Critical Thinking Summary for Department Heads

Definition

By developing Critical Thinking skills, students will actively reflect on, reason about and form independent judgments on a variety of ideas and information, and will use these skills to guide their beliefs and actions.

At CCP, Critical Thinking is divided into six skill sets. Students will be able to:

- Gather and analyze data, ideas, and/or concepts from multiple sources (Multiple Sources)
- Apply information related to formulas, theories, procedures, principles or themes (Apply Information)
- Present multiple solutions, positions or perspectives (Multiple Perspectives)
- Draw well-supported conclusions (Support Conclusions)
- Synthesize ideas into a coherent whole (Synthesize Ideas)
- Participate in the self reflection/assessment process (Self Reflection)

Assessment History

Critical Thinking was examined twice (in 2010 and 2012). Both assessments utilized the Critical Thinking Rubric (developed by faculty members of the Critical Thinking Subcommittee of the Learning Outcomes Assessment Committee (Appendix A). On each skill, students were given one of five scores:

- Accomplished (Valued at 4)
- Competent (Valued at 3)
- Developing (Valued at 2)
- Beginning (Valued at 1)
- Not Applicable (not counted).

Assessment 1: Spring 2010

In Spring 2010, faculty assessed one individual assignment from one of six courses (STS 101, DMI 120, ACC 101, MATH 150, PHIL 101, PHIL 111). 125 student assignments were assessed. In that assessment 65% of students were determined to be Competent or Accomplish in Critical Thinking. Details for each skill are provided in Table 1. Although in each category more than half of students were at least competent; taking Multiple Perspectives was the lowest skill, with only 52% of students achieving competency or better. Courses in Philosophy (101 and 111) had the highest levels of students reached "accomplished." Mean scores ranged between 2.62 (Multiple Perspectives) and 3.08 (Multiple Sources).

Several faculty members indicated that they did not use the rubric, but rather used their own determinations for competence. Also several expressed dissatisfaction about the use of the rubric for a single assignment. Finally, others expressed concern that the standards were more than could be expected of students in two years. No specific recommendations were made at that time.

Table 1. Critical Thinking Skills from 2010 Assessment

	At or above competency	Below Competency	Mean
Multiple Sources	83%	17%	3.08
Applies Information	78%	22%	3.02
Multiple Perspectives	52%	48%	2.62
Supports Conclusions	70%	30%	2.82
Synthesizes Ideas	67%	33%	2.85
Self Reflection	71%	29%	2.89

Assessment 2: Fall/Spring 2012

In 2012 (Spring and Fall), 151 randomly selected students were assessed using the same rubric as above. Faculty were asked to assess the student regarding their performance over the whole semester. Fifty four of these students had accumulated less than 15 credits (freshmen); 97 had more than 45 credits earned (seniors). On each skill, mean scores for freshmen and seniors were compared. On two skills, Apply Information and Self Reflection, seniors scored significantly higher than freshmen. Seniors also were significantly higher on their overall critical thinking score. (Table 2.) Multiple Perspectives and Supporting Conclusions had the lowest gains over the time period. With the exception of Self Reflection, no mean scores were above 3 (competent).

Additional Indirect Evidence from 2012:

- Students have been as or more successful in courses that fulfill requirements related to Critical Thinking than in other general education areas (IR#195).[1]
- CCP students report that the college benefits their ability to think clearly and analytically on par with national averages and rank it 3rd highest gain out of 8 (IR#191).[2]
- Thinking critically and analytically had the highest growth score out of 8 (IR#204). [3]

Recommendations were that faculty should examine their courses that promote Critical Thinking for the skills with the weakest gains (Multiple Perspectives and Supporting Conclusions) and develop activities to promote those areas. Students should also be encouraged to partake in the full array of activities available to students including: extra-curricular clubs and activities, attending talks by visiting scholars,

[1] http://www.ccp.edu/VPFIN-PL/ir/ir_reports/ir_report_195.pdf
[2] http://www.ccp.edu/VPFIN-PL/ir/ir_reports/ir_report_191.pdf
[3] http://www.ccp.edu/VPFIN-PL/ir/ir_reports/ir_report_204.pdf

art exhibits, concerts, and plays, or regularly utilizing the services that the College offers students such as tutoring or advising. Critical Thinking is to be assessed again in 3 years.

