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**Save the Dates!**

- **Friday – June 12<sup>th</sup>**  
**The Olswang Symposium**
- **Friday and Sat – July 10 - 11<sup>th</sup>**  
**Interprofessional Workshop on EI**
- **Saturday – August 8 or 15**  
**Annual “Summer Institute on Supervision”**

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**Critical Thinking:  
How Can We Make It Happen in a  
Clinical Rotation?**

April 7, 2015  
University of Washington  
Seattle, WA

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**Financial & Non-Financial  
Disclaimer**

- I am an employee of the University of Washington and presenting as part of my position
- I do not have a financial interest in the content presented

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### Special Appreciation

- Elizabeth Gavett, Boston University
- Ruth Peaper, University of New Hampshire
- Patrick Finn, University of Georgia

*Special Thank You  
to my UW Colleagues and our Students*

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### We'll Talk About...

- The essential elements of critical thinking in the presence of clinical services
- Practical strategies for building critical thinking skills in the clinical learning environment




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### What is Critical Thinking?

- A unique kind of purposeful thinking
- The thinker systematically and habitually imposes criteria and intellectual standards upon the thinking
- Takes charge of the construction of thinking
- Guides the construction of their thinking according to the standards

Gavett & Peeper

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## Critical Thinking

“Assessing the effectiveness of the thinking according to the purpose, the criteria and the standards”

“A continuous improvement in one’s quality of thinking about problems.”

Paul, R. (1993). *Critical Thinking*, 3<sup>rd</sup> Edition.  
Santa Rosa, CA: Foundation for Critical Thinking

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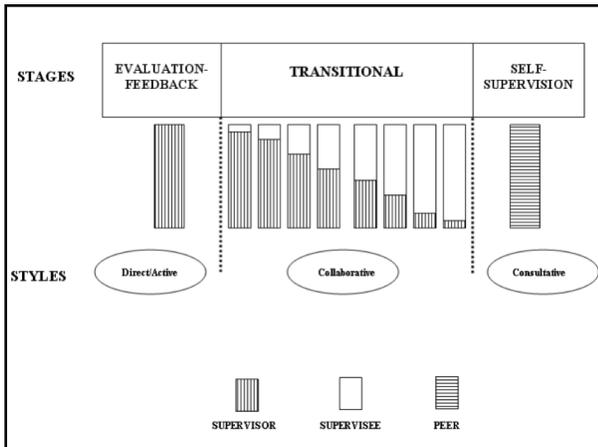
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## Components of the Supervisory Process

1. **Understanding** the process
2. **Planning** for active engagement
3. **Observing** by the student and the supervisor
4. **Analyzing** the data and applying it
5. **Integrating** and adjusting the teaching plan

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### A Critical Thinker will...

- **Raise relevant and precise questions** tapping into past experiences blended with knowledge
- **Analyze and interpret experiences** from the assessment of relevant information
- **Provide reasoned conclusions and recommendations** based on frames of reference and standards for professional performance
- **Modify thinking** based on practical implications that demonstrate self-correction of thinking in atypical or unique situations; and
- **Communicate effectively** with others in negotiating complex problems.

Crist 2001

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### Essential Critical Thinking Skills

- Inference
- Explanation
- Interpretation
- Analysis
- Evaluation
- Self-regulation

Facione & Facione 1994  
Facione, Facione and Giancarlo, 2000

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Employers Say Colleges Should Place Varying Degrees Of Emphasis On Selected Learning Outcomes			
	More %	Less %	Same %
Critical thinking and analytical reasoning skills	82	7	11
The ability to analyze and solve complex problems	81	6	13
The ability to effectively communicate orally	80	8	12
The ability to effectively communicate in writing	80	8	12
The ability to apply knowledge and skills to real-world settings	78	6	16
The ability to locate, organize, and evaluate information from multiple sources	72	9	19
The ability to innovate and be creative	71	9	20
Teamwork skills and the ability to collaborate with others in diverse group settings	67	11	22
The ability to connect choices and actions to ethical decisions	64	9	27
Knowledge about science and technology	56	9	35
The ability to work with numbers and understand statistics	55	10	35
Proficiency in a language other than English	43	18	39
Knowledge about global issues and developments and their implications for the future	40	15	45
Knowledge about the role of the United States in the world	35	18	47
Knowledge about cultural diversity in America and other countries	33	22	45
Civic knowledge, civic participation, and community engagement	30	18	52
Knowledge about democratic institutions and values	27	20	53

