

Preceptor Development: Effective Assessment of Learner Performance

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The presenters have nothing to disclose.

Objectives

- ▶ Describe the 6 different levels within Bloom's Taxonomy (cognitive domain).
- ▶ List 2 appropriate verbs that can be used at each level when writing objectives.
- ▶ Design an inpatient or outpatient learning activity that can help a student complete a higher level objective according to Bloom's Taxonomy (analysis, synthesis, or evaluation).
- ▶ Describe 2 strategies or tools that can be effective in assessing a learner's performance.
- ▶ Describe 3 characteristics of effective learning activities and 3 characteristics of ineffective learning activities from a learner's perspective.

Outline

- ▶ What is Effective Assessment?
- ▶ Bloom's Taxonomy
- ▶ Learning Activities
- ▶ Preceptor Roles
- ▶ Assessment Strategies/Tips/Tools
- ▶ Learner's Perspective

Effective Assessment

- ▶ What is it?
- ▶ No crying?
- ▶ No conflict?
- ▶ An “A” grade or “Goal Achieved”?
- ▶ Balance between learning and feedback to help the learner:
 - ▶ Understand how they can improve their skills
 - ▶ Become a lifelong learner and self-evaluator
 - ▶ Become more independent, confident in role as pharmacist
 - ▶ Resulting in improvement in patient care

Effective Assessment

- ▶ Connection between:
 - ▶ Appropriate learning activities for the objectives
 - ▶ Right preceptor role for the learner and the situation
 - ▶ Appropriate assessment strategy

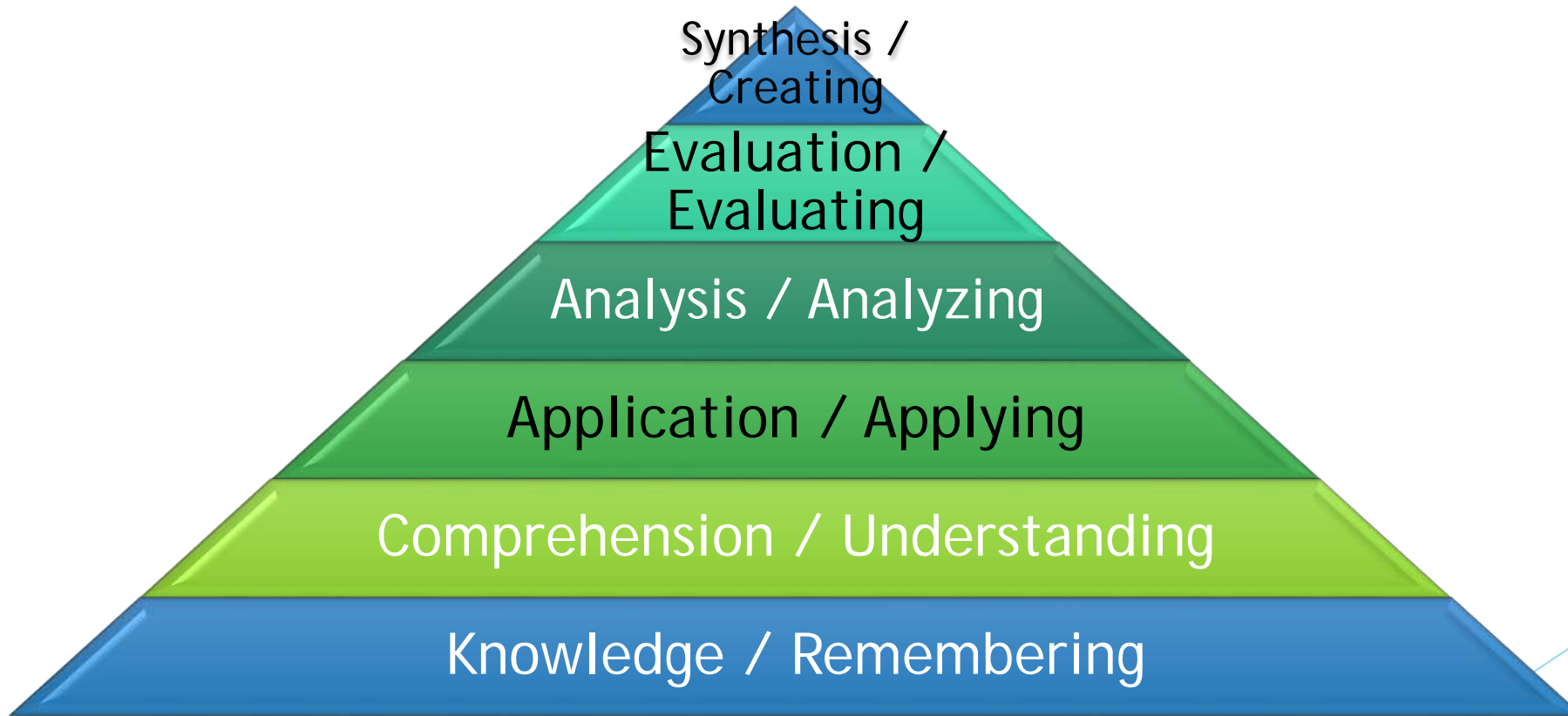
Outline

- ▶ What is Effective Assessment?
- ▶ **Bloom's Taxonomy**
- ▶ Learning Activities
- ▶ Preceptor Roles
- ▶ Assessment Strategies/Tips/Tools
- ▶ Learner's Perspective

