General Outline of Thursday June 20\textsuperscript{th} 3:30-4:15 Presentation
Dr. David Knox

I. Overview of the $CT^2$ assessment process:

II. $CT^2$ Assessments Within Your Class:

a. The Pre and Post CAT or CCTST and the $CT^2$ Artifacts are required of all $CT^2$ classes.

b. The Delphi Group report: \textit{Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction}. (1990) upon which the ETS PP, CCTST, and CAT instrument are based (and, thus, the $CT^2$ student learning outcomes).

- How can you design in-class assessments that align with the Delphi report, the $CT^2$ SLOs, and the standardized tests?

- In each formative or evaluative exercise you design include at least one of the Delphi Core CT Skills are illustrated in the chart below:
<table>
<thead>
<tr>
<th><strong>SKILL</strong></th>
<th><strong>Experts’ Consensus Description</strong></th>
<th><strong>Subskill</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Interpretation</strong></td>
<td>“To comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria”</td>
<td>Categorize&lt;br&gt;Decode significance&lt;br&gt;Clarify meaning</td>
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<tr>
<td><strong>Analysis</strong></td>
<td>“To identify the intended and actual inferential relationships among statements, questions, concepts, descriptions or other forms of representation intended to express beliefs, judgments, experiences, reasons, information, or opinions”</td>
<td>Examine ideas&lt;br&gt;Identify arguments&lt;br&gt;Identify reasons and claims</td>
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<tr>
<td><strong>Inference</strong></td>
<td>“To identify and secure elements needed to draw reasonable conclusions; to form Conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation”</td>
<td>Query evidence&lt;br&gt;Conjecture alternatives&lt;br&gt;Draw conclusions using inductive or deductive reasoning</td>
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<tr>
<td><strong>Evaluation</strong></td>
<td>“To assess the credibility of statements or other representations that are accounts or descriptions of a person’s perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions, or other forms of representation”</td>
<td>Assess credibility of claims&lt;br&gt;Assess quality of arguments that were made using inductive or deductive reasoning</td>
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<tr>
<td><strong>Explanation</strong></td>
<td>“To state and to justify that reasoning in terms of the evidential, conceptual, methodological, criteriological, and contextual considerations upon which one’s results were based; and to present one’s reasoning in the form of cogent arguments”</td>
<td>State results&lt;br&gt;Justify procedures&lt;br&gt;Present arguments</td>
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<tr>
<td><strong>Self-Regulation</strong></td>
<td>“Self-consciously to monitor one’s cognitive activities, the elements used in those activities, and the results deduced, particularly by applying skills in analysis and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results”</td>
<td>Self-monitor&lt;br&gt;Self-correct</td>
</tr>
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Some of the ways to “fire-up” the development of these skills are illustrated in the chart below:

### Questions to Fire Up Our Critical Thinking 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?  
|                | • How can we make sense out of this (experience, feeling, statement)?  
| 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?  
|                | • What is your basis for saying that?  
| 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.  
|                | • Are there any undesirable consequences that we can and should foresee?  
| 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?  
|                | • How confident can we be in our conclusion, given what we now know?  
| 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)?  
|                | • How would you explain why this particular decision was made?  
| 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 reconcile these two apparently conflicting conclusions?  
|                | • How good is our evidence?  
|                | • OK, before we commit, what are we missing?  
|                | • I’m finding some of our definitions a little confusing; can we revisit what we mean by certain things before making any final decisions?  

These in-class activities and evaluations will provide items for the $CT^2$ Artifacts data point. These are the skills that constitute CT ability. But what about CT ability as a whole? Just as the CCTST breaks down the score of the test-taker into the 5 CT skills in the table above, it also provides an integrated score of overall CT competence. One of the ways of evaluating overall competence in your in-class activities is by the use of a rubric. One that I would recommend is the AAC&U Critical Thinking VALUE Rubric. This rubric grew from the same Delphi roots as the test mentioned above.