

## Chapter XIII: PORTFOLIO ASSESSMENT

### Portfolio Assessment

#### *Who takes it?*

Right now, only seniors in classes that require creation of a Liberal Arts and Sciences Portfolio (most often capstone courses or senior seminars) submit portfolios. In May of 2001, one thousand eleven seniors, or 84% of the graduating class turned in portfolios. All students matriculating in or after the fall of 1999 will be required to develop and submit portfolios as a requirement for graduation.

#### *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?*

The class that requires it.

#### *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 late summer or early 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 2000-2001 academic year, a portfolio included a pair of works showing *growth as a thinker*, a work demonstrating *interdisciplinary thinking*, a work applying *quantitative/mathematical reasoning* (about 60% of portfolios), a work reflecting *historical analysis* (about 40% of portfolios), a work showing *scientific reasoning*, an item demonstrating *aesthetic analysis and/or evaluation*, 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. The implementation of the Liberal Studies Program (LSP) has prompted discussions including items representative of LSP modes of inquiry. These include the Historical, Philosophical/Religious, and Social Scientific modes. This year, students submitting portfolios in the Spring semester submitted works showing *historical analysis*, a category that temporarily replaces *quantitative/mathematical reasoning*. Samples of student learning in the other modes of inquiry are expected to be included in portfolio assessment in the future.

#### *From whom are the results available?*

The director of portfolio assessment.

#### *Are the results available by division or discipline?*

By assessment tradition at Truman, 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 reaccreditation 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 reaccreditation 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. Few universities are using portfolios for assessment of general education or liberal studies; however, many institutions have inquired about the development and results of the portfolio assessment at Truman.

## 2001 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 2000-2001 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 2001, portfolios from one thousand eleven, or 84% of the 1203 students who graduated in fiscal year 2001, were read and evaluated by faculty readers. This percentage is significantly greater than the 78% participation reported for 2000. Twenty-one disciplines participated in the portfolio project, administering the portfolio to its majors. This number is higher than the eighteen disciplines participating last year. The increase is assumed to be attributable to the pending implementation of the portfolio as a graduation requirement, which comes into effect when the students who matriculated in 1999 complete their studies in the spring of 2003. The accompanying table lists several more disciplines, because some students are double majors. The number of majors represented in the portfolio is twenty-eight, five more than in 2000.

Fifty-nine faculty members read and evaluated the portfolios, representing all ranks and twenty-four academic disciplines from every division except Military Science and Education. Fifteen of the faculty participants (seven less than last year) were new readers. The portfolio co-directors, who are faculty members, 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. Two student employees helped considerably with data entry and sorting. Newer readers were encouraged to seek advice of those with more experience when confronted with difficulties.

Reading sessions were scheduled over the three weeks from May 14 to June 1, 2001. Approximately one third, or about 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 third 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 2001 portfolio were the same as in 2000 with one exception. Portfolio submissions were elicited by prompts for demonstrating “growth as a thinker”, “interdisciplinary thinking”, “scientific reasoning”, “quantitative/mathematical reasoning”, “historical analysis” and “aesthetic analysis and evaluation”, focussing 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 “historical analysis” category is new in 2001. It was developed by a committee of six faculty members who teach history courses (music history, art history, and history) to begin fulfilling the goal of assessing the LSP Modes of Inquiry. “Historical analysis” temporarily replaces “quantitative/mathematical reasoning” beginning with students who assembled their portfolios in the Spring of 2001. Thus about

PORTFOLIOS BY MAJOR	
Accounting	64
Agriculture	1
Anthropology	1
Art	26
Biology	117
Business	220
Chemistry	35
Classics	5
Communication	66
Computer Science	31
Economics	9
English	109
Exercise Science	73
French	4
German	2
Health Science	34
History	40
Justice Systems	4
Mathematics	15
Music	20
Nursing	32
Philosophy and Religion	5
Physics	6
Political Science	33
Psychology	100
Russian	1
Spanish	16
Theater	1

PARTICIPATING DISCIPLINES	
Accounting	
Art	
Biology	
Business	
Chemistry	
Classics	
Communication	
Computer Science	
Economics	
English	
Exercise Science	
Health Science	
History	
Mathematics	
Music	
Nursing	
Philosophy and Religion	
Physics	
Political Science	
Psychology	
Spanish	

- | <u>The 2001 Portfolio</u> |   |
|---------------------------|---|
| •                         | Growth as a Thinker                       |
| •                         | Interdisciplinary Thinking                |
| •                         | Scientific Reasoning                      |
| •                         | Quantitative/Mathematical Reasoning (60%) |
| •                         | Historical Analysis (40%)                 |
| •                         | Aesthetic Analysis and Evaluation         |
| •                         | Most Personally Satisfying Experience     |
| •                         | Reflective Cover Letter                   |

60% of the current portfolios (i.e. those assembled in the Fall of 2000) contain submissions for “quantitative/mathematical reasoning” (and not “historical analysis”), while the remaining 40% contain submissions for “historical analysis” (and not “quantitative/mathematical reasoning”). Additionally, several small changes were made in the portfolio prompts to increase clarity. With only small changes over the last several years in the format of the portfolio, the data collected in these years constitute a good baseline against which the success of the recently implemented LSP can be measured in the future.