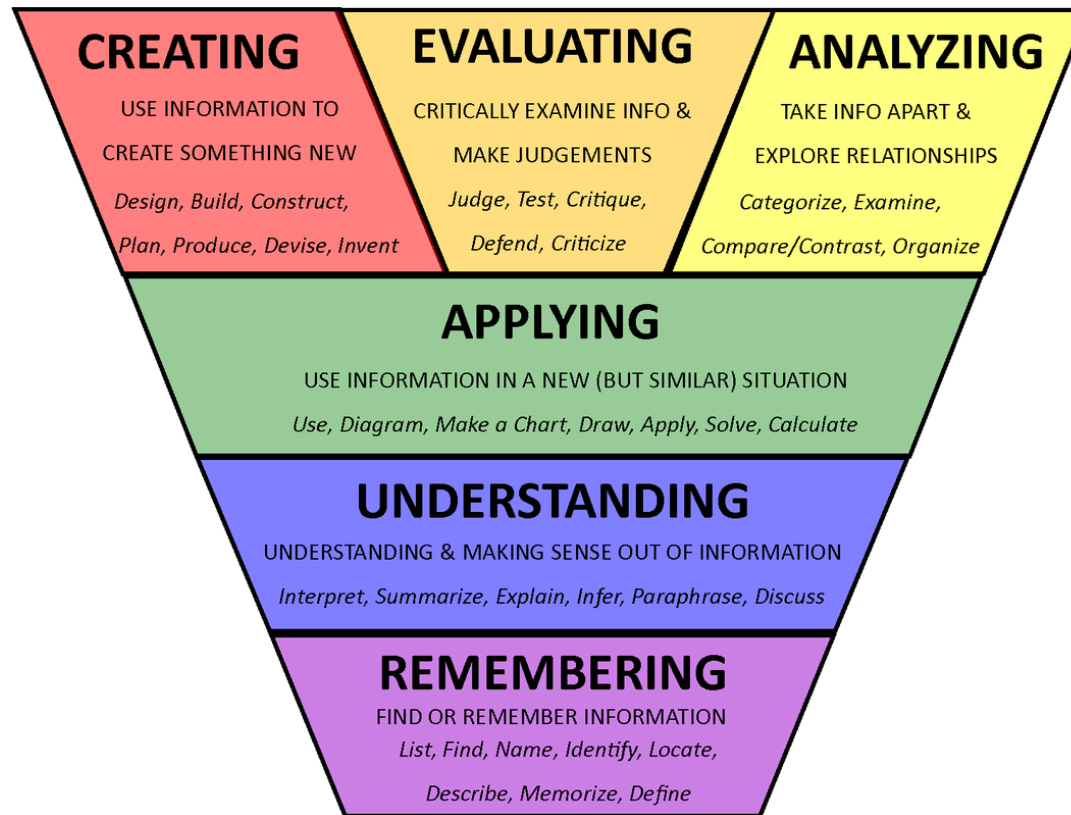
Bloom's Taxonomy

- ▶ Classification of learning objectives
- ▶ Cognitive, Affective, Psychomotor domains

Bloom's Taxonomy



Bloom's Taxonomy



Knowledge

Recall /regurgitate facts without understanding. Exhibits previously learned material by recalling facts, terms, basic concepts and answers.

Comprehension

To show understanding finding information from the text. Demonstrating basic understanding of facts and ideas.

Application

To use in a new situation. Solving problems by applying acquired knowledge, facts, techniques and rules in a different way.

Analysis

To examine in detail. Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalisations.

Synthesis

To change or create into something new. Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.

Evaluation

To justify. Presenting and defending opinions by making judgements about information, validity of ideas or quality of work based on a set of criteria.

Key words:

- Choose
- Copy
- Define
- Duplicate
- Find
- How
- Identify
- Label
- List
- Listen
- Locate
- Match
- Memorise
- Name
- Observe
- Omit
- Quote
- Read
- Recall
- Recite
- Recognise
- Record
- Relate
- Remember
- Repeat
- Reproduce
- Retell
- Select
- Show
- Spell
- State
- Tell
- Trace
- What
- When
- Where
- Which
- Who
- Why
- Write

Key words:

- Ask
- Cite
- Classify
- Compare
- Contrast
- Demonstrate
- Extend
- Generalise
- Give examples
- Illustrate
- Indicate
- Infer
- Interpret
- Match
- Observe
- Outline
- Predict
- Purpose
- Relate
- Rephrase
- Report
- Restate
- Review
- Show
- Summarise
- Translate

Key words:

- Act
- Administer
- Apply
- Associate
- Build
- Calculate
- Categorise
- Choose
- Classify
- Connect
- Construct
- Correlation
- Demonstrate
- Develop
- Dramatise
- Employ
- Experiment
- with
- Group
- Identify
- Illustrate
- Interpret
- Interview
- Link
- Make use of
- Manipulate
- Model
- Organise
- Perform
- Plan
- Practice
- Relate
- Represent
- Select
- Show
- Simulate
- Solve
- Summarise
- Teach
- Transfer
- Translate
- Use

Key words:

