

## Depth, Complexity, and Challenge

I recently reviewed a book entitled *The Ingredients of Challenge* by Carrie Winstanley. This is something I developed and thought might be useful for our discussion.

QUESTIONS	POSSIBLE APPLICATIONS AND RESOURCES
1. What makes an advanced student or scholar in your particular field/course/subject area? What would he/she be able to know, understand, or be able to do?	Research  Writing  Experiments  Key Scholars and Theorists, Seminal Readings, etc.
2. What kinds of activities might the student engage in (with the support of the faculty member) that will enhance his/her interest about, engagement in, and passion for	Interviews of Other Practitioners and/or Scholars  Conference or Meeting Attendance and Reflection  Observations  Applying the Taxonomy of Personal Engagement (p. 147-48 Winstanley based on Morgan and Saxton, 2006) <u>Levels of Involvement (from most advanced at the top):</u> <ul style="list-style-type: none"> <li>• Evaluating: wanting and being willing to test new understanding</li> <li>• Interpreting: wanting and needing to communicate that understanding to others</li> <li>• Internalising: merging objective concepts with subjective experiences, resulting in understanding and ownership of new ideas</li> <li>• Committing: developing a sense of responsibility towards the task</li> <li>• Engaging: wanting to be involved in the task</li> <li>• Interest: being curious about what is presented</li> </ul>

this subject?	
3. What does this student already know and what can he/she already do in this particular area of study? What are the areas of interest this individual student has with regard to	Pre-Assessment (paper/pencil, observational, or personal conference)
4. What does this area of study look like at the next level up? (i.e. for undergraduates, what does graduate study in, for example, linguistics, look like?) For P-12, what are the standards (core or state) for the next several grade levels above in, for example, animals and animal biology?)	<p>Professional Standards</p> <p>Advanced Syllabi and Course Descriptions</p> <p>Creative Problem Solving  <a href="http://members.optusnet.com.au/charles57/Creative/Brain/cps.htm">http://members.optusnet.com.au/charles57/Creative/Brain/cps.htm</a>  <a href="http://en.wikipedia.org/wiki/Creative_problem_solving">http://en.wikipedia.org/wiki/Creative_problem_solving</a></p> <p>Edward DeBono:  <a href="http://www.foodsec.org/DL/course/shortcourseFK/en/pdf/trainer_resources/PG_SixThinkingHats.pdf">http://www.foodsec.org/DL/course/shortcourseFK/en/pdf/trainer_resources/PG_SixThinkingHats.pdf</a>  <a href="http://www.debonoonline.com/what-are-the-six-thinking-hats.asp">http://www.debonoonline.com/what-are-the-six-thinking-hats.asp</a>  <a href="http://www.edwdebono.com/lateral.htm">http://www.edwdebono.com/lateral.htm</a>  <a href="http://www.youtube.com/watch?v=UjSjZOjNIJg">http://www.youtube.com/watch?v=UjSjZOjNIJg</a></p> <p>Kaplan's Depth and Complexity:  Details, Patterns, Trends, Unanswered Questions, Rules, Ethics, Big Ideas, Language of the Disciplines, Points of View, Relationships Over Time, Interdisciplinary Connections  <a href="http://daretodifferentiate.wikispaces.com/file/view/ELEMENTS+OF+D%26C+CHART.2pdf">http://daretodifferentiate.wikispaces.com/file/view/ELEMENTS+OF+D%26C+CHART.2pdf</a></p>

