

University of California, Irvine

**2010 Assessment of
Upper Division Writing at UCI**

By Natalie B. Schonfeld
Division of Undergraduate Education

Introduction

This report presents the findings from the Summer 2010 Assessment of Upper-Division Writing at UCI. A random selection of papers from Art History 190W, Economics 122W, Economics 123W, Informatics 162, Physics 196, Physics 197, and Writing 139 were collected in Spring 2010 and assessed using a common scoring rubric to determine the quality of student writing achieved through completion of the upper division writing requirement at UCI. Differences across courses as well as student characteristics were examined.

Key Findings

The analysis of upper division student writing products found that students are able to demonstrate some evidence of writing achievement that would be expected in fulfillment of the upper division writing requirement. Students appear to be strongest in their writing skills related to the use of language and style conventions and weakest in their ability to demonstrate critical thinking and analysis skills through their writing.

Significant differences in writing quality were observed between upper division courses, with papers produced in Art History 190W being strongest in all four categories of the Upper Division Writing Assessment Rubric and Writing 139 papers were weakest in all four categories. The assessment project confirmed the need for continued discussion about the goals of upper division writing across disciplines and the degree to which writing and research expectations differ as a function of discipline. No significant differences in writing quality emerged as a function of students' language status or enrollment status. This finding represents a departure from the results from the 2008 and 2009 assessments where significant differences were observed as a function of students' enrollment status. The Upper Division Writing Assessment Rubric was found to be a reliable and valid tool overall. Nonetheless, the findings from this project suggest the need for continued modifications and refinements to the critical thinking and use of evidence categories.

Overall, this project underlined the complexity associated with achieving clarity on the shared writing skills and techniques across disciplines, and the need for course writing assignments that provide students with the opportunity to practice, achieve, and demonstrate those shared writing skills and abilities, most notably critical thinking and analysis.

Assessment Design

Based on the findings and results from the 2008 and 2009 Upper Division Writing Assessments, the Campus Writing Coordinator sought to continue assessing student writing produced in upper division courses, focusing on writing produced in Social Sciences, ICS, Physical Sciences, and Humanities. The 2010 Upper Division Writing Assessment Project sought to further refine the Upper Division Writing Assessment Rubric, collect information about the quality of student writing produced in upper division writing courses, and determine whether such student characteristics as first language and transfer vs. high school status impact the quality of student writing. With these goals in mind, this assessment project sought to answer the following questions:

- **Writing Rubric:** To what extent does the Upper Division Writing Assessment Rubric capture the writing skills and techniques shared across academic disciplines? Is the rubric a reliable and valid instrument?
- **Student Writing Skills:** What is the quality of student writing produced in fulfillment of the upper division writing requirement? Are there differences in the observed quality of student writing as a function of the upper division writing course?

- Student Background and Writing: To what extent does the quality of student writing vary as a result of the student's language status and whether they transferred to UCI or came here directly from high school?

The Upper division Writing Assessment Rubric

In response to the findings and recommendations from the 2008 and 2009 Upper division Writing Assessments, modifications were made to the rubric's quality labels and descriptions within the four writing categories in order to more clearly delineate the distinctions between quality scores and more accurately capture the shared writing expectations across disciplines. The four levels of quality, (0) insufficient evidence, (1) some evidence, (2) satisfactory evidence, and (3) proficient evidence, and their descriptions for each of the writing rubric's writing categories are presented in Table 1.

