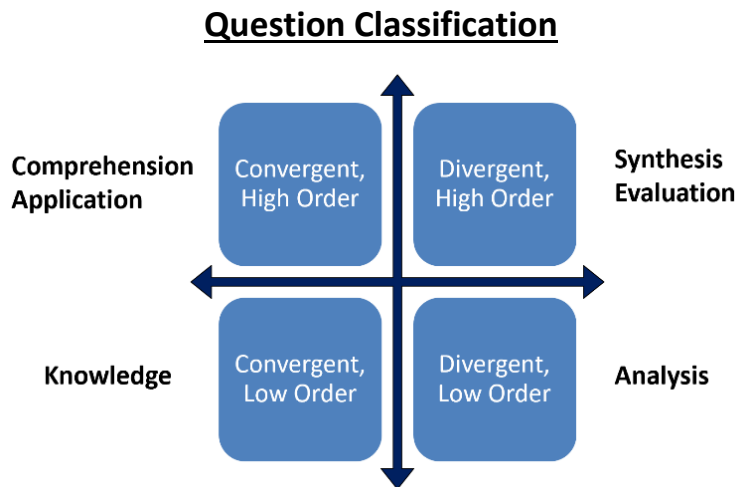


Teaching Up the Ladder: Strategies for Meeting Your Trainees' Clinical Learning Needs at Every Level



Low-order, convergent ~ Knowledge

- "What are drugs that have proven mortality benefit in heart failure with reduced ejection fraction (EF)?"

High-order, convergent ~ Comprehension and Application

- "In what ways is heart failure with reduced EF different from heart failure with preserved EF?"

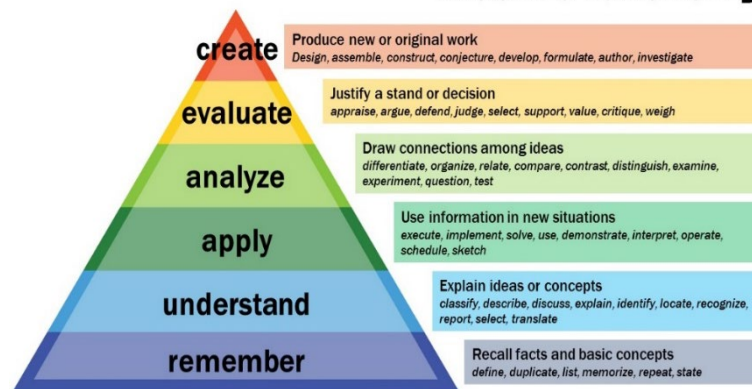
Low-order, divergent ~ Analysis

- "Why might it be difficult for our homeless patients with heart failure to adhere to their prescribed low-salt diet?"

High-order, divergent ~ Synthesis and Evaluation

- "Given the results of the COURAGE trial for PCI vs medical therapy in patients with ACS, what is your recommendation for our patient?"

Bloom's Taxonomy



Remember

- "What is the mechanism of action of acetaminophen?"

Understand

- "Describe the goals of therapy in patients with malignant pain?"

Apply

- "According to the WHO guidelines, what would be the most appropriate choice in this case scenario?"

Analyze

- "Given the patient's symptoms, what are the most likely etiologies of her pain?"

Evaluate

- "Based on the findings of this study, what do you believe is the role of pregabalin in the treatment of post-herpetic neuralgia?"

Create

- "This patient has had four ER visits in the past month due to uncontrolled pain. How would you manage this patient to help prevent another urgent care visit?"

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Descriptions of Multi-level Teaching Techniques

Technique	Description	Example
Broadening	Change the specifics of a case to make it more challenging or interesting	"What if the patient developed fevers overnight? How would that change management?"
Targeting	Target medical knowledge or management questions to specific team members based on the difficulty of the question	John (student), what are some major causes of atrial fibrillation; Sarah (intern), how do you manage atrial fibrillation with RVR; June (resident), can you summarize the key points of the BRIDGE trial?"
Novelty	Offer new data	"Let's discuss the new c. difficile guidelines..."
Up the Ladder	Ask the same question to the medical student, then the intern, then the resident, etc.	"OK, we have a patient with chest pain and fevers... Oliver, what do you think it is? Jill, what about you? Jose, what do you think it is?"
Student as Teacher	Have a more senior learner train a more junior learner	"Carline, can you tell Joyce how to assess for lymphadenopathy?"
Multi-Answer	Seek many answers to the same question	"We have a patient with chest pain. What do you think is going on? OK, Sarah thinks it's PE because of his recent hospitalization. What does everyone else think?"
No Right Answer	Ask questions with no single correct answer	"When and how should we tell the patient her diagnosis?"
Teaching to the Top	Teach to the most senior trainee on the team	"Susan, what's the next step in heart failure patient who is already on maximum dose of inotropic agents and cannot tolerate further afterload reduction?"
Extreme Challenge	Teach to the level above everyone on the team	"One way to study the development of drug resistance is to do a haplotype analysis..."

How to ENGAGE Multilevel Learner Groups



Useful Resources and References

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- Long M, Blankenberg R, Butani L. Questioning as a Teaching Tool. *Pediatrics.* 2015;133(3):406-408.
- Quigley PD, Potisek NM, Barone MA. How to "ENGAGE" Multilevel Learner Groups in the Clinical Setting. *Pediatrics.* 2017;140(5)e20172861.
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