- Analyse
- Appraise
- Arrange
- Assumption
- Breakdown
- Categorise
- Cause and effect
- Choose
- Classify
- Differences
- Discover
- Discriminate
- Dissect
- Distinction
- Distinguish
- Divide
- Establish
- Examine
- Find
- Focus
- Function
- Group
- Highlight
- In-depth
- discussion
- Inference
- Inspect
- Investigate
- Isolate
- List
- Motive
- Omit
- Order
- Organise
- Point out
- Prioritize
- Question
- Rank
- Reason
- Relationships
- Reorganise
- Research
- See
- Select
- Separate
- Similar to
- Simplify
- Survey
- Take part in
- Test for
- Theme
- Comparing

Key words:

- Adapt
- Add to
- Build
- Change
- Choose
- Combine
- Compile
- Compose
- Construct
- Convert
- Create
- Delete
- Design
- Develop
- Devise
- Discover
- Discuss
- Elaborate
- Estimate
- Experiment
- Extend
- Formulate
- Happen
- Hypothesise
- Imagine
- Improve
- Innovate
- Integrate
- Invent
- Make up
- Maximise
- Minimise
- Model
- Modify
- Original
- Originate
- Plan
- Predict
- Produce
- Propose
- Reframe
- Revise
- Rewrite
- Simplify
- Solve
- Speculate
- Substitute
- Suppose
- Tabulate
- Test
- Theorise
- Think
- Transform
- Visualise

Key words:

- Agree
- Appraise
- Argue
- Assess
- Award
- Bad
- Choose
- Compare
- Conclude
- Consider
- Convince
- Criteria
- Criticise
- Debate
- Decide
- Deduct
- Defend
- Determine
- Disprove
- Dispute
- Effective
- Estimate
- Evaluate
- Explain
- Give reasons
- Good
- Grade
- How do we know?
- Importance
- Infer
- Influence
- Interpret
- Judge
- Justify
- Mark
- Measure
- Opinion
- Perceive
- Persuade
- Prioritise
- Prove
- Rate
- Recommend
- Rule on
- Select
- Support
- Test
- Useful
- Validate
- Value
- Why

Actions:

- Describing
- Finding
- Identifying
- Listing
- Locating
- Naming
- Recognising
- Retrieving

Outcomes:

- Definition
- Fact
- Label
- List
- Quiz
- Reproduction
- Test
- Workbook
- Worksheet

Actions:

- Classifying
- Comparing
- Exemplifying
- Explaining
- Inferring
- Interpreting
- Paraphrasing
- Summarising

Outcomes:

- Collection
- Examples
- Explanation
- Label
- List
- Outline
- Quiz
- Show and tell
- Summary

Actions:

- Carrying out
- Executing
- Implementing
- Using

Outcomes:

- Demonstration
- Diary
- Illustrations
- Interview
- Journal
- Performance
- Presentation
- Sculpture
- Simulation

Actions:

- Attributing
- Deconstructing
- Integrating
- Organising
- Outlining
- Structuring

Outcomes:

- Abstract
- Chart
- Checklist
- Database
- Graph
- Mobile
- Report
- Spread sheet
- Survey

Actions:

- Constructing
- Designing
- Devising
- Inventing
- Making
- Planning
- Producing

Outcomes:

- Advertisement
- Film
- Media product
- New game
- Painting
- Plan
- Project
- Song
- Story

Actions:

- Attributing
- Checking
- Deconstructing
- Integrating
- Organising
- Outlining
- Structuring

Outcomes:

- Abstract
- Chart
- Checklist
- Database
- Graph
- Mobile
- Report
- Spread sheet
- Survey

Questions:

- Can you list three ...?
- Can you recall ...?
- Can you select ...?
- How did _____ happen?
- How is ...?
- How would you describe ...?
- How would you explain ...?
- How would you show ...?
- What is ...?
- When did ...?
- When did _____ happen?
- Where is ...?
- Which one ...?
- Who was ...?
- Who were the main ...?
- Why did ...?

Questions:

- Can you explain what is happening . . . what is meant . . .?
- How would you classify the type of ...?
- How would you compare ...?contrast ...?
- How would you rephrase the meaning ...?
- How would you summarise ...?
- What can you say about ...?
- What facts or ideas show ...?
- What is the main idea of ...?
- Which is the best answer ...?
- Which statements support ...?
- Will you state or interpret in your own words ...?

Questions:

- How would you use...?
- What examples can you find to ...?
- How would you solve _____ using what you have learned ...?
- How would you organise _____ to show ...?
- How would you show your understanding of ...?
- What approach would you use to...?
- How would you apply what you learned to develop ...?
- What other way would you plan to ...?
- What would result if ...?
- Can you make use of the facts to ...?
- What elements would you choose to change ...?
- What facts would you select to show ...?
- What questions would you ask in an interview with ...?

Questions:

- What are the parts or features of ...?
- How is _____ related to ...?
- Why do you think ...?
- What is the theme ...?
- What motive is there ...?
- Can you list the parts ...?
- What inference can you make ...?
- What conclusions can you draw ...?
- How would you classify ...?
- How would you categorise ...?
- Can you identify the difference parts ...?
- What evidence can you find ...?
- What is the relationship between ...?
- Can you make a distinction between ...?
- What is the function of ...?
- What ideas justify ...?