Table 1: Upper Division Writing Assessment Rubric

Category 1: Critical Thinking & Analysis	Category 2: Use of Evidence/Research
<p>3: Proficient Evidence: The approach to the assigned topic of study is insightful, and/or creative, persuasive, unique, and worth developing; the level of thinking/analysis is strong; the ideas are clearly communicated with focus and specificity; the topic is considered/addressed from several facets or perspectives; the writer understands discipline-specific methods for producing knowledge; the content is tailored to the disciplinary audience.</p> <p>2: Satisfactory Evidence: The approach is acceptable, reasonable, thoughtful; the level of thinking/analysis is appropriate; the ideas offered are generally specific and focused, some are insightful, usually communicated clearly; the writer shows an awareness of other facets or perspectives; the writer seems to understand the disciplinary discourse and has taken some care in including content appropriate to the disciplinary audience.</p> <p>1: Some Evidence: The approach is occasionally adequate; some evidence of thinking/analysis, or an attempt at analysis, is evident; the ideas offered are intermittently delineated, thought-through, and appropriate to the task; the writer attempts to show awareness of at least one other facet or perspective; the writer sporadically shows awareness of the disciplinary discourse and includes content that is relevant to the disciplinary audience.</p> <p>0: Insufficient Evidence: The approach is inadequate or confusing; little or no evidence of critical thinking and analysis are evident; although some of the ideas may be worthwhile, the level of insight and clarity of presentation are lacking; the writer does not take into account other facets or perspectives, or does so in an inappropriate or simplistic manner; the thinking lacks focus and clarity, illustrates misconceptions; little or no evidence of awareness of the disciplinary audience.</p>	<p>3: Proficient Evidence: Uses evidence/sources appropriately and effectively, with a clear understanding of the disciplinary audience's expectations; considers (if appropriate) the previous knowledge generated within the discipline (e.g., literature review); evidence/sources used help develop and exemplify the overall argument/purpose of the writer; evidence/sources, including data tables or other visuals, are clearly and accurately represented and smoothly integrated into writer's argument/purpose.</p> <p>2: Satisfactory Evidence: Generally uses evidence/sources appropriately and effectively, with understanding of the disciplinary audience's expectations; shows awareness (if appropriate) of the previous knowledge generated within the discipline (e.g., literature review); evidence/sources used generally contribute to the overall argument/purpose of the writer; evidence/sources are usually represented accurately and with clarity; evidence/sources, including data tables or other visuals, are often well integrated into writer's argument/purpose (writer controls the ideas, the sources do not).</p> <p>1: Some Evidence: Evidence/sources have occasionally been used appropriately, and intermittently further the writer's purpose/argument; some evidence of disciplinary expectations for sources/research are evident; evidence/sources are presented with some degree of clarity, with some misreading or simplistic reading; the evidence/sources, including data tables or other visuals, may overwhelm the writer's own voice and purpose; evidence/sources are inconsistently integrated into the prose.</p> <p>0: Insufficient Evidence: Evidence/sources, if present at all, are used inappropriately, simplistically, or misreading is evident; the writing shows little or no evidence of the writer's understanding of the discipline's expectations for presenting evidence and using sources; evidence/sources, including data tables or other visuals, are mis-matched with the writer's purpose within the prose.</p>

Table 1: Upper Division Writing Assessment Rubric (continued)

Category 3: Development & Structure	Category 4: Language & Style Conventions
<p>3: Proficient Evidence: The prose clearly reflects the genre/discipline’s methods of organizing written discourse; the organization is apparent, coherent, and contributes to the overall goals; the insightful, specific, focused development of the main purpose/thesis is effectively organized in paragraphs or sections (as appropriate to the genre/discipline); sophisticated transitional devices help to develop one idea from the previous one or identify their logical relations; the reader is effortlessly guided through the writer’s chain of reasoning or progression of ideas.</p> <p>2: Satisfactory Evidence: The prose generally illustrates the writer’s understanding of the genre/discipline’s methods of organizing written discourse; the organization is usually apparent, coherent, and contributes to the overall goals; the development of ideas is generally insightful, specific and focused, following a logical progression; appropriate transitions connect the ideas and show relations between them; the reader is guided through the writer’s chain of reasoning or progression of ideas.</p> <p>1: Some Evidence: The prose sporadically illustrates the writer’s understanding of the genre/discipline’s methods of organizing written discourse; the organization is intermittently apparent, coherent, and on occasion, contributes to the overall goals; the development of ideas is somewhat insightful, specific, focused, and logical; transitional devices are inconsistently employed to connect the ideas; the reader can occasionally follow the writer’s chain of reasoning or progression of ideas.</p> <p>0: Insufficient Evidence: The prose does not clearly illustrate the writer’s understanding of the genre/discipline’s methods of organizing written discourse; organization is random, simplistic or inappropriately sequential, and rarely (if ever) contributes to the overall goals; little or no development of ideas is evident, with limited insight, focus or logic; the writing has little or no internal coherence, using few or inappropriate transitional devices; the reader has difficulty following the writer’s chain of reasoning or progression of ideas.</p>	<p>3: Proficient Evidence: The writing is styled and eloquent, with an easy flow, rhythm, and cadence; sentences have clear purpose and varied structure; sentences and paragraphing show skill with a wide range of rhetorical, disciplinary, or generic conventions; the writer chooses words for their precise meanings and uses an appropriate level of specificity, illustrating his/her facility with the discipline’s discourse; mechanics (spelling, punctuation, grammar, usage, and paragraphing) enhance overall readability and purpose; writing free of errors, evidence of careful editing and proofreading. Correct and appropriate use of citation methods for the discipline and genre.</p> <p>2: Satisfactory Evidence: The writing is generally appropriately styled and has a flow, rhythm, and cadence; sentences are purposeful and varied in structure; sentences and paragraphing typically show appropriate use of rhetorical, disciplinary, or generic conventions; the writer generally chooses words for their precise meanings and uses an appropriate level of specificity, illustrating his/her understanding of the discipline’s discourse; mechanics (spelling, punctuation, grammar, usage, and paragraphing) contribute to overall purpose; writing is almost free of errors, with evidence of editing and proofreading; limited errors do not detract from readability. Correct and appropriate use of citation methods for the discipline and genre.</p> <p>1: Some Evidence: The writing sometimes illustrates aspects of style, rhythm, and cadence appropriate to the discipline/genre; sentences are somewhat varied in structure and occasionally show the writer’s understanding of how to use rhetorical, disciplinary, or generic conventions; the writer sporadically chooses words for their precise meanings and uses some level of specificity; mechanics (spelling, punctuation, grammar, usage, and paragraphing) are sometimes detracting from readability and inconsistently contribute to overall purpose; errors occur, and occasionally detract from readability. Some awareness of citation methods for the discipline and genre.</p> <p>0: Insufficient Evidence: The writing illustrates little or no ability to use style, rhythm, and cadence; sentences generally lack purpose, with little or no variety in structure; sentences and paragraphing show a lack of understanding of how to use rhetorical, disciplinary, or generic conventions; word choice is typically inappropriate and generalized, showing a limited understanding of disciplinary discourse; mechanics (spelling, punctuation, grammar, usage, and paragraphing) detract (or rarely contribute to) from readability and overall purpose; errors occur throughout, illustrating an inability to control language or a lack of editing and proofreading. Little or no awareness/presence of citation methods for the discipline and genre.</p>

