

University of California, Irvine

Assessing the First-Year Integrated Program

The First Two Years

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Introduction

The purpose of this report is to present the data and findings from the first two years of the formative assessment of FIP, the First-Year Integrated Program. FIP courses are designed to provide students with (1) a year-long interdisciplinary academic experience, (2) the opportunity to complete up to four of their general education requirements, including the second course of the lower division writing requirement, and (3) a relatively intimate freshman learning community experience comprised of 80 or fewer students. In the two years since the inception of FIP, the following courses have been taught:

2006-2007 academic year:

- University Studies 11: Persuasion and Social Change: taught by faculty in German, Comparative Literature, and Sociology
- University Studies 12 - Computer Games as Art, Culture And Technology: taught by faculty in Information and Computer Science, Informatics, and Film and Media Studies.

2007-2008 academic year:

- University Studies 12: Computer Games as Art, Culture and Technology, taught by faculty from Information and Computer Science, Informatics, and Film and Media Studies.
- University Studies 13: Environmental Studies, taught by faculty from Earth System Science, Developmental and Cell Biology, and Engineering.

As part of the First-Year Integrated Program's approval, the Council on Educational Policy requested that the writing component of the program be reviewed. This report serves both as a response to that request and an overview of FIP.

Assessment Plan

During the first two years of instruction for the First-Year Integrated Program, formative assessment plans, designed primarily to provide information for guiding program improvements, were implemented. Though modifications to the FIP assessment plan were made in 2007-2008 in response to the first year findings, three questions have consistently guided the assessment of this program:

1. To what extent do students perceive that their writing and research skills have improved as a result of the course?
2. To what extent do students' one-page diagnostic essays demonstrate changes in writing over time?
3. To what extent do students' capstone papers demonstrate achievement of writing that satisfies the second course of the lower division writing requirement?

To answer these questions, the following assessment methods have been used:

- Students' self-reported gains in writing and research, collected at the end of each quarter through quarterly course evaluations (indirect measure);
- Collection and analysis of one-page diagnostic essays, written at the beginning of each quarter (direct measure) using two computer programs, one that measures fluency and use of academic vocabulary and one that measures writing mechanics and structure¹; and,
- Analysis of a random sample of capstone papers (direct measure) using a revised version of the assessment matrix used by writing directors of Writing 39C and Humanities Core Course 1C (courses that satisfy the second course of the lower division writing requirement).

¹ The one-page diagnostic essays were initially analyzed with the use of a computer program that measures fluency and use of academic vocabulary. During the 2007-2008 academic year, the analysis of these essays was expanded to include a second computer program designed to measure writing mechanics and structure.

Student Enrollments

Student enrollment in the FIP courses increased slightly from the first to the second year of the program, though the target enrollment of 80 students per course was not met in either year. In both 2006-2007 and 2007-2008, the FIP courses lost some enrollments over the course of the year.

Table1: FIP Course Enrollments by Quarter

		Fall Quarter	Winter Quarter	Spring Quarter
2006-2007 Academic Year	US 11	47	34	33
	US 12	61	51	50
2007-2008 Academic Year	US 12	74	66	63
	US 13	41	30	28

As displayed in Table 1, 77% of all 2006-2007 students who enrolled in a FIP course completed the three-quarter sequence compared to 79% for 2007-2008. Follow-up communication with students who did not re-enroll took place both years. In 2006-2007, workload and course organization and content were the primary reasons students reported for not remaining enrolled in their FIP course; in 2007-2008, students indicated that scheduling conflicts were the primary reason they did not remain enrolled in their FIP course.

Student Characteristics

In order to better understand the student population who participates in the First-Year Integrated Program, each year, academic data such as high school GPA, SAT scores, UCI Fall Quarter GPA, and academic school affiliation was collected and analyzed. As noted in Table 2, in both 2006-2007 and 2007-2008, the results of comparisons made between those students enrolled in FIP and all other new freshmen found that FIP students had consistently higher SAT Writing scores and Fall Quarter GPA's, and US 12 students had consistently higher SAT Mathematics scores.

Table 2: FIP Course Enrollments by Quarter

		High School GPA	SAT Verbal Score	SAT Mathematics Score	SAT Writing Score	Fall Quarter GPA
2006-2007 Academic Year	US 11	3.70	601	601	607	2.94
	US 12	3.66	609	640	595	2.93
	All Other Freshman	3.69	574	614	581	2.79
2007-2008 Academic Year	US 12	3.73	620	665	616	3.07
	US 13	3.84	575	629	588	3.31
	All Other Freshman	3.79	564	614	575	2.88

Because of the FIP Program’s commitment to interdisciplinarity, there was also interest in learning what academic schools students were affiliated with both when they started at UCI and at the end of their first year.

