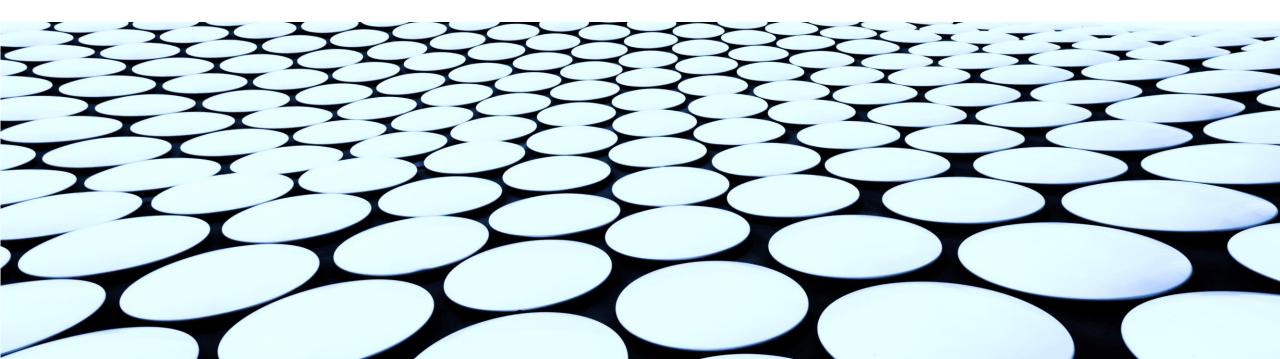
CULTIVATING CRITICAL THINKING MINDSETS AMONG PHARMACY STUDENTS ON PLACEMENT

EILEEN SAVAGE PHD

EXCELLO COACHING & FACILITATION

Enabling you to grow and excel yourself



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Please Interact & Engage

- VIDEOS ON/OFF Please put on if speaking
- CHAT FUNCTION Feel free to add in comments / Ask questions
- Reactions Use



WELCOME!

OVERALL AIM OF THE SESSION

The aim of this workshop is to facilitate participants cultivate critical thinking mindsets in undergraduate pharmacy students when facilitating their learning during placement experiences.



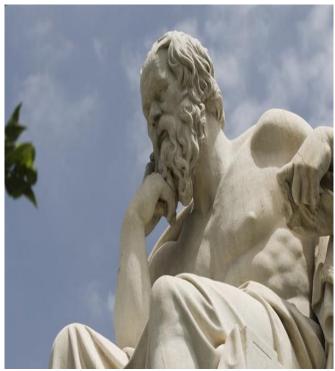
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OUTLINE

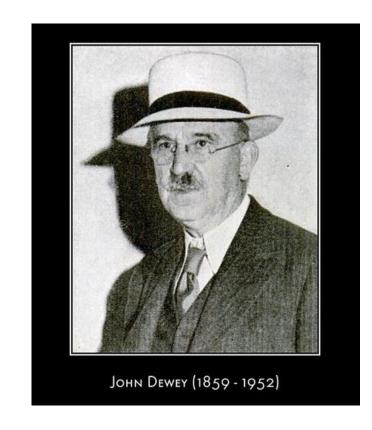
- Critical thinking What it is and why it counts
- Critical thinking in clinical contexts
- Critical thinking as a matter of mindset
- Honing critical thinking skills

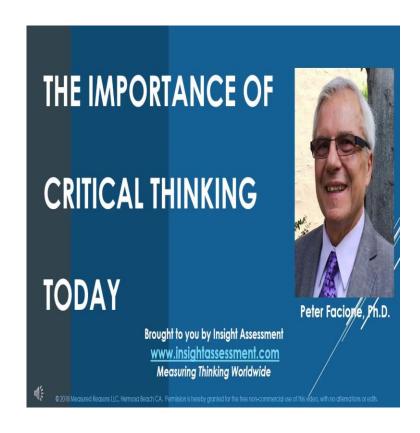


CRITICAL THINKERS OVER TIME



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CRITICAL THINKING – WHAT IT IS

EXERCISE

Reflect on any one person you know that you consider to be a strong critical thinker