## 2001 Portfolio Findings

The findings of the 2001 Portfolio Task Force 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.

Arts/Humanities	MAJOR GROUPS	
	Science/Math	Professional
Art	Agriculture	Accounting
Classics	Biology	Business Administration
Communication	Chemistry	Justice Systems
English	Computer Science	Nursing
French	Economics	
German	Exercise Science	
History	Health Science	
Music	Math	
Philkosophy/Religion	Physics	
Sociology/Anthropology	Political Science	
Russian	Psychology	
Spanish		
Theater		
<b>296 portfolios</b>	<b>454 portfolios</b>	<b>320 portfolios</b>

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 other offer multiple submissions, the number of submissions varies from category to category in the report.

Traditionally, we have kept track of the sources of items selected by seniors for their portfolios. This year, as we did last year, we will attempt to characterize that data by indicating several of the most common sources (disciplines and courses) for each category.

For several years, we have been tallying the occurrences of submissions dealing with issues of race, class, gender or international perspectives. Those findings are also reported.

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### Growth as a Thinker

Seniors submit early and later works to demonstrate growth over time as critical thinkers. In 2001, items were elicited with the following prompt:

*Please include a work reflecting your best critical thinking from late in your academic career (i.e., from your junior or senior year). Strong critical thinking involves such intellectual processes as analyzing, evaluating and synthesizing ideas and concepts (see “Bloom’s Taxonomy” on the following sheet). Please also include a second work that reflects your best critical thinking from early in your academic career (i.e., freshman or sophomore year). The faculty readers will use your earlier work as a reference point when looking*

*for evidence of your growth as a thinker over your years at Truman. Many students (and the faculty readers) find it easier to compare somewhat similar assignments (e.g., two papers, two exams, two lab reports) from earlier and later times. 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. Please reflect on and choose whatever materials best demonstrate your growth as a thinker.*

Students are further provided with a description of Bloom’s<sup>1</sup> taxonomy of critical thinking, and are encouraged to use it when reflecting on their growth. The cover sheet encourages metacognition when it specifies that seniors describe how and why their choices demonstrate their growth as thinkers.

Materials come from every sector of the curriculum; some students pair a problem-solving essay from Composition I with a researched assignment from Composition II to show the change in their response over time to similar assignments. Others might pair an early scientific lab report with a later scientific research report.

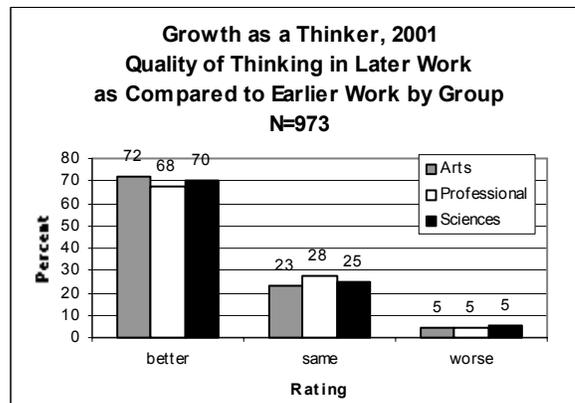
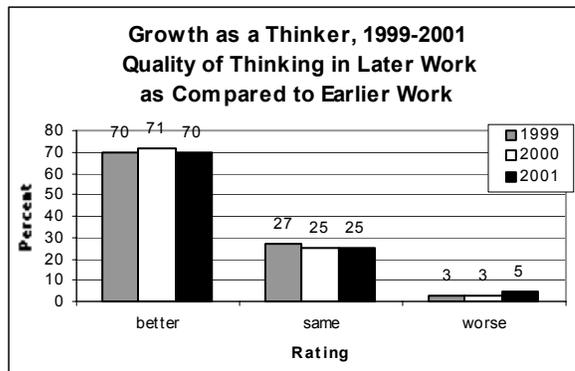
Faculty read both submissions, comparing and evaluating the thinking in each as they make three judgements: 1) whether the thinking in the later work is about the same as, better than or worse than the thinking in the earlier paper; 2) whether the quality of the thinking in the later work is strong, competent, weak or not evident; and 3) whether the quality of insight evident in the senior’s description and self-assessment of growth as a thinker is strong, competent, weak or nonexistent. Each pair of items was read and evaluated by one faculty reader.

Out of the 1011 portfolios collected, 942 (93%) contained paired submissions to demonstrate growth as a thinker. Thirty-four seniors submitted only a single work, confounding any attempt to evaluate growth in thinking. In these cases, the item was evaluated only for quality of thinking as evidenced in the submitted work. Of the 976 seniors who submitted anything in this category, about 16% offered no meaningful self-assessment.