Table 3: Academic School Affiliation for FIP Students in Fall and Spring Quarters

Academic School	2006-2007				2007-2008			
	US11		US12		US12		US13	
	Fall 2006	Spring 2007	Fall 2006	Spring 2007	Fall 2007	Spring 2008	Fall 2007	Spring 2008
Arts	0	0	3	4	1	5	3	4
Engineering	0	0	1	1	0	1	0	0
Biological Sciences	4	4	3	3	0	3	1	2
Health Sciences	0	0	1	1	0	0	0	0
Humanities	2	4	2	3	0	1	2	3
Information and Computer Science	2	2	23	24	29	30	0	0
Physical Sciences	1	1	2	2	8	8	0	1
Social Ecology	5	8	1	3	3	3	4	6
Social Sciences	4	9	4	4	2	8	4	10
Undecided/Undeclared	15	5	9	5	20	4	14	2

As shown in Table 3, the academic school affiliations of students enrolled in the First-Year Integrated Program differed as a function of course, with students affiliated with science schools, most notably ICS, being more highly represented in US12: Computer Games as Art, Culture, and Technology. The percentage of FIP students who were Undecided/Undeclared declined from 38% in 2006-2007 to 34% in 2007-2008.

Writing Instruction

Each of the FIP courses approached writing instruction and writing assignments in their own way. In addition, the amount of writing required varied between the two courses and over the two years of the program. The following summary describes the course content and assignments for the FIP courses by year and quarter. Course distinctions become especially important when reviewing the results from the various writing assessment efforts.

2006-2007 Academic Year:

US 11: Persuasion and Social Change

- Fall Quarter explored how the concept of rhetoric takes shape across media such as the work of Plato, Greek plays, and the Internet. Students were required to produce eight one-page blogs and a two-page essay. They also engaged in regular email Q & As from the TAs and other class members, and engaged in a peer review process for each formal essay assignment.
- Winter Quarter students examined the notion of conversion through such varied works as Augustine’s Confessions, The Autobiography of Malcolm X, and Darwin’s Origin of Species. Students were required to compose two essays, to research and construct an annotated bibliography on one topic, and to engage in a peer review process for each essay assignment.
- Spring Quarter explored the themes of law and resistance and the relationship between law and rhetoric through such events as the Civil Rights Movement, the Vietnam War, 9/11 and the War on Terror, with students writing one three to four page paper as well as their capstone research paper. Again, students engaged in a peer review process for the short essay, and

joined peers in the selection of topics and the review of the research essays composed in fulfillment of the capstone research paper requirement.

US 12: Computer Games as Art, Culture and Technology

- Fall Quarter tackled general concepts in computer games and required students to learn the basics of Java programming and to develop a game. Students were also required to write two academic essays, a historical investigation into the history of computer games (1,000 to 2,000 words), and an analysis of a specific game's design elements (9 paragraphs), and to engage in peer review.
- Winter Quarter explored computer games both as works of art and political or social expressions through an examination of non-commercial computer games designed as art or as critiques of computer games. Students researched computer games as art, submitted a two page essay proposal, constructed an annotated bibliography assessing sources on their selected topic, composed a 1,200 to 1,500 word capstone research paper, and engaged in peer review of both the annotated bibliography and the final research project. Students were also required to become familiar with Second Life, a computer program which served as an example of a computer game platform with social and political implications.
- Spring Quarter focused on gaming criticism, the elements that make computer games unique, and a more in-depth look at the elements needed to construct a computer game. Students worked in groups and were required to write a more sophisticated game that, if they chose, was an extension of the prototype they had developed in the Fall. Students were required to produce a professional quality design document which is a report about the construction and implementation of the computer game each group created. A Design Document is comprised of the following elements: an abstract, introduction, description of the game, description of the art and concepts, detailed instructions about how the game was written, and a link to a demonstration of an actual game module. Students also produced a 250 word critique analyzing their work in the group, the contributions of each group member, and assessing what they learned.

2007-2008 Academic Year:

US 12: Computer Games as Art, Culture and Technology

The course content modifications for the 2007-2008 academic year were minor with the most noticeable changes occurring in the writing assignments as a result of what was learned in the first year of instruction. As a result, the summary for US12 here is limited to a description of the 2007-2008 course writing assignments.

- During the Fall Quarter, students wrote two papers, one exploring the connections between the history of computer games and contemporary culture (1,000 to 2,000 words) and another one analyzing a game's design elements (800 to 1,000 words).
- During the Winter Quarter, students wrote a source analysis paper (500 to 700 words) as well as their capstone research paper (1,500 words).
- During the Spring Quarter, in teams, students produced a design document about their computer game. A Design Document is comprised of the following four elements: an overview or abstract, game specification, technical specification, and the schedule, which includes the timeline for the development of the game. Group members individually constructed a 250 word critique analyzing their work in the group, the contributions of each group member, and assessing their learning.

US 13: Environmental Studies

- The Fall Quarter focused on the Earth as a physical environment and introduced students to methods for measuring and monitoring changes in the environment central to discussions about climate change, the global water cycle, and stratospheric ozone. During

the Fall Quarter, students wrote two papers, a water quality lab report (800 to 1,000 words) and a source analysis about a historical issue in environmental studies where the impacts on human activities and/or the impacts on natural processes have been studied (500 to 750 words).