A random selection of papers produced in Spring Quarter 2010 in Art History 190W, Economics 122W, Economics 123W, Informatics 162, Physics 196, Physics 197, and Writing 139 were collected for the 2010 Upper division Writing Assessment Project.

Nine readers, all with significant writing instruction experience and a strong commitment to better understanding the quality of student writing produced through UCI's upper division writing requirement, assessed the quality of the writing products from Art History 190W, Economics 122W, Economics 123W, Informatics 162, Physics 196, Physics 197, and Writing 139. Six of the readers, Emily Brauer, Kat Eason, Brook Haley, Abraham Romney, Matt Seybold, and Elaina Taylor, serve as instructors for lower division writing courses at UCI. A seventh reader, Daniel Gross, serves as the Director of UCI's Composition Program and is an Associate Professor of English. An eighth reader, Michael Dennin, is a Professor of Physics, and is currently serving as the chair for the Academic Senate's Council on Educational Policy. An expert in writing external to UCI, Jacqueline Rhodes, is a Professor of English and former Upper division Writing Director at CSU San Bernardino, served as the ninth reader for this project.

In preparation for the Upper division Writing Assessment on September 13 and 14, 2010, the Campus Writing Coordinator met with faculty from Physics to discuss the four writing categories contained within the rubric and the discipline-specific writing expectations for Physics. A week prior to the assessment, all nine readers were sent the Upper division Writing Assessment Rubric along with 3 sample papers (from Art History, Economics, and Informatics) identified by Jonathan Alexander, Campus Writing Coordinator, and Lynda Haas, Associate Director for Composition, as reflecting both a range of writing quality based on the rubric's four categories and the distinctive nature of writing as a function of academic discipline. The readers were asked to review the papers and assign scores to each of these.

The first morning of the assessment started with a group discussion about the projects' goals, the lessons learned from the previous two years' assessment efforts, and the distinctive nature of academic writing as a function of its disciplinary frame. The assignment prompts were not provided to the readers, based on the view that student writing produced in upper division writing courses should rhetorically situate itself, and that it should be able to stand on its own, in that it addresses the aims, goals, and contexts for the writing. As a result, the success of this assessment project required a discussion among the readers about the distinct disciplinary conventions and organizational methods associated with academic writing in Art History, Economics, Informatics, Physics, and Humanities. Following this discussion, the readers reviewed the assessment rubric, the 3 sample papers, and discussed the assignment of writing scores to the sample papers. On two subsequent occasions, the readers collectively reviewed and discussed 7 additional sample papers to strengthen agreement of what constitutes achievement of the 4 writing traits contained in the Upper division Writing Assessment Rubric.

After the initial training session on the morning of September 13, 2010, readers were divided into 3 reading teams, with all members of a given team reading the same set of papers. All papers were read by three readers, with each individual reader assigning a score for each writing trait contained within the rubric. As papers were scored, Natalie Schonfeld monitored and tabulated the results. In order to strengthen inter-rater reliability, for any paper where the difference between the overall scores assigned by the three readers was greater than 2, one of the readers was asked to re-read the paper in question to confirm the score they initially assigned to the paper in question.

Table 2 displays the reliability coefficients for both the individual writing categories and the overall quality scores, by course and for all upper division writing products assessed for this project. The overall reliability coefficients for all upper division writing papers and for each of the courses suggest that the rubric has high overall reliability. In reviewing the reliability coefficients by course, the findings suggest that the Upper division Writing Assessment Rubric is most reliable in its ability to capture the writing quality of Art History 190W papers, and least reliable in its ability to capture the quality of writing in Writing 139 papers. When reviewing the reliability coefficients across courses, the values suggest that the rubric is most reliable in its ability to capture students' ability

to demonstrate critical thinking and analysis through their writing and least reliable in its ability to capture students' ability to organize their writing as captured by the development and structure category.

