

Critical Thinking 1999

General Assessment report

Summary

Outcome

Through the General Education Core 300: Values and Critical Thinking course and other course work students will learn to think critically and evaluate their own values and the value systems of other persons, groups, and nations.

Faculty and Personnel Involved

Dan Campana, John Gingrich, Milton Morland, Jonathan Reed, and Richard Rose, as well as faculty students and personnel involved in conducting the senior exit and alumni survey.

Methods and Procedures

1. Senior Exit Survey
2. Alumni Phone Survey
3. Course Embedded Performance Measure

Results

1. Seniors and alumni were generally satisfied with the progress they made at ULV in thinking critically and analytically.
2. Few seniors (About 30%) were satisfied with their progress in applying math and statistical concepts.
3. Course embedded pilot assessment, final exam question, showed the sensitivity of the assessment procedures to differentiate performance levels in various aspects of critical thinking skills.
4. Findings of course embedded assessment showed that students appeared to be having difficulty identifying premises, fallacies, and ethical approaches, which varied somewhat between the sections.

Actions for Program Improvement

The dialogue that took place among the faculty in the process of developing the assessment procedures resulted in the clarification of learning outcomes. However, the results have not yet been shared to further the dialogue. This is expected to occur early in the Fall of 1999.

Outcome

Through the General Education Core 300: Values and Critical Thinking course and other course work students will learn to think critically and evaluate their own values and the value systems of other persons, groups, and nations.

This course is designed to teach critical thinking in the context of exploration of values. The degree to which students made progress in dealing with values in general was partially assessed under Value Orientation (Number 2, Section 8), which is one of the General Mission Elements. Although the assessment of this G.E. core course focuses on critical thinking skills, it does so in the general context of values. In this sense then it also provides an indirect measure of how well students are dealing with values.

Faculty and Personnel Involved

1. The following faculty in the Philosophy and Religion Department were actively involved in devising the assessment method and data collection: **Dan Campana, Milton Morland, Jonathan Reed, and Richard Rose.**
2. Faculty, students and personnel involved in conducting the senior exit and the alumni survey.

Methods and Procedures

1. Senior Exit Survey

The ACT College Outcomes Survey was used to survey seniors during the 1997-1998 academic year. The Survey includes five items that relate to critical thinking. Altogether 134 traditional age and 191 nontraditional age students participated in the survey. The items and the responses are attached.

2. Alumni Phone Survey

Altogether 84 undergraduate and 125 graduate alumni from 1995 participated in the phone survey. There were two questions about critical thinking: a) "Please tell me if the preparation you received at ULV was excellent, good, fair or poor concerning thinking critically and analytically."
b) "Compared to your peers or co-workers from other colleges and universities were you better prepared, about equally prepared, less than most prepared, or no basis for comparison concerning thinking critically and analytically?"

3. Course Embedded Performance Measure

This measure went through several versions and was piloted in two sections in the Spring of 1999. The discussions among the faculty that led to the pilot version was instrumental

in revising and clarifying the objectives of the course, which were then used to identify learning outcomes in operational terms. The steps that led to the pilot version are attached.

The assessment tool was a short article (editorial from newspaper, op-ed, etc.) advocating an ethical position on a topic relevant to the course. Each instructor selected his or her topic, appropriate to topics discussed in class. The following questions were given to the students to be answered in essay form in 1-2 pages:

“ After reading the article carefully, answer the following questions using concepts discussed in the class, and in appropriate terms introduced by the instructor over the course of the semester:

1. State in your own words the premises and the conclusions of the author.
2. Identify elements of the author’s world view and ethical approach that shape the premises and conclusions.
3. Identify any logical fallacies in the author’s argument.
4. Describe how your worldview, ethical approach, or values lead you to agree with or disagree with the author’s opinion.”

This question was given as part of the final and graded as such. The grading was done using a specially designed evaluation rubric. The learning outcomes and the evaluation rubric are attached.