- The Winter Quarter was devoted to an exploration of biodiversity, conservation biology and ecology, with a heavy emphasis placed on legislation and human environmental impacts. During the Winter Quarter, students wrote two papers, one explaining and evaluating a bill related to environmental issues that has been introduced in Congress (600 to 750 words) and a consumer guide indicating the environmental pros and cons of consumer choices (600 to 750 words).
- The Spring Quarter focused on the links between the economy, politics, sustainability efforts and the environment. During the Spring Quarter, students produced two papers, a one page overview of their proposed research topic which included an annotated bibliography for six research sources, and their capstone research paper (1,200 to 1,500 words).

For FIP's two years of instruction, the FIP Writing Director provided instructional guidance to TAs on how best to integrate writing assignments into the courses, and how to assign, conduct peer review, comment on and assess student writing throughout the year. The Director met weekly with the TAs to teach formal pedagogical approaches to writing and research, helped TAs explore ways to integrate writing into course content, develop and use scoring rubrics, and taught techniques for involving students in the assessment of their own writing. During the 2007-2008 academic year, the FIP Writing Director directed more of their weekly meetings with the TA's to discussing the use of peer review as an instructional writing technique, developing writing rubrics for evaluating student writing, and norming the TA's in terms of grading students' writing to ensure consistency in writing expectations across FIP courses.

Assessment Results

1. Self-Assessment of Writing (Surveys)

Since Fall 2006, FIP students have been asked to complete a quarterly course evaluation for their FIP course which included items asking students to evaluate their own improvement in writing. Because many of the survey items have been modified over the course of FIP's two year history, in response to feedback from the FIP instructional teams, the FIP Writing Director and the FIP Program Director, only those survey items which have appeared consistently on the course evaluations are presented below.²

Results from the quarterly course evaluations, as displayed in Table 4, show that students' self-assessments of both their writing and research skills improved from Fall to Spring Quarters in both 2006-2007 and 2007-2008. When reviewing the results by course, it is important to remember the different approaches to writing taken by each course, the nature of the academic disciplines the courses represent, and the differences among the students, both in terms of their academic interests and abilities, as a function of their chosen FIP course. Together, these differences likely influenced the ways in which students experienced the courses and reflected on changes in their writing and research skills.

- While the results potentially point to differences both between the FIP courses and the students who enroll in them, it is important to note that, overall, FIP students perceive

² For all FIP course evaluation results, please contact Natalie Schonfeld, nschonfe@uci.edu.

having made greater gains in their writing and research skills in 2007-2008 than was the case in the first year of the program.

- Similarly, students rated the quality of their FIP course more positively in 2007-2008 than they had during the first year of the program.

Table 4: Self-Assessment of Writing and Research Skills and Course Quality

2006-2007 Academic Year	US 11			US 12		
	Fall	Winter	Spring	Fall	Winter	Spring
My skills in expressing myself through writing have improved. ^a	83%	91%	97%	67%	75%	77%
My TA is helping me improve my writing skills. ^{a, b}	NA	91%	93%	NA	81%	91%
My TA is helping me improve my research skills. ^{a, b}	NA	83%	89%	NA	76%	85%
How would you rate the overall quality of your FIP course? ^c	81%	95%	96%	83%	79%	87%

2007-2008 Academic Year	US 12			US 13		
	Fall	Winter	Spring	Fall	Winter	Spring
This course has strengthened my writing skills. ^a	75%	84%	85%	58%	90%	93%
This course has strengthened my research skills. ^a	73%	83%	77%	85%	93%	93%
My TA is helping me improve my writing skills. ^a	77%	75%	83%	63%	90%	93%
My TA is helping me improve my research skills. ^a	68%	71%	74%	81%	83%	96%
How would you rate the overall quality of your FIP course? ^c	89%	87%	91%	88%	93%	92%

^a The results displayed represent the percentage of respondents who agreed or strongly agreed.

^b These survey items first appeared in the Winter Quarter 2007 course evaluation.

^c The results displayed represent the percentage of survey respondents who rated the quality as excellent, very good, or good.

2. One-Page Essays

During both 2006-2007 and 2007-2008, FIP students were required to write a one-page, diagnostic essay during the first two weeks of each quarter. In 2007-2008, students were required to produce a fourth diagnostic essay during the eighth week of the Spring Quarter. The primary purpose of these essays was to generate a short piece of writing at different stages during the year which could be used to assess changes in writing. All diagnostic essay writing prompts were developed by the course instructional teams in consultation with FIP Writing Director Lori Miller and given to students during their discussion session meeting time. During the 2006-2007 academic year, the writing conditions for the one-page diagnostic essays differed by course; US11 students were allowed to work on their essays for the rest of the day (turning them in by midnight of the day their received the prompt), while US12 students completed their one-page essays during the discussion session. In addition, the writing prompts varied both by course and quarter, from asking students to explore an opinion or experience, to asking students to evaluate a class lecture or reading assignment. These distinctions limited the usefulness of the assessment results from the one-

page diagnostic essays in 2006-2007 and led to significant changes in the administration and development of the one-page diagnostics during the second year of FIP instruction. During the 2007-2008 academic year, the writing prompts were made more uniform, both across courses and across quarters, to allow for ease of assessing changes in writing over time. Further, students in both FIP courses were given a few days to complete their essays and submit them electronically, thereby ensuring that all FIP students be afforded the same writing conditions.