In 2001, some growth in thinking was found in 70% of the paired submissions. This is about the same percentage as was found last year. Twenty-five percent of the submissions were found to demonstrate about the same quality of critical thought over time, and 5% were found to demonstrate worse thinking in the later work. This pattern is demonstrated similarly amongst all three major groups: Arts/Humanities, Professional and Science/Math.

**Growth as a Thinker at a Glance**

- Number of paired submissions: **942**
- Number of single submissions: **34**
- Percent of “no submissions”: **3**
- Percent showing growth: **70**
- Mean critical thinking score (on a 0 – 3 scale): **1.90**
- Highest scoring “group”: **Arts/Humanities**
- Lowest scoring “group”: **Math/Science**
- Most frequent “early” source (course): **ENG 100**
- Most frequent “early” source (discipline): **ENG**
- Most frequent “later” source (course): **ENG 314**
- Most frequent “later” source (discipline): **ENG**
- Most common course pairing: **ENG 100 with ENG 314**
- Trend: **Steep drop in insightful self-assessment of critical thinking  
Weaker critical thinking scores**



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

[Note that the total number, N, of portfolios reflected on all graphs that compare the major groups in this report is higher than the total number of portfolios evaluated. This is because portfolios of students with more than one major are multiply counted if the student's majors belong to different groups.]

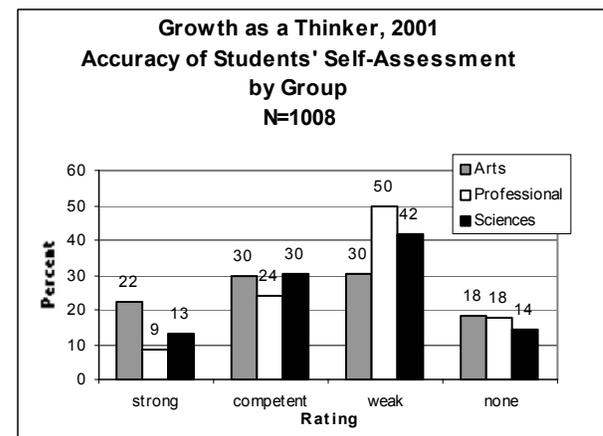
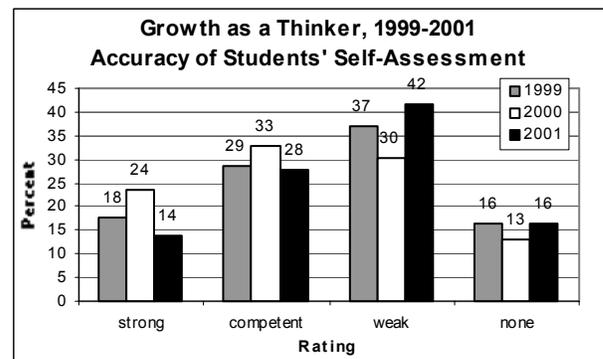
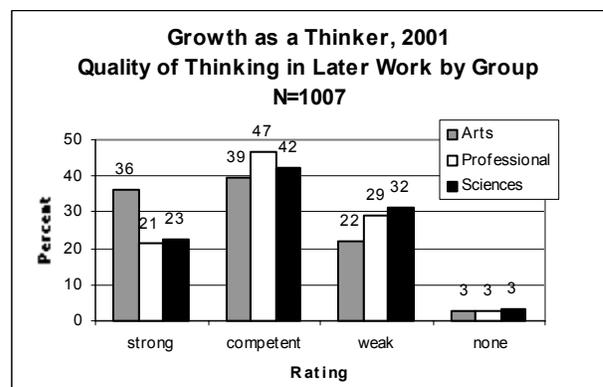
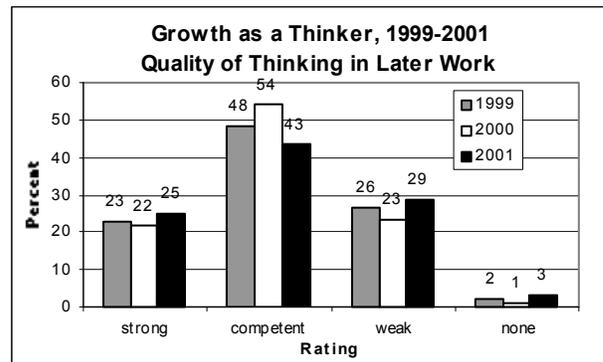
Faculty readers evaluated 942 "later" works and 34 single submissions for the quality of critical thinking evidenced, and rated the thinking as "strong", "competent", "weak", or "none". In 2001, 25% of seniors submitted material judged as demonstrating "strong" thinking; 43% submitted material with thinking judged as "competent"; 29% submitted material judged as showing "weak" thinking; and 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" is 11% lower in the current portfolios than was found in 2000 and 5% less than was found in 1999. Although "strong" thinking increased by 3% as compared with the 2000 findings, "weak" and "no" critical thinking increased by 8%. These factors combine to account for a decrease in the mean score from 1.97 in 2000 to 1.90 in 2001, which is closely comparable to the 1999 mean score on 1.91 (where a score of 0 = "none" and 3 = "strong").