**Core 300: Values and Critical Thinking
Evaluation Rubric**

Name: _____ semester: _____

<u>Learning Outcomes</u>	<u>Grade(Evaluation)</u>				
1. Accurately interprets the statement	A	B	C	D	
2. Able to identify the conclusion of the argument	A	B	C	D	
3. Able to identify and list the premises	A	B	C	D	
4. Identifies relevant logical fallacies with proper terms		A	B	C	D
5. Describes salient features of the author’s world view		A	B	C	D
6. Can describe the ethical approach in suitable					

terms	A	B	C	D
7. Able to articulate own view of the matter	A	B	C	D
8. Addresses major alternative points of view	A	B	C	D
9. Understands the reasons for disagreeing (World view, ethical approach, values or Logic).	A	B	C	D
10. Overall grade	A	B	C	D

Rubric

A = 4 points

Demonstrates critical thinking skill completely and clearly; makes appropriate references to and/or gives examples from text; and uses terminology accurately and unambiguously.

B = 3 points

Demonstrates critical thinking skill quite well but is incomplete or is somewhat unclear; Makes references to the text most of which are appropriate; and uses terminology accurately with few or minor errors.

C = 2 points

Demonstrates critical thinking skill marginally with lack of clarity; makes infrequent references to the text which, when present, tend to be correct; and uses terminology inconsistently but with some accuracy.

D = 1 point

Fails to demonstrate critical thinking skill; makes no references to the text or are inaccurate when present; and uses terminology inconsistently and mostly inaccurately.

Results

1. Senior Exit survey

Over two-thirds of the students, both traditional and nontraditional, reported making much or very much progress at ULV in various aspect of critical thinking:

- Drawing conclusions after weighing facts and ideas
- Problem solving skills (more nontraditional than traditional)
- Think and reason
- Thinking objectively about beliefs, attitudes and values
- Openness to new ideas and practices
- Intellectual curiosity
- Willingness to consider opposing points of view

On all of these critical thinking skills more of the ULV students said they made much or very much progress than the students in the normative sample of private universities and colleges.

There was one area that was quite low both in the ULV traditional sample as well as the national normative sample. Only about one-third said they made much or very much progress in applying math concepts and statistical reasoning. About one-half of the nontraditional students said so.

2. Alumni Phone Survey

Among the 1995 undergraduate alumni, about 45% said that their preparation at ULV was excellent, and that they were better prepared than their peers concerning thinking critically and analytical. And, about another 50% said that their preparation was good, and that they were about equally prepared than their peers in thinking critically and analytically.

Among the 1995 graduate alumni, the percentages were very similar to those found among the undergraduate alumni.

3. Course Embedded Performance Measure

During the Spring, 1999 semester two sections of the Core 300: Values and Critical Thinking course used a final exam question to assess critical thinking skills using a common set of learning outcomes and an evaluation rubric (Attached). One of the sections had 28 students, and the other had 32 students. The mean rating for each of the learning outcomes for each of the sections is attached. The following table summarizes the mean ratings and percentage of students rated A or B and C or D for each of the learning outcomes for the two sections combined.

Ratings(4-point scale, 4 = A) and percentages of A or B(High skill level) and C or D for critical thinking learning outcomes.

Learning outcomes	Mean	%(A or B)	%(C or D)
1. Accurately interprets the statement	3.43	92	8
2. Able to identify the conclusion of the argument	3.40	80	20
3. Able to identify and list the premises	2.79	56	44
4. Identifies relevant logical fallacies with proper terms	2.69	60	40
5. Describes salient features of the author's world view(1 section only)	3.16	81	19
6. Can describe the ethical approach in			

suitable terms	2.68	55	45
7. Able to articulate own view of the matter	3.25	79	21
8. Addresses major alternative points of view	3.21	78	22
9. Understands the reasons for disagreeing (World view, ethical approach, values, or logic)	3.01	73	27
10. Overall rating	3.03	73	27

The combined ratings of the learning outcomes in the above table show that three areas may need attention: numbers 3,4, and 6. Relatively more students seem to be having difficulty in identifying premises, fallacies, and ethical approaches. However, these varied from one section to another. Inspection of the ratings for the two sections separately (Attached) showed that students were having difficulty with premises in one section, and with fallacies, ethical approaches and alternative views in the other. Such differences may be due to the unique focus of the problem area covered by each section, or may be due to more fundamental pedagogic issues.

Dissemination and Dialogue

At the time of writing this report the results were not shared with the faculty, except the chair of Philosophy and Religion Department. He thought it would lead to a worthwhile dialogue among the faculty, and would help extend the conversation that took place in the process of formulating the learning outcomes and the evaluation rubric. In the Fall of 1999 these data will be shared with the faculty who teach the course, the General Education Committee, the students, and the faculty at large.