During the 2006-2007 and 2007-2008 academic years, the one-page diagnostic essays were assessed on two dimensions of writing: 1) fluency (length or number of words), and 2) word choice. To reduce the amount of time needed to review the essays, a computerized assessment tool called Lextutor® was selected for this analysis. This tool is designed to assess fluency (length or number of words) and word choice (percentage of words frequently found in academic texts).

According to its publisher, Lextutor® operates as follows;

" [Lextutor®]... takes any text and divides its words into four categories by frequency: (1) the most frequent 1000 words of English, (2) the second most frequent thousand words of English, i.e. 1001 to 2000, (3) the academic words of English (the AWL, 550 words that are frequent in academic texts across subjects), and (4) the remainder which are not found on other lists. In other words, [it] measures the proportions of low and high frequency vocabulary used by a native speaker or language learner in a written context."
http://lextutor.ca/vp/eng/vp_research.html

Although primarily used to assess the vocabulary acquisition of second-language learners, there is evidence that Lextutor® is a valid tool for assessing lexical complexity, and is "reliable across...texts by the same learner (provided genre is the same)" (Laufer & Nation, 1995). To help with the interpretation of the Lextutor® results, we consulted with Professor Robin Scarcella who has used the computer program in her research studies. She indicated that the best indicator of progress in writing is the presence of academic words. According to Prof. Scarcella, an increase of 1% or more in academic vocabulary is an indication of good progress, especially if the essay topics are comparable over time.

Results using Lextutor®, word counts as well as the presence of academic words, are presented in Table 5. Regarding fluency, the average number of words per essay improved both years across quarters for both FIP courses. In 2006-2007, the average word count increased 11% in US 11 and 22% in US 12 from Fall to Spring Quarter. In 2007-2008, the average word count increased by 60% in US 12 and 8% in US 13 from Fall Quarter to the end of Spring Quarter. Regarding academic vocabulary, the percentage of academic words increased among 2006-2007 US12 diagnostic essays though it declined both among 2006-2007 US 11 diagnostic essays as well as all diagnostic essays produced in 2007-2008.

Table 5: Analysis of One-Page Diagnostic Essays Using Lextutor®

			Fluency (Word Count)	Academic Vocabulary (% of Academic Words)
<u>2006-2007 Academic Year</u>	US11	Fall	284	4.2%
		Winter	313	4.9%
		Spring	315	3.8%
	US 12	Fall	223	5.1%
		Winter	190	9.8%
		Spring	271	9.0%
<u>2006-2007 Academic Year</u>	US12	Fall	248	6.56%
		Winter	229	6.65%
		Spring	236	4.81%
		Spring (2)	396	4.36%
	US13	Fall	273	8.05%
		Winter	258	8.84%
		Spring	303	10.51%
		Spring (2)	295	7.79%

Because of the potential of the one-page diagnostic essays to capture changes in writing over time, a second computer program, ETS' Criterion® Online Writing Evaluation, was adopted for the assessment of these essays in 2007-2008.

According to Educational Testing Service (ETS) who created this tool, Criterion

“is a web-based application that provides faculty, writing instructors and administrators at community colleges, universities and other institutions of higher education with a reliable writing assessment tool for their students. Students draft and submit essays and receive immediate feedback in the form of a holistic score and diagnostic annotations within each essay that guide writing instruction.”

(<http://www.ets.org/portal/site/ets/menuitem.1488512ecfd5b8849a77b13bc3921509/?vgnextoid=763f57e78e3b2110VgnVCM10000022f95190RCRD&vgnnextchannel=d07e253b164f4010VgnVCM10000022f95190RCRD>)

Criterion® uses a technology called e-rater to provide essays with a holistic score ranging from 1 to 6. According to ETS, e-rater has been found to have a 98% level of reliability, and is typically found to be in agreement with human scores 92% of the time. Criterion®'s holistic score is based on an analysis of the following five writing traits: grammar, word usage, writing mechanics, style, organization, and development of ideas. Essays are then assigned a holistic score between 1 and 6, with 6 representing the highest score.³ In order to determine the value of this tool in the analysis of the diagnostic essays, and the reliability of its holistic scores, the program was tested with all Fall 2008 FIP diagnostic essays. The Criterion® results were then compared with the FIP Teaching Assistants' analysis. Because both the TA's and Criterion® were in agreement on which diagnostics were strongest and weakest, the decision was made to use the Criterion® Online Writing Evaluation to assess the quality of all one-page diagnostic essays during the 2007-2008 academic year. Throughout the 2007-2008 academic year, after students submitted their diagnostic essays, the results of the reviews by the TA's and Criterion® were compared to confirm

³ For more information about the Criterion® Holistic Scores, go to <http://ets.org/Media/Products/Criterion/topics/co-1s.htm>.

that the Criterion® scores were a reliable indicator of the quality of students' writing. Table 6 displays the mean holistic scores produced by Criterion® for all one-page diagnostic essays by FIP course. The results suggest that FIP students' writing skills improved over the course of 2007-2008.