Table 2: Alpha Reliability Coefficient Values by Rubric Category and Overall

	Category 1: <i>Critical Thinking & Analysis</i>	Category 2: Use of <i>Evidence & Research</i>	Category 3: <i>Development & Structure</i>	Category 4: <i>Language & Style Conventions</i>	OVERALL
Art History 190W (n=10)	.927	.891	.811	.699	.936
Economics 122W (n=10)	.707	.815	.748	.838	.845
Economics 123W (n=10)	.798	.841	.782	.698	.863
Informatics 162 (n=20)	.779	.726	.461	.692	.806
Physics 196 (n=14)	.867	.746	.789	.464	.858
Physics 197 (n=6)	.843	.881	.910	.750	.921
Writing 139 (n=20)	.775	.702	.489	.666	.796
ALL PAPERS (n=90)	.823	.797	.697	.721	.859

In order to determine the validity of the assessment results, the grades for each of the papers were collected and compared to the assessment scores. A correlation was then performed to determine whether there exists a relationship between the grades students received on their upper division writing papers and the scores assigned through the use of the Upper Division Writing Assessment Rubric. The level of significance selected for this analysis was $p < .05$. The results, presented in Table 3, suggest that there is a positive and significant relationship between grades received and the assessment results for all papers as well as those produced in Economics 123W with the strength of the relationship being moderate.

Table 3: Paper Grades and Assessment Scores

	Grades	Assessment Scores	Pearson's R Value
Art History 190W (n=10)	87.85	8.23	.392
Economics 122W (n=10)	89.70	6.37	.540
Economics 123W (n=10)*	89.10	5.8	.687
Informatics 162 (n=20)	85.70	5.8	.378
Physics 196 (n=14)	91.86	7.36	.374
Physics 197 (n=6)	90.67	7	.665
Writing 139 (n=20)	78.91	4.6	.335
ALL PAPERS (n=90) **	86.54	6.21	.489

The analysis of the assessment results suggest that while the Upper Division Writing Assessment Rubric is reliable overall, it is a more valid instrument for the Economics 123W papers than for all other papers assessed for this project as a function of course, when defined as the relationship

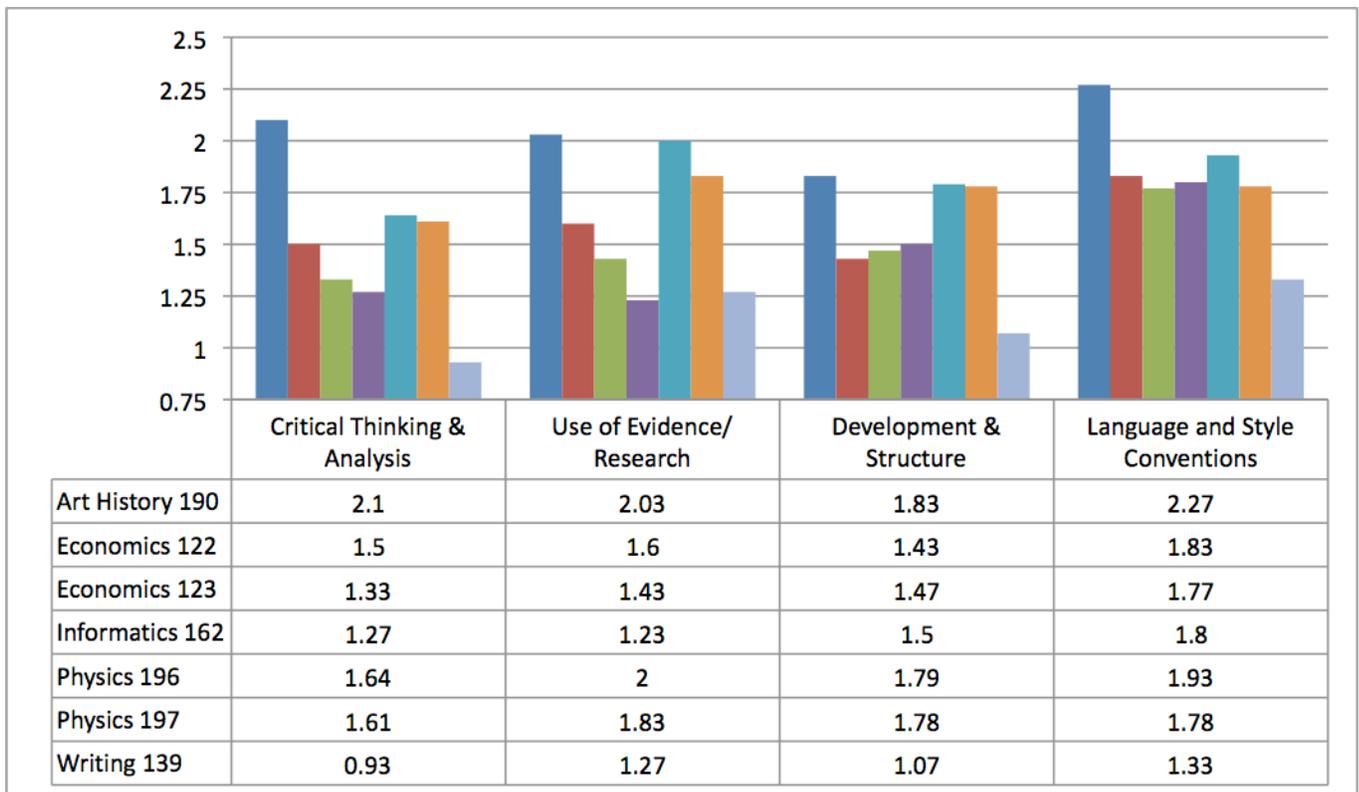
between assessment scores and grades received. Most importantly, there is a positive and significant relationship between the assessment scores and the paper grades for all papers reviewed for the 2010 Assessment of Upper Division Writing which suggests that the Upper Division Writing Assessment Rubric is an effective tool for capturing discipline-specific writing expectations.