Questions:

- What changes would you make to solve...?
- How would you improve ...?
- What would happen if...?
- Can you elaborate on the reason...?
- Can you propose an alternative...?
- Can you invent...?
- How would you adapt _____ to create a different...?
- How could you change (modify) the plot (plan)...?
- What could be done to minimise (maximise)...?
- What way would you design...?
- Suppose you could _____ what would you do...?
- How would you test...?
- Can you formulate a theory for...?
- Can you predict the outcome if...?
- How would you estimate the results for...?
- What facts can you compile...?
- Can you construct a model that would change...?
- Can you think of an original way for the ...?

Questions:

- Do you agree with the actions/outcomes...?
- What is your opinion of...?
- How would you prove/disprove...?
- Can you assess the value/importance of...?
- Would it be better if...?
- Why did they (the character) choose...?
- What would you recommend...?
- How would you rate the...?
- What would you cite to defend the actions...?
- How would you evaluate ...?
- How could you determine...?
- What choice would you have made...?
- What would you select...?
- How would you prioritise...?
- What judgement would you make about...?
- Based on what you know, how would you explain...?
- What information would you use to support the view...?
- How would you justify...?
- What data was used to make the conclusion...?

Bloom's Taxonomy: Teacher Planning Kit

Objectives- How did we do?

- ▶ Describe the 6 different levels within Bloom's Taxonomy (cognitive domain).
- ▶ List 2 appropriate verbs that can be used at each level when writing objectives.
- ▶ Design an inpatient or outpatient learning activity that can help a student complete a higher level objective according to Bloom's Taxonomy (analysis, synthesis, or evaluation).
- ▶ Describe 2 strategies or tools that can be effective in assessing a learner's performance.
- ▶ Describe 3 characteristics of effective learning activities and 3 characteristics of ineffective learning activities from a learner's perspective.

Bloom's Taxonomy

- ▶ Differences between student and resident learners?
- ▶ Preceptor role, number of repetitions, type of activity may be different, but goal is the same

Outline

- ▶ What is Effective Assessment?
- ▶ Bloom's Taxonomy
- ▶ **Learning Activities**
- ▶ Preceptor Roles
- ▶ Assessment Strategies/Tips/Tools
- ▶ Learner's Perspective

Learning Activities

- ▶ Designing Learning Activities
 - ▶ Read the objective closely
 - ▶ Think about your practice site and what can be done efficiently and effectively by the learner to achieve the objective
 - ▶ Qualitative: Specific and detailed enough to assure learner will achieve linked objectives and competence
 - ▶ Quantitative: Need for repetition should be considered to achieve objective and competence
 - ▶ Activities should be designed (i.e., sufficient scope, depth and type) to assure that the learner will achieve the required cognitive level for each assigned objective

Learning Activities

- ▶ From Concordia University Wisconsin (CUW) Advanced Pharmacy Practice Experience (APPE) Learning Objectives
 - ▶ Formulate and implement patient-specific, evidence-based patient care and monitoring plans.
 - ▶ You practice at a site where you don't have access to an EHR and uptick of your Comprehensive Medication Reviews (CMRs) has been slow
 - ▶ There are 2 patients scheduled when the student is on site
 - ▶ You decide to lead the first visit and have the student lead the second.
 - ▶ Things do not go well since the second patient was fairly complex and this was the student's first rotation

Learning Activities

- ▶ From CUW APPE Learning Objectives
 - ▶ Identify drug-related problems and provide appropriate resolution and documentation.
 - ▶ Each day you have a different drug information question for the student at your site.

Learning Activities

- ▶ From CUW APPE Learning Objectives
 - ▶ Create appropriate educational tools for a diverse patient population.
 - ▶ At your practice site you must use health-system or company sponsored patient educational tools. Rather than waste your student's time on creating something new that will never be used, you tell him/her to look at the approved educational sheets online and describe in which scenarios he/she would use them.

Learning Activities

- ▶ From CUW APPE Learning Objectives
 - ▶ Participate in the allocation of key resources and supervision of pharmacy technical staff, as appropriate, at the pharmacy practice site.
 - ▶ What does “participate in” mean?
 - ▶ Should the student attend a meeting with administration discussing personnel/workflow?
 - ▶ Should the student direct the work of the technicians when working with them?
 - ▶ Should the managing pharmacist and student have a discussion about how staffing is allocated based on prescription or order volume?
 - ▶ All may work, if there is time for self-reflection or discussion to assess student learning

Learning Activities

- ▶ From ASHP Post Graduate Year One (PGY1) Competencies, Goals, Objectives
- ▶ **Objective 2.1.4: (Applying) Participate in medication event reporting and monitoring.**

Criteria:

- Effectively uses currently available technology and automation that supports a safe medication-use process.
- Appropriately and accurately determines, investigates, reports, tracks and trends adverse drug events, medication errors and efficacy concerns using accepted institutional resources and programs
- ▶ At your site the resident meets with the pharmacist in charge of reviewing medication error reports or adverse drug events and listens to a 30 minute lecture on medication errors

Learning Activities

- ▶ From ASHP PGY1 Competencies, Goals, Objectives
- ▶ **Objective R1.1.6: (Applying) Ensure implementation of therapeutic regimens and monitoring plans (care plans) by taking appropriate follow-up actions.**
 - ▶ At your practice site the resident gets a lot of experience with developing therapeutic plans for patients. However, there is not a lot of communication with the physician-led teams, so most of the recommendations are on paper and plans don't always get followed, or followed-up on by the pharmacists. The resident does no follow-up.