Table 6: Mean Holistic Scores for FIP Diagnostics

FIP Course	Fall 2007	Winter 2008	Spring 2008	Spring 2008 (2)
US12	3.42	3.19	3.14	4.21
US13	3.75	3.56	4.25	4.17

Because the findings from Criterion®, which suggest that students' writing skills improved over time, were consistent with those of the TA's but inconsistent with the Lextutor® results, a critical examination of the academic word category took place. Based on the review of the academic word category and the three other word categories -- the limited size of the academic word category, which is not specific to any discipline, and appears to be most relevant to writing in non-scientific disciplines -- serious questions about the ability of Lextutor® to capture gains in writing over time, defined as lexical complexity, emerged.

The analysis and review of the Lextutor® and Criterion® findings led to a larger conversation about the challenges of locating a computer-based analytical tool that effectively captures changes in writing over time. In addition, based on conversations with the FIP Writing Director and TA's during the Spring 2008 Quarter, the usefulness and validity of this measure was further challenged by the inconsistency among students in taking this writing exercise seriously. Certainly, the one-page diagnostic essays can be of great value and significance to understanding changes in writing among FIP students; its usefulness was increased in the second year of the FIP program through efforts to make both the prompts and the writing conditions for these consistent over time. Nonetheless, because these essays were not graded, let alone submitted by all enrolled students, the degree to which they truly captured students' writing abilities remains unclear.

3. Capstone Papers

All FIP students were required to complete a capstone paper. In 2006-2007, US 12 students completed their capstone paper in the Winter, while US 11 students completed their capstone paper in the Spring. Similarly, in 2007-2008, US13 students completed their capstone paper in the Spring, while US12 students continued to complete their capstone paper in the Winter Quarter.

The summary that follows describes the capstone assignments for the FIP courses by year.

2006-2007 Academic Year:

- US 11 - students had three options for completing the capstone paper 1) 8-10 page paper on any text or topic discussed in the course, with a research component; 2) 10-12 page research paper on a student movement and as part of a group, write a manifesto; or 3) an extensive research paper of 15-20 pages on one topic from the readings and themes of the course.
- US 12 - students were required to write approximately 1,500 words (6 to 7 pages) on the work of one person/artist (or a collaborative group) who used computer game technology to

create a non-commercial, experimental, or artistic project, comparing the creator's work to his/her contemporaries and predecessors, and using cultural and theoretical frameworks.

2007-2008 Academic Year:

- US 12 - students were required to write approximately 1,500 words on the work of one person/artist (or a collaborative group) who used computer game technology to create a non-commercial, experimental, or artistic project, comparing the creator's work to his/her contemporaries and predecessors, and using cultural frameworks and theoretical models.
- US 13 - students were required to write approximately 1,200 to 1,500 words on a “sustainable” way to manage a nature resource or system, which included a recommendation for action.

The 2006-2007 assessment of the FIP capstone papers was modeled after a pilot assessment project completed in August 2006 which involved a blind scoring of 20 randomly selected capstone papers from Writing 39C and Humanities Core Course 1C (both satisfy the second course of the lower division writing requirement). In that study, a four-by-four matrix was used to determine the presence or absence of certain traits that had been extracted from course writing assignments and scoring rubrics. The authors of that study concluded that the matrix was very useful for identifying strengths and weaknesses of papers and that it provided immediate curricular guidance for the two courses involved.

As a result of the success of that pilot project, the matrix was adapted for use with the FIP capstone papers by the FIP Writing Director working with the writing directors of WR39C and HCC1C (see Table 7 for the revised assessment matrix used for the FIP Capstone Papers). For the 2006-2007 FIP capstone paper assessment, a random sample of 6 US11 papers, 6 US12 papers, plus one long US11 paper were assessed using the revised matrix (Table 7). Three readers, not affiliated with any of the writing courses or the FIP courses, were asked to do the assessment. To promote inter-rater reliability, readers attended three separate training sessions to review the assessment matrix, review the writing prompts, come to agreement on what constitutes the presence or absence of the 16 primary traits, and practice using the assessment matrix. They also met with the TAs to ask questions about the courses and the writing prompts.