When the data is sorted according to major groups, it becomes evident that seniors with Arts/Humanities majors are judged as significantly stronger critical thinkers than those with Professional or Science/Math majors. Thirty six percent of Arts students were found to be "strong" critical thinkers, while only 23% of Science students and 21% of Professional Studies students were considered "strong" in their thinking. These results closely parallel last year's findings.

In 2001, students' self-assessments of their critical thinking were found to be the poorest seen in recent years. "Strong" and "competent" self-assessments were down a combined total of 15%. Many students continue to focus on their *writing* as opposed to their critical thinking, and many others ignore the request for self-reflection completely. This result may parallel a growing cynicism amongst the seniors regarding assessment in general, or it could be an indication that students are not being taught at Truman what critical thinking is all about.

When sorted according to major groups, we find that seniors with Arts and Humanities majors were most insightful in their self-assessments of growth as a thinker and those with Professional majors were least insightful.

The "early works" chosen by seniors for this category were generated mostly in the first two years of study. Fifty two percent of the submissions were examples of work done as a freshman, 34% were from the



sophomore year, 12% came from the junior year and seniors produced the remaining 1%. Forty eight percent of the “early works” fulfilled assignments for classes in the LAS core, 41% were generated in classes fulfilling major requirements, and the rest were products of elective courses, minor requirements or other sources.

The “later works” submitted by seniors demonstrating growth as a thinker were 64% from the senior year, 32% from the Junior year, 2% from the sophomore year, and less than 1% from freshmen. Twenty-nine percent of the “later works” fulfilled assignments for classes in the LAS core, 60% were generated in classes fulfilling major requirements. It is interesting to note that more students choose work from their major coursework to demonstrate their best thinking.

English classes were the most common sources of both “early” and “later” works. Three hundred seven “early” submissions were from English classes. History courses were the sources of 87 submissions (82 in 2000), followed by Biology with 73 submissions (54 in 2000). Most other disciplines were represented as sources of “early” works with less than 45 submissions from each. Two hundred ninety one of the later works were produced in English courses (255 in 2000), followed by Business with 122 submissions (98 in 2000), Biology with 60 (46 in 2000), History with 54 (67 in 2000), Psychology with 50 (21 in 2000), and the rest with less than 40.

<b>"EARLY" GROWTH SOURCES</b>			
<b>Top Ten Courses</b>		<b>Top Ten Disciplines</b>	
Eng 100	146	ENG	307
Eng 190	39	HIST	87
Biol 107	30	BIOL	73
Eng 314	25	POL	44
Pol 171	18	BSAD	43
Psyc 166	17	PSYC	41
Admissions Essay	16	PHRE	39
Hist 104	16	CHEM	31
Hist 105	16	ECON	31
Bsad 234	15	COMM	27

Composition I (ENG 100) and the Writing as Critical Thinking (ENG 190) together were the sources of 185 “early” works (174 in 2000). Introductory Biology (BIOL 107) accounted for 30 “early” submissions, and 25 submissions were produced in Composition II (ENG 314). No other course accounted for more than 20 submissions of “early” work. Last year 34 seniors submitted their admissions application essay as an “early” work, but only 16 did so in 2001. Composition II was the source of 177 “later” works (167 in 2000). In 2001 Business Policy (BSAD 460) remained the second most common source of “later” works with 58 submissions (41 in 2000) and Senior Seminar in English (ENG 498) accounted for 23 “later” submissions (only 8 in 2000).

<b>"LATER" GROWTH SOURCES</b>			
<b>Top Ten Courses</b>		<b>Top Ten Disciplines</b>	
Eng 314	177	ENG	291
Bsad 460	58	BSAD	122
Eng 498	23	BIOL	60
Bsad 325	13	HIST	54
Econ 303	12	PSYC	50
Psyc 465	12	PHRE	40
Bsad 445	11	POL	39
Chem 421	11	ES	35
Hist 328	10	CHEM	34
Bsad 349	9	COMM	32

The most common pairing of submissions remains works from Composition I (ENG 100) paired with papers from Composition II (ENG 314). This pairing of courses accounted for 62 submissions, and another 17 submissions paired Writing as Critical Thinking (ENG 190) with Composition II (ENG 314). The next most common pairings both occurred seven times. They were Composition I (ENG 100) with Senior English Seminar (ENG 498) and Composition I/Writing as Critical Thinking (ENG 100/190) with Business Policy (BSAD 460).