Learning Activities

- ▶ From ASHP PGY1 Competencies, Goals, Objectives
- ▶ **Objective R2.1.1 (Creating) Prepare a drug class review, monograph, treatment guideline, or protocol.**
 - ▶ The particular month the resident is with you on rotation there are no new reviews, etc... to work on so rather than create one that isn't needed you have the resident review a protocol from last month and make suggestions for improvement.

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- ▶ Learning Activities
- ▶ **Preceptor Roles**
- ▶ Assessment Strategies/Tips/Tools
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Preceptor Roles

- ▶ You've designed the perfect learning activity, but it can still fall flat.
- ▶ How do you ensure the learning and assessment experience is effective?
- ▶ The valuable preceptor!

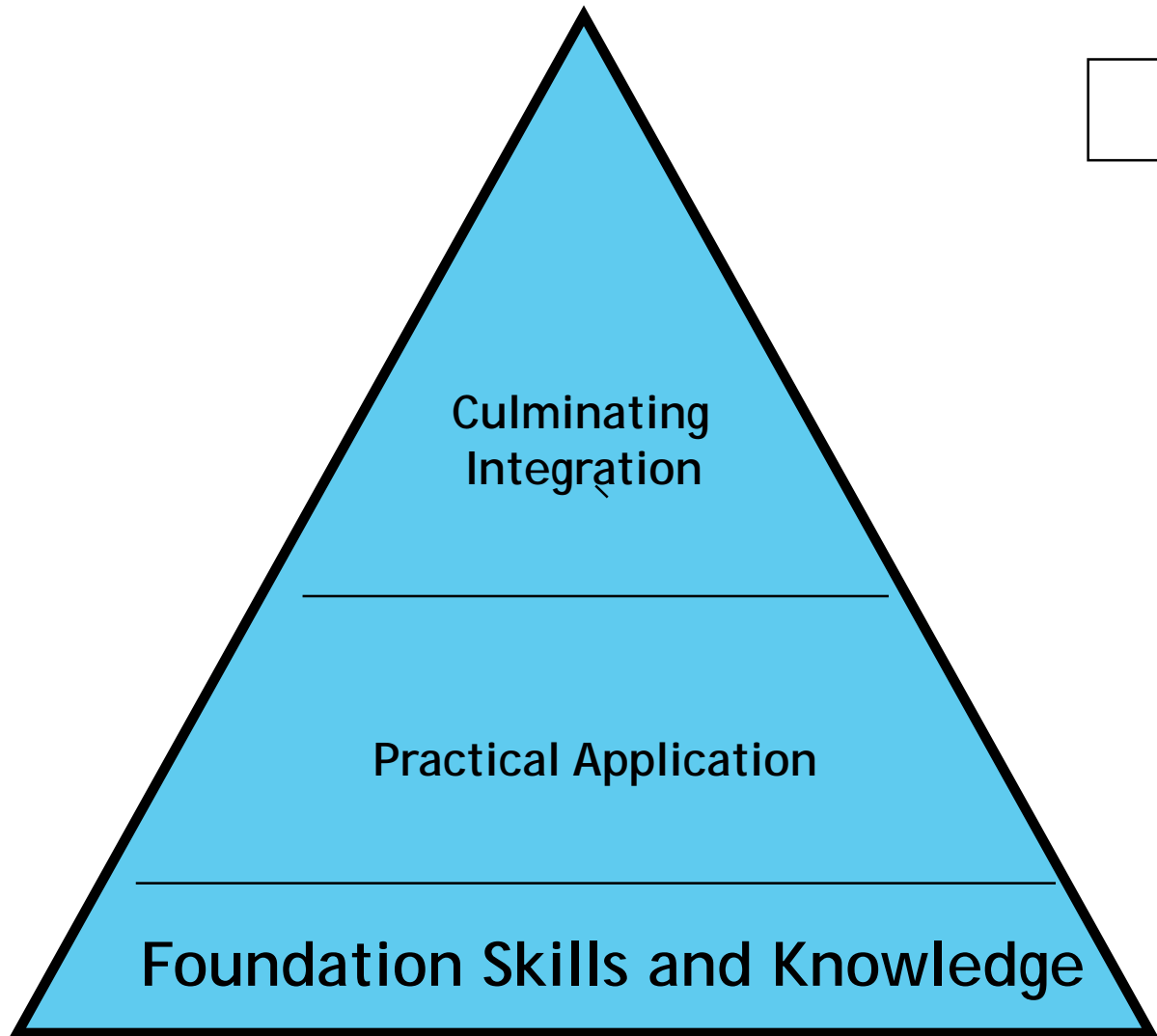
Preceptor Roles

- ▶ Where to start?
 - ▶ Establish the desired endpoint of the learning activity
 - ▶ Be realistic- minimum competency vs expert
 - ▶ Consider timing
 - ▶ Assess learner's baseline knowledge, skills, and learning style
 - ▶ Prior rotation experience
 - ▶ Skills/knowledge assessment
 - ▶ Individualize teaching strategies to meet the learner's specific needs to achieve desired outcomes

Preceptor Roles

- ▶ Direct Instruction
- ▶ Modeling
- ▶ Coaching
- ▶ Facilitation

The Preceptor's Role in Teaching: The Learning Pyramid



Preceptor's Role

Facilitating



Coaching



Modeling



Direct
Instruction

The Learning Pyramid. (Source: Nimmo CM. Developing training materials and programs: facilitating learning in staff development. In: Nimmo CM, Guerrero R, Greene SA, Taylor JT, eds. Staff development for pharmacy practice. Bethesda, MD: ASHP; 2000.