At the conclusion of the Upper Division Writing Assessment, all readers were asked to provide written feedback about this assessment experience and the Upper Division Writing Assessment Rubric.¹ A large portion of the discussion with the readers upon completion of the assessment of upper division writing papers centered around the differences in writing as a function of academic discipline and the need for more training and discussion about the different disciplinary expectations for future upper division writing assessment readers. In discussing possible revisions to the Upper Division Writing Assessment Rubric, the readers suggested removing the word “evidence” from the rubric’s quality score labels, and further distinguishing critical thinking and the use of evidence.

Student Writing Skills

The upper-division writing quality results, as defined by the Upper Division Writing Assessment Rubric, are presented in Graph 1.

Graph 1: Upper-Division Writing Assessment Results



The assessment results found the Art History 190W papers to be strongest in all four categories contained within the Upper Division Writing Assessment Rubric in contrast to the Writing 139 papers which were found to be weakest in all four categories. All papers, regardless of course,

¹ The reader feedback comments about the 2010 Upper Division Writing Assessment Project are located in Appendix A.

were weakest in the critical thinking and analysis category, and nearly all, with the exception of the Physics 196 papers, were strongest in the language and styles conventions category. An ANOVA was performed to determine if the observed differences in writing quality as a function of upper division writing course were significant. The level of significance selected for this analysis was $p < .05$. The results, presented in Table 4, show there are significant differences in the quality of student writing as a function of course both by writing category and overall.

Table 4: Comparison of Mean Assessment Scores by Upper Division Writing Course

	Art History 190W (n=10)	Economics 122W (n=10)	Economics 123W (n=10)	Informatics 162 (n=20)	Physics 196 (n=14)	Physics 197 (n=6)	Writing 139 (n=20)	ALL PAPERS (n=90)
Critical Thinking & Analysis**	2.1	1.5	1.33	1.27	1.64	1.61	0.93	1.4
Use of Evidence/ Research**	2.03	1.6	1.43	1.23	2	1.83	1.27	1.55
Development & Structure*	1.83	1.43	1.47	1.5	1.79	1.78	1.07	1.49
Language & Style Conventions**	2.27	1.83	1.77	1.8	1.93	1.78	1.33	1.77
OVERALL SCORE **	8.23	6.37	5.8	5.8	7.36	7	4.6	6.21

Overall, the writing quality of the papers assessed in 2010 was higher than the writing quality observed in the papers used in the both the 2009 and 2008 Assessments of Upper Division Writing. As displayed in Table 5, the majority of papers both overall, and by individual course, showed some or satisfactory evidence of achievement of the four writing categories.

