Beyond See One, Do One:
Cognitive Apprenticeship and Motivation in Clinical Education

Core Components of Cognitive Apprenticeship

Content Dimension

- Domain Knowledge: Clinical facts, procedures, and protocols
- Strategic Knowledge: Decision-making, reasoning strategies, and metacognitive skills

Method Dimension

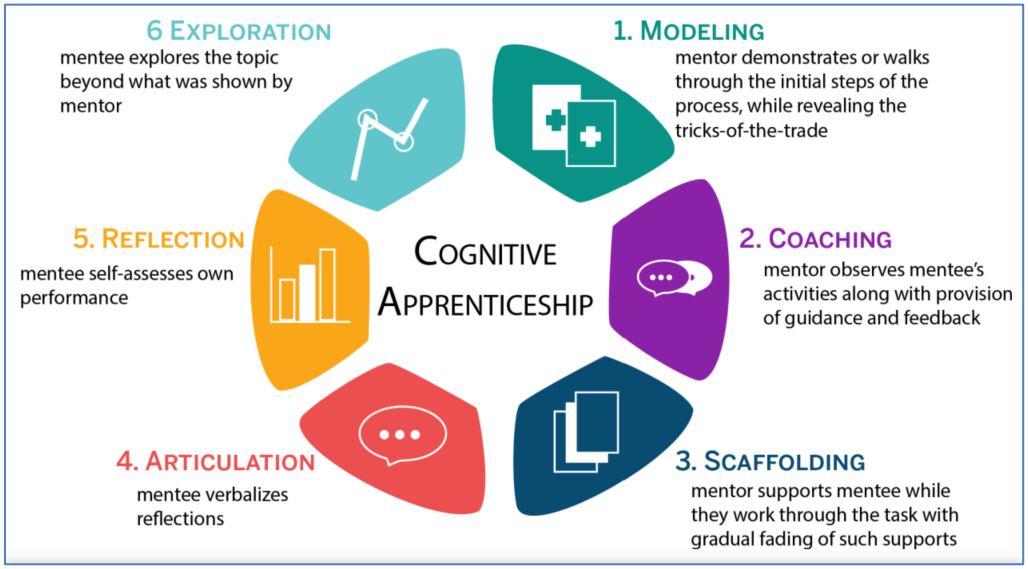

Image - https://educationaltechnology.net/cognitive-apprenticeship/

Effective Talk Moves for Cognitive Apprenticeship

- "Talk me through your reasoning as you examine this patient..."
- "What specific aspects of this case are you finding challenging?"
- "How does this compare to the case we saw yesterday?"
- "What questions do you still have about managing this condition?"
- "What would you do differently next time?"
- "Let's break this procedure down into steps..."
- "How might you apply this principle in a different clinical scenario?"
- "What additional information would help clarify your understanding?"

Remember: Cognitive apprenticeship is flexible and can be adapted to different clinical specialties, settings, and student learning needs.

Common Challenges & Evidence-Based Solutions

Challenge	Cognitive Apprenticeship Strategy	Implementation Example
Limited teaching time	Modelling + Articulation	"One-minute preceptor" technique: Ask for commitment, probe for supporting evidence, teach general rules, reinforce what was done well, correct mistakes
Student struggles with clinical reasoning	Articulation + Coaching	"Think aloud" protocol: Have students verbalise their thought process while working through a case, providing guidance at key decision points
Theory-practice gap	Scaffolding + Sociology	"Contextual linking": Connect theoretical knowledge to specific patient cases, gradually increasing complexity as student progresses
Student lacks confidence with procedures	Modelling + Coaching + Scaffolding	"Graduated supervision": Demonstrate → Assist → Observe → Provide feedback, with decreasing support over time
Students not self-directed	Reflection + Exploration	"Learning goals dialogue": Help students identify specific learning needs and create personalised learning plans with regular reflection points
Difficulty assessing clinical competence	Articulation + Reflection	"Structured case presentations": Have students present cases using a consistent framework that reveals their clinical reasoning

References:
Lyons K, McLaughlin JE, Khanova J, & Roth MT. (2017). Cognitive apprenticeship in health sciences education: A qualitative review. Advances in Health Sciences Education, 22(3), 723-739. DOI: 10.1007/s10459-016-9707-4

Lyons KM, Cain JJ, Haines ST, Gasevic D, & Brock TP. (2021). The clinical educator's guide to fostering learner motivation: AMEE Guide No. 137. Medical Teacher, 43(5), 492-500. DOI: 10.1080/0142159X.2020.1837764

Boosting Motivation & Engagement for Clinical Learners

Key Motivation Frameworks

1. Increasing Motivation Level

- Optimal Challenge: Tasks that are challenging but achievable
- Sparking Curiosity & Interest: Creating novelty and connecting to existing interests
- Modelling Enthusiasm: Authentic expression of excitement for the field
- Creating Relevance: Explicitly connecting learning to greater **Purpose,** e.g., student's goals and future practice

2. Enhancing Motivation Quality (i.e., intrinsic vs extrinsic)

- **Autonomy** with Structure: Providing choice within clear frameworks
- Addressing Identity Contradictions: Bridging gaps between placement and career goals
- Framing Challenges: Presenting difficulties as common and improvable
- Eliciting **Mastery** Approach: Focusing on skill development over performance

3. Improving Motivation Know-How

- Teaching Regulation Strategies: Sharing specific techniques for self-motivation
- Modelling Motivation Regulation: Demonstrating how you manage your own motivation

Practical Talk Moves for Clinical Educators

Day 1: Building Connection & Setting the Stage

- "What aspects of [specialty/site] interest you most?"
- "Let me show you how this connects to your interest in [area]..."
- "Many students find [task] challenging at first. I did too when I was learning."
- "Here's our structure, and within that, what would you like to focus on?"
- "I'm excited about [aspect of practice] because..."

Days 2+: Deepening Engagement

- "Let's set specific learning goals that matter to you..."
- "I notice you did [specific action] well. Next time, try..."
- "When I faced similar challenges, I used this approach..."
- "How could we modify this for a patient in your area of interest?"
- "What questions or concerns do you have about today's cases?"

Discussion Questions for Simulation

1. Which motivation strategies has Dr Lyons employed effectively?
2. What would you say or do next with this student? How would you tailor the placement to better motivate Sam?
3. What strategy did you see that you want to employ in your placement?
4. What specific talk moves could you adopt tomorrow?
5. How might you adapt these approaches for:
    - Different disciplines, various experience levels, challenging placement environments

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