<p>5. Given the same assignment as typical students, what components might be revised or what rubric components might be added or weighted differently?</p>	<p>Bloom's Taxonomy of Cognition <a href="http://www.ntlf.com/html/lib/faq/bl-ntlf.htm">http://www.ntlf.com/html/lib/faq/bl-ntlf.htm</a></p> <p>Paul and Elder's work on Critical Thinking <a href="http://www.criticalthinking.org/pages/the-national-council-for-excellence-in-critical-thinking/FULLRULpages/the-national-council-for-excellence-in-critical-thinking/406#universal-intellectual-standards">http://www.criticalthinking.org/pages/the-national-council-for-excellence-in-critical-thinking/FULLRULpages/the-national-council-for-excellence-in-critical-thinking/406#universal-intellectual-standards</a></p> <p>Bloom's Taxonomy of Affective Development <a href="http://assessment.uconn.edu/docs/LearningTaxonomy_Affective.pdf">http://assessment.uconn.edu/docs/LearningTaxonomy_Affective.pdf</a></p> <p>Tomlinson's work on Ascending Intellectual Demand</p> <p>Costa's Work on 16 Habits of Mind</p>
<p>6. How might this assignment develop advanced critical thinking skills?</p>	<p><b>“A well cultivated critical thinker:</b></p> <ul style="list-style-type: none"> <li>• raises vital questions and problems, formulating them clearly and precisely;</li> <li>• gathers and assesses relevant information, using abstract ideas to interpret it effectively comes to well-reasoned conclusions and solutions, testing them against relevant criteria and standards;</li> <li>• thinks openmindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences; and</li> <li>• communicates effectively with others in figuring out solutions to complex problems.</li> </ul> <p>Critical thinking can be seen as having two components: 1) a set of information and belief generating and processing skills, and 2) the habit, based on intellectual commitment, of using those skills to guide behavior. It is thus to be contrasted with: 1) the mere acquisition and retention of information alone, because it involves a particular way in which information is sought and treated; 2) the mere possession of a set of skills, because it involves the continual use of them; and 3) the mere use of those skills ("as an exercise") without acceptance of their results.”</p> <p><a href="http://www.criticalthinking.org/pages/defining-critical-thinking/766">http://www.criticalthinking.org/pages/defining-critical-thinking/766</a></p>
<p>7. How might this assignment</p>	<p><b>From the 21<sup>st</sup> Century Skills Framework:</b> <b>Communication and Collaboration</b></p>

<p>develop the essential communication, collaboration, and presentation skills that are valued by professionals in this field/subject/area of study? How might similarly advanced students work together on a project, assignment, or activity?</p>	<p><i>Communicate Clearly</i></p> <ul style="list-style-type: none"> <li>• Articulate thoughts and ideas effectively using oral, written and nonverbal communication skills in a variety of forms and contexts</li> <li>• Listen effectively to decipher meaning, including knowledge, values, attitudes and intentions</li> <li>• Use communication for a range of purposes (e.g. to inform, instruct, motivate and persuade)</li> <li>• Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact</li> <li>• Communicate effectively in diverse environments (including multi-lingual)</li> </ul> <p><i>Collaborate with Others</i></p> <ul style="list-style-type: none"> <li>• Demonstrate ability to work effectively and respectfully with diverse teams</li> <li>• Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal</li> <li>• Assume shared responsibility for collaborative work, and value the individual contributions made by each team member</li> </ul>
<p>8. In what ways might the student and I engage in activities that offer a novel approach?</p>	<p>Analogic thinking</p> <p>Creative products</p>
<p>9. How might we use this opportunity to extend this individual student's learning into the broader community ("real world application")?</p>	<p>Interviews (Skype or Live)</p> <p>Field Experiences and Internships</p> <p>Volunteer Opportunities</p>
<p>10. In what ways might</p>	<p>Additional conferences and meetings between faculty and student/s</p>

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December, 2011

this experience enhance the mentoring relationship between the student and the faculty member?	Blogging or online discussion  Co-teaching or co-presenting
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Because the concept of a “Contract Course” involves negotiation between two parties (teacher and student) it is important to get student input on the contract. It might be too easy for a teacher or professor to design something that is SO difficult or time-consuming that it dooms a student to failure. It is also too easy to just have one boilerplate contract completed by all students in a differentiated experience or Honors Contract Course, regardless of interest or prior knowledge.