# Guiding Questions—Student Artifacts (Compiled Responses)

**QEP Evaluation Question: To what extent did students demonstrate CT skills?**

## 1. What are the major conclusions you would draw about the students’ ability to master each of the learning outcomes?

| Explain questions, problems, and/or issues | • Enhanced classes are higher  
• Students are better at explaining than at other abilities/skills.  
• 56% demonstrate or exceed this standard. This outcome has the highest average of all outcomes (2.82). Student scores are higher in enhanced compared to non-enhanced.  
• The fact that the professor is focused on the process in the enhanced class has a positive impact on the design of the assignment and student outcome.  
• Scoring guide uses “evaluate” as part of “exceeds standard” and in level three we again use “evaluate information.” This should be removed from the first level. |
| Analyze and Interpret relevant Information | • The biggest difference between enhanced and non-enhanced was found for this outcome. This was also the highest score for the enhanced courses.  
• The fact that the professor is focused on the process in the enhanced class has a positive impact on the design of the assignment and student outcome.  
• Should “Analyze” and “Interpret” be separated as different constructs/skills even though they are the lumped together in California Critical Thinking Skills Test (CCTST)?  
• If they, “Analyze and Interpret,” remain together in the same learning outcome statement, does the scoring guide articulate how these two skills work in conjunction with one another?  
• **General comment:** When the eight Certified Scholars’ enhanced student artifacts are included with the ten Emerging Scholars’ enhanced student artifacts, the average scores for each learning outcome, except “Explain,” declined. Could this be attributed to the amount of training one group received versus the other; could it be the level of engagement of one group versus the other? Since this is the model moving forward (Certified and Emerging Scholars), it warrants additional exploration and conversation. |
| Evaluate information to determine credibility of reasoning | • The difference between the average scores for the enhanced and non-enhanced for this outcome is .22, which is less than the difference between the average scores for than “Explain” and “Analyze and Interpret” learning outcomes. In other words, students in enhanced course could benefit from improving scores in this outcome.  
• The difference of .22 between both average scores in the enhanced and non-enhanced suggests the “treatment” in the enhanced class was not “strong” enough.  
• The fact that the professor is focused on the process in the enhanced class has a positive impact on the design of the assignment and student outcome. |
| **Generate well-reasoned conclusions** | • Students scored lowest for this outcome. This is a challenging task for students. However, the difference (.28) is greater than “Explain” (.26) and “Evaluate” (.22) when comparing enhanced and non-enhanced courses.  
• The fact that the professor is focused on the process in the enhanced class has a positive impact on the design of the assignment and student outcome. |
| **2.** | **Do the results indicate any strengths; if so, what are the strengths?** |
| | • The enhanced classes are showing improvements early in this process. We believe this trend will continue.  
• Demonstrates the QEP engages the student and demonstrates effective use of thinking in QEP terms.  
• Based on the improvement in the CT-enhanced vs. non-enhanced classes, it appears that the inclusion of CT assignments is strengthening the students’ CT skills.  
• The four SLOs are designed to build on each other. One is designed to build on the next.  
• The highest achievement was greatest in “Explain,” which is the lowest level of Bloom’s Taxonomy. |
| **3.** | **What concerns, if any, are raised by the results?** |
| | • We need to be aware how faculty are designing and explaining the designated (assessed) assignment to students. It is important to clearly state the critical thinking language. Are students being exposed to the CT outcomes prior to this assignment?  
• Biggest concern is with the scoring guide; some of the language is confusing.  
• During the action research of the “enhanced and non-enhanced,” faculty could have run the risk of prejudicing the non-enhanced courses. In other words, faculty may have taken measures (conscious or not) to not teach with “enhanced” practices that they would ordinarily always employ.  
• Are the assignments used for artifacts of equivalent level of difficulty across disciplines and classes?  
• Should assignments used for artifacts be standardized across each and/or all disciplines?  
• Almost half of the students were unable to explain questions/problems adequately.  
• Is it possible to excel in one area and be lacking in another? If so, we have no way to track the reason.  
• How much of the data reflects the ability of the student to succeed in applying critical thinking in the course and in other areas of life?  
• With “Explain” and “Analyze and Interpret” should reflect “0” under below standard, so this is concerning that the scoring guide has “1” for Below Standard. |
# 4. What are some recommendations for using these results to improve learning for each outcome?