Table 7: Writing Assessment Matrix for FIP Capstone Papers (2006-2007)

Analysis	Evidence (Research)	Conventions	Structure
Purpose evident; thesis arguable	Source material is integrated into writing	Consistent use of conventional style sheet for discipline	Effective introduction or overview
Use of expert knowledge; evidence of understanding material	Multiple authors cited and/or listed in references	Appropriate word choice/diction	Paragraphs are internally organized
Evidence of critical thinking; a consideration of multiple perspectives	Sources used are credible	Evidence of editing or proofreading; few surface errors	Clear use of transitions or headings and subheading
Substantive, evaluative conclusions	Evidence of critical evaluation of sources	Objective and/or stylistically appropriate voice	Suitable overall organization

The 2006-2007 FIP Capstone Paper Assessment took place on July 6, 2007, and was led by the FIP Writing Director. The first portion of the day was devoted to a review of the assessment matrix and the writing samples. Each reader then read and assessed all 13 papers for the presence or absence of each of the 16 traits in the assessment matrix. The results were then tabulated. To strengthen inter-rater reliability, two of the three raters had to agree that the trait was present before it was recorded as such.

Results are presented in Table 8. For FIP courses overall, the six strongest traits were⁴:

- Analysis: purpose evident and thesis arguable (100% of papers)
- Analysis: use of expert knowledge; evidence of understanding of material (100% of papers)
- Evidence: source material is integrated into writing (100% of papers)
- Evidence: multiple authors cited and/or listed in references(100% of papers)
- Evidence: sources used are credible(92% of papers)
- Conventions: consistent use of convention style sheet for discipline (100% of papers)

And the three weakest traits were:

- Analysis: substantive, evaluative conclusions (38% of papers)
- Evidence: evidence of critical evaluation of sources (31% of papers)
- Conventions: evidence of editing or proofreading; few surface errors (31% of papers)

All other traits were present in 54% to 85% of the papers. In terms of the four majors headings (analysis, evidence, conventions and structure) students performed best in the area of evidence, followed by analysis and conventions, and worst in the area of structure.

The results from the 2006-2007 capstone paper assessment suggested that students were successful in the use of evidence. At the same time, the results suggested that students need help in their critical analysis of sources, how to structure their papers, how to make substantive and evaluative conclusions, and rather surprisingly, they also needed to be reminded to edit or proofread their papers to avoid making surface errors.

⁴ In the 2006 Pilot Assessment of Writing 39C and Humanities Core 1C, no writing traits were found to be present in all the papers assessed in that study.

Table 8: Presence of Writing Traits in FIP Capstone Papers

Writing Traits	FIP Capstone Papers (n = 13) ^a	
	Count	Percent
<u>Analysis</u>		
Purpose evident; thesis arguable	13	100%
Use of expert knowledge; evidence of understanding material	13	100%
Evidence of critical thinking; a consideration of multiple perspectives	7	54%
Substantive, evaluative conclusions	5	38%
<u>Evidence (Research)</u>		
Source material is integrated into writing	13	100%
Multiple authors cited and/or listed in references	13	100%
Sources used are credible	12	92%
Evidence of critical evaluation of sources	4	31%
<u>Conventions</u>		
Consistent use of conventional style sheet for discipline	13	100%
Appropriate word choice/diction	10	77%
Evidence of editing or proofreading; few surface errors	4	31%
Objective and/or stylistically appropriate voice	10	77%
<u>Structure</u>		
Effective introduction or overview	10	77%
Paragraphs are internally organized	11	85%
Clear use of transitions or headings and subheading	7	54%
Suitable overall organization	7	54%

^a Based on a random selection of 13 FIP capstone papers (7 from US11 and 6 from US12). Each paper was assessed by 3 readers using an assessment matrix of 16 primary writing traits.

As a result of the findings from the 2006-2007 FIP Capstone Paper assessment, a number of changes were made to the writing and research instruction in the FIP courses in 2007-2008. These changes included a greater emphasis on the analysis of sources as is evidenced by the inclusion of library instruction sessions for both FIP courses and the development of a source analysis writing assignment for both courses in the Fall 2007 Quarter. In addition, it was decided

that the assessment matrix for the FIP Capstone Papers be modified in 2007-2008 in order that the assessment capture both the presence and the quality of the sixteen agreed-upon writing traits (see Table 9). As was the case in 2006-2007, the 2007-2008 assessment of the capstone papers had no relationship or influence on course grades.

All three readers who had read the capstone papers in 2006-2007, were asked to serve as readers for the 2007-2008 FIP Capstone Paper Assessment. Because of their familiarity with both the FIP program and the writing traits assessed through the matrix, one training session was organized prior to the reading day to (1) review the assessment matrix, which organizes writing traits under the headings of analysis, evidence (research), conventions, and structure, (2) discuss the capstone paper prompts, (3) come to agreement on the quality scores (the source of the modification to the matrix) to increase inter-rater reliability, and (4) practice using the matrix with 3 capstone paper samples from US12. As the readers reviewed the individual papers, they were directed to assign a quality score for each of the 16 traits in the matrix.