Of the 1916 items submitted as both “early” and “later” works, 4% dealt with issues of class (up from 3% in 2000), 4% dealt with issues of race (down 1% from 2000), and another 4% had international perspectives (down 4% from 2000). Two percent of the submissions dealt with issues of gender (down 3% from last year). The percentage of collaborative submissions continued to rise from 3% in 1999 to 6% in 2000 to 7% in 2001.

## 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 20<sup>th</sup> century history.*

In 2001, as in the previous year, 7% of participating seniors did not submit an entry demonstrating “interdisciplinary thinking”. Only 2% provided “self-reports” of interdisciplinary work they remembered but no longer possessed (the same percentage as in 2000 and down from 5% two years ago). Because faculty readers did not have direct evidence of interdisciplinary thinking, self-reports were not evaluated. Several portfolios contained multiple submissions that were evaluated and scored independently. Altogether 925 submissions were each evaluated by two faculty readers who read the works “holistically” while keeping in mind the following descriptors:

<b>Interdisciplinary Thinking at a Glance</b>	
• Number of submissions:	<b>925</b>
• Percent of “no submissions”:	<b>7</b>
• Mean score (on a 0-4 scale):	<b>1.06</b>
• Reader “split” rate percent:	<b>19</b>
• Highest scoring “group”:	<b>Arts/Humanities</b>
• Lowest scoring “group”:	<b>Professional</b>
• Most frequent source (course):	<b>ENG 314</b>
• Most frequent source (discipline):	<b>ENG</b>
• Trends:	<b>Little change in scores First JINS submissions, and with higher scores More major course sources and less from core courses</b>

### **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

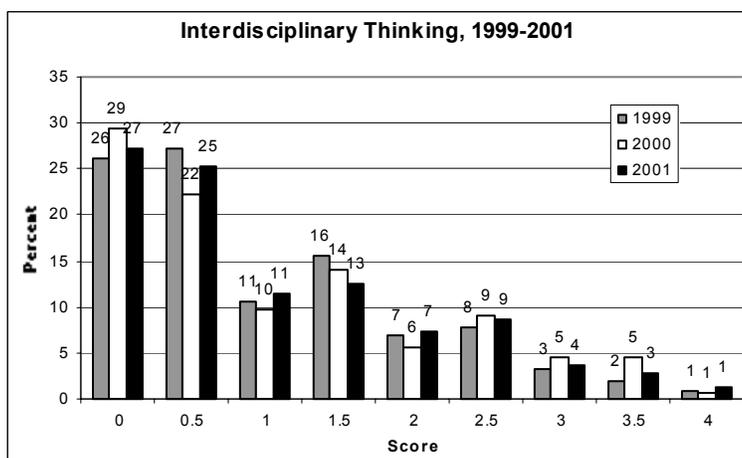
### 0 No demonstration of competence as an interdisciplinary thinker

- ❖ 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 an experienced reader (usually the portfolio director) to determine the final score. The percentage of splits is a measure of the reliability of the evaluation process. In 2001, 19% of the submissions received split scores. This percentage is close to the 20% split rate achieved last year, but higher than the 16% rate of two years ago. (For comparison, random scoring with the five level scale used here would result in a 48% split rate.)

The histogram below shows the results for “interdisciplinary thinking” in 2001 with the results for 1999 and 2000.

Year after year, faculty readers express disappointment at the dearth of good interdisciplinary thinking found in the portfolios. It is worth noting that most of the seniors submitting portfolios in 2001 have all completed their degrees under the old Liberal Arts and Sciences core curriculum, which contains no explicitly programmed interdisciplinary experience. For the first time, however, a small number (19) of submissions were produced in Junior Interdisciplinary Seminar (JINS) courses. Readers anticipate finding more good examples of interdisciplinary thinking next year as all seniors will have been required to take a JINS course.



In comparing the data from 1999 to 2001, there appears to be little significant change in the results. Although the percentage of zeroes decreased by 2% from 2000 to 2001, the percent scoring 0.5 increased by 2% and the percent scoring a 1.0 increased by 1%. There was a noticeable increase in the number of students receiving scores of 4 (“strong competence”), although the percentage, after rounding remains the same at 1%. Five submissions received the highest score in 2000 and eleven scored a “four” in 2001. (The first foreign language “four” was also received this year.) The mean score for interdisciplinary thinking fell from 1.13 in 2000 to 1.06 in 2001, but was still slightly higher than the mean of 1.03 found in 1999.

The scores of the 19 submissions from JINS course are shown in the accompanying table. The mean score of this subset, 2.00, is significantly higher than the mean score of all the submissions, but with such a small number of JINS papers, it is difficult to ascribe any meaningful interpretation to this finding.

The data sorted by major group is summarized below. Students from “Arts/Humanities” disciplines submitted significantly fewer items with little or no interdisciplinary thinking than did students with “Professional” or “Science/Math” majors. Fully 62% of “Professional” students’ and 49% of Science students’ submissions were scored a zero by at least one reader. Only 44% of “Arts/Humanities” students’ submissions were scored 0 or 0.5.