Outline

- ▶ What is Effective Assessment?
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- ▶ Learning Activities
- ▶ Preceptor Roles
- ▶ **Assessment Strategies/Tips/Tools**
- ▶ Learner's Perspective

Ambulatory Pharmacist's Perspective

- ▶ Lack of time
 - ▶ Patient care responsibilities always trump other activities, busy clinic environment, provider needs, personal goals
- ▶ Space
 - ▶ Limited areas for learners to work
- ▶ Resources
 - ▶ EMR access, computer/technology
- ▶ Learner expectations
 - ▶ Address what is realistic
 - ▶ Make them an active part of reaching expectations
- ▶ Preceptor's hopes and dreams

Choosing Appropriate Activities

- ▶ Skills assessment
 - ▶ Consider pharmacotherapy “quiz”
 - ▶ Baseline
 - ▶ Tailor to your practice site
 - ▶ Reevaluate throughout
 - ▶ Set expectations to facilitate assessment
 - ▶ Week 1: Five simple patient visits
 - ▶ Week 3: Fifteen patient visits, five complex
 - ▶ Week 6: Twenty patient visits, ten complex

Choose Appropriate Activities

- ▶ Actively assess patient / provider interactions
 - ▶ Fulfill *Preceptor Roles*, but make sure to observe their interactions early on (before they are molded)
- ▶ Ask them for their self-assessment first
 - ▶ Immediate, even if brief
- ▶ Meet Learning Objectives
 - ▶ (But) may need to consider *bending* to fit the real life situation / patient care opportunity

Utilize Learners

- ▶ Make them co-responsible for completing their goals
 - ▶ Examples
 - ▶ “I like having frequent clinical discussion topics.”
 - ▶ “My ideal preceptor provides me with a lot of feedback while allowing me to *spread my own wings* and be independent.”
 - ▶ “I want to increase my confidence in treating patients with disease XYZ.”

Utilize Learners

- ▶ Residents as Preceptors
 - ▶ Eager to mentor
 - ▶ Eager to instruct
 - ▶ Eager to share opinions
 - ▶ But make sure they are ready
 - ▶ Ask them about involvement
 - ▶ Define expectations / boundaries
 - ▶ Observe their interactions

Think Outside the Box

- ▶ Consider different models
 - ▶ Adopt more of a medical-model
- ▶ How are non-pharmacy learners utilized at your site?

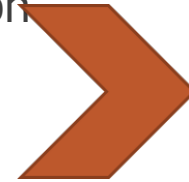
Keep in Mind

- ▶ Baseline skills should not interfere with ultimate goal
 - ▶ Different learners, with different skill-sets, who have the same goal
 - ▶ Take care when comparing learners
- ▶ Help learner understand that practice site doesn't automatically make them "clinical" or "non-clinical"
 - ▶ As preceptors, we can help show them how our clinical knowledge / skills can be applied no matter the barrier or environment