Conclusions and Recommendations

The 1997-1998 seniors and 1995 alumni tended to report good progress in and satisfaction with their training at ULV concerning critical thinking and reasoning skills. However, they appeared to be critical of their progress in applying math skills and statistical reasoning.

The procedures and the rubric developed to assess learning outcomes in the General Education Core 300 course were piloted and the results were reported here. They appeared to be adequately sensitive in identifying strengths and weaknesses of learning outcomes within and across the sections.

Application of math and statistical skills seems to be an issue. At this time statistics or applied math is not required of all students as part of their G.E., although several departments require statistics from their majors, such as Behavioral Sciences, and Business and Global Studies. Faculty in the Math Department, and the General Education Committee may want to take up this issue either for action or further study. Performance based assessment of critical thinking skills in discipline specific areas may be considered by different departments.

Actions for Program Improvements

No specific actions for program improvements have been taken yet. As the dialogue starts to happen as early as next fall, action recommendations may emerge concerning assessment procedures and curricular improvements.

The dialogue in the process of developing the assessment tool for Core 300 has already had a significant impact on the revision of the course outline by helping clearer articulation of learning outcomes.

Items and Responses
On the
ACT College Outcomes Survey

Table 1
Percentage of ULV Seniors (97-98) indicating contribution of ULV to **critical thinking** skills, compared to the ACT norms of national private universities.

ACT Items	ULV Trad Undergrad N=134	Fresh Entry n=73	Trans Entry n=57	CAPA n=85	SCE n=106	National Privates
1. Made progress in drawing conclusions after weighing facts and ideas (Very Much/Much) (II-A1)	71	71	68	78	70	62
2. Made progress in developing problem-solving skills (Very Much/Much) (II-A2)	67	69	64	80	70	61
3. Made progress in learning to think and reason (Very Much/Much) (II-A3)	81	86	73	79	73	70
4. Made progress in thinking objectively about beliefs, attitudes and values (Very Much/Much) (II-A5)	73	78	66	72	79	65
5. Made progress in developing openness to new ideas and practices (Very Much/Much) (II-A13)	73	78	68	73	74	61
6. College contribution to increasing my intellectual curiosity (Very Great/Great) (II-D27)	68	69	68	79	71	59

7. College contribution to becoming more willing to consider opposing points of view (Very Great/Great) (II-D2)	64	59	62	57	49
	62				
8. Made progress in understanding and applying math concepts and statistical reasoning (Very Much/Much) (II-A26)	31	34	25	53	45
					35

Separate Ratings of the Two
Sections
Of
Core 300

Table

Ratings (4-point scale, 4 = A) and percentage of A or B (High skill level) and C or D for critical thinking learning outcomes for a section of Core 300 (Dr. Rose).

Learning outcomes	Mean	%(A or B)	%(C or D)
1. Accurately interprets the statement	3.50	89	11
2. Able to identify the conclusion of the argument	3.61	85	15

3. Able to identify and list the premises	3.25	75	25
4. Identifies relevant logical fallacies with proper terms	2.50	50	50
5. Describes salient features of the author's world view	(Not evaluated for this section)		
6. Can describe the ethical approach in suitable terms	2.11	32	68
7. Able to articulate own view of the matter	3.00	64	36
8. Addresses major alternative points of view	2.41	55	45
9. Understands the reasons for disagreeing (World view, ethical approach, values, or logic)	3.11	77	23
10. Overall rating	2.96	68	32

Table

Ratings (4-point scale, 4 = A) and percentages of A or B (High skill level) and C or D for critical thinking learning outcomes for a section of Core 300 (Dr. Reed).

Learning Outcomes	Mean	%(A or B)	%(C or D)
1. Accurately interprets the statement	3.38	94	6
2. Able to identify the conclusion of the argument	3.19	75	25
3. Able to identify and list the premises	2.34	37	63
4. Identifies relevant logical fallacies with proper terms	2.89	69	31
5. Describes salient features of the			

author's world view	3.16	81	19
6. Can describe the ethical approach in suitable terms	3.25	78	22
7. Able to articulate own view of the matter	3.50	94	6
8. Addresses major alternative points of view	4.00	100	0
9. Understands the reasons for disagreeing (World view, ethical approach, values, or logic)	3.00	69	31
10. Overall rating	3.09	78	22