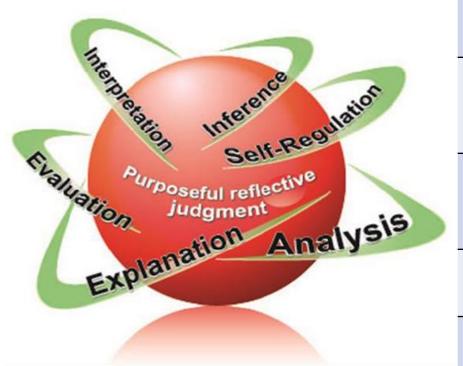
What is it about this person that indicates s/he is a strong critical thinker?

Let's Create a Wordle

Participants can vote at **slido.com** with **#347090**



CRITICAL THINKING - WHAT IT IS.



Interpretation	Understanding & Express meaning
Analysis	Examining ideas, arguments, similarity & differences, pros and cons
Evaluation	Judging the credibility of claims made, logical strengths and weaknesses of argument
Inference	Drawing reasonable conclusions, deducing consequences
Explanation	Justifying one's reasoning/ decisions.
Self-regulation	Self-conscious monitoring of one's thinking activities; Involves self-correction.

WORKING DEFINITIONS OF CT

- ..a reflective and reasonable thinking that is focused on deciding what to believe and what to do.. (Ennis, 1985 cited in Golding 2011).
- ...active, persistent, and careful consideration of a belief or supposed form of knowledge in light of the grounds which support it (Dewey 1909 cited in Moattari et al. 2014)

 ...thinking about one's thinking..(Wiersema & Licklider, 2009)



CRITICAL THINKING AS FOUNDATIONAL

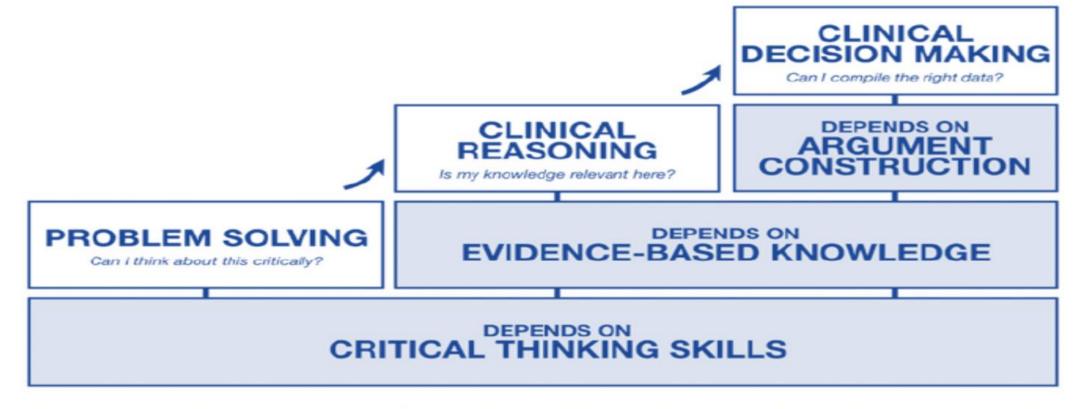


Figure 1. Schematic of Critical Thinking and its Relationship to Other Types of Thinking

PHARMACY EDUCATION

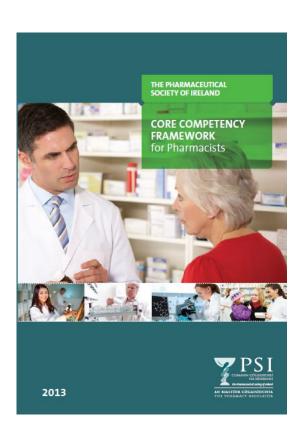




Table 1: Core Competency Framework for Pharmacists

Domain	Competency
Professional practice	Practises 'patient-centred' care Practises professionally Practises legally Practises ethically Engages in appropriate continuing professional development
Personal skills	Leadership skills Decision-making skills Team working skills Communication skills
Supply of medicines	Manufactures and compounds medicines Manages the medicines supply chain Reviews and dispenses medicines accurately
Safe and rational use of medicines	Patient consultation skills Patient counselling skills Reviews and manages patient medicines Identifies and manages medication safety issues Provides medicines information and education
Public health	Population health Health promotion Research skills
Organisation and management skills	Self-management skills Workplace management skills Human resources management skills Financial management skills Quality assurance

EDUCATING FOR CRITICAL THINKING



WHAT MIGHT GET IN THE WAY?