Association of American Colleges and Universities (2013)

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### Fifty Years of Research in Decision-Making and Judgement

- Decision makers have biases
- This results in false beliefs and poor decisions
- This occurs with:
  - Physicians
  - Psychologists
  - Scientists
  - Investors
  - Politicians.....

Finn 2013

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### Does this apply to our Professions?

- Have we adopted treatments that have minimal to non-existent evidence?
- Have some failed to meet inventor claims?
- What comes to mind:
  - Facilitated communication
  - Speech Easy
  - Fast Forward
  - Non speech oral exercises
  - “Ampli Ear” or “Vivo 105”

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### Adopting Critical Thinking

Evidence of “knowledge and skills requirements” or emphasis within

- American Dental Association
- American Nursing Association
- American Psychological Association
- ASHA and AAA
- Medical programs
- Business programs




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### “Disposition of Critical Thinking”

- Inquisitive
- Systematic
- Judicious
- Analytical
- Truth seeking
- Open-minded
- Confident in Reasoning

Facione, Facione and Giancarlo 2000

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### Negative Perspective?

A critical thinker could be construed as

- Critical
- Negative
- Judgmental
- Argumentative
- Oppositional
- Not a team player




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### Positive Perspective?

A critical thinker could be construed as

- Inquisitive
- Careful
- Judicious
- Truth seeking
- Open-minded
- Confident
- A team member




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## Applying Critical Thinking to Clinical Practice



***Clinical thinking IS Critical thinking!***

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## Human Thinking Skills

**Can be broken into six categories**

- Evaluation
- Synthesis
- Analysis
- Application
- Comprehension
- Knowledge

Bloom's Taxonomy

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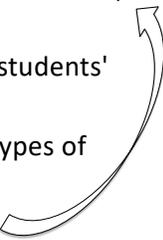
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## Bloom's Taxonomy

- Asking students to think at higher levels, beyond simple recall
- An excellent way to stimulate students' thought processes
- Emphasis on asking different types of questions
  - to get at different levels of thinking




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### Bloom's Taxonomy

**Lower Level: Foundational behaviors**

- Knowledge
- Comprehension
- Application

**Higher Level: Putting it all together**

- Analysis
- Synthesis
- Evaluation

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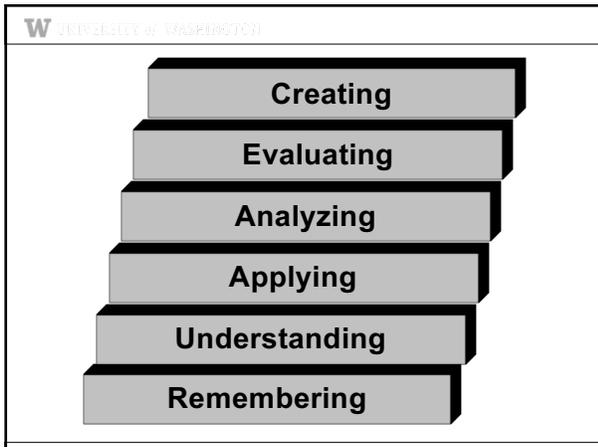
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### Bloom's Taxonomy Lower Level