Table 5: Upper Division Assessment Score Distribution by Writing Category

Quality Scores by Category	1	2	3	4	OVERALL
Art History 190W (n=10)					
Insufficient Evidence (0-.99)	1 (10%)				
Some Evidence (1-1.99)	3 (30%)	4 (40%)	4 (40%)	2 (20%)	5 (50%)
Satisfactory Evidence (2-2.99)	3 (30%)	3 (30%)	6 (60%)	6 (60%)	5 (50%)
Proficient Evidence (3)	3 (30%)	3 (30%)		2 (20%)	
Economics 122W (n=10)					
Insufficient Evidence (0-.99)	2 (20%)	1 (10%)	2 (20%)		1 (10%)
Some Evidence (1-1.99)	6 (60%)	5 (50%)	6 (60%)	4 (40%)	7 (70%)
Satisfactory Evidence (2-2.99)	2 (20%)	4 (40%)	2 (20%)	6 (60%)	2 (20%)
Proficient Evidence (3)					
Economics 123W (n=10)					
Insufficient Evidence (0-.99)	2 (20%)	2 (20%)	3 (30%)		3 (30%)
Some Evidence (1-1.99)	6 (60%)	5 (50%)	4 (40%)	6 (60%)	4 (40%)
Satisfactory Evidence (2-2.99)	2 (20%)	2 (20%)	2 (20%)	3 (30%)	3 (30%)
Proficient Evidence (3)		1 (10%)	1 (10%)	1 (10%)	
Informatics 162 (n=20)					
Insufficient Evidence (0-.99)	7 (35%)	7 (35%)	3 (15%)	1(5%)	7 (35%)
Some Evidence (1-1.99)	7 (35%)	9 (45%)	11 (55%)	7 (35%)	9 (45%)
Satisfactory Evidence (2-2.99)	6 (30%)	4 (20%)	6 (30%)	12 (60%)	4 (20%)
Proficient Evidence (3)					
Physics 196 (N=14)					
Insufficient Evidence (0-.99)	1 (7%)	1 (7%)	2 (14%)		2 (14%)
Some Evidence (1-1.99)	9 (64%)	4 (29%)	5 (36%)	5 (36%)	4 (29%)
Satisfactory Evidence (2-2.99)	3 (21%)	7 (50%)	7 (50%)	9 (64%)	8 (57%)
Proficient Evidence (3)	1 (7%)	2 (14%)			
Physics 197 (N=6)					
Insufficient Evidence (0-.99)	1 (17%)	1 (17%)	1 (17%)	1 (17%)	1 (17%)
Some Evidence (1-1.99)	3 (50%)	1 (17%)	1 (17%)	2 (33%)	3 (50%)
Satisfactory Evidence (2-2.99)	2 (33%)	4 (67%)	4 (67%)	3 (50%)	2 (33%)
Proficient Evidence (3)					
Writing 139 (N=20)					
Insufficient Evidence (0-.99)	7 (35%)	4 (20%)	7 (35%)	4 (20%)	8 (40%)
Some Evidence (1-1.99)	12 (60%)	13 (65%)	10 (50%)	11 (55%)	10 (50%)
Satisfactory Evidence (2-2.99)	1(5%)	3 (15%)	3 (15%)	5 (25%)	2 (10%)
Proficient Evidence (3)					

^a Category 1 is “Critical Thinking and Analysis”; Category 2 is “Use of Evidence/Research”; Category 3 is “Development and Structure”; Category 4 is “Language and Style Conventions”.

Overall, the findings suggest that students are able to demonstrate some evidence of writing achievement that would be expected in fulfillment of the upper division writing requirement. The majority of papers, regardless of course, showed some evidence of achievement in all the four writing categories, with only 23% showing satisfactory evidence of achievement in all four writing categories. It is interesting to note that over half of all papers produced in Physics 196, a year-long upper division writing course, demonstrated satisfactory evidence in all four writing categories. All the upper division writing papers were strongest in the area of language and style conventions and lowest either in the area of critical thinking and analysis or development and structure. Significant differences were observed in the quality of writing students produced as a function of upper division writing course. These results point to the need to better understand the structure and scope of the writing assignments students are provided, the writing expectations as a function of academic discipline, and the degree to which assignments allow and require students to both achieve and demonstrate the level of writing expected upon completion of their upper division writing course. As noted by the readers at the conclusion of the assessment, nearly all the papers assessed, regardless of the discipline, were weak in their ability to demonstrate critical thinking and analysis.

Student Background and Writing

In order to better understand the writing quality in the sample of Art History 190W, Economics 122W, Economics 123W, Informatics 162, Physics 196, Physics 197, and Writing 139 papers, data was collected both about students’ enrollment and language status. As displayed in Table 6, the majority of papers assessed, both overall and by course, were produced by direct entrants from high school.

Table 6: Enrollment Status by Upper-Division Writing Course

Enrollment Status	High School	Transfer
Art History 190W	9 (90%)	1 (10%)
Economics 122W	7 (70%)	3 (30%)
Economics 123W	10 (100%)	0
Informatics 162	15 (75%)	5 (25%)
Physics 196	7 (50%)	7 (50%)
Physics 197	4 (67%)	2 (33%)
Writing 139	14 (70%)	6 (30%)
All Papers	66 (73%)	24 (27%)

Table 7 shows that the majority of students whose papers were assessed for this study were non-Native English speakers. For three of the courses, Art History 190W, Economics 122W, and Physics 196, the majority of papers assessed were produced by students who grew up in English only households.