Table 9: Writing Assessment Matrix for FIP Capstone Papers (2007-2008)

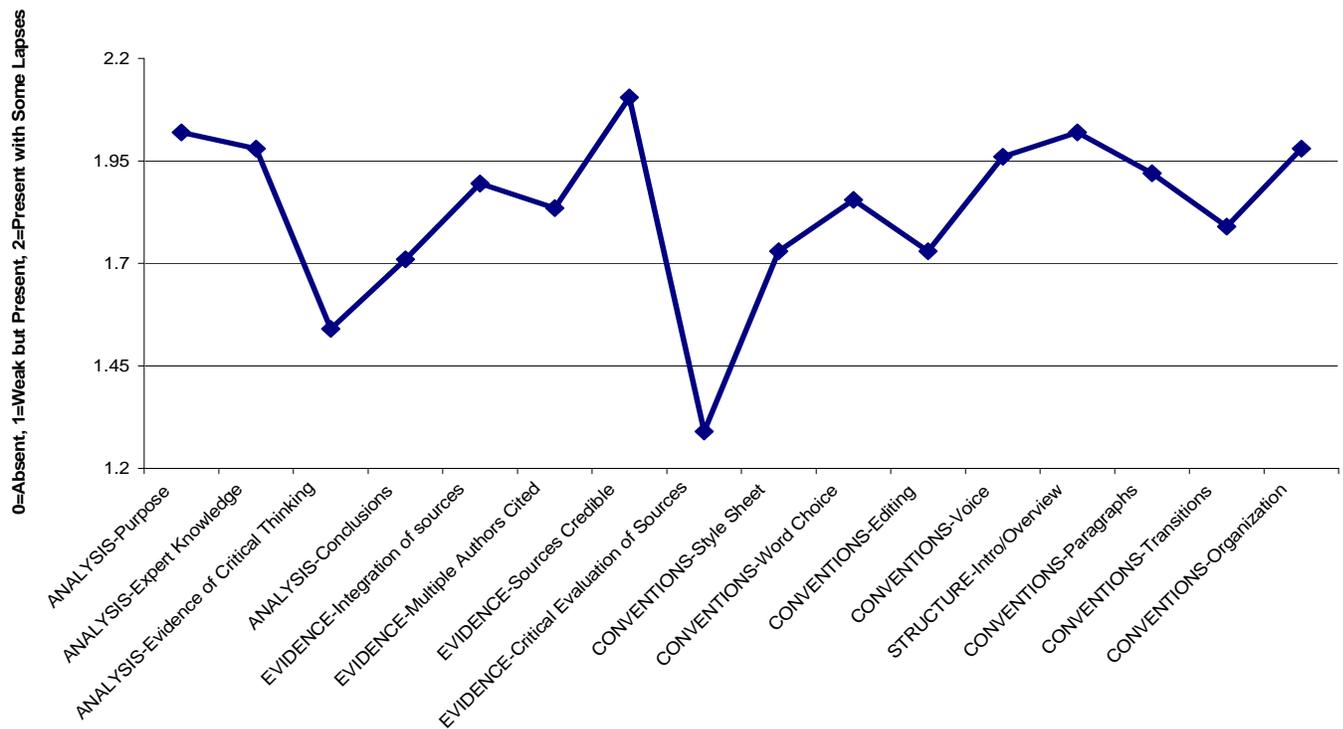
Analysis	Evidence (Research)	Conventions	Structure
Purpose evident; thesis arguable	Source material is integrated into writing and adequately commented upon	Consistent use of conventional style sheet for discipline	Effective introduction or overview
Use of expert knowledge; evidence of understanding of material	Multiple authors cited and/or listed in references	Appropriate word choice / diction	Paragraphs are internally organized
Evidence of critical thinking; a consideration of multiple perspectives	Sources used are credible for appropriate audience	Evidence of editing or proofreading; few surface errors	Clear use of transitions or headings and subheadings
Substantive or evaluative conclusions	Evidence of critical evaluation of sources	Objective and/or stylistically appropriate voice	Suitable overall organization
Quality scores:			
0 = absent	1 = weak but there (present less than 40%)	2 = some lapses but present (40-80%)	3 = clearly present and effective (over 80%)

The 2007-2008 FIP Capstone Paper Assessment took place on June 17, 2008, and was led by the FIP Writing Director. The first portion of the day was devoted to a review of the writing assessment matrix and the writing samples. Each reader then proceeded to read the 16 randomly selected papers assessed all papers for the quality of the 16 agreed-upon writing traits. The results were then tabulated and are presented in Graph 1. In order to strengthen inter-rater reliability, two of the three readers had to confirm the quality of a specific writing trait in order for it to receive a quality score.

The 2007-2008 assessment found that the strongest writing trait was “sources used are credible”, while the two weakest traits were “evidence of critical evaluation of sources” and “evidence of critical thinking; a consideration of multiple perspectives”. The two weakest traits in student writing in FIP are the same traits that were found to be weakest in the Writing 39C and Humanities Core 1C papers pilot assessment project.

Though there were noticeable improvements in the quality of the capstone papers produced in 2007-2008 compared to those produced in 2006-2007, it is important to note that two of the writing traits that emerged as needing attention in 2006-2007, critical evaluation of sources, and how to structure their papers, emerged as key issues in 2007-2008 as well. The US12 capstone papers were found to be strongest in those traits associated with the paper’s structure and organization and weakest in those traits associated with evidence while the US13 capstone papers were found to be strongest in those writing traits associated with evidence and weakest in those traits associated with analysis. Though the quality of the 16 writing traits was assessed as being either weak or present with some lapses, it is important to note that all 16 writing traits were found in the 16 FIP capstone papers assessed in 2007-2008. This represents a significant improvement from the 2006-2007 academic year when only 5 of the 16 writing traits were found to be present in all FIP capstone papers and 3 of the 16 writing traits were found to be present in less than 40% of the papers.

Graph 1: 2007-2008 FIP Capstone Paper Assessment Results



Conclusions and Next Steps

Through the collection of data since Fall 2006 designed to understand enrollment patterns in FIP, the academic characteristics of the students who choose to enroll in FIP, and the nature of student writing, this report suggests that the First-Year Integrated Program is achieving its intended writing

objectives and has improved in the achievement of its objectives since its initial year. Students' own self-assessments of specific writing and research skills as well as the results from the Capstone Paper Assessments reflect that gains are being made in writing and research as a result of participation in FIP, and that these gains increased from 2006-2007 to 2007-2008. Overall, the majority of students reported that their FIP course strengthened both their writing and research skills. Both direct assessments of student writing -- the one-page diagnostic essays and the capstone papers -- confirmed that students made progress in their writing skills and also exposed the challenges associated with measuring changes in writing over time. The use of the assessment matrix, originally designed to assess the alignment between WR 39C and HCC 1C courses, adapted for FIP in 2006-2007, and modified in 2007-2008 to allow for both an assessment of the presence and the quality of writing traits, demonstrated its usefulness for the assessment of FIP capstone papers and for the identification of writing strengths and weaknesses of both the students and the curriculum.

Over the two year history of FIP, it has become evident that the benefits of FIP for students are tremendous, due largely to the multi-disciplinary approach to topics and the integration of context-specific writing instruction. Students appreciate the opportunity to investigate topics from different perspectives and have commented positively on the interdisciplinary approaches used in these courses. The results of the assessment of writing in FIP courses make a strong case both that student writing and the effectiveness of writing instruction in FIP are strong and improving. Nonetheless, the program is committed to continuing to assess student writing through the capstone papers, largely because of the positive impacts this exercise has on the writing instruction process. At the same time, we recognize that the challenges to providing a uniform writing experience to students taking FIP courses are many largely due to the unique content of the individual FIP courses. In an effort to help give greater clarity to the aims of the First-Year integrated Program, during the summer of 2008, specific writing and research learning outcomes were produced to serve as a guide for writing and research instruction. The shared learning outcomes for all FIP courses are:

- Belong to an academic learning community through their connection to three faculty, two teaching assistants and a small cohort of freshmen all of whom are engaged in similar topics.
- Be able to articulate some differences in the way three different disciplines approach the issues or problems and have some perspective on how viewing this topic through a variety of lenses can enrich conversation about it.
- Have been introduced to and had opportunities to practice and demonstrate their skills in several broad areas of written communication.
 1. Evidence: Students will improve their information literacy and research skills.
 - Students will locate, evaluate and summarize discipline-appropriate sources.
 - Students will successfully integrate these sources into their writing.
 - Students will use an appropriate citation style for the discipline.
 2. Writing: Students will improve their written expression.
 - Students will demonstrate their ability to think critically by composing well-supported, thesis-driven essays.
 - Student essays will be clearly organized and designed for a particular audience.
 3. Research: Students will compose a research project.
 - Students will locate, evaluate, synthesize, analyze and present information on an appropriate topic,
 - Students will write more than one draft, participate in peer reviews, and produce a sustained argument in a final, well-written, proof-read product.

In light of the findings from the first two years of the formative assessments of the FIP Program, our plans for assessment for the 2008-2009 academic year include the following:

-We will continue to distribute and collect quarterly course evaluations designed to capture students' perceptions of their gains in writing and research skills, gains in their knowledge of content specific knowledge, and their overall perceptions of the FIP Program so that we can continue to make improvements to the program.

-We will continue to assess a random sample of the capstone papers. In light of the planned review of writing starting this year, it is our hope that we will be able to review a random selection of FIP Capstone papers alongside a random selection of papers produced in other courses which fulfill the second course of the lower division writing requirement. Such an assessment will allow for us to confirm whether the writing produced in FIP is comparable to that produced in Writing 39C, and Humanities Core 1c.

-As this year marks the third year of the First-Year Integrated Program, we will be collecting data on the first-year FIP cohort and their performance in Upper Division Writing at UCI. It is our intention to compare their performance, as defined by course grade, to students who share a number of academic characteristics with them, such as entering SAT scores and academic school affiliation.

References

Laufer, B., & Nation, P. (1995). Vocabulary size & use: Lexical richness in L2 written productions. *Applied Linguistics* 16 (3), 307-322.