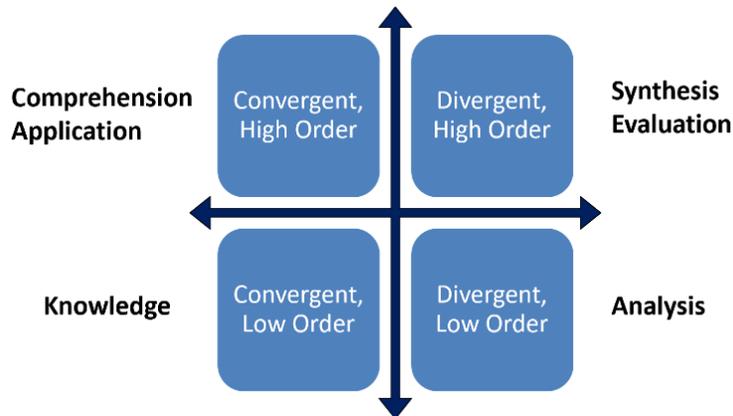


Teaching Up the Ladder: Strategies for Meeting Your Trainees' Clinical Learning Needs at Every Level

Question Classification



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?"

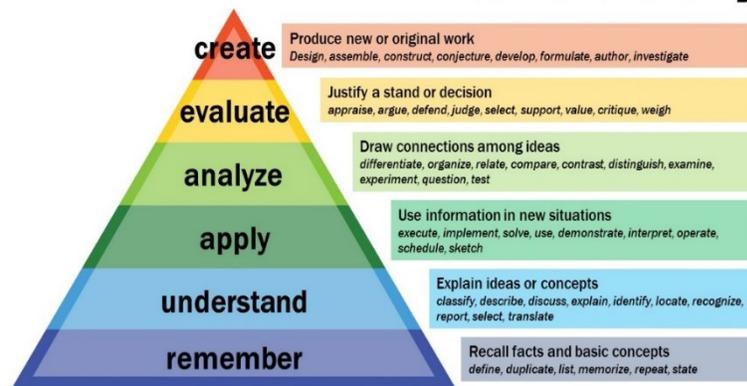
Low-order, divergent ~ Analysis

- "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

- Certain LK, Guarino AJ, Greenwald JL. Effective multilevel teaching techniques on attending rounds: A pilot survey and systematic review of the literature. *Med Teach.* 2011;33(12):e644-e650.
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- Quigley PD, Potisek NM, Barone MA. How to "ENGAGE" Multilevel Learner Groups in the Clinical Setting. *Pediatrics.* 2017;140(5)e20172861.
- Tofade T, Elsner J, Haines ST. Best Practice Strategies for Effective Use of Questions as a Teaching Tool. *American Journal of Pharmaceutical Education.* 2013;77(7):Article 155.