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CHALLENGES TO CRITICAL THINKING

- Poor Metacognition Skills
- Superficial thought processes
- Memorisation = shallow short-term learning (vs higher order thought processes = deep long-term learning (Brown 2016)

Zorek et al. described an alarming pattern of study among pharmacy students, termed "bulimic learning," which refers to the binge-purge pattern of cramming course material intensely during the days leading up to an exam.

AGREE OR DISAGREE

STUDENT THINKING TYPES

SPONGES

OR

PANNING FOR GOLD





A FEW WORDS ON MINDSET



- 1. Keen to pursue challenges during placement
- Willing to hear various options/arguments before drawing conclusions
- 3. Willing to engage in trial and error if it means learning
- 4. Eager to seek feedback including areas for improvement
- 5. Asking lots of questions with inquiring mind
- Excited about the skills learned to become a pharmacists

- 1. No point in trying -too hard to understand/practice
- 2. Draws conclusions without teasing out alternatives
- 3. Don't like stepping out of comfort zone
- 4. Discouraged or defensive with constructive feedback
- 5. Seldom ask questions about practice
- 6. Doubt abilities to become pharmacists



COGNITIVE FRAMEWORK FOR PHARMACY EDUCATION (PETERS ET AL 2016)

Figure 1. A Cognitive Framework for Pharmacy Education

Focus on Patient Care

- Problem-solving
- Clinical reasoning
- Moral reasoning

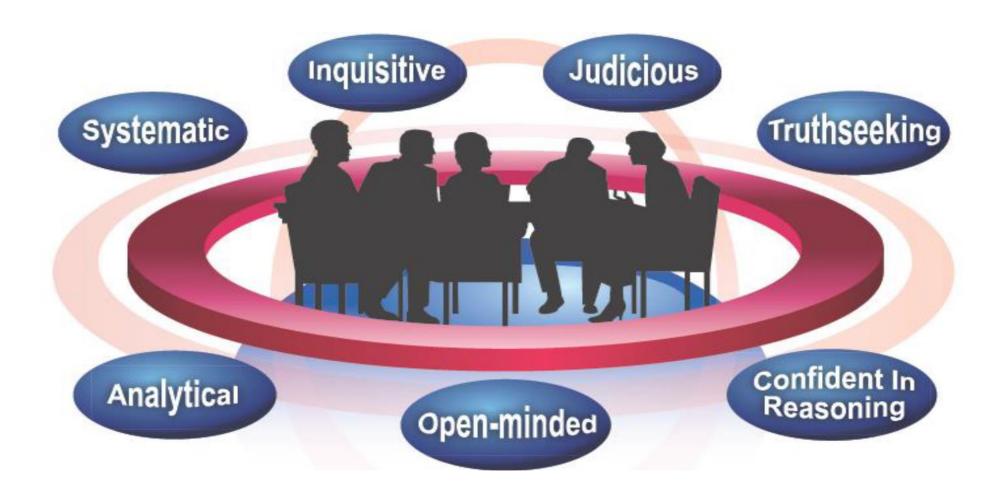
Higher-order, Complex Thinking

Habits of Mind (includes analytical Critical Thinking)

Foundational Thinking

(Modified from references #11 and #43)

CRITICAL THINKING HABITS OF MIND



INSTITUTE OF HABITS OF MIND (COSTA & HALLICK) HTTPS://WWW.HABITSOFMINDINSTITUTE.ORG/WHAT-ARE-HABITS-OF-MIND/



1. Persisting

Stick to it!

Persevering in task through to completion; remaining focused. Looking for ways to reach your goal when stuck.