Table 2. Critical Thinking Skills from 2012 Assessment

		Mean (Freshmen)	Mean (Seniors)	Mean Difference	Sig. (1-tailed)
Multiple Sources	Mean	2.56	2.77	.21	.088
	N	*50*	*91*		
Apply Information	Mean	2.53	2.87	.34*	.009
	N	*47*	*94*		
Multiple Perspectives	Mean	2.56	2.72	.16	.147
	N	*50*	*89*		
Support Conclusions	Mean	2.67	2.82	.16	.141
	N	*51*	*96*		
Synthesize Ideas	Mean	2.63	2.86	.24	.055
	N	*51*	*96*		
Self Reflection	Mean	2.69	3.02	.33*	.011
	N	*49*	*90*		
Critical Thinking Composite	Mean	15.51	16.94	1.42*	.047
	N	*45*	*77*		

Outstanding Questions

1. What constitutes competency?
Although 65% of students in 2010 were above deemed competent or higher, and that seniors scored higher than freshmen in 2012, for many skills, students, on average, did not reach the level of "competent" (3). Is this, overall, an acceptable outcome?

2. Who is responsible for Critical Thinking?
Without being tied to a specific course, how should the College encourage in students the development of Critical Thinking skills? How do we measure the impact of non- or extra-curricular activities?

3. What is Critical Thinking?
Does the current rubric continue to make sense for CCP? What level of competency should students achieve in their time at CCP?

Appendix A: Critical Thinking Rubric

Skills	Beginning	Developing	Competent	Accomplished
Gathers and analyzes data, ideas, and/or concepts from multiple sources	Copies information, often inaccurately, incompletely, or omits relevant information. Uses only one source	Reports information - paraphrases. May have minor inaccuracies, irrelevancies or omissions	Presents information accurately and appropriately. Uses multiple sources.	Blends multiple sources. Interprets accurately, appropriately and in depth in new contexts.
Applies information related to formulas, theories, procedures, principles or themes	Labels formulas, theories, procedures, principles or themes inappropriately, inaccurately or omits them	Uses appropriate formulas, theories, procedures, principles or themes with minor inaccuracies	Applies formulas, theories, procedures, principles or themes appropriately and accurately in familiar context	Employs formulas, theories, procedures, principles or themes accurately, appropriately and or creatively in new contexts
Presents multiple solutions, positions or perspectives	Identifies a single solution or resolution or fails to present one	Identifies simple solutions or perspectives with minor inaccuracies	Describes two or more solutions, resolutions, positions or perspectives accurately	Explains accurately and thoroughly, multiple solutions, resolutions, positions, or perspectives that balance opposing views of an issue
Draws well-supported conclusions	Proposes a conclusion or resolution that is inconsistent with evidence, illogical or omits conclusion altogether	Offers an abbreviated or overly simple conclusion that is mostly consistent with evidence and has minor inaccuracies	Organizes a conclusion that is complete, logical and consistent with evidence	Creates an independent judgment that is reflected in the conclusion or solution. Well supported by evidence and logic.
Synthesizes ideas into a coherent whole	Lists ideas or expresses solutions in a disjointed manner, no order	Uses a simple pattern to organize solutions	Connects ideas or develops solutions in a clear and orderly manner	Integrates ideas into solutions that are clear and cohesive.
Participates in the self reflection/ assessment process	Unable to identify major strengths and weaknesses in work. Does not seek and/or resists feedback on work	Attempts to identify strengths and weaknesses in work. Accepts feedback to improve work	Identifies strengths and weaknesses in work. Seeks assistance when needed to improve work	Self-identifies strengths /weaknesses in work and makes efforts to improve. Uses feedback to increase self awareness, improve overall research methods, and enhance learning