Chapter XIII: PORTFOLIO ASSESSMENT

Who takes it?
All students matriculating in or after the fall of 1999 are expected to develop and submit portfolios as a requirement for graduation. In May of 2003, 1013, or 83.1% of the graduating class turned in portfolios.

When is it administered?
The instructor of the course requiring participation in the portfolio assessment distributes the guidelines and collects portfolios during the course. This could occur in any semester during the student's senior year.

How long does it take for the student to compile the portfolio?
The average is about four to five hours.

What office administers it?
Each discipline/program administers it, in conjunction with the director of the portfolio project.

Who originates the submission requirements for portfolios?
Faculty readers and evaluators, the Assessment Committee and the director of the portfolio assessment design, evaluate and publish the requests for specific portfolio items.

When are results typically available?
The portfolios are read and evaluated in May and generally the results are available in the fall.

What type of information is sought?
Faculty evaluators and the Assessment Committee designate the types of works requested from students. In the past, many of the requested items have remained constant. In the 2002-2003 academic year, a portfolio included a work demonstrating *critical thinking*, a work demonstrating *interdisciplinary thinking*, a work reflecting *historical analysis*, a work showing *scientific reasoning*, an item demonstrating *aesthetic analysis*, a work or experience the student considered *most personally satisfying*, and *a cover letter* in which the student reflects on ways they have changed while at Truman and offers any other thoughts they care to express about their experiences here. Other items may be included, and some disciplines may require additional items relating specifically to their major.

From whom are the results available?
The director of the portfolio project.

Are the results available by division or discipline?
Traditionally, results by discipline are not made available to the general public. However, each Division Head receives the results from students majoring in disciplines within his or her division, and each discipline is provided with results from students in its major. Furthermore, information about the classes serving as sources for portfolio submissions including the scores of those submissions are provided to individual disciplines. In this way portfolio data can be used by disciplines in making informed decisions regarding their curricula and methods.

To whom are results regularly distributed?
The results of portfolio assessment are made available to all members of the Truman community through this Assessment Almanac. Division Heads receive results for students majoring in disciplines within their divisions, and individual disciplines receive results for their major students. Information about classes serving as sources for portfolio submissions are provided to disciplines through their conveners. More detailed data are accessible in consultation with the Portfolio Director. Specific findings are shared with faculty and administrators through planning workshops, faculty development luncheons, and other forums. In the past, data and specific findings have been useful to the university in preparing a self-study report for reaccredidation by the North Central Association and in guiding the core reform that led to the development of the Liberal Studies Program. The Faculty and Student Senates have used the reports in developing planning documents. In discipline committees, some faculty use the information to reform their curriculum, improve their major, and engage in self-study for reaccredidation of their programs. Portfolio findings have also affected the assignments and syllabi of faculty that have participated as portfolio readers.

Are the results comparable to data of other universities?
No. While some universities are using portfolios for assessment of general education or liberal studies, most do not use similar prompts or submission categories.

2003 Liberal Arts and Sciences Portfolio

In 1988, President Charles McClain charged a faculty committee to design a local assessment of the liberal arts and sciences curriculum at then Northeast Missouri State University. The Liberal Arts and Sciences Assessment Committee recommended the use of senior portfolios for sampling and assessing materials that demonstrated student achievement and learning. This volume reports and analyzes the 2002-2003 academic year portfolio assessment findings, concluding with a series of recommendations about the portfolio assessment processes and about the use of the data for improving teaching and learning.

In May 2003, portfolios from 1013, or 83% of the 1219 students who graduated in fiscal year 2003, were read and evaluated by faculty readers. This percentage is significantly higher than the 67% participation reported for 2002. Twenty-seven disciplines participated in the portfolio project, administering the portfolio to its majors. This number is higher than the twenty-one disciplines participating last year. The increase was expected, due to the implementation of the portfolio as a graduation requirement, which came into effect when the students who matriculated in 1999 completed their studies in the spring of 2003. The accompanying table includes additional disciplines, because some students are double majors. The number of majors represented in the portfolio is twenty-eight, which is the same as in 2002.

Sixty faculty members read and evaluated the portfolios, representing all ranks and twenty-five academic disciplines from every division except Education. Ten of the faculty participants (ten fewer than last year) were new readers. The portfolio director, who is a faculty member, organized the readings sessions, trained readers in holistic evaluation, facilitated discussions, and served as a second or third reader of materials that were difficult to assess. Newer readers were encouraged to seek advice of those with more experience when confronted with difficulties. Furthermore, two student employees assisted with data entry and sorting. Their help was critical to the success of this large assessment process.

PORTFOLIOS BY MAJOR	
Accounting	56
Agriculture	12
Art	36
Biology	95
Business Administration	206
Chemistry	8
Classics	5
Communication	73
Communication Disorders	40
Computer Science	31
Economics	9
English	119
Exercise Science	42
French	2
Health Science	35
History	38
Justice Systems	3
Mathematics	13
Music	29
Nursing	39
Philosophy and Religion	9
Physics	1
Political Science	27
Psychology	58
Russian	1
Sociology/Anthropology	12
Spanish	5
Theatre	8

Reading sessions were scheduled over the three weeks from May 19 to June 6, 2003. One-third, or twenty, of the readers participated during each week, gathering daily at 8:00 AM and ending at 4:30 PM (8:00 AM to 6:15 PM during the second week, shortened due to the Memorial Day holiday) with a long hour for lunch and a morning and afternoon break of about fifteen minutes each. Having tried other arrangements, it seems that twenty readers per week form an optimum cohort, allowing reasonable time for satisfactory discussions without compromising efficiency.

The types of student works sought with the 2003 portfolio were the same as in 2002. Portfolio submissions were elicited by prompts for demonstrating "critical thinking," "interdisciplinary thinking," "scientific reasoning," "historical analysis," and "aesthetic analysis," focusing on students' critical thinking across the liberal arts and sciences curriculum. A sixth prompt asks students to demonstrate or describe their "most personally satisfying work or experiences" during their Truman tenure. Finally, seniors were asked to draft reflective cover letters for their portfolios.

The 2003 Portfolio

- Critical Thinking
- Interdisciplinary Thinking
- Scientific Reasoning
- Historical Analysis
- Aesthetic Analysis
- Most Personally Satisfying Experience
- Reflective Cover Letter

2003 Portfolio Findings

The findings of the 2003 Portfolio Project are presented for the entire group of participating seniors. The findings are also sorted and reported according to three large groupings based on students' majors: "Arts/Humanities," "Science/Math," and "Professional" studies. The accompanying table shows how the various disciplines are characterized in this scheme.

Major Groups		
Arts/Humanities	Science/Math	Professional
Art	Agriculture	Accounting
Classics	Biology	Business Administration
Communication	Chemistry	Communication Disorders
English	Computer Science	Justice Systems
French	Economics	Nursing
History	Exercise Science	
Music	Health Science	
Philosophy and Religion	Mathematics	
Russian	Physics	
Sociology/Anthropology	Political Science	
Spanish	Psychology	
Theatre		
336 Portfolios	332 Portfolios	344 Portfolios

Because this assessment relies on students to first keep and then select materials for inclusion in their portfolios, the resulting data are inherently "fuzzier" than data from a standardized, systematically controlled instrument. Students occasionally indicate that they are submitting work that is not their strongest demonstration because they did not keep or did not receive back the artifacts which best demonstrate their competence in the specified area. Other students report that they were never challenged to use the thinking skills or the mode of inquiry requested by individual prompts and, therefore, cannot submit material. Lack of motivation may inhibit the thoughtfulness of the selection process or engagement in self-assessment encouraged by the cover sheets for each portfolio category. In their reflective cover letters, students report a wide range of motivation levels and frequently are frank in stating that they compiled their portfolio quickly and with little thought because other concerns and responsibilities were considered higher priorities. The administration of the portfolio and the degree of self-reflection it fosters in students are uneven across the campus.

Because some students elect not to submit materials in certain categories and others offer multiple submissions, the number of submissions varies from category to category in the report. Additionally, we have kept track of the sources of items selected by seniors for their portfolios. We characterize that data by indicating several of the most common sources (disciplines and courses) for each category. Finally, we report findings regarding the occurrences of submissions dealing with issues of race, class, gender or international perspectives.

Critical Thinking

Seniors submit works to demonstrate their abilities as critical thinkers. In 2003, items were elicited with the following prompt:

> *Please include a work reflecting your best critical thinking from your academic career. Strong critical thinking is more than a display of knowledge; it involves such intellectual processes as analyzing, evaluating and synthesizing ideas and concepts. To help you understand this concept, please consider the descriptions on the following sheet.*
>
> *Please note that in the past, some students confused good writing with good critical thinking. Although writing and thinking are correlated, we are most interested in your critical thinking skills.*
>
> *As you consider this category, you may find that a submission from another category demonstrates strong critical thinking. If so, feel free to use that item for this category as well.*

In past years, a copy of Bloom's[1] taxonomy of critical thinking was included with the portfolio packet, to assist students as they reflected back on their thinking skills. Based on discussions with faculty readers, Bloom's taxonomy was replaced with a page that included several definitions of critical thinking. Faculty members believed that students tended to simply use the language of Bloom, without engaging in metacognition. The new page provides alternative perspectives, without presenting an apparent hierarchical scale.

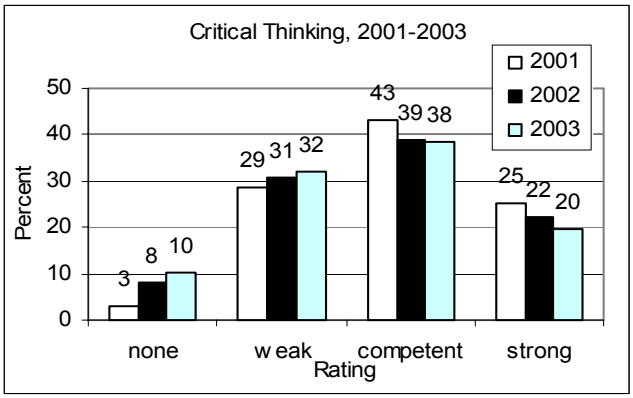
Faculty read the submissions and made two judgments: 1) whether the quality of the thinking is strong, competent, weak or not evident; and 2) whether the quality of insight evident in the senior's description and self-assessment of his/her thinking is strong, competent, weak or nonexistent. Each item was read and evaluated by one faculty reader.

Critical Thinking at a Glance

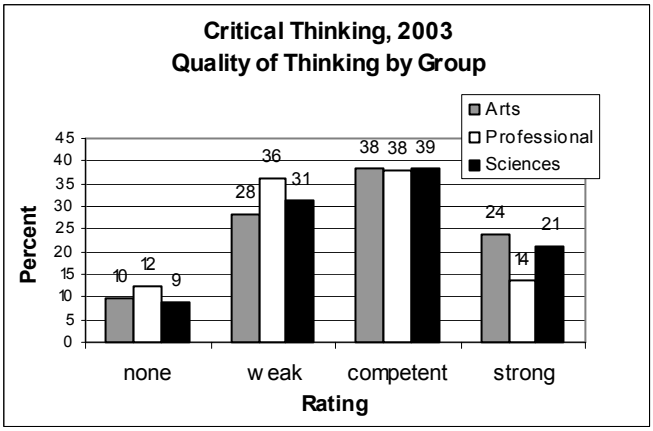
- Number of submissions: **994**
- Percent of "no submissions": **1.9%**
- Mean critical thinking score (on a 0 – 3 scale): **1.67**
- Highest scoring "group": **Arts/Humanities**
- Lowest scoring "group": **Professional**
- Most frequent source (course): **ENG 190**
- Most frequent source (discipline): **ENG**

Trend: **Slightly weaker critical thinking scores**

Out of the 1013 portfolios collected, 994 (98%) submitted examples of critical thinking. The others did not include a submission for this category (n=12), provided a "self-report" (described but did not include an assignment, n=2), or failed to attach prompts to their submissions for any categories (n=4). Of the 994 seniors who submitted something in this category, 20.6% offered no meaningful self-assessment.



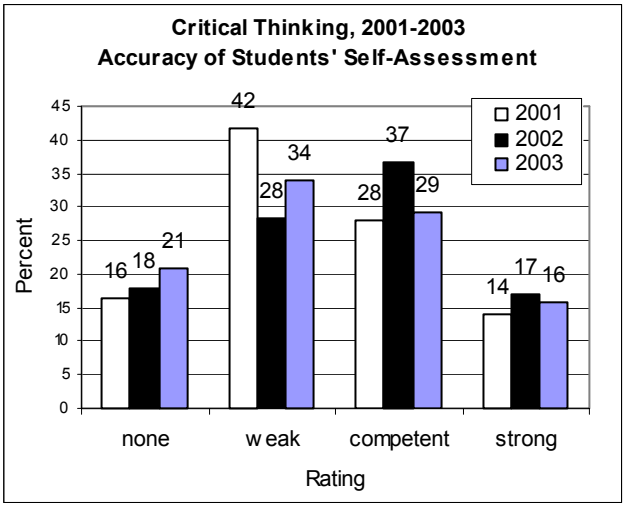
Faculty readers evaluated the works for the quality of critical thinking evidenced, and rated the thinking as "strong," "competent," "weak," or "none." In 2003, 19.5% of seniors submitted material judged as demonstrating "strong" thinking; 38.4% submitted material with thinking judged as "competent"; 31.9% submitted material judged as showing "weak" thinking; and 10.3% submitted material judged as demonstrating no critical thinking. Typically, entries evaluated as "none" were reflective papers, creative writing, or researched reports displaying neither analysis nor evaluation. The percentage of seniors with submissions judged as "competent" showed a slight decline from 2002 (38.4% vs. 39%). It was 5% lower in the current portfolios than was found in 2002. Additionally, "strong" thinking decreased by 3% as compared with the 2002 findings, while "weak" and "no" critical thinking increased by 3%. These factors combine to account for a slight decrease in the mean score from 1.76 in 2002 to 1.67 in 2003, (where a score of 0 = "none" and 3 = "strong").



When the data are sorted according to major groups, Arts/Humanities and Science majors demonstrated stronger critical thinking skills than those with Professional majors. Twenty-four percent of Arts/Humanities students and 21% of Science/Mathematics students were found to be "strong" critical thinkers, while only 14% of Professional Studies students were considered "strong" in their thinking.

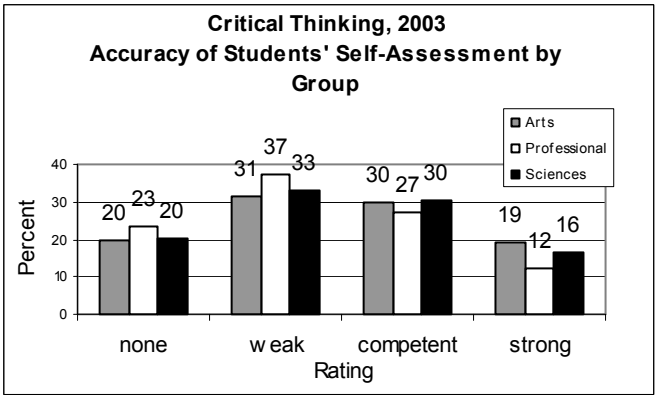
[1] Bloom, B.S. (Ed). Taxonomy of Educational Objectives Handbook 1: Cognitive Domain. New York: Longman, Green & Co. (1956).

In 2003, students' self-assessments of their critical thinking were generally weaker than in 2002. "Strong" self-assessments were down slightly, while "competent" assessments declined eight percent from 2002. The percentage of students who provided no self-assessment continued to increase. This three-year pattern is troublesome and its cause is unclear.



When sorted according to major groups, seniors with Arts and Humanities majors were most insightful in their self-assessments of their critical thinking skills. Science/Math majors were rated similarly, though slightly lower. Students with Professional majors were least insightful.

As with previous years, the majority of works chosen by seniors for this category were generated in the last two years of study. Thirty-seven percent of the submissions were examples of work done as a senior, 34% were from the junior year, 15% came from the sophomore year and 14% were produced during the freshman year. However, it is perplexing that 29% of the submissions are from the first two years of study. Furthermore, this is significantly higher than the 20% reported in 2002. When one examines the courses used for submissions, it appears that many students recall ENG 190 ("Writing as Critical Thinking") and assume that this is the appropriate source.



The large number of submissions from other 100-level courses is also of interest. Students may feel that those courses placed particular emphasis upon critical thinking or that they provided opportunities to think and write in ways that called for personal judgments.

Fifty-two percent of the submissions fulfilled assignments for classes in the major, 37% were generated in Liberal Studies Program classes, and the rest were products of elective courses, minor requirements or other sources.

English classes were the most common sources of student submissions (n = 225). Philosophy and Religion courses provided 101 submissions, and Business and Accountancy classes provided 99 submissions. This year, JINS courses also generated a fair number of submissions (n = 75), representing a broad spectrum of topical areas.

Critical Thinking

Top Ten Courses		Top Ten Disciplines	
ENG 190	96	ENG	225
BSAD 460	43	PHRE	101
PHRE 186	27	BSAD	99
PHRE 185	18	JINS	75
ENG 209	17	COMM	62
PHRE 188	16	HIST	49
ENG 498	14	POL	46
NU 325	14	BIOL	37
POL 161	12	NU	31
CHEM 421	12	ECON	29

Of the items submitted, 1.5% dealt with issues of class (down from 3.8% in 2002), 4.3% dealt with issues of race (down from 5.7% in 2002), and another 5.1% had international perspectives (down from 6.5% in 2002). Four percent of the submissions dealt with issues of gender (down from 6% last year). The percentage of collaborative submissions was 8.4%, down from 9.2% in 2002.

Interdisciplinary Thinking

Examples of student work demonstrating an ability to engage in interdisciplinary thinking were elicited with the following prompt:

> *Please include a work demonstrating that you have engaged in interdisciplinary thinking. "Interdisciplinary Thinking" means using the perspectives, methodologies or modes of inquiry of two or more disciplines in exploring problems, issues, and ideas as you make meaning or gain understanding. You work in an interdisciplinary way when you integrate or synthesize ideas, materials, or processes across traditional disciplinary boundaries. You should not assume that you are generating interdisciplinary work if you merely use essential skills like writing, speaking, a second language, computation, percentages, or averages to explore content, perspectives and ideas in only one discipline.*
>
> *For example, a Chemistry major was assigned as part of her internship to study a pollution problem caused by the company's product. She used ethical inquiry and applied economic theory to balance the criteria of cost to the quality of life and cost to the economy in her recommendations about reducing the pollutant. Another student found significant meaning in the changing architecture of school buildings in America by exploring a parallel evolution in pedagogical methods and philosophies. You might have analyzed a film like Them or The Beast from 20,000 Leagues to illustrate Cold War mentality in a class presentation of your research into and application of a paradigm from Political Science as part of your studies of 20th century history.*

In 2003, 2.3% of participating seniors did not submit an entry demonstrating "interdisciplinary thinking," which is slightly lower than 2002 (2.8%). Less than one percent provided "self-reports" of interdisciplinary work they remembered but no longer possessed (this is roughly half the percentage reported in previous years). Because faculty readers did not have direct evidence of interdisciplinary thinking, self-reports were not evaluated. All together, 979 submissions were each evaluated by two faculty readers who read the works "holistically" while keeping in mind the following descriptors:

Interdisciplinary Thinking at a Glance

- Number of submissions: **979**
- Percent of "no submissions": **2.3**
- Mean score (on a 0-4 scale): **1.55**
- Reader "split" rate percent: **18%**
- Highest scoring "group": **Arts/Humanities**
- Lowest scoring "group": **Professional**
- Most frequent source (course): **JINS 325**
- Most frequent source (discipline): **JINS**
- Trends: **Higher scores**
  Majority of submissions coming from JINS courses

Some Descriptors of Competence as an Interdisciplinary Thinker

The items submitted may have some, many, or all of these features which influence your holistic response to the material you review.

4 Strong Competence

- A number of disciplines
- Significant disparity of disciplines
- Uses methodology from other disciplines for inquiry
- Analyzes using multiple disciplines
- Integrates or synthesizes content, perspectives, discourse, or methodologies from a number of disciplines

3 Competence

- A number of disciplines
- Less disparity of disciplines
- Moderate analysis using multiple disciplines
- Moderate integration or synthesis

2 Some Competence

- A number of disciplines
- Minimal disparity of disciplines
- Minimal analysis using multiple disciplines
- Minimal evidence of comprehension of interdisciplinarity

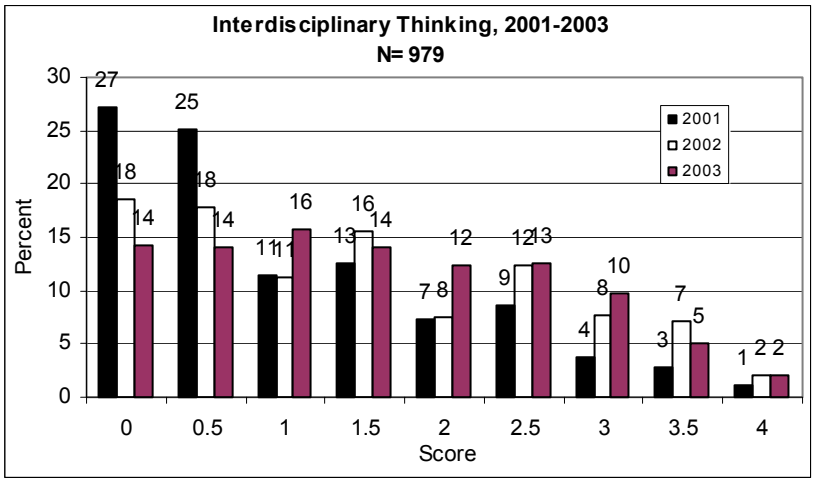
1 Weak Competence

- A number of disciplines
- Mentions disciplines without making meaningful connections among them
- No analysis using multiple disciplines
- No evidence of comprehension of interdisciplinarity

0 No demonstration of competence as an interdisciplinary thinker

- Only one discipline represented
- No evidence of multiple disciplines, of making connections among disciplines, or of some comprehension of interdisciplinarity

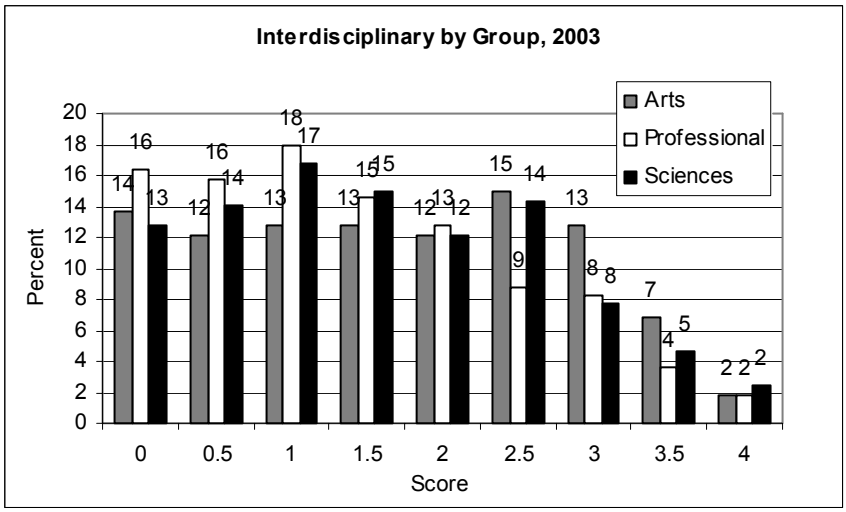
With each item read by two different evaluators, the overall score on a 0- to 4-point scale is the average of the two individual scores as long as these differ by no more than one point. Differences of two or more points are "splits," and items receiving split scores are evaluated a third time by another reader to determine the final score. The percentage of splits is a measure of the reliability of the evaluation process. In 2003, 18% of the submissions received split scores. This percentage is lower than the 24% split rate observed in 2002 and the 19% split rate in 2001. (For comparison, random scoring with the five level scale used here would result in a 48% split rate.)



The histogram shows the results for "interdisciplinary thinking" in 2003 with the results for 2001 and 2002. As is evident, the scores for 2003 continue the upward trend observed over the past three years. The percentage of submissions scored zero or 0.5 continued to decrease, while those scored as 2.0 or better increased. The number of students receiving scores of 4 ("strong competence") continued to increase as well. This year, 20 submissions received the highest score, up from both 2002 (n = 18) and 2001(n = 11). The mean score for interdisciplinary thinking this year was 1.55, continuing the pattern of increased scores over the past three years. By comparison, the average in 2002 was 1.46, and in 2001 it was 1.06.

As with 2002 data, the encouraging results are related to the continued growth in JINS submissions. This year, 56% of the submissions came from JINS courses, up from the 36% in 2002. Furthermore, these submissions had a mean score of 1.8, while all other submissions had a mean score of 1.22. These data provide additional evidence that the adoption of the JINS course in the Liberal Studies Program is having the desired effect: better comprehension and demonstration of interdisciplinary thinking by students.

The data sorted by major group are summarized in the accompanying chart. Students from Arts/Humanities and Science/Math disciplines submitted fewer items with little or no interdisciplinary thinking than did students with Professional majors. However, the gap in this area is much smaller than in previous years. In fact, the percentage of Professional students' submissions that were scored a zero by at least one reader declined from over 47% in 2002 to 32% this year. For Arts/Humanities and Science/Math submissions the percentages of zeros and 0.5 are similar to those observed in 2002.



The interdisciplinary items were selected by seniors from 38 academic disciplines, as well as independent research projects. This year, the use of JINS submissions outstripped all others combined. In fact, of the top 30 courses used for submissions in this category, only four were not JINS courses. Concomitantly, almost 69% of submissions came from LSP courses, while 22% were drawn from the major. The rest were drawn from electives (4%), academic minor requirements (4%), and other miscellaneous sources (less than 1%). In addition to the 550 JINS entries, 69 came from English classes. BSAD courses were the next most frequent source of interdisciplinary submissions with 44 items followed by PHRE courses accounting for 41 items.

Interdisciplinary Thinking

Top Ten Courses			Top Ten Disciplines	
JINS 325	40		JINS	550
JINS 306	31		ENG	69
JINS 301	27		BSAD	44
JINS 341	22		PHRE	41
JINS 324	21		COMM	35
JINS 322	19		ECON	24
JINS 318	19		HIST	22
JINS 335	18		POL	20
JINS 311	17		BIOL	18
JINS 344	16		MUSI	14

Most of the work reflected in the interdisciplinary submissions was accomplished by students in their junior and senior years (57% and 29%, respectively). Eleven percent came from the sophomore year and 4% from the freshman year. Nine percent of the items were the result of collaborative work.

Portfolio readers keep a tally in each category of items dealing with race, class, gender, and international issues. In the interdisciplinary category, 18.2% of submissions dealt in some way with issues of class, 17.6% with international issues, 14.2% with gender, and 11.4% dealt with race.

Interdisciplinary Thinking Five Years Ago

In 2002, a sample of interdisciplinary submissions from five-year-old portfolios was read by faculty participants. This was done to address questions regarding the reliability and stability of the scoring in this category. The results from last year indicated that differences in scoring were minimal and not statistically significant.

This year, the director replicated the assessment of five-year-old portfolios, using submissions from 1998. A 25% random sample was drawn. Eliminating packets without submissions from the list reduced the usable sample to 166, or 22.3% of the dataset. This sample was of sufficient size to permit significance testing of the results. During each week of reading, approximately one-third of the 1998 packets were distributed along with the current packets. Readers were instructed to score them without regard to date of origin. Each 1998 submission was read by

one reader. The mean score in 1998 was .86, while the mean score given this year was 1.14. Though relatively small, a paired samples t-test revealed that the difference is statistically significant.

Comparing the average score from 1998 to the score given in 2003 produced a "split rate" for the sample of 16.2%, which is slightly lower than the split rate for the current year. This rate is also below the split rate produced by the original readers of 19.9%. Furthermore, 32.5% of the sample was scored the same as the average score from 1998. This suggests that differences in scoring, while statistically significant, may not be substantively significant.

As was the case last year, comparing the scores from this sample with those of the current group is revealing. The average for the 1998 sample (1.14) was statistically significantly lower than this year's group (1.55), indicating that current students are demonstrating higher levels of competence in interdisciplinary thinking. Additionally, the scoring of this sample is consistent with the scoring of non-JINS submissions for the current year (1.22), supporting the finding that JINS courses are having a positive effect upon scores.

Historical Analysis

The "Historical Analysis" category was developed in the fall of 2000, and implemented in the spring of 2001. The prompt for this category is provided below.

> *Please include a work that shows your ability to think historically. This involves analyzing connections between events or developments, demonstrating change over time, and showing the relevance of historical context to the topic you are discussing, whether the focus be individuals, social groups, cultural developments, or particular events. Historical thinking critically evaluates historical sources, which could be written, visual, aural, archaeological, scientific, etc., and it pays attention to the reliability and objectivity of the historical record.*

This year, 2.9% of participating seniors did not submit a work for this category, which is lower than last year (3.7% in 2002). Less than one percent provided "self-reports" (n=7), which were not evaluated by faculty readers. A total of 970 submissions were evaluated and scored, using the following descriptors:

Historical Analysis at a Glance

- Number of submissions: **970**
- Percent of "no submissions": **2.9**
- Mean score (on a 0-3 scale): **1.25**
- Highest scoring "group": **Arts/Humanities**
- Lowest scoring "group": **Professional**
- Most frequent source (course): **HIST 105**
- Most frequent Source: (discipline): **History**
- Trends: **Stable scoring**

Some Descriptors of Competence in Historical Analysis

3 Strong Competence

Strong demonstration of historical analysis includes some, but not necessarily all of these features. The submission may:

- ❖ Deal deliberately with historical context and chronology.
- ❖ Critically evaluate historical resources.
- ❖ Use good analytical thinking in making an argument.
- ❖ Show clear and insightful understanding of causation.

2 Competence

Competent demonstration of historical analysis submissions may:

- ❖ Make vague or incidental reference to historical context and chronology.
- ❖ Show awareness of causation in looking at change over time.
- ❖ Be diligent in reporting resources, but does not evaluate them.
- ❖ Be uneven in its analysis.

1 Minimal Competence

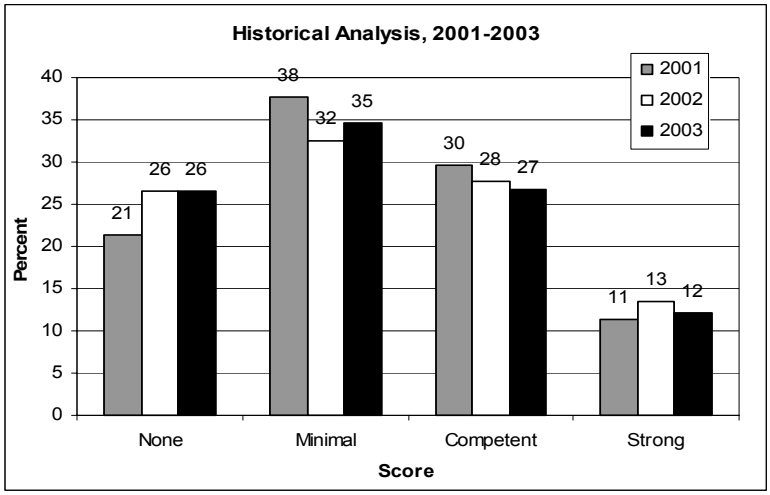
Minimally competent demonstration of historical analysis submissions may:

- Analyze weakly.
- Deal with a historical event or artifact with little attention to historical context or chronology.
- Recognize change over time (i.e., see differences), while neglecting to recognize causation and evolution (i.e., no illuminating connection discussed).

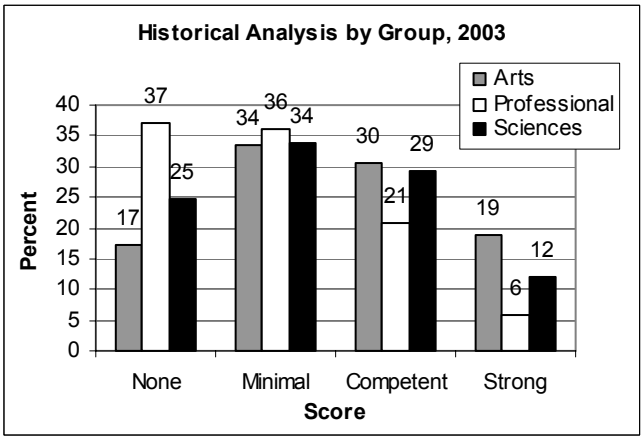
0 No Competence

- Report historical "facts."
- Ignore historical context.
- Neglect to deal with change over time.
- Contain no analysis.

The table at right compares the data for the past three years. Results are consistent, with slight increases in the number of submissions demonstrating no competence or minimal competence. The mean score of 1.25 for 2003 is just slightly below the 2002 average of 1.28 and the 2001 average of 1.31.



When the data are sorted according to the major groupings, students majoring in the Arts/Humanities disciplines scored higher than students with either Professional or Science/Math majors. Nineteen percent of students in the Arts/Humanities group submitted items judged as demonstrating strong competence, compared with only 12% of the items from the Science/Math group and 6% of the items submitted from the Professional major group. While 49% of Arts/Humanities students scored at least "competent" (i.e., scores of 2 or 3), only 41% of Science/Math students, and 27% of Professional students were judged competent or better in historical analysis.



Not surprisingly, the discipline from which students chose work for this category most frequently was History. Roughly 36% of the items came from history courses (n=345). JINS courses accounted for 16% of the submissions (n=150) and English courses accounted for 8% of the submissions (n=76). The U.S. History sequence, HIST 104 and 105 were the two most common courses used as sources for items in this category, together accounting for almost 14% of the total number. World Civilizations since 1700 (HIST 133) was the next most common item (n=35), followed by World Civilizations 500 A.D. to 1700 (HIST 132) with 25 items.

Over 26% of the submissions were produced in the senior year, 35% in the junior year, 20% in the sophomore year and 18% in the freshman year.

Sixty-two percent of the items submitted were the result of work in LSP classes, 26% were assignments in major courses, 6.6% were from elective courses and 5% were produced in classes taken to fulfill minor requirements.

Of the 970 submissions read for historical analysis, 17.8% dealt with international perspectives, 12% with race, 9.4% with issues of gender, and 4% with class issues. In this category, 3.9% of the items submitted were collaborative works.

HISTORICAL SOURCES

Top Ten Courses		Top Ten Disciplines	
HIST 105	73	HIST	345
HIST 104	59	JINS	150
HIST 133	35	ENG	76
HIST 132	25	ART	56
HIST 131	21	PHRE	42
HIST 298	18	POL	38
PHRE 185	18	COMM	36
HIST 151	17	MUSI	32
ART 222	15	BSAD	27
HIST 140	14	PSYC	17

Scientific Reasoning

Examples of student work demonstrating an ability to reason scientifically were elicited with the following prompt:

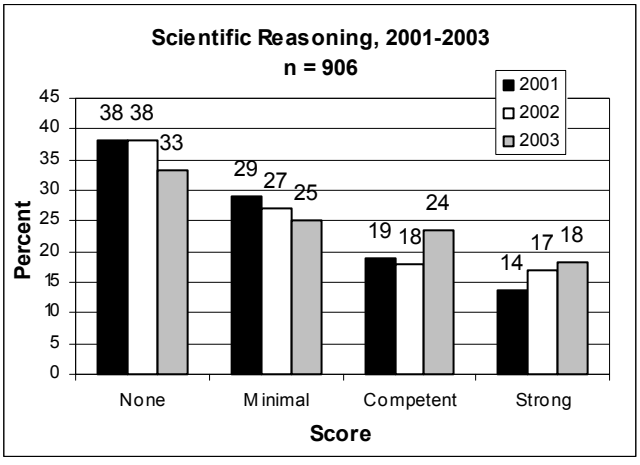
> *Please include a work that shows your ability to reason scientifically. You might include a laboratory or research report in which you justified or validated a scientific theory or reached new conclusions about the behavior of humans or other aspects of the natural world. Alternatively, you might have derived testable predictions about the behavior of Nature or of persons developing some theory to a logical and relevant consequence.*

This year, 8.5% of seniors did not submit materials to demonstrate "an ability to reason scientifically." This percentage is higher than the non-submission rate of 6.7% found in 2002 and the 8% rate in 2001. Only 1.7% of seniors submitted self-reports (2% in 2002) of work they recalled doing. Self-reported work was not evaluated by faculty readers.

Scientific Reasoning at a Glance

- Number of submissions: **906**
- Percent of "no submissions": **8.5**
- Mean score (on a 0-3 scale): **1.27**
- Highest scoring "group": **Science/Math**
- Lowest scoring "group": **Arts/Humanities**
- Most frequent source (course): **BIOL 100**
- Most frequent Source: (discipline): **Biology**
- Trends: **Improving scores**

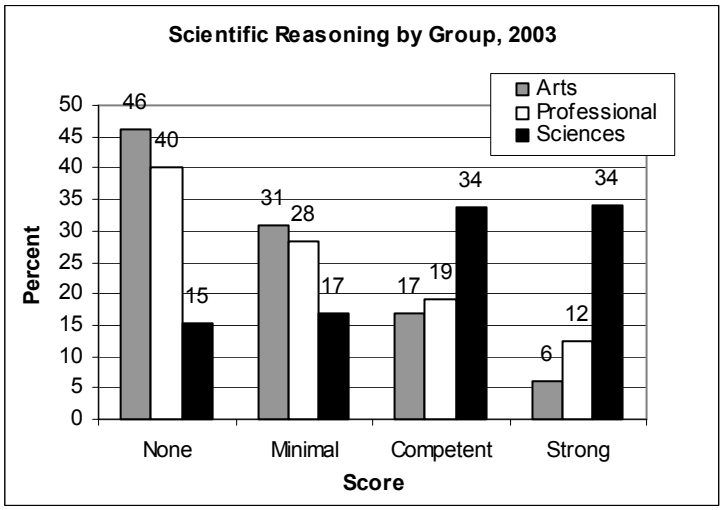
Readers evaluated 906 submissions one time, assessing the competence of scientific reasoning as evidenced in the submission. Each item was assigned a score from zero to three with zero representing "no evidence," one representing "minimal competence," two representing "competence" and three representing "strong competence." When readers had questions about the quality of the submission, they consulted with colleagues from the sciences and social sciences.



As in past years, the most common finding was "no evidence," while "strong competence" was found least often. This is the fourth consecutive year that submissions scored a zero outnumbered submissions judged "minimally competent." However, this year's submissions showed increases in the percent judged to be competent and strongly competent. When examined over a three-year interval, the trend shows generally higher scores. Scores of

zero and one have begun to decrease, while scores of two and three have increased during that time. Mean scores have increased, moving from 1.08 in 2001 to 1.14 in 2002, then to 1.25 this year.

As was the case in previous years, seniors in Science/Math majors account for most of the higher scores. Seniors majoring in the Arts/Humanities disciplines had the lowest mean score (.83), followed by Professional majors (1.04). In fact, 77% of the submissions from Arts/Humanities majors were scored zero or one, while 68% of the Professional majors' submissions received the two lowest scores. Conversely, 68% of the submissions from Science/Math majors were considered competent or strongly competent.



While Biology and Chemistry remained the most popular source disciplines, Psychology and JINS moved up to third and fourth, respectively. Furthermore, Physics and Agricultural Science dropped below English, Business and Accountancy, Communication, and Exercise Science as source disciplines. The top individual classes were BIOL 100, CHEM 100, PSYC 466, AGSC 100, and BIOL 107.

Twenty-nine percent of the submissions were produced by students in their senior year, 31% in the junior year, 22% in the sophomore year, and 19% were generated by freshman students. Forty-eight percent of the submissions were generated by students satisfying requirements of their majors, 41% were from LSP courses, while minor and elective courses accounted for 5% and 6%, respectively.

Scientific Reasoning Sources

Top Ten Courses			Top Ten Disciplines	
BIOL 100	108		BIOL	242
CHEM 100	60		CHEM	110
PSYC 466	28		PSYC	88
AGSC 100	21		JINS	53
BIOL 107	20		ENG	45
BIOL 200	16		BSAD	37
BIOL 204	16		COMM	36
CHEM 421	16		ES	36
BIOL 301	14		PHYS	29
ENG 190	13		AGSC	24

Slightly less than four percent of the submissions for scientific reasoning dealt with issues of gender. International perspectives were observed in 1.7% of the submissions; one percent of science submissions examined issues of race, and .2% touched upon issues of class. This year, almost 32% of submissions were the results of collaborative work.

Aesthetic Analysis

Following the requests of faculty members in Fine Arts and Language and Literature, this category was significantly revised in 2002, so as to more appropriately assess the outcome statements for the Aesthetic Mode of Inquiry (both Fine Arts and Literature). The new prompt was introduced in the spring 2002 packets, and used throughout the 2003 academic year. It reads as follows:

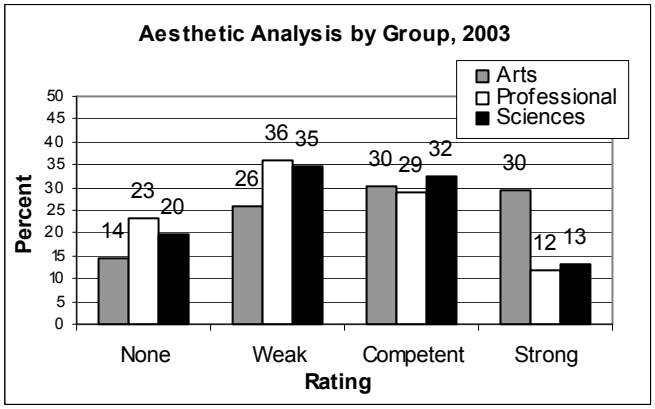
> *Please submit an analysis of a creative work or works, using aesthetic criteria. The subject of your analysis may be from a wide variety of genres: visual arts (such as painting, sculpture, collage, film, or costume), performing arts (such as music, theatre, dance, or dressage), or written arts (such as poetry, fiction, or nonfiction). Your submission should demonstrate your ability to analyze the work's form, structure, and contexts; ultimately, it should interpret the work in some way. Please do not submit an original creative piece of your own.*

This year, 4.4% of the portfolios failed to submit an item for this category. This is significantly below the 8% non-submission rate for the revised prompt in 2002. The mean score for the 946 submissions was 1.48, which is slightly better than last year's mean of 1.35. Overall, 49% of the submissions were judged to demonstrate competence or strong competence.

Aesthetic Analysis at a Glance

- Number of submissions: **946**
- Percent of "no submissions": **4.4%**
- Mean score (on a 0-3 scale): **1.48**
- Highest scoring "group": **Arts/Humanities**
- Lowest scoring "group": **Professional**
- Most frequent source (course): **ART 203**
- Most frequent Source: (discipline): **ENG**

When comparing the groups, Arts and Humanities majors scored significantly better than either Sciences or Professional majors, averaging 1.75, versus 1.39 (for Sciences) and 1.30 (for Professional). The difference is most obvious when examining the submissions demonstrating strong competence. Thirty percent of Arts and Humanities majors' items received the highest score, while the other two groups achieved this score less than half as often (Sciences = 13%, Professional = 12%).



Of the 909 submissions where the year produced was identified, 17.3% were created during the senior year. Another 32.6% were produced during the junior year, while 22.8% were from the sophomore year and 27.4% from the freshman year.

Roughly 65% of the submissions came from LSP courses, while 21% were from major courses. Just over 8% were from electives, and 6% from courses in the minor. Collaborative efforts comprised 3.6% of the submissions.

In this group, 7% dealt with international perspectives, 1.3% considered issues of class, 6.3% involved gender issues, and 3.8% examined issues of race.

Most Satisfying Work or Experience

Students are asked to submit an item or a description of a most personally satisfying experience with the following prompt:

> *Please include something (a work from a class, a work from an extracurricular activity, an account of an experience, objects which are symbolic to you, etc.) that you consider representative of the most personally satisfying results of your experiences at Truman. If you don't have an "artifact", which would represent or demonstrate the experience, write about it on this sheet. This is space for something you feel represents an important aspect, experience or event of your college experience.*

This portfolio category was recommended to the University Portfolio Committee in 1992 by students in capstone classes seeking a site where they could share experiences or work at Truman that made them proud or most satisfied them.

Faculty readers do not evaluate the quality of the materials submitted in any way. Rather, they review and describe what it is that a student found to be "most personally satisfying." Over time repeated motifs have been

identified. Readers use a checklist to record the context of the experience and the reason it was especially satisfying to the student.

This year, less than one percent of the portfolios did not contain an item or a description representing a "most satisfying experience" (compared with 3% in 2002 and 4% in 2001). In all, the faculty readers reviewed 994 submissions (868 in 2002).

The accompanying table presents the reasons why a submission was most satisfying. Items were included that received ten or more responses. Though students are asked for a single reason for the item's inclusion, many identified several reasons. Thus, the percentages exceed 100%.

Why Was It Satisfying?	Number	%
Achieved significant personal growth	354	35.6
Personal best	241	24.2
Achieved personal goals	213	21.4
Especially challenging	210	21.1
Miscellaneous	151	15.2
Working as a professional	148	14.9
Collaborative effort	98	9.9
No indication	56	5.6
Enjoyable educational experience	39	3.9
Friendship/relationship	37	3.7
Self-reflection or self-expression	28	2.8
Personal interest	26	2.6
Successful activity	13	1.3
Contribution to others/society	10	1.0

Almost 36% explained that their satisfaction was the result of having achieved "significant personal growth," 24% achieved a "personal best," 21% described something that "achieved personal goals" or was "especially challenging," and 15% mentioned "working as a professional." Another 10% pointed to "collaborative efforts," while 4% discussed "enjoyable educational experiences. Assignments that enhanced friendships or relationships were mentioned in 3.7% of the submissions, while the opportunity for self-expression or self-reflection was identified in 2.8% of the items. The opportunity to explore a topic of personal interest came up in 2.6% of the submissions, while the successful completion of a task/project (1.3%) and opportunity for making a contribution to others (1%) were also discussed. Finally, 5.6% gave no indication and 15.2% identified a variety of things that did not fit other categories.

Context	Frequency	%
Major Class	335	33.0%
LSP	172	16.9%
Other	87	8.6%
Elective	58	5.7%
Social Fraternity/Sorority	50	4.9%
Study Abroad	48	4.7%
Capstone	37	3.6%
Internship	34	3.3%
Research	30	3.0%
Minor Class	26	2.6%
Varsity Athletics	21	2.1%
Other Organization	17	1.7%
Religious Organization/Experience	16	1.6%
Campus Media	12	1.2%
Residence Life	11	1.1%
Other Athletics	10	1.0%
No Indication	10	1.0%
Campus Employment	9	0.9%
Volunteer Work	8	0.8%
Off-Campus Job	8	0.8%
Service Organization	8	0.8%
Honor Society	5	0.5%
Club Sports	3	0.3%

It is difficult to group the kinds of experiences students cite as especially satisfying. Many students submit academic work of which they are especially proud. Others talk about friends, family, religion, getting married or engaged, campus organizations, particular campus events in which the student played a role, and a wide variety of other things. The accompanying table attempts to organize the contexts of students' most personally satisfying experiences into groups.

As in past years, the great majority of submitted artifacts were papers, essays, projects, and lab reports generated in classes. It is interesting, even with the great diversity of citations in this category, that so many students are most proud of some artifact of their academic experience.

Practically every aspect of campus culture was cited as a satisfying experience by at least one student. Participation in sports (both varsity and club), involvement with fraternities and sororities, working on SAB projects, participation in theater performances and musical groups, and volunteer work, are but a few examples.

Thirty-nine percent of the "most satisfying experiences" occurred in the senior year (38% in 2002), 32% in the junior year (28% in 2002), 11.4% in the sophomore year (down from 13% last year), and 7.5% in the freshman year (down from 9% in 2002). The remaining 9.6% occurred over times spanning more than a year (13% last year).

Almost five percent of most personally satisfying experiences dealt with international perspectives (up from 4% in 2002). Many of these were study abroad experiences. Three percent dealt with issues of gender (same as last year), 2.4% with race issues (3% in 2002), and less than 1% dealt with issues of class (same as 2002).

Reflective Cover Letters

Finally, the portfolio asks students to compose a cover letter addressed to the Liberal Arts and Science Portfolio Task Force. During the weeks of portfolio assessment and evaluation, the student letters are generally reserved for the last day. They provide faculty readers with a more intimate and direct engagement with student ideas and attitudes as compared with what can be inferred from reading students' academic works. Through the students' letters, readers capture a fuller sense of individual students, their achievements and aspirations, even as they are collecting information that leads to a larger picture of student attitudes. While reading student letters, faculty readers are instructed to reserve several student letters to share with the group, and thus the week of portfolio evaluations ends with an airing of student concerns, criticisms, recommendations, and/or kudos that seniors feel compelled to express. Giving voice to the students provides a sense of perspective and "closure" for the faculty that parallels the kind of closure that the entire portfolio is envisioned to give students with respect to their undergraduate academic careers.

Students are asked in their cover letters to reflect on and write about several specific items:

- The process used and time spent in compiling their portfolio.
- What they learned about themselves through the process.
- Their attitudes toward portfolio assessment (and assessment at Truman in general).
- Their attitudes about their education at Truman.
- Their ideas, reactions, and suggestions regarding the undergraduate experience at Truman.
- Their immediate plans upon leaving Truman.

Faculty readers look for self-reflection in the letters. They characterize students' attitudes about the portfolio and about their education in ways described below. Finally, they mark parts of letters containing relevant insights, or specific suggestions, which the faculty readers feel should be given a broader airing. Some of these insights and suggestions are shared openly with the other readers as described above. The portfolio director reads all of them, and many are used as the examples reprinted below.

Because of an expressed concern that portfolio assessment could be too intrusive in student and faculty lives, the prompt for the cover letters asks seniors to report the time involved in compiling and submitting their portfolio. The average time reported to assemble a portfolio in 2003 was 3.8 hours. (This average includes all *reasonable* responses – some students did not address the time they spent on this task, and others gave responses like "It took me four hard years of work to generate the material for this portfolio.")

Continuing the trend of recent years, fewer students express surprise upon being assigned the portfolio project in their senior capstone course. More students say they have been expecting and preparing for the assignment throughout their undergraduate careers.

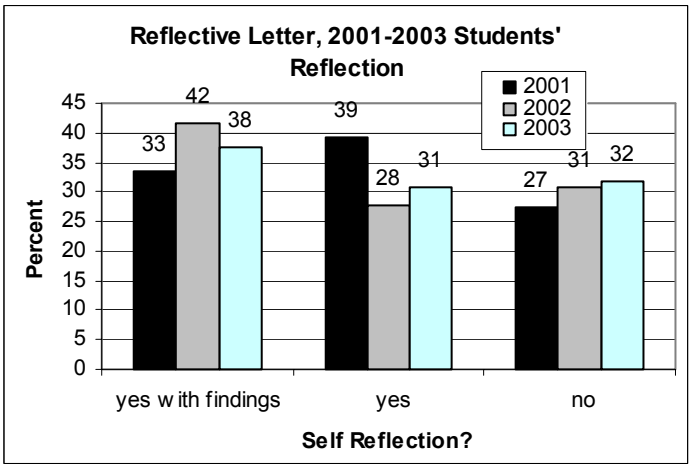
Additionally, a large proportion of students are maintaining documents electronically. As in past years, this has also created problems in retrieving documents due to various computer failures. However, students also appear to be better prepared for such issues by using networked drives and maintaining paper copies as well as digital documents. The following letter from an Accounting major presents an example of this kind of preparation for assembling the portfolio:

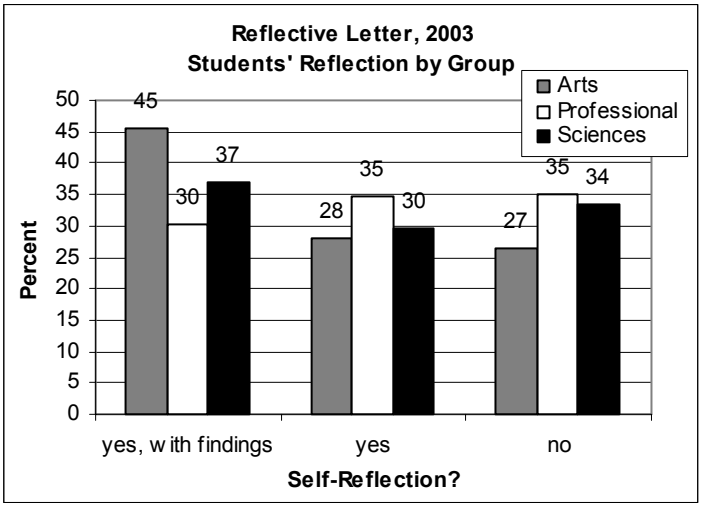
> *To prepare for my portfolio, I kept accurate records of all my class work. I saved all my documents on labeled disks and kept hard copies as well. In putting together my portfolio, I read the requested items and scanned my disks for the appropriate works. I chose to include the works that best matched the criteria for each category. Then, I thought about the questions asked in the respective category and answered in a thoughtful manner. I spent about two days on the entire project.*

This year, several students discussed the assistance they received from faculty members in their capstone courses. These students spoke of the active role taken by the instructors, generally requiring or encouraging submission of items throughout the semester, rather than as a single packet at the end of the semester. Each of these students commented on the advantages of this procedure and suggested its adoption by other capstone faculty members. This letter from a Nursing major typifies those comments:

> *The process for putting together this portfolio was a gradual one. We were assigned to complete our major portfolio for our nursing class, Professional Socialization. Each week during the last three weeks of this class, we had to work on the portfolio piece by piece. The first week we had to submit any three submissions we would like. The next week was the next three. Then finally, we put it altogether by submitting the cover letter and permission to use.*

> *The portfolio process was definitely not something I was looking forward to my senior year of college. I was dreading the entire process. However, completing the portfolio in this way made it a lot easier. I didn't just complete it in one sitting. I had time to think about the pieces I wanted to use and how I wanted to explain them.*





REFLECTION IN COVER LETTERS

It is clear that self-assessment and reflection is valued across the University community as an integral component to student learning. The portfolio process has always been considered a means to encourage students to engage in this task as they near graduation. This year, many students did so, though the percentage is down slightly.

Cover letters often provide personal and thick description as seniors "sum up" their experiences at Truman. Some writers are specific and brief. Others expand on their attitudes toward their education at Truman, their personal growth and academic achievement, and their opinions and recommendations about the curriculum, the liberal arts culture, and the assessment culture.

Many refer to experiences and learning outcomes that best represent them but were not elicited by the other portfolio prompts.

Faculty readers report whether cover letters contain reflection. They check "yes" for reflection presented only as generalizations and "yes, with findings" when the writer presents specific and well-developed insight. The 2003 data shows a very slight decline in the percentages of students providing some reflection, when compared to 2002 (69% in 2003, versus 70% in 2002 and 72% in 2001). As in the past, those without reflection were mostly letters explaining the contents of their portfolio and the process they used in assembling it.

The data by group show Arts/Humanities students to be more likely to include findings in their self-assessment than are the students in either Science or Professional majors.

Seniors engage in a broad range of reflections in the portfolio cover letters. Some focus on the challenges they faced and the achievements they accomplished in the major. Others wrote about the value of the liberal arts to them. Still others attempt a holistic assessment of personal development over their Truman tenure. Each cover letter excerpted in this almanac was recommended by faculty readers for sharing with the university community.

This English major focuses on growth as a writer and thinker:

> *In the past four years, I have written a massive amount. Going back through my work, I have demonstrated real progress in not only my ability to write, but my ability to convey my thoughts, and to critically analyze works of literature. I began my college career looking inward, trying to figure out how a certain work or article agreed or disagreed with the way that I thought, and I have progressed to a point where I am capable of incorporating other's ideas and opinions into my own, and forming a new and more complete thought process.*

In this letter, a Biology major describes the on-going nature of learning:

> *I have learned there are a variety of climates in life and almost as many adaptations. I know very little, will never know the half of it, but want to continue the process of growing. It is fine not to know everything. Those people who attest to know everything, actually know very little. Happiness is not superficial and quantitative, but rather is personal and intimate. We still grow, even in times of drought. Bad things, as well as good things, come in threes. Experience is a very difficult thing to print on paper, even when it is framed.*

Another Biology student spoke at length about her experiences in making interdisciplinary connections and the role of her friends in the process:

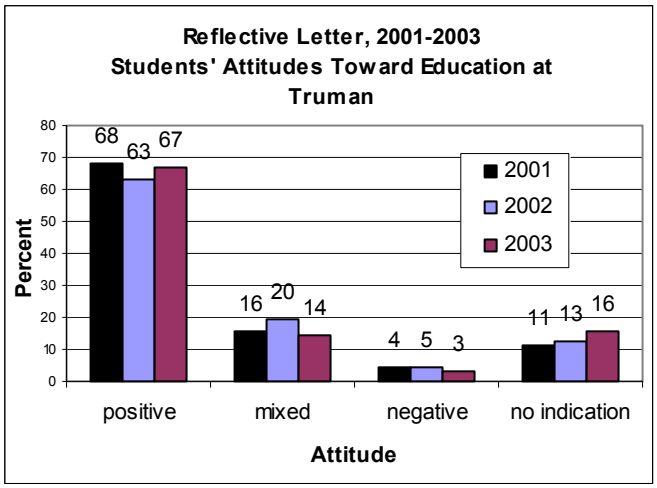
> *For the first two years at the university, I focused on my foreign language, my math and my sciences. Thus, it wasn't until my junior and senior years that I began to focus on the truly interdisciplinary and liberal aspects of my education.*
>
> *Even before that point, I was lucky enough to have a very interdisciplinary education. I was surrounded by a diverse group of girlfriends whose majors included Chemistry, Nursing, Justice Systems, History, Linguistics, Spanish, English, Business and Accounting. As a Biology major and for some time a Chemistry and Physics minor, I rounded up the group nicely. Every day at dinner, we would share stories from our classes that day, so I got quite a diverse education on subjects otherwise out of my field. It's amazing what one can learn when one surrounds themselves with other students who love to learn.*
>
> *Along with learning new topics, I also learned to make connections. Like having the proverbial light bulb go off, it is a very enjoyable experience, connecting two dots previously unrelated. In one case, I was taking Geology and Organic Chemistry. In Organic Chemistry, we learned that pure solids will have higher melting temperatures because they fit together better than impure solids. In geology we learned that igneous rocks had higher melting temperatures than metamorphic rocks, but the reasoning was vague. I was rather delighted when I made the connection between the two, metamorphic rocks being much like a very impure solid. My Chemistry major friend, admitted to being impressed with that connection-of-dots.*
>
> *This need to make connections across educational fields followed me into my junior and senior years and has only given me more tools to work with. I've made connections between anthropology and animal behavior, linguistic studies and the comparative method of evolutionary biology and I've even been known to draw lines between Plato's Republic and Harry Potter. This is a fascination for me, and one that I plan to continue to pursue throughout my lifetime.*

A Business Administration major points to study abroad as a key element in personal growth:

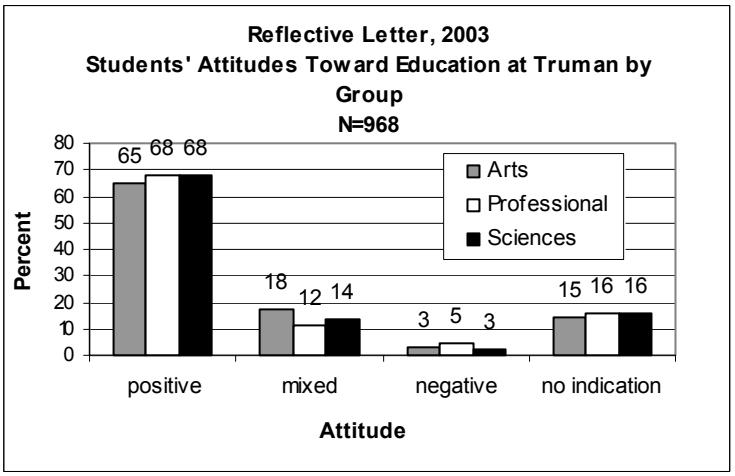
> *If Truman has taught me anything it's that the world I once saw myself in is not the same world anymore. It is a whole heck of a lot bigger than I ever dreamed it to be and I now know that I can do anything I put my mind to. My opportunities are endless and my once narrow thoughts about money and happiness have changed completely. My mind is more open to different cultures, religious views, political ideas, and other people's opinions more than it ever has been. One very important experience in my four and a half years here was my study abroad semester in Newcastle, Australia. If Truman didn't open my eyes to what was out there in life, Australia and the people I met and places I saw sure did.*

ATTITUDE TOWARD EDUCATION AT TRUMAN

Student attitudes regarding their education at Truman continue to be positive. The 'positive' attitudes increased 4% from last year, approaching the level in 2001. Additionally, fewer students expressed mixed attitudes (14% versus 20%), and more students did not discuss their attitudes in this area (16% versus 13%). Sixty-seven percent of the letters expressed a positive attitude about their education, 14% expressed mixed feelings, and 3% were negative. Overall, the general pattern of a large positive attitude and a small negative attitude towards a Truman education has been demonstrated each year and appears generally constant across disciplines.



As a group, arts/humanities students were slightly less likely to express positive attitudes than science and mathematics or professional majors. Furthermore, arts/humanities students were somewhat more likely to have mixed attitudes about their education.



Students expressing negative or mixed feelings about their Truman experience commented on a range of things, including time constraints imposed due to study expectations, faculty attitudes, and a sense that the university is simply "too hard" or expects far too much from its students. Some students complained about changes in requirements, commenting that it seems the institution is unable to decide what plan to follow. A Business Administration student who returned to complete her degree after an absence of several years was quite specific about this latter point:

> *I must tell you that I do not consider myself to be a Truman alumnus, but rather an alumnus of Northeast Missouri State University. My first semester at this university was in the fall of 1991 and I left during the spring semester of 1994. Since returning to this university in the fall of 2001, I have endured your name changes and your curriculum experiments. These experiments cost me a total of ten credit hours, which I paid a lot of money for and spent a lot of time on. Someday I hope you will not only settle on a permanent name, but that you also decide on what your university should stand for.*

An Exercise Science major found Truman lacking in extra-curricular opportunities and "personality":

> *My experience at Truman has been an educational one but not one I would recommend to anyone else. What it has in education it lacks in personality and enjoyment. If I had the opportunity now to start over, it would not be at this school. Granted I made a lot of friends but I would do that anywhere. The atmosphere of this school is so stuffy that there is nothing that I can do other than sports that is school related to have fun with my friends. If you want to stay in your room, eat, and study, this is the perfect college.*

The following excerpt, from a Biology student, is particularly vitriolic. The student describes an elitist attitude among faculty that produced overwhelming feelings of inferiority for her. Included in the lengthy letter is the following recollection of a particularly painful conversation that typified her perception of the faculty:

> *My life has been ruined due to you. It doesn't matter whether I stuck with it and finished the degrees with all of you laughing in my face, Ha you're not good enough! You're just not smart enough. I loved it when I had a faculty member actually tell me that they cannot believe some of the types of students that are allowed into this school. Of course, this was just after she had seen my GPA. She talked to me for a while and then actually asked me how I had been admitted. (You really do know how to pick those faculty, don't you, great job once again!!) Can you imagine her surprise when I, already pushed to tears told her that I had been accepted to the REAL Harvard and even to Princeton and Brown. I was a 5.3 on a 4.0 student who participated in everything, from student government, clubs to every athletic event that I could. I had a bright career ahead of me, one that I was proud of. The one mistake I made was not going to a different school. I came to you an intelligent, highly capable, outstanding student and I am leaving a beaten, trampled over, kicked until I'm black and blue person, whom you will probably have to support through your tax dollars because I just wasn't good enough for you!*

The following excerpts came from students who are leaving Truman with more positive attitudes about their education here. In contrast to the previous letter, many describe faculty as caring and personable.

First, this excerpt from a Biology major describes faculty who made a difference outside the classroom:

> *I personally have loved every minute of my time at Truman. I don't think I could've asked for a better education, particularly for the price, and I couldn't have been in a more supportive environment during college. Coming here with no support network was one of the most frightening experiences in my life. So many faculty members I have met through the years really were concerned with students' education and really cared about them as people. But as I said, most of my learning didn't occur in class. It occurred during the many office hours I have attended, the conversations I've had faculty and students in passing, and the moments someone was there to lend me a hand. Besides the facts and figures I've learned, I've also learned who I want to be and how I can achieve that. I've also learned to trust and count on people again.*

Next, this Agricultural Science major reflects on the atmosphere and positive faculty interaction:

> *I have thoroughly enjoyed the small school atmosphere here at the college. In fact, I still have professors from my freshman year here at Truman who I speak to on a regular basis, and they are not in my major. That would not be likely to have happened at a larger college or university.*

Various students commented on the role of co-curricular and extra-curricular activities in making their time at Truman memorable. The following excerpt from an English major typifies those letters:

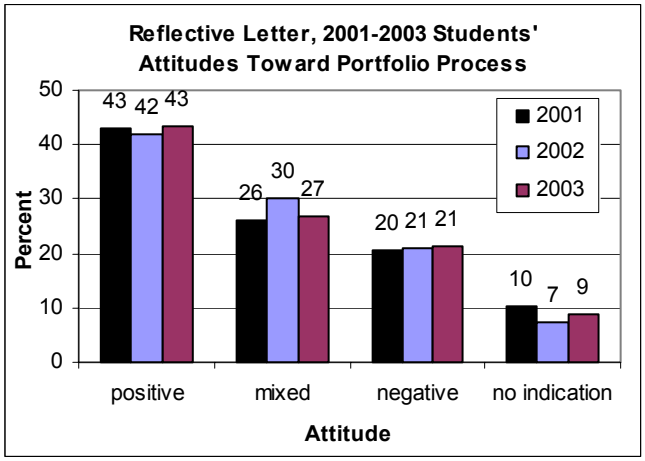
> *At Truman, I received my education inside and out of the classroom. This school has let me choose how much to grow as a person, without setting an upper limit. 1 got to participate in everything from student government and ROTC to show choir and marching band. This exposed me to people with a tremendous variety of political, religious, and philosophical views. In addition, I was fortunate enough to spend a semester studying in Europe and a summer in Australia. These kinds of experiences happen only once, as each is unique (and usually expensive) but they put my character to the test and challenged me to question what 1 think of things, how 1 think about them, and why. This is an invaluable tool in growing as a person.*

Finally, this Communication Disorders major described how Truman instilled in her a love for learning that will stay with her:

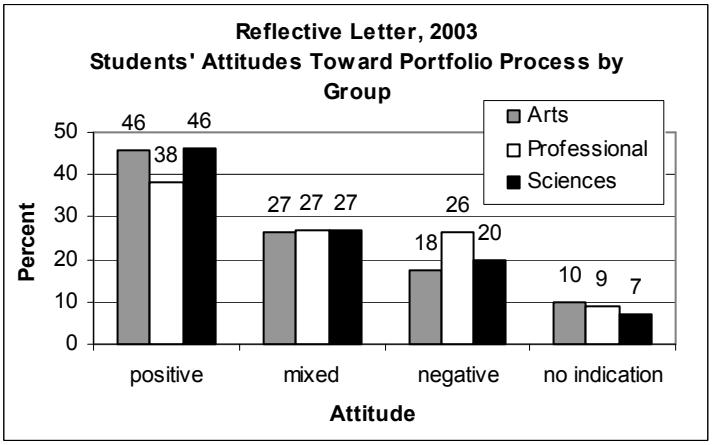
> *I cherish my time spent here at Truman. This has been one of the best decisions of my life, certainly of the past and probably for the future. I have loved most every minute of learning. This environment was so inviting to me. I was challenged every day by my professors and by myself. I have learned so much here, but I am sure that the most important lesson that I have learned is simply to love learning. I have this deep craving for knowledge that has been encouraged by this university.*

ATTITUDE TOWARD THE PORTFOLIO PROCESS

Overall, seniors continue to express more positive than negative attitudes about the portfolio process. This year, faculty readers found slightly more positive expressions than they did in 2002, along with slightly more negative responses. This year, 9% of seniors provided no feedback, which is up from the 7% in 2002. Forty-three percent of seniors were positive about their experience with the portfolio, up 1% from last year's findings. Expressions of negative attitudes regarding the portfolio were roughly the same as in 2002. Twenty-seven percent offered mixed opinions, which is lower than 2002. When sorted by group, seniors in the professional majors are more negative about portfolio assessment than are students in the other two groups.



As in previous years, many students admitted that they spent little time on their portfolios. A number of students indicated that they believed the task might have been personally beneficial if they had been able to devote more time to it. However, they often spoke of the flurry of other important activities that occur in conjunction with graduation or with coursework.



Some students expressed dismay at having to complete this requirement, feeling that it is just one more "assessment hoop" through which to jump. Several students questioned the wisdom of spending money on assessment (particularly portfolios) in the face of budget shortfalls.

The following excerpts serve as examples of some of the negative attitudes students expressed toward the portfolio process and in several cases toward assessment in general:

This passage is from a Music major, who found the portfolio far too limiting:

> *Although many educators don't like to hear this, I maintain that my most valuable lessons have been learned outside the classroom. How can a compilation of a few papers ever show just how much I've grown and matured these past years? Reading through my papers as I decided which to submit for my portfolio was an unsatisfactory project. I wondered to myself, how would this committee ever know everything that I've accomplished over the years? The friendships I've made, the people I've met, the experiences I've had…none of these things, which I hold most important in my college career are even mentioned in any of my "academic" papers.*

This excerpt is from a Sociology/Anthropology major:

> *I must admit, I have not spent much time compiling this portfolio. I put effort into the assignments included in the portfolio instead. While I understand the purpose of the portfolio, I feel that the reflection process is unnecessarily time-consuming and not a valid part of the educational process-the educational process took place when I did the assignments and wrote the papers. I do not mean for the tone of this letter to be disgruntled. My time at Truman has been truly memorable, and the education I have received here excellent. However, I do feel that streamlining the process and cutting out the busywork that appears to exist for no particular reason would only serve to benefit current and future students.*

After describing his education at Truman in a positive way, this Studio Art major had this to say about portfolios:

> *Most of my negative experiences at Truman are related to this very portfolio. The constant hoops that a student has to jump through at Truman are ridiculous. I shudder at the fact that major changes are made throughout the university in response to this portfolio. Consider the average senior student (based on every senior I've ever talked to and my personal observations): seniors are tired of the hoop-jumping, seniors have found the path of least resistance for most tasks and unfortunately go that way (including this portfolio), seniors simply don't care about most of these tasks, seniors are tired of school, ready to move on with life, and have lost a great deal of material from their university experience. How accurate do you think the average portfolio is? How much effort does the average senior put into this portfolio? Just yesterday a Truman graduate and friend told me not to spend very much time on this portfolio because "it is stupid".*

Finally, a History student pointed to an over-emphasis on assessment:

> *I can sort of understand the motives behind the Portfolio Assessment, but in general, I think it is a waste of time for administrators and, more importantly, for students. I have loved my Truman experience and am proud to be receiving my education here, but one shortcoming of the experience has undoubtedly been the administration's obsession with self-assessment, and the incessant and mind-numbing testing that results. It seems to me that the resources used to conduct these types of bureaucratic procedures could be put to much better use in some other area of University improvement. I have spoken with many students, and even some faculty too, who view this and other assessments with an attitude of "let's get this over with." The results therefore would seem to be rendered meaningless. While I do believe there are good intentions behind the Portfolio Assessment, in practice it is time-consuming, annoying, and ultimately unnecessary.*

On the other hand, many students find the portfolio process to be rewarding or see it as an opportunity to give something back to the University. In fact, some students who anticipate that the process will be a waste of time are pleasantly surprised at what they discover. The following excerpt from an English major discusses this self-revelation at length:

> *Last spring, I laughed with a graduating friend who wrote in his portfolio cover letter that he thought the requirement was a total waste of his time and hoped that the person reading it thought so too. I wished that I could have such courage of my convictions. As I spent the afternoon putting together my own portfolio, however, I found it to be a more satisfying endeavor than I expected. No compilation of papers could serve as a thorough representation of my experiences at Truman which stretch far beyond the classroom, yet looking over the assignments, tests, and papers which I have accumulated over the last three and a half years, I was surprised at the amount and array of work I have done here. Of course I saw the expected intellectual growth from my freshman to senior year, but I also saw something even more encouraging: a growth in the depth of my personal engagement with my work. If you had asked me before I completed this project how close I felt to my academic work, I would have said that as I grew more and more weary of college, I also became less engaged with my courses. Reviewing my assignments, however, I find that this is wholly untrue. Each paper (most of my assignments have been critical analyses of literary works) contains a more human involvement with the subject than the last. It seems that I have developed an academic sense of self that I did not have as a freshman.*
>
> *So, thinking back to my friend's assessment of the portfolio requirement, I have - to disagree. Not only have I found it to be personally enlightening, but I appreciate the institution's effort to evaluate its students' educational experience on a broader basis than standardized test scores offer. Furthermore, I commend the faculty for putting in the extra time required to read each portfolio.*

This Political Science major expressed similar sentiments:

> *This assignment has affirmed that I have really enhanced many skills while at Truman. I have improved in critical thinking, writing quality, quantitative analysis, and aesthetic analysis. All of these things will be helpful further down the road in life, and the liberal arts education at Truman is one of the reasons for the wide variety of improvements. Truman really does improve students' grasps of other disciplines so that they have a more diverse education that will provide a stronger base for them as they leave the university. I think this portfolio assignment really emphasizes this aspect. The assignment is very good for students to have a chance to review their previous works and see the progress that has been made in their years at Truman. Sometimes students do not realize how far they have come until they are forced to examine their assignments and think about the things that the portfolio is asking.*

An English major contrasts the portfolio with other assessment instruments:

> *I think that the portfolio assessment is the most valid form of assessment I've taken part in while at Truman. Questionnaires, freshman testing, the SWE, and any other assessment I've taken part in was either based on overly simple questions (usually multiple choice) or not taken seriously by anyone (especially the SWE). I think that to properly determine the success of the liberal arts program, it is necessary to look beyond standardized testing and examine the process rather than product of the education students receive here at Truman, and I think that the portfolios do this very well.*

Recommendations for LAS Portfolio Assessment

Both students and faculty readers have offered recommendations about the process of portfolio assessment. To maximize the benefits to students, faculty and the university community, and to keep step with changes occurring within the university, the portfolio process must be assessed and amended each year.

INCREASING STUDENT ENGAGEMENT

A theme evident in various cover letters and in statements made by faculty readers was the need to increase the degree of student engagement with the portfolio process. Universally, individuals believed that students who participate in a more reflective manner will experience greater levels of satisfaction and deeper personal awareness.

Achieving this deepened level of engagement can be enhanced by increasing the engagement of the faculty. Numerous students commented on the important role played by capstone faculty in facilitating the construction of the portfolio. They pointed to faculty (often by name) who communicated the value of the portfolio and provided help along the way. In the minds of these students, faculty engagement increased their own level of engagement on various levels. While capstone faculty members are responsible for many other important tasks in these courses, it is clear that our students benefit from their capable assistance in this process.

Increasing faculty engagement is, at least in part, tied to exposure to the portfolio reading process. Year after year, first-time faculty readers tell us that they leave the week of reading with a new appreciation for the value of portfolios to all members of the university community. Furthermore, they express a deeper understanding of the value of reflection and self-assessment as integral aspects of the university's culture, and they leave, after a week of reading, with new ideas for their classes and for their advising inspired by their experiences reading portfolios.

Furthermore, several students suggested ways to encourage student engagement. For instance, some commented that it would be valuable to require submission of works for the portfolio by students throughout their college career, perhaps even on an annual basis. Others recommended regular reminders and a discussion of the portfolio in JINS classes. These recommendations present ways of embedding the portfolio process in the curriculum to a greater extent. Doing so reduces the perception that portfolios are simply another assessment hoop through which students must dutifully jump before graduating. Overall, such recommendations suggest that students are recognizing the significance of the portfolio and the value it can bring to them individually.

Of course, changing the expectations of students in such ways may have the deleterious effect of creating additional resentment regarding the entire process. However, the resentment of most students is tied to the pragmatic

issue of timing – creating a portfolio during the last weeks of one's college career, when other important tasks must also be completed.

MOVING TO ELECTRONIC PORTFOLIOS

As discussed in last year's report, there are potentially a wide range of benefits that would accrue from the adoption of a digital/electronic format for portfolio submissions. Along with the practical benefits of reducing the handling and storage of vast amounts of paper, it is clear that students' experiences with the process can be enriched through the adoption of electronic portfolios.

First of all, an electronic format gives students greater flexibility. This year, a number of students submitted specific items (or their entire portfolio) in digital format, either on diskette, compact disk, or via a link to a website. Furthermore, many items were submitted that are more effectively reviewed in digital form, such as PowerPoint presentations, web pages, and hyperlinked documents. In some cases, students had printed out these artifacts rather than providing them in their original format. Unfortunately, other students noted that they were hindered in the submission process by the cost or inconvenience of printing out large documents. A few simply did not submit items that were lengthy for similar reasons.

Secondly, electronic portfolios are dynamic, enabling students to modify their entries quite easily. This encourages students to engage in regular self-reflection and to consider their portfolio throughout their academic career. This is further enhanced when the portfolio is web-based and integrated into the institution's website.

Thirdly, electronic portfolios can serve multiple purposes. Students may create several versions of an electronic portfolio, using one for prospective employers, another for self-reflection, and a third for submission under university guidelines. The options are limited only by the student's imagination and wishes. Many students have commented on the perceived lack of utility for the LAS portfolio, since it is put together at the end of their time at Truman and is only returned ten years later. An electronic portfolio is perceived as a "customized" work that is shared with others, yet retained for personal use. Students who complete such portfolios tend to value them more highly and to take greater care to submit quality works.

Finally, electronic portfolios enable students to demonstrate increasing levels of computer literacy. This learning outcome is currently not assessed, but these portfolios would provide an appropriate venue for consideration of student abilities.

SHARING PORTFOLIO ASSESSMENT FINDINGS

The portfolio assessment generates richer data than any annual report in the *Assessment Almanac* can accommodate. Raw data from the past two years has been saved in SPSS data file format, while data from 1998 through 2001 is saved in Excel spreadsheet format.

Starting in 1998, portfolio findings have been sorted by student major and the results for each major have been disseminated to the corresponding disciplines through their division heads. The disciplines are encouraged to study how their majors' portfolios were evaluated and to consider those findings as they engage in program review and curriculum development.

Starting in 1999 disciplines also receive data showing which classes in their disciplines served as sources for portfolio entries and how those works were scored. Again, this information is intended to stimulate discussion in the disciplines regarding their curriculum and to provide data for disciplines considering reforms.

The summer planning workshop and faculty development luncheons have been traditional venues for sharing and discussing portfolio results, and these should continue to be utilized. The Faculty Development Committee should consider designing other workshop experiences where portfolio findings are shared and the portfolio process is explained.