Not giving up.



2. Managing Impulsivity

Take your time!

Thinking before acting; remaining calm, thoughtful and deliberative.



3. Listening with understanding and empathy

Understand others!

Devoting mental energy to another person's thoughts and ideas; Make an effort to perceive another's point of view and emotions.



4. Thinking flexibly

Look at it another way!

Being able to change perspectives, generate alternatives, consider options.



5. Thinking about your thinking

(Metacognition)

Know your knowing!

Being aware of your own thoughts, strategies, feelings and actions and their effects on others.



6. Striving for accuracy

Check it again!

Always doing your best. Setting high standards. Checking and finding ways to improve constantly.



7. Questioning and problem posing

How do you know? Having a questioning attitude: knowing

what data are needed & developing questioning strategies to produce those data. Finding problems to solve.



8. Applying past knowledge to new situations

Use what you learn!

Accessing prior knowledge; transferring knowledge beyond the situation in which it was learned.



9. Thinking & communicating with clarity and precision

Be clear!

Strive for accurate communication in both written and oral form; avoiding over-generalizations, distortions, deletions and exaggerations.



10. Gather data through all senses

Use your natural pathways!

Pay attention to the world around you Gather data through all the senses. taste, touch, smell, hearing and sight.



11. Creating, imagining, and innovating

Try a different way!

Generating new and novel ideas, fluency, originality



12. Responding with wonderment and awe

Have fun figuring it out!

Finding the world awesome, mysterious and being intrigued with phenomena and beauty.



13. Taking responsible risks

Venture out!

Being adventuresome; living on the edge of one's competence. Try new things constantly.



14. Finding humor

Laugh a little!

Finding the whimsical, incongruous and unexpected. Being able to laugh at one's self.



15. Thinking interdependently

Work together!

Being able to work in and learn from others in reciprocal situations.

Team work.



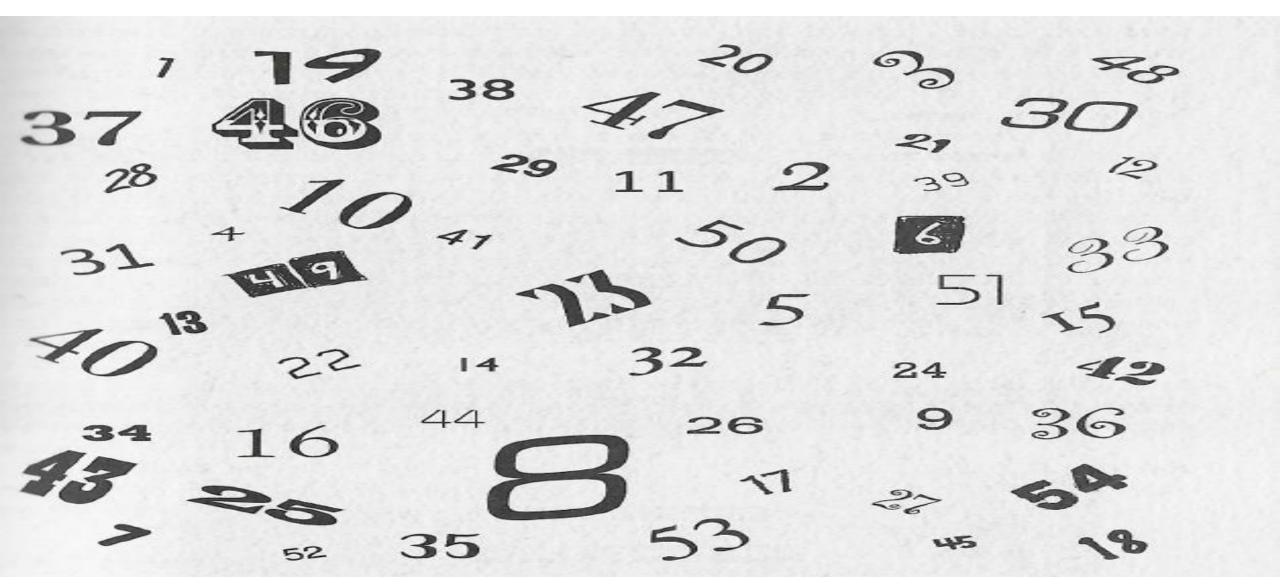
16. Remaining open to continuous learning