Inpatient Pharmacist's Perspective

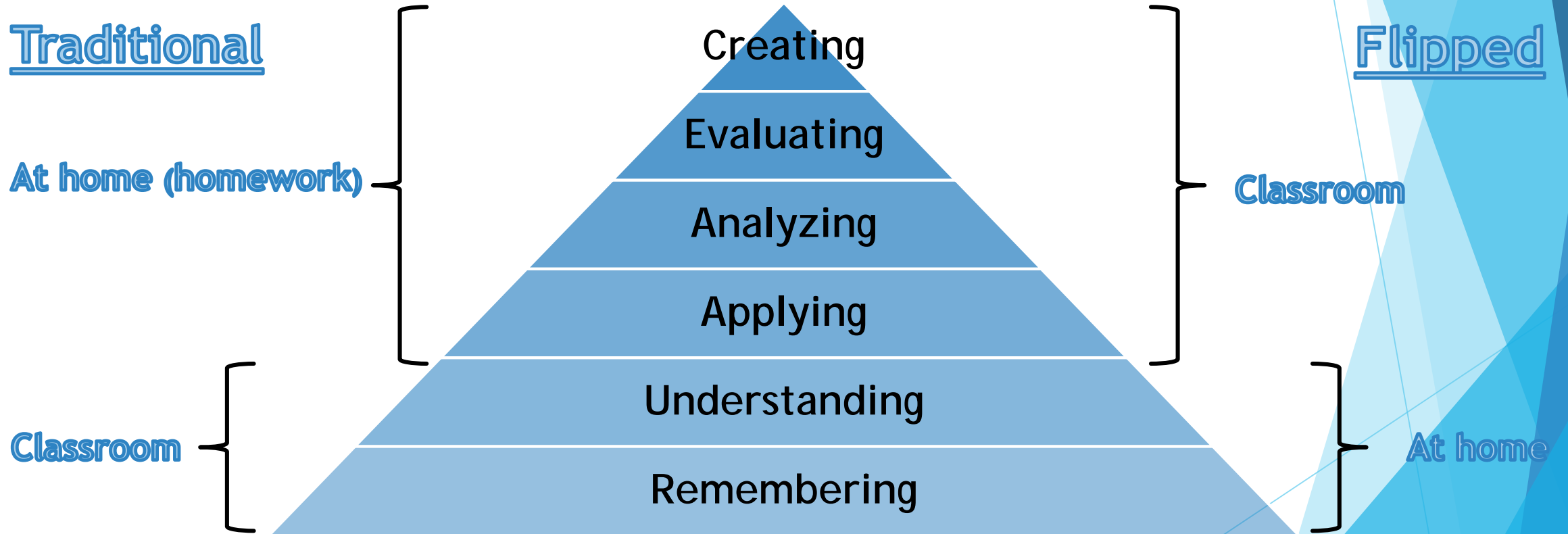


- ▶ Lack of time
 - ▶ Busy hospital, acutely-ill patients, large volume of clinical services expected
- ▶ “Adult Surgical Direct Patient Acute Care” rotation
 - ▶ ASLMC PGY-1 residents year-round
 - ▶ CUWSOP APPE students year-round
 - ▶ IPPE 1-4 students (P1s/P2s)
- ▶ 3 examples of overcoming obstacles and using layered learning to your advantage