JINS Course Scores	
Score	Number
0	2
0.5	2
1	1
1.5	2
2	3
2.5	3
3	4
3.5	1
4	1

The interdisciplinary items were selected by seniors from 36 academic disciplines. Although last year, for the first time, more submissions were drawn from LAS courses than from major courses, this year 47% of submissions came from major courses (39% in 2000 and 44% in 1999) while only 34% were from core classes (41% in 2000 and 38% in 1999). The rest were drawn from electives (11%), academic minor requirements (7%), and other miscellaneous sources (1%) such as the Sophomore Writing Experience, a medical school application essay, an original musical composition, and a personal web page. Two hundred four entries (22%) were generated in 41 English classes with 101 items (11%) coming from English Composition II (ENG 314). These numbers are very similar to last year's. BSAD courses were the next most frequent source of interdisciplinary submissions with 115 items followed by HIST courses accounting for 48 items.

Most of the work reflected in the interdisciplinary submissions was accomplished by students in their junior and senior years (36% and 39%, respectively). Sixteen percent came from the sophomore year and 9% from the freshman year. Eleven 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 15% of submissions dealt in some way with international issues, 11% with gender, 10% with race, and 7% dealt with issues of class.

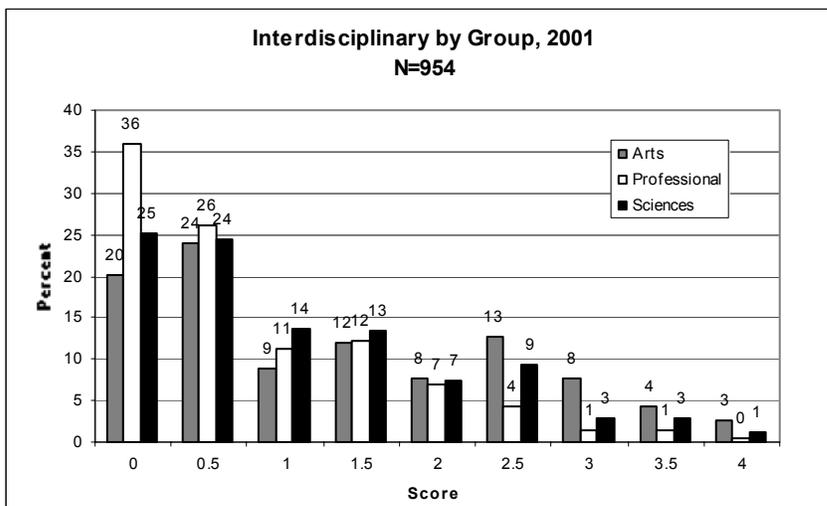
## Quantitative/Mathematical Reasoning

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

*Please include a work in which you applied mathematical skills and techniques in discovering new knowledge through quantitative or mathematical reasoning. Select a work that goes beyond mere computation. If you choose to submit an exam or a homework assignment, be sure your selection is one in which the mathematics is accompanied by written explanations and interpretations. Your submission should provide evidence of your ability to apply mathematical tools to reach a more general and relevant conclusion about some broader question.*

*If the meaning you make will not be clearly evident to a diverse group of readers, either because of the nature of the assignment or because the level of mathematical abstraction, please be sure to take the time to describe the meaning clearly and specifically as you reflect on your submission below.*

Because of the introduction of a new portfolio category, Historical Analysis, in the spring semester, only those seniors compiling their portfolios in the fall semester responded to the Quantitative/Mathematical Reasoning category. It is anticipated that this category will be retired from the portfolio for the next several years to make way for new categories associated with LSP modes previously not assessed in the portfolio.



INTERDISCIPLINARY SOURCES			
Top Ten Courses		Top Ten Disciplines	
Eng 314	101	ENG	204
Bsad 349	21	BSAD	115
Bsad 325	18	HIST	48
Biol 545	15	BIOL	45
Bsad 234	14	PHRE	44
Bsad 365	13	COMM	40
Bsad 460	12	PSYC	40
Phre 188	12	ES	35
Acct 319	11	ECON	33
Agsc 100	11	CHEM	31

Five hundred eighty seven (58%) of the submitted portfolios requested submissions for Quantitative/Mathematical Reasoning. Of these, 485 seniors included a sample of their work in this category. The 15% rate of “no submissions” in 2001 was 2% higher than in 2000. This increase continues a trend of students omitting this category in their portfolios: 6% “no submissions” in 1998, 9% in 1999, 13% in 2000, and 15% in 2001. In contrast, the percentage of “self-reports” fell from 7% in both 1998 and 1999 to 3% in 2000 and to 2% in 2001. Readers did not attempt to evaluate self-reports.