<table>
<thead>
<tr>
<th>Explain questions, problems, and/or issues</th>
<th>Analyze and Interpret relevant Information</th>
</tr>
</thead>
</table>
| • It is recommended that faculty include in their syllabi the specifics of what they expect students to do for each outcome and/or for the assignment. This will help to determine which assignments and directions/ explanations lead to higher levels of critical thinking.  
• Critical thinking learning outcome language needs to be introduced to students early in the semester and reinforced throughout the semester.  
• Provide opportunities for faculty to improve their CT assignments.  
• Faculty could encourage that students use resources including BC Writing Lab, BC Academic Success Centers (ASC), and SmartThinking to improve writing skills and Critical Thinking skills.  
• Continue the process and involve more faculty in asking these questions and becoming aware and attentive to the design of assignments, assessments, projects, class structure, extra-curricular activities.  
• The more focus given to the process, the more the tools can be enhanced to become closer to demonstrating and/or exceeding the standard.  
• Find ways to integrate examples, illustrations, scenarios  
• Develop more enhanced qualitative instruments. Should we develop an in-house instrument that looks at student disposition? If so, working with PD office would be necessary.  
• Rather than aggregate numbers, is it possible to have more detailed information on individual student performance? In addition to knowing how much an SLO changed, shouldn’t we be interested in “how” it changed?  
• Should we look at the qualitative development of thought rather than statistical? (Connects with the recommendation about looking at a student’s disposition.)  
• To truly test whether the skills have been mastered and not just mimicked, have the professors assess the students in role playing based assessments using real life situations and not just concepts covered in class.  
• Reporting: For next IRPEA Report, on page 15 – Change “All Scholars” in the title to “All Participants”  
• Incorporate the Degree Qualification Profile (DQP) Assignment Library as a resource for faculty [http://www.assignmentlibrary.org/](http://www.assignmentlibrary.org/)  
• General Comment: Look at making appropriate revisions to the scoring guide. | • It is recommended that faculty include in their syllabi the specifics of what they expect students to do for each outcome and/or for the assignment. This will help to determine which assignments and directions/ explanations lead to higher levels of critical thinking.  
• Critical thinking learning outcome language needs to be introduced to students early in the semester and reinforced throughout the semester.  
• Provide opportunities for faculty to improve their CT assignments.  
• Faculty could encourage students to use resources including BC Writing Lab, BC ASCs, and SmartThinking to improve writing skills and Critical Thinking skills. |
<table>
<thead>
<tr>
<th>Evaluate information to determine credibility of reasoning</th>
</tr>
</thead>
<tbody>
<tr>
<td>• It is recommended that faculty include in their syllabi the specifics of what they expect students to do for each outcome and/or for the assignment. This will help to determine which assignments and directions/ explanations lead to higher levels of critical thinking.</td>
</tr>
<tr>
<td>• Critical thinking learning outcome language needs to be introduced to students early in the semester and reinforced throughout the semester.</td>
</tr>
<tr>
<td>• Provide opportunities for faculty to improve their CT assignments.</td>
</tr>
<tr>
<td>• Faculty could encourage students to use resources including BC Writing Lab, BC ASCs, BC Library Information Literacy workshops/sessions, and SmartThinking to improve writing skills and Critical Thinking skills.</td>
</tr>
<tr>
<td>• Incorporate the Degree Qualification Profile (DQP) Assignment Library as a resource for faculty <a href="http://www.assignmentlibrary.org/">http://www.assignmentlibrary.org/</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Generate well-reasoned conclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Make sure assignments are designed to expect a conclusion that is well-reasoned.</td>
</tr>
<tr>
<td>• Make sure students are being taught how to do this prior to this assignment.</td>
</tr>
<tr>
<td>• Faculty could encourage students to use resources including BC Writing Lab, BC ASCs, BC Library Information Literacy workshops/sessions, and SmartThinking to improve writing skills and Critical Thinking skills.</td>
</tr>
<tr>
<td>• With respect to critical thinking overall (especially being able to apply critical thinking skills outside of the controlled classroom setting): look to colleges which have designed separate critical thinking classes (not embedded into a content class) for ideas of warm-up exercises, real-life scenarios, and role playing as a way both to teach and to assess critical thinking either across disciplines or simply external to academic situations</td>
</tr>
<tr>
<td>• Incorporate the Degree Qualification Profile (DQP) Assignment Library as a resource for faculty <a href="http://www.assignmentlibrary.org/">http://www.assignmentlibrary.org/</a></td>
</tr>
<tr>
<td>• <strong>General Comment:</strong> Review the engagement of Emerging Scholars to maximize the opportunities for students to demonstrate mastery of the student learning outcomes.</td>
</tr>
</tbody>
</table>