Layered Learning

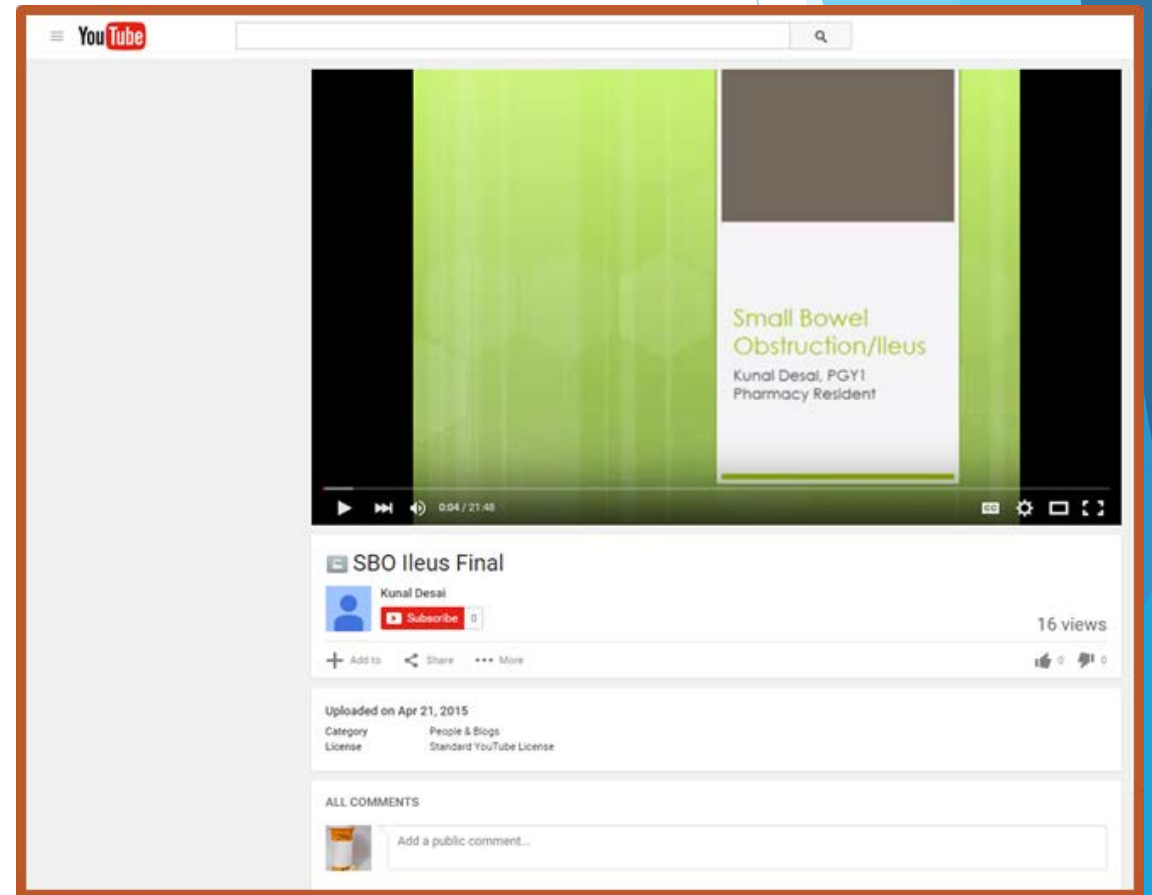
Flipped Rotation: Overview



Pre-Recorded Topic Discussions: Overview

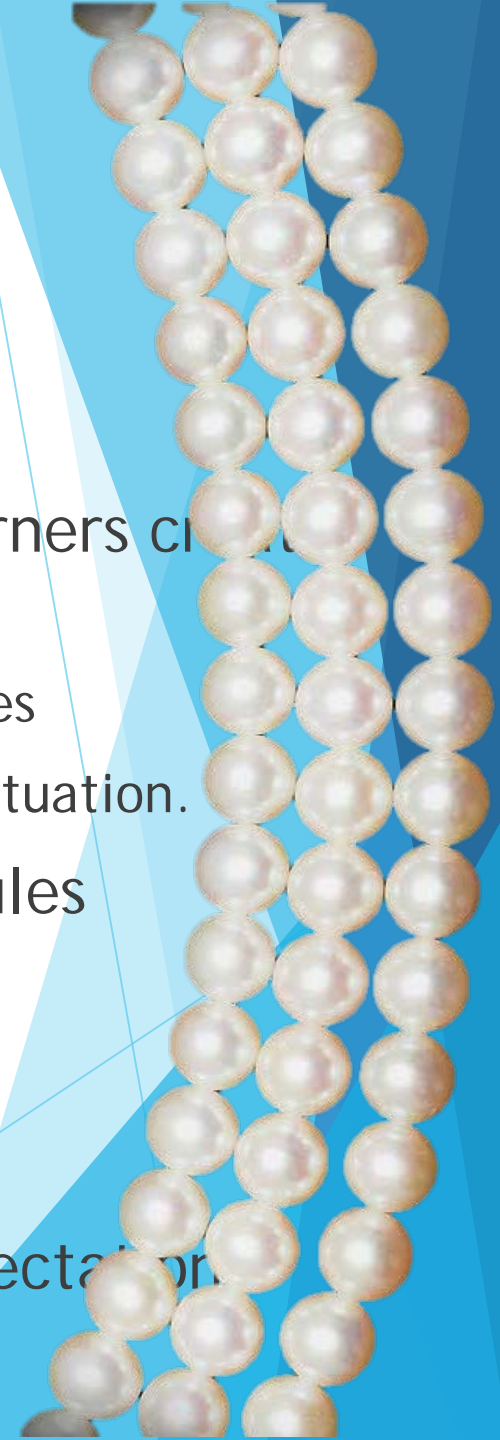
Creator:

- ▶ Narrates presentation using Microsoft PowerPoint
- ▶ Publishes as video file and uploads to video sharing website
- ▶ Creates assessment questions
 - ▶ Helps ensure learner identifies key pieces of information
- ▶ Directs learner to apply didactic concepts during patient care discussion



Pre-Recorded Topic Discussions: Pearls

- ▶ Creation of flipped topic discussions by learners for other learners creates an opportunity to assess higher-order thinking skills.
 - ▶ ASHP R5.1.2: Design an assessment strategy that appropriately measures the specified objective for education or training and fits the learning situation.
- ▶ Appropriate topics must be selected for flipped learning modules
 - ▶ Topics of narrow scope
 - ▶ Can be accomplished in 15-30 minutes when recorded
- ▶ Utilize rotation calendar to assign deadline for viewing
- ▶ Creation of project objectives/outline is helpful to detail expectations



Resident Precepting and Peer Review

- ▶ Developing pharmacy residents into effective preceptors and educators is essential to meet the demands of pharmacy education.
- ▶ Create opportunities for residents to evaluate and critique and integrate them into the experiential teaching model.
 - ▶ APPE assignments: Drug information questions, case presentations, journal clubs
 - ▶ APPE patient education/medication reconciliation: “see one, do one, teach one”
 - ▶ APPE/IPPE overall performance evaluations
- ▶ No resident, but 2 APPEs or APPE + IPPE:
 - ▶ Use second learner to provide peer review
 - ▶ Bring concerns/issues/possible interventions to preceptor

Providing Consistent Feedback

- ▶ Learners like immediate, regular, daily feedback
- ▶ A Five-step "Microskills" Model of Clinical Teaching¹
 1. Get a Commitment - *What do you think?* ANALYZE
 2. Probe for Supporting Evidence - *What led you to that conclusion?* APPLY
 3. Teach a General Principle - *When this happens, do this...*
 4. Reinforce What Was Done Well - *Specifically, you did an excellent job of...*
 5. Correct Mistakes/Self-critique - *Next time this happens, try this...* EVALUATE
- ▶ Feedback huddle during last 10 minutes of the day.
 - ▶ Learner starts with self-assessment. "How do you think you did?"
 - ▶ Preceptor agrees/disagrees, provides context/examples, and additional comments

¹ Neher, JO, Gordon, KC, Meyer, B, and Stevens, N. Journal of the American Board of Family Practice. 5:419-424, 1992.

Outline

- ▶ What is Effective Assessment?
- ▶ Bloom's Taxonomy
- ▶ Learning Activities
- ▶ Preceptor Roles
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- ▶ Learner's Perspective

Positive Characteristics of Learning Activities

- ▶ The expectations for the rotation were clearly outlined from the beginning and prior to each activity
- ▶ Core activities were listed in a rotation calendar
- ▶ The activities aligned with my interests and goals for the rotation
- ▶ The activities were modeled for me
- ▶ The activities were diverse in scope and complexity
- ▶ The expectations for activities were realistic
- ▶ The assessment of the activity was fair and consistent
- ▶ Feedback provided was constructive in nature

Negative Characteristics of Learning Activities

- ▶ Unclear expectations provided at the beginning
- ▶ No attempt made to assess baseline knowledge or interests
- ▶ Assessment based on previous student(s) performance
- ▶ No modeling provided
- ▶ Unrealistic expectations
- ▶ Negative feedback without suggestions for improvement

Learning Activities

- ▶ Active learning exercise
- ▶ Using the Objectives described earlier, participants will work in pairs to design an activity that focuses on analysis, evaluation, synthesis

Summary

- ▶ Effective assessment is no easy task
- ▶ Planning is essential
 - ▶ Learning activities
 - ▶ Multiple learners
 - ▶ Time for feedback