yourself on:
  – Your ability to optimize a learning experience
  – Your use of active learning strategies
  – Your ability to assess the effectiveness of your teaching

Disclosures

Neither Chris nor John have (nor does any immediate family member have) a vested interest in or affiliation with any corporate organization offering financial support or grant monies for this continuing education activity, or any affiliation with an organization whose philosophy could potentially bias my presentation.
For the next 75 minutes…
• Think of the best, most effective, most memorable teacher you ever had.
• What 3 characteristics about them did you find most valuable?

Objective 1: Teaching vs. Learning Paradigms

A Brief History of Pharmacy Education - Evolution of Pharmacist Roles

Evolution of Pharmacist Roles

Preparing & dispensing drugs
Evidence-based therapeutics
Cognitive services
Collaborative services
Integrated healthcare teams
Pharmaceutical care

What do pharmacy students/residents look for in an excellent preceptor?
• The most important factors were:
  – Serving as a role model
  – Showing an interest in teaching
  – Relating to the student as an individual

Teaching vs. Learning

Teaching
• Akin to filling a vessel

Learning
• Akin to lighting a fire

Adult learning is best when...

- Perceived as relevant & based on the learner’s perceived needs
- Based on or augments previous experiences
- Problem-focused
- Self-directed
- Applied immediately, if possible
- Uses cycles of action and reflection
- Based on trust and respect


Teaching vs. Learning

From a teaching perspective → passive learning

From a learning perspective → active learning

“Think out loud.”

Experiential Learning

- It’s all about balance!
  - Cognitive and motivational goals
  - Between abstract or concrete concepts
  - Assist students to realize concepts and apply to “real-life” phenomena
- Student independence and preceptor supervision
  - Give enough time for students to learn from mistakes
  - Don’t let students become too frustrated that they start to lose motivation

McKeachie’s Teaching Tips

Case 1

- Day 1 Orientation for Drug Information Rotation PGY1 residency
  - Introduced myself and reviewed the syllabus with resident
  - Established expectations
  - Shared resources and P&T formats with resident
  - Reviewed electronic drug information retrieval methods

Audience Participation

- Was this a teaching paradigm or a learning paradigm?
- Describe a different approach to optimizing the orientation experience.

Hint: Adult learning is best when...

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Assessment Question #1 (polling question)
Which is an example of a teaching paradigm?
- Lectures
- Topic discussions
- Case studies
- Roundtable discussions

Ponder This (Objective #1)
Tips:
- Develop a fiduciary relationship with your student
- Set clear goals and expectations for your student, show them how to achieve those goals and provide guidance, feedback, and reflection
- Eschew paternalism; actively listen to them (what are their expectations?)

Objective 2:
Construct learner-centered learning experiences

Creating a learning environment
- First, ask yourself...
  – What is the purpose of my rotation?
  – What are its goals and objectives?
  – How will my rotation meet these objectives?
  – How will I know if the objectives have been met?

Have you created a learning environment?
- Provide the student/resident with access to medical records and other resources
- Let student/resident know what he/she will be doing ahead of time
  – Communicate what you expect the student/resident to learn
- Schedule some time into the day in the morning and afternoon for teaching, review, and reflection.
- Consider ahead of time, interesting patients that will be coming in tomorrow that are opportunities for learning.

Establishing Expectations
- What are your expectations for students?
- What are their expectations for you?
- Are the expectations reasonable?
- Do your expectations change based on level of student experience (IPPE, APPE, resident)?
  Things to consider:
  – Previous student experiences and rotations
  – Current student interests
  – Future student plans after graduation
  – Utilize check-ins throughout (beginning, middle, end)
Active Listening

- "What interested you in this rotation/residency?"
- "What do you expect to get out of this rotation?"
- "What is your preferred style of learning?"

Example

- "What do you expect to get out of this rotation?"
  - "I want to be able to evaluate a clinical trial more efficiently, in the interest of time, while still being comprehensive in my review of it. And I'd like to feel more comfortable with statistics and study design."
- "What is your preferred style of learning?"
  - "I would have to say, a converger, though I am concerned with others' feelings, too."

Audience Participation (polling question)

What is your learning style?
- Accommodator – “feel & do”
- Diverger – “feel & watch”
- Converger – “think & do”
- Assimilator – “think & watch”

Learning Styles

- A survey of 29 Canadian pharmacy residents and 185 faculty members:
  - Residents
    - Assimilators, then convergers, then a combination of both (90%)
  - Faculty members
    - Assimilators, then convergers, then a combination of both (93%)

Establishing Inclusion

- Create a positive learning atmosphere
- Convey respect to students
- Connect with students by conveying confidence and trust through collaborative learning
- Have residents/students participate in projects
- Discuss patient cases and brainstorm alternative treatment plans
- Have residents/students lead topic discussions
Developing a Positive Attitude

- Personal relevance, a key ingredient in developing positive attitude
- “[T]he emotional nutrient for positive attitude toward learning”
- Discuss purpose of activity or assignment with student upfront
- Have several pointers on current and future relevance

One-Minute Preceptor Model

Get a commitment

Ask open-ended questions to student

Encourage student to commit to an assessment

Probe for supporting evidence

“What led you to that conclusion?”

Reinforce what the student did correctly

Very good summary, you did an excellent job____

“What is your plan?"

Correct mistakes

Deliver real-time feedback to student’s assessments

“We need to understand other underlying factors regarding____”

Teach general rules

Review contraindications

Distinguish what is recommended in current guidelines

Mold recommendations for patient-centered care


Active Learning Strategies

- Socratic dialogue
- Case studies
- Problem-based learning
- Journal Club
- Role-playing and simulations
- Others?

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Drug Consult (Audience Participation)

- A provider asks the resident if a medication their patient is on is the cause of their elevated liver enzymes.
- How could you make this a learner-centered learning experience?
Drug Consult (Audience Participation)

- Use the KWL method to start.
- Consider the One-Minute Preceptor Model
- Ask how they would approach this question.
- Use Socratic dialogue to stimulate critical thinking.
- Think out loud.
- Consider giving a tutorial on Drug Induced Liver Injury.

Ponder This (Objective #2)

- Before rotations, actively listen and discuss clear expectations and goals from both yourself and resident.
- Create a learning environment by establishing inclusion, being available, and providing resources/tools for success.
- Residents appreciate organized preceptors, rotations that are structured.
- Always consider the learner’s perspective.
- Practice active learning strategies.

Assessment Question #2 (polling question)

Which is an example of a learner-centered experience?

- Didactic instruction
- The KWL method
- Assuming expectations
- Reviewing syllabus

Objective 3: Assess effectiveness of learning experiences

How do you know if your charge is “getting it”?

Planning is Essential

- “If you don’t know where you’re going, you might wind up someplace else.” — Yogi Berra

What is Feedback?

- What feedback is NOT:
  - Encouragement, evaluation, or criticism
- Feedback should be a discussion between preceptor and student:
  - Driven by student, supplemented by preceptor
- Feedback structure – requires preparation and planning:
  - Timetable
  - Preparation
  - Discussion (strengths/weaknesses)
  - Goal setting
Assessment Planning

- Determine your assessment strategy ahead of time
  - Quiz, Socratic dialogue, observation, case study, topic discussion, role-playing, others
- Make adequate time for the assessment
  - Including timely feedback
- Does it align with your goals and objectives?
- Does it align with your KWL process?

Critical Thinking

- Association of American Colleges and Universities
- “Critical thinking is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion.”

Critical Thinking Tips

- Critical thinking is a general skill that can be developed for use within the practice of pharmacy.
- We should link learning experiences to specific critical thinking skills that can be assessed.
- We should foster critical thinking skills in all areas of the student’s present and future life including, but not limited to, clinical issues specific to pharmacy.

Effective methods to develop critical thinking skills tend to be:

- Learner-focused
- Inquiry-based
- Reflective in nature
- May be group processed

Formulating Questions as a Teaching Tool

- Convergent questions
  - Closed, converges on a single or narrow list of “best” answers
- Divergent questions
  - Open, having many responses, allows for the exploration of diverse perspectives, promotes dialogue

Cognitive Learning

<table>
<thead>
<tr>
<th>Knowledge (or Recall)</th>
<th>Comprehension</th>
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<td></td>
<td>Application</td>
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<td>Analysis</td>
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<td>Evaluation</td>
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- Remembering new facts
- Understanding the meaning of new information
- Applying knowledge to solve a problem
- Breaking down complex ideas to simpler parts and seeing how they relate
- Creating something new to solve a complex problem
- Judging the soundness of one’s own work and that of peers
Cognitive Learning Example:
Drug Information Sources

1. Recall
   - Identify drug information sources are accessed to answer clinical questions.
   - Name the 3 classifications of drug information resources.

2. Comprehension
   - Outline each of these drug information resource classes.
   - In other words, what kind of drug information question would prompt you to use each resource type.

3. Application
   - Illustrate how you would appropriately use each type of drug information resource.
   - In other words, what kind of drug information question would prompt you to use each resource type.

4. Analysis
   - Compare each resource type by their advantages and disadvantages.

5. Synthesis
   - Create a scenario by which you would use all 3 resource types on the same clinical question.

6. Evaluation
   - Justify your answer to question 5 above by logically outlining your thought process.
   - Provide an alternative approach to answering the clinical question.


Lower-order questions are asked more frequently

- 91 faculty members in classroom instruction asked 3,407 questions.
  - 68.9% were lower-level questions
- During practice-based experience clinical instructors asked lower-level questions 91.2% of the time.


Socratic Dialogue

- Students are asked questions, hoping to get to a higher level of understanding
- It helps keep students more engaged in their learning experience
- It can be used to assess whether or not students read the material
- Importantly, it helps the instructor assess the quality of the student’s thinking

Socratic Dialogue Example

- Why did they choose a non-inferiority study design?
- Would you have done a placebo-controlled trial for this study?
- Why not?
- How do you determine the appropriateness of their non-inferiority design methods?
- How do you determine non-inferiority statistically?
- Can you determine superiority from a non-inferiority design?

Other Assessment Techniques

- Discussions during case studies
- Role playing and simulations
- Journal Club
- Problem-based discussions
- Peer review (e.g., P&T assignments)
- Quizzes
- Others?

Drug Consult (Example)

Audience Participation

- A provider asks the resident if a medication their patient is on is the cause of their elevated liver enzymes.

- How could you assess the effectiveness of the resident’s learning experience?
Choose an assessment method:

- Quiz?
- Socratic dialogue?
- Observation?
- Case study?
- Topic discussion?
- Others?
- Formulate effective convergent and divergent questions ahead of time, being mindful of cognitive domains

Consider this…

- Take to heart what your resident tells you in their evaluation of you.
  - What worked well
  - What was most valuable to them
  - What they would have liked to see more of (less of)

Resident Comments

- Positive
  - I really like that you are organized and structured
  - I appreciate that you’re always available to me
  - I appreciate detailed timelines on assignments ahead of time
  - I appreciate that you do “check-ins” with me on how my life is going in residency
- Negative
  - I would like more tutorials and topic discussions
  - Sometimes it seems preceptors are unaware of what other preceptors have assigned me and it makes time management difficult
  - I’d like more feedback on how I can improve my preceptor skills

Objective 3: Audience participation

- Sharing personal experiences as preceptor, how do you assess the effectiveness of their learning experience?

Ponder This (Objective #3)

- Determine your assessment strategy ahead of time
  - Quiz, Socratic dialogue, observation, case study, topic discussion, role-playing, others
- Develop convergent and divergent questions
- Stress learner-focused, inquiry-based experiences that are reflective in nature and in line with your goals and objectives

Post-Assessment Question #1 (polling question)

Which is an example of a teaching paradigm?

- Lectures
- Topic discussions
- Case studies
- Roundtable discussions

Answer: A
Post-Assessment Question #2 (polling question)
Which is an example of a learner-centered experience?

- Didactic instruction
- The KWL method
- Assuming expectations
- Reviewing syllabus

Answer: B

Post-Assessment Question 3 (polling question)
Which is key to optimally assessing the quality of a resident’s critical thinking?

- Ask didactic questions
- Review formulary
- Develop fiduciary relationship
- List assignments

Answer: C

Key Takeaways

- Key Takeaway #1
  - Creating a learning paradigm involves developing a fiduciary relationship with your student through active listening and setting mutually agreed upon goals and expectations.

- Key Takeaway #2
  - Constructing a learner-centered learning experience involves identifying the student's learning styles and creating a positive environment that establishes inclusion and identifies the student's intrinsic motivations. (One-minute preceptor model, KWL method)

- Key Takeaway #3
  - Assessing the effectiveness of student's learning experiences involves preparing assessment strategies, establishing how the assessment will be performed, and being mindful of convergent and divergent questions.

Questions?

References