<ul style="list-style-type: none"> <li>• <b>Knowledge/ Remembering:</b> Recall of information</li> <li>• <b>Comprehension/ Understanding:</b> Understanding given information</li> <li>• <b>Application:</b> Use of information</li> </ul>	<ul style="list-style-type: none"> <li>• <i>List, Describe, Identify, Name</i></li> <li>• <i>Discuss, Summarize, Contrast</i></li> <li>• <i>Apply, Illustrate, Demonstrate</i></li> </ul>
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### Bloom's Taxonomy Higher Level

- |   |  |
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| <ul style="list-style-type: none"> <li>• <b>Analysis:</b> Application of knowledge to a new situation.</li> <li>• <b>Evaluation:</b> Judgments about the value.</li> <li>• <b>Synthesis/Create:</b> Bringing together parts.</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Break apart, Separate, Order</b></li> <li>• <b>Assess, Judge, Convince</b></li> <li>• <b>Integrate, Formulate, Generalize</b></li> </ul> |
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### Guiding Critical Thinking

*“Inquiring Minds Really Do Want to Know: Using Questioning to Teach Critical Thinking”*

*King, A., 1995*

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### Inquiry Based Learning

- Is structured around the questions posed
- If questions are primarily factual = learning will not progress beyond the factual level
- Learning is improved when questions stimulate students to use the facts for **analysis, prediction, synthesis, evaluation and inferencing**
- AND, new clinicians need to begin to ask these question of themselves

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### Reciprocal Peer Questioning

.....provides a context which fosters the emergence and resolution of socio-cognitive conflict

.....being required to ask and answer thought-provoking questions in a group setting would compel students to externalize their thoughts, making their ideas explicit and accessible both to themselves and to others in their group

.....guided high-level questioning and responding would undoubtedly cause group members to think about the material in new ways because they would be confronted with a variety of differing peer perspectives on the content being studied

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- How would you use... to... ?
- What is a new example of. . . ?
- Explain why. . .
- What do you think would happen if. . . ?
- What is the difference between. . . and. . . ?
- How are. . . and. . . similar?
- What is a possible solution to the problem of. .
- What conclusions can you draw about. . . ?
- How does. . . affect. . . ?
- In your opinion, which is best,... or... ? Why?
- What are the strengths and weaknesses of. . . ?
- Do you agree or disagree with this statement ? Support your answer.
- How is... related to... that we studied earlier?

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### How can we use Bloom’s framework for question asking?

- Become aware of the *simplicity and complexity of our questions* and modify when necessary
- Become aware of *potential gaps* in student foundational knowledge and adjust
- Become aware of the *complexity level in supervisee’s questions* and track over time

Gavett & Peeper

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### Why Should We Examine Our Questions?

We can:

- Provide structure for supervisees as they begin to make connections between theory and practice
- Challenge students to think beyond a specific client toward broader applications
- Provide a model for how an expert clinician reasons
- Develop communication skills with colleagues

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### Sample Question Stem

- What do we already know about.....?
- How could.....be used to.....?
- What is the difference between.....and.....?
- What are the pro & cons of.....?

- **Activation of prior knowledge**
- **Application**
- **Compare/contrast**
- **Analysis/ inferencing**

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### Sample Question Stems

- How does.....effect.....?
- Explain why .....occurred?
- Why is .....important?
- What is a counterargument to.....?

- **Analysis of relationship (cause & effect)**
- **Analysis of situations**
- **Analysis of significance**
- **Rebuttal**

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**Sample Question Stems**

• What would happen if.....?	• <i>Analysis/ inferencing</i>
• What is the best.....and why?	• <i>Evaluation and provision of evidence</i>
• What is a solution to this problem?	• <i>Synthesis</i>
• What is another way to look at?	• <i>Considering other perspectives</i>

King, 1995

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**Strategies for Using Questions in Your Setting**

- Consider asking supervisee to formulate questions on:
  - Lesson Plans
  - Session Management Summary
  - Soap Notes or other Clinical Documentation
  - Journal Entry
  - End of Day Question
  - Portfolio Reflections

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**Modeling: Supervisor “Self-Talk”**

- Supervisors “think out loud” throughout the day.
  - “The reason I.....”
  - “I wonder if.....”
- Pose the questions for yourself that require making connections - go beyond factually based questions.
- Questions that will require us to model the kind of thinking we want to develop in our students.
- Let students see that the process can be complex and sometimes messy even for proficient/expert clinicians.

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## Our Role with Students

Compels us to be a....

- Coach – assisting the student in closing the gap
- Teacher – providing a learning environment
- Role Model – emulating and demonstrating
- Facilitator – managing learning
- Evaluator
  - Providing feedback on the student’s diagnostic, treatment and professional/interpersonal skills
  - Making judgments

Newman, et.al. 2011

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## Essential Roles

- Providing on-going **Feedback**
- Modeling
- Gathering data (observations)
- Re-calibrating assignments, expectations and desired outcomes
- **Evaluating** in order to:
  - Determine the next steps
  - Adjust the course
  - Assess skills at a given point in time



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## Questions

- Lower level questions—remembering, understanding & lower level applying levels
- Lower level questions
  - Evaluate students’ preparation and comprehension
  - Diagnose students’ strengths and weaknesses
  - Review and/or summarizing content

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### Questions

- Higher level questions require complex application, analysis, evaluation or creation skills
- Higher level questions
  - Encourage students to think more deeply and critically
  - Facilitate problem solving
  - Encourage discussions
  - Stimulate students to seek information on their own

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### A Culture of Trust

- What does that mean?
- What does that say about how I think and feel and treat my colleagues?
- What does that convey to our supervisees?




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### Workplace Behaviors - TRUST

<p style="text-align: center;"><b>CREATE</b></p> <p>Honesty Openness Follow-through Humility Transparency</p>	<p style="text-align: center;"><b>WEAKEN</b></p> <p>Secrets Lies Unreliability Disregard for input Shooting the messenger</p>	<p style="text-align: center;"><b>REPAIR</b></p> <p>Quick apology Courage to do the right thing Timely responses Ownership</p>
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## Bibliography

- Anderson, J. (1988). The supervisory process in speech-language pathology and audiology. Boston: College Hill Press.
- Bloom, B.S. (Ed) (1956). Taxonomy of educational objectives: The classification of educational goals: Handbook I, cognitive domain. New York, Toronto: Longmans, Green.
- Cruz, E. (2003). Bloom's revised taxonomy. In B. Hoffman (Ed.), Encyclopedia of Educational Technology. <http://coe.sdsu.edu/eet/Articles/bloomrev/start.htm>
- Facione, P., Facione, N., & Giancarlo, G. (2000). The Disposition toward Critical Thinking: Its Character, Measurement, and Relationship to Critical Thinking Skill. *Informal Logic*, Vol. 20, No.1.
- Giesen, J. (date unknown). Teaching with the Revised Bloom's Taxonomy. Northern Illinois University Presentation.
- King, A. (1995). Designing the instructional process to enhance critical thinking across the curriculum. *Teaching of Psychology*. Vol. 22, No. 1, pp. 1-17.
- Paul, R. (1993). *Critical thinking*, 3<sup>rd</sup> edition. Santa Rosa, CA: Foundation for Critical Thinking.
- Pohl, Michael. (2000). Learning to think, thinking to learn: Models and strategies to develop a classroom culture of thinking. Cheltenham, Vic.: Hawker Brownlow.
- Tarlington (2003). Bloom's revised taxonomy. <http://www.kurwongbss.qld.edu.au/thinking/Bloom/bloomsres.ppt>.
- University of Illinois, Center for Teaching Excellence (2006). Bloom's taxonomy. [www.oir.uiuc.edu/Did/docs/QUESTION/quest1.htm](http://www.oir.uiuc.edu/Did/docs/QUESTION/quest1.htm)

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