<b><u>Quantitative/Mathematical Reasoning at a Glance</u></b>	
• Number of submissions:	<b>485</b>
• Percent of “no submissions”:	<b>15</b>
• Mean score (on a 0-3 scale):	<b>1.30</b>
• Reader “split” rate percent:	<b>10</b>
• Highest scoring “group”:	<b>Math/Science</b>
• Lowest scoring “group”:	<b>Arts/Humanities</b>
• Most frequent source (course):	<b>STAT 190</b>
• Most frequent source (discipline):	<b>STAT</b>
• Three year trends:	<b>Toward more “no submissions”</b>

It should be noted with only 58% of students represented in this category, that the results are colored by the scheduling of capstone classes where portfolios are administered. Only those disciplines requiring portfolios of their seniors in the summer and fall of 2000 are represented in the following findings. Students majoring in disciplines with more of a mathematical orientation might be expected to score higher in this category than students of other majors. Many of the larger disciplines offer their senior seminar in both fall and spring semesters.

Altogether 485 submissions were each evaluated by two faculty readers who read the works “holistically” while keeping in mind the following descriptors:

### **Some Descriptors of Competence in Quantitative/Mathematical Reasoning**

#### **3 Strong Competence**

Strong demonstration of quantitative/mathematical reasoning includes some, but not necessarily all of these features. The submission may:

- ❖ Show strong inferential or deductive skills
- ❖ Show a strong ability to explain concepts
- ❖ Show an appreciation of concepts
- ❖ Show an ability to ascertain a pattern and relationships
- ❖ Show an ability to use data or calculations to explore further or expand the scope of the problem or issue
- ❖ Interpret the meaning of quantitative results
- ❖ Explain why quantitative techniques are applied

#### **2 Competence**

Competent demonstration of quantitative/mathematical reasoning submissions may:

- ❖ Have a level of inferential or deductive skills
- ❖ Show an appreciation of concepts
- ❖ Interpret the meaning of the quantitative results
- ❖ Explain why quantitative techniques are applied

#### **1 Minimal Competence**

Offers a minimal explanation of the meaning of data or calculations used.

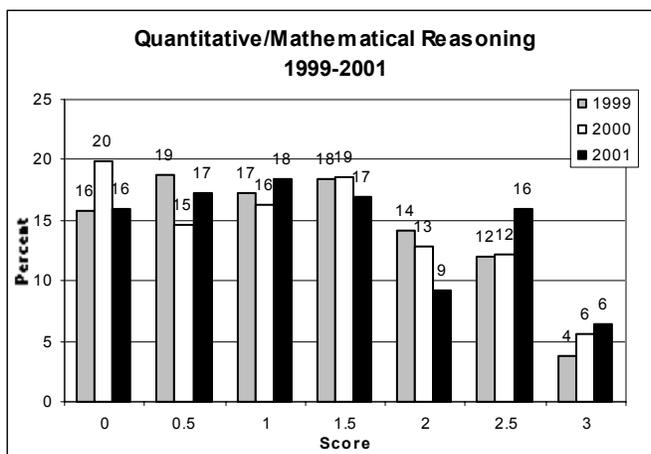
Alternatively, displays only a minimal mathematical knowledge or skill in making meaning.

#### **0 No Evidence of Quantitative/Mathematical Reasoning**

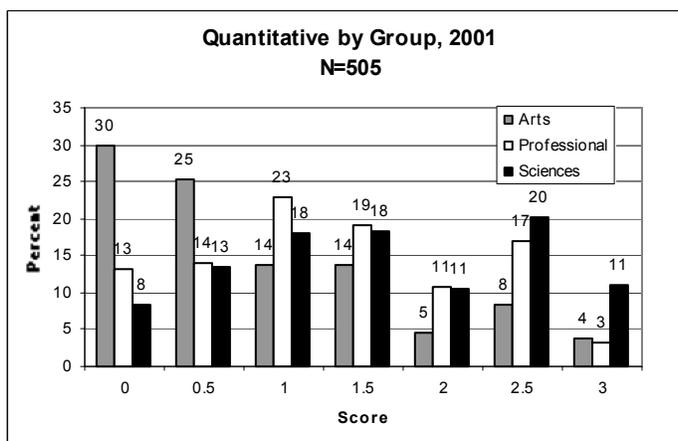
The submission has calculations without explanations; it manipulates numbers without conclusions or discussion, or it makes meaning without mathematics or quantitation.

With each item read by two different evaluators, the overall score on a 0 to 3-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 an experienced reader to determine the final score. The percentage of splits is a measure of the reliability of the evaluation process. In 2001 as in 2000, 10% of the submissions received split scores. This value one percentage point lower than the split rate of 1999. (For comparison, random scoring with the four-level scale used here would result in a 38% split rate.)

Although mean scores increased from 1998 (mean score = 1.09) to 2000 (mean score = 1.31), in 2001 the mean score dropped slightly to 1.30. The percentage of zeroes has fallen back to the 1999 rate of 16% after rising in 2000 to 20%, while scores greater than 2.0 increased by 4%. However a 6% drop in scores of 1.5 and 2 are balanced by increases in lower scores of 0.5 and 1.