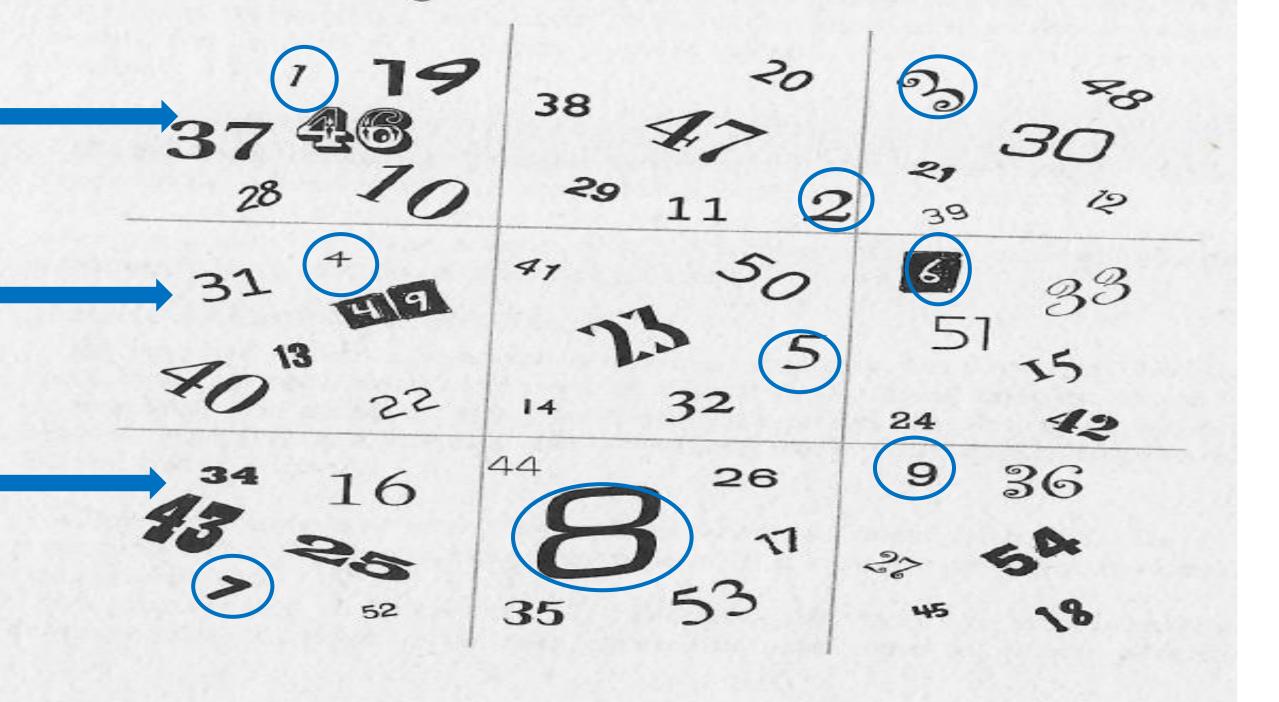
Learn from experiences!

Having humility and pride when admitting we don't know; resisting complacency.

HABIT FORMATION (

(Covey 2020)







CULTIVATING CRITICAL THINKING IN CLINICAL PRACTICE: WHERE TO FROM HERE?













IDEAS

A 5-Step Critical Thinking General Problem Solving Process

I = IDENTIFY the Problem and Set Priorities (Step 1)

D = DETERMINE Relevant Information and Deepen Understanding (Step 2)

E = ENUMERATE Options and Anticipate Consequence (Step 3)

 \mathbf{A} = ASSESS the Situation and Make a Preliminary Decision (Step 4)

S = SCRUTINIZE the Process and Self-Correct as Needed (Step 5)

THE POWER OF QUESTIONING



MATCHING QUESTIONS TO ELICIT CT SKILLS

Interpretation	What does this mean?
	• What's happening?
	How should we understand that (e.g., what he or she just said)?
	• What is the best way to characterize/categorize/classify this?
	In this context, what was intended by saying/doing that?
Analysis	• Please tell us again your reasons for making that claim.
	• What is your conclusion/What is it that you are claiming?
	• Why do you think that?
	• What are the arguments pro and con?
	What assumptions must we make to accept that conclusion?
Inference	Given what we know so far, what conclusions can we draw?
	Given what we know so far, what can we rule out?
	• What does this evidence imply?
	If we abandoned/accepted that assumption, how would things change?
	What additional information do we need to resolve this question?
	If we believed these things, what would they imply for us going forward?
	• What are the consequences of doing things that way?
	What are some alternatives we haven't yet explored?
	Let's consider each option and see where it takes us.

MATCHING QUESTIONS TO ELICIT CT SKILLS

Evaluation	 How credible is that claim? Why do we think we can trust what this person claims? How strong are those arguments? Do we have our facts right?
Explanation	 What were the specific findings/results of the investigation? Please tell us how you conducted that analysis. How did you come to that interpretation? Please take us through your reasoning one more time. Why do you think that (was the right answer/was the solution)?
Self-Regulation	 Our position on this issue is still too vague; can we be more precise? How good was our methodology, and how well did we follow it? Is there a way we can reconcile these two apparently conflicting conclusions? How good is our evidence? OK, before we commit, what are we missing?

VISUAL APPROACH: PUT YOUR THINKING HAT ON (DE BONO)

PROCESS



Blue Hat - Process

Thinking about thinking. What thinking is needed? Organizing the thinking. Planning for action.





Green Hat - Creativity

Ideas, alternatives, possibilities. Solutions to black hat problems.





White Hat - Facts

Information and data.
Neutral and objective.
What do I know?
What do I need to find out?
How will I get the information I need?





Yellow Hat - Benefits

Positives, plus points. Why an idea is useful. Logical reasons are given.





Red Hat - Feelings

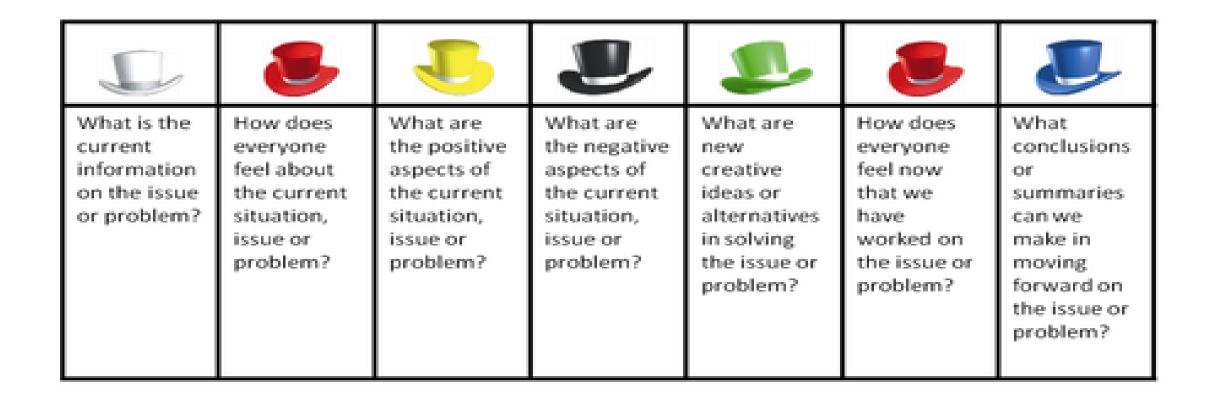
Intuition, hunches, gut instinct. My feelings right now. Feelings can change. No reasons are given.





Black Hat - Cautions

Difficulties, weaknesses, dangers. Spotting the risks. Logical reasons are given.



"Too often we...
enjoy the comfort
of opinion without
the discomfort of
thought." - JOHN F.
KENNEDY



THANK YOU