Table 7: Language Status by Upper Division Writing Course

Language Status	English Only	English & Another Language/Another Language Only
Art History 190W	6 (60%)	4 (40%)
Economics 122W	6 (60%)	4 (40%)
Economics 123W	2 (20%)	8 (80%)
Informatics 162	10 (50%)	10 (50%)
Physics 196	7 (58%)	5 (42%)
Physics 197	2 (40%)	3 (60%)
Writing 139	6 (33%)	12 (67%)
All Papers	39 (46%)	46 (54%)

An analysis of variance was performed to identify the effects of enrollment status, and language status, respectively, on the four individual writing categories and the overall writing assessment scores. The level of significance selected for these analyses was $p < .05$. The results from the analysis of variance, displayed in Table 8, concerned with the effect of enrollment status on writing quality show that there are no significant differences in writing quality as a function of enrollment status, though transfer students achieved higher assessment scores by category and overall than their direct from high school counterparts. This finding is particularly interesting as significant differences as a function of enrollment status were observed in the 2008 and 2009 Upper Division Writing Assessment Projects; in both of those projects, students who enrolled at UCI directly from high school demonstrated a significantly higher quality of writing than their transfer counterparts.

As also noted in Table 8, there are no significant differences in writing quality as a function of language status though students who grew up in English only households achieved higher assessment scores by category and overall than their English and another language and another language only counterparts. These findings are consistent with the findings concerned with the effects of language status on writing quality that emerged in the 2008 and 2009 Upper Division Writing Assessment Projects.

Table 8: Mean Writing Assessment Values as a Function of Enrollment and Language Status

<u>Mean Writing Assessment Values and Enrollment Status</u>	High School	Transfer
Critical Thinking & Analysis	1.38	1.44
Use of Evidence/ Research	1.51	1.68
Development & Structure	1.47	1.54
Language & Style Conventions	1.78	1.74
OVERALL SCORE	6.14	6.40
<u>Mean Writing Assessment Values and Language Status</u>	English Only	English & Another/ Another Only
Critical Thinking & Analysis	1.44	1.38
Use of Evidence/ Research	1.57	1.51
Development & Structure	1.53	1.46
Language & Style Conventions	1.86	1.69
OVERALL SCORE	6.40	6.04

** $p < .01$, * $p < .05$

Conclusions and Recommendations

The 2010 Upper Division Writing Assessment was designed with three goals in mind: (1) to assess the degree to which the Upper Division Writing Assessment Rubric captured shared writing skills and techniques across academic disciplines, (2) to assess the quality of student writing produced in upper division writing courses, and (3) to determine whether such student characteristics as first language and transfer vs. high school status impact the quality of student writing. The Upper Division Writing Assessment Rubric, modified in response to the findings and recommendations from both the 2008 and 2009 Assessment Projects, proved to be a useful tool for assessing the quality of writing produced in upper division courses. While the rubric was found to be both a reliable and valid tool, improvements to the instrument will continue to further strengthen its ability to effectively capture the quality of student writing produced in upper division writing courses as it related to both the critical thinking and use of evidence categories, as well as across disciplinary genres. The review of student writing showed that students are able to demonstrate some evidence of writing achievement that would be expected in fulfillment of the upper-division writing requirement. The papers were consistently strongest in the use of language and style conventions, with only 23% of the papers demonstrated satisfactory evidence of achievement of all four writing categories. Further, significant differences in writing quality were observed between upper division courses, with papers produced in Art History 190W being strongest in all four categories of the upper-division writing rubric and Writing 139 papers were weakest in all four categories. Overall, the papers were found to be weakest in critical thinking, which is consistent with the results from both the 2008 and 2009 upper-division writing assessment projects. Finally, no meaningful differences were observed in the writing quality produced by students as a function of their enrollment status.

In light of these findings, the following recommendations emerge:

While there is great value in the distinctiveness of upper division writing courses as a result of the given discipline's approach to writing, differences in writing and research expectations as a function of discipline have consistently been a source of discussion each year that upper-division writing has been assessed. In response to the discussions with the readers, and the results from these assessment projects, modifications and refinements to the Upper Division Writing Assessment Rubric are made to further strengthen the rubric's ability to capture and reflect different disciplinary writing expectations. The findings from this year's project serve to confirm the complexity of this task, and the need for a greater understanding of how the discipline shapes the expectations, organization and structure of the writing.

In addition to making modifications to the rubric so as to most accurately capture what constitutes writing quality across disciplines, upper division writing courses and assignments need to provide students with the opportunity to practice, achieve, and demonstrate the writing skills and abilities reflected by the rubric, most notably critical thinking.

While no significant differences in the quality of writing produced by students as a result of their enrollment status emerged in 2010, such differences did emerge in both the 2008 and 2009 assessments. As a result, it is recommend that writing quality as a function of students' enrollment status continue to be monitored in future writing assessment projects.

Appendix A

UDW Assessment Reader Notes/Feedback-Summer 2010

What writing courses do you teach?

- 39B; I emphasize writing in other courses
- WR 39 A, B, C
- 1st year composition; basic writing; upper division writing; writing in the public sphere
- WR39C, WR139, E28, WR39B
- 39B
- WR39C, Argument & Research
- 39B, C; FIP US11
- Physics 21: Science of Superheroes

What suggestions do you have for improving the initial training period provided to you as a reader (discussion of rangefinders and the UDW rubric)?

- As we discussed today, naming the input of subject-matter experts certainly helps us read more confidently. It is, however, not a deal-breaker
- Discipline specific expectations for placement of various activities
- Don't bother emailing rangefinders beforehand- just start 15 minutes earlier and have readers do it there
- I think that further work on the rubric should clarify the difference between crit/analysis and use evidence/research. Also, I would reword the phrase "use of evidence is evident" to make it less circular
- I would encourage greater attention to the genre and evidence criteria specific to each discipline
- More rangefinders (time/length permitting) maybe less discussion- while the discussion is interesting, sometimes it goes on a bit
- No incentives for masking in the midrange (psychological, practical)
- None. It was clear the rubric

What suggestions do you have for improving the UDW rubric for future assessments of Upper-Division Writing?

- Clarify if this is evidence or evidence category
- Drop "evidence" from descriptions of proficiency levels- gets a little confusing
- Generally excellent. Eliminate the word "evidence." Change proficient (modify a person, not a thing...i.e. "evidence")
- I like the rubric
- None (all mentioned in discussion)
- None...wait, make the language consistent in Category 3- about readers following- (this was passed on to Linda & Jonathan already)
- Remove the word "evidence" from each category?

What were the areas of strength in the writing products you read?

- A wide range: on the whole, fluency was higher than I expected it to be based on the LDW papers I've been familiar with
- Category 4
- Clear organization, language was mostly readable
- I was impressed that most papers had generally good grammar
- I was pleased to see rigorous research & careful attention to detail
- Language & style
- Language mechanics
- Structure (esp. for physics/informatics)

What were the areas of weakness in the writing products you read?

- Again, a wide range, but focusing on a consistent, persuasive, and clear theme. Too often students distract themselves with macro issues of dubious relevance
- As in any undergraduate writing, critical thinking & analysis
- Critical thinking
- Critical thinking/analysis
- Critical thinking/analysis
- I felt that in general, papers needed better paragraph transitions and structure
- Some research and stronger purpose/thesis
- Use of sources

The Library is currently gathering evidence to assess information literacy. How did the writing products demonstrate the effective use of information to accomplish a specific purpose?

- Hard to tell from this sample- if rubric included info literacy standards, might be helpful- right now isn't designed to measure such
- I can't say – sorry
- I did not see extensive use of library sources. Many sources used were likely digital databases
- Most was based off their research so they didn't use as much information from library
- Not well. Limited use of sources
- Probably about half of these papers depended heavily on library resources, many didn't utilize them at all
- Sources generally well integrated; could sometimes be better integrated

What disciplinary differences, if any, did you see in the writing products?

- Certainly, the science papers have a clear sense of purpose & organization (usually)
- Humanities papers weaker in terms of evidence
- Informatics didn't seem to be strong in terms of purpose
- Large differences- some were focused, some documented detailed research. ICS papers focused heavily on description but after lacked focus and sometimes critical analysis
- Non-Humanities isn't as structured (formally)- physics had a greater emphasis on describing historical trends & explaining past research
- Physics very polished. Informatics a bit goofy/soft/not rigorous
- Too massive to fully articulate, but Art History definitely had the best writers and critical thinkers. Informatics students wrote well, but were consistently lacking with research
- Where critical thinking/analysis is highlighted

Based on your participation in this assessment activity, what changes, if any, might you make in your own teaching?

- I think I will be very careful at outlining specific research genre expectations
- Knowing more about UDW I'd like to look at how we can prepare students for the discipline-related issues they'll have to consider. Hm.
- More explicit about certain disc. Expectations
- None
- None yet
- Place even more emphasis on genre awareness because clearly student writing in later coursework varies in genre
- Probably focus more on purpose

Based on your participation in this assessment activity, do you have any recommendations for curricular changes, alterations, or improvements to Upper-Division Writing?

- For assessment, I do believe it would be very useful to spend time clarifying and comparing the expectations in each field. I think these characteristics should be taken into more consideration.
- Give clearer prompts on rubrics
- I think most in the humanities cannot read the natural sciences
- It seems that some instructors might need to revisit their writing prompts
- Many of the papers result from some type of experiment, often one test fueled. I would suggest that even though this may be a genre difference from argumentative papers, they would benefit from revision and sign posting (even if in better abstracts in the science papers) when the outcome is unexpected, further analysis of results should be given (critical analysis) and perhaps better revision in introductions to anticipate results (within reason for given genres)
- More readers from the disciplines
- Yes. For physics