When the data are sorted according to the major groupings, C. P. Snow’s “two cultures”<sup>2</sup> are clearly evident. While 60% of math and science majors are judged “competent” or strong by at least on reader (i.e., scores 1.5 or greater), only 31% (up from 24% in 2000) of the arts and humanities majors received scores at or above 1.5. Furthermore, 30% (same as in 1999, down from 42% in 2000) from the “Arts/Humanities” group submitted items with no evidence of quantitative/mathematical reasoning, while only 8% (down from 14% in 2000) of the “Science/Math” group were scored zeroes. Students in professional disciplines, which may be largely quantitative (such as Accounting) or less so, fall somewhere in between.



Once again in 2001, we attempted to characterize the kind of math used in each submission. Readers found advanced statistics (correlations, T-tests, ANOVA’s, etc.) as the most common mathematics evident in student submissions. This finding represents a change from 2000 when basic statistics (averages, percentages, standard deviations, stem and leaf plots, etc.) were more prevalent. In 2001 32% of submissions used advanced statistics (24% in 2000), while 26% used basic statistics (38% in 2000). Twenty-five percent (up sharply from 9% in 2000) used only basic arithmetical skills and 21% used precalculus (basic algebra and trigonometry). The use of calculus was up from 7% in 2000 to 13% in 2001.

Not surprisingly, the disciplines from which students chose work for this category most frequently were Statistics and Math. Seventy-two items were produced in Statistics courses and 63 came from Math courses. Business and Chemistry courses accounted for 54 and 37 submissions respectively. Last year Biology was the third most common source for submissions, and in 2001 it has fallen to ninth place. This change may be due, however, to a larger number of biology

QUANTITATIVE/MATHEMATICAL SOURCES			
Top Ten Courses		Top Ten Disciplines	
Stat 190	40	STAT	72
Bsad 406	19	MATH	63
Stat 375	18	BSAD	54
Hpp 311	13	CHEM	37
Acct 212	11	ES	30
Bsad 352	11	PSYC	29
Stat 376	10	PHYS	23
Cs 310	9	ACCT	22
Es 343	9	BIOL	20
Math 157	9	COMM	20

<sup>2</sup> Snow, C. P. The Two Cultures. Cambridge: Cambridge University Press, reissue edition (1993). [Snow’s controversial Rede lecture of 1959 identifies a cultural split between the humanities and the sciences.]

majors compiling their portfolios in the spring semester when this category was not included in the portfolio. Basic Statistics (STAT 190) was again the most common individual class from which items were submitted to demonstrate quantitative/mathematical reasoning, followed by Corporation Finance (BSAD 406) with 19 submissions.

Thirty-three percent of the submissions were produced in the senior year, 36% in the junior year, 21% in the sophomore year and 10% in the freshman year. This distribution is closely comparable to last years' findings.

Sixty-seven percent of the items submitted were the result of work in major courses, 22% were assignments in courses used to fulfill LAS core requirements, and 6% were from elective courses and 4% were produced in classes taken to fulfill minor requirements. These findings are also similar to last year's.

Of the 485 portfolios read for quantitative/mathematical reasoning, 6% dealt with issues of gender, 4% with issues of race, 3% with international perspectives, and 2% with class issues. Thirty-three percent (up four percent from 2000) of the items were collaborative works, with many of these science laboratory reports and term papers from business classes.

Readers still find it difficult to evaluate the "meaning" reflected in the works submitted in this category. Despite rewriting the prompt, we still found many students submitting exams from a Statistics course, for example, that displayed considerable mathematical skill applied to some problem, but with the "meaning" inferable only from the statement of the problem. On the one hand, readers feel compelled to reward the display of mathematical skills yet are reluctant to reward a submission in which the application of math tools "in order to reach a more general and relevant conclusion about some broader question", as the prompt requires, is not accompanied by explicit interpretations and conclusions composed by the student. Other students submit work from advanced math classes that are highly abstract and largely inaccessible to most faculty readers. One might presume that such work makes "mathematical meaning" and reflects the highest mathematical reasoning amongst our students, but beyond such presumption it is impossible to evaluate a work if the reader cannot understand it. It will be important to think carefully about what quantitative/mathematical reasoning we expect from Truman graduates, and how to elicit meaningful and assessable examples from students with diverse math backgrounds when this category is reintroduced into the portfolio.

## Historical Analysis

With the inception of the Liberal Studies Program (LSP) in the fall of 1998 came a need to assess its strengths and weaknesses with regard to the desired outcomes for students outlined explicitly in the new program. Indeed, committees charged with developing the various aspects of LSP were also responsible to suggest means of assessing the intended student outcomes. Many of these committees identified the senior portfolio as the most efficacious place to probe student learning in the LSP. Specifically, the portfolio was widely discussed as a potential window on student learning in most of the "Modes of Inquiry" of the LSP: Communicative, Scientific, Historical, Social Scientific, Philosophical/Religious, Aesthetic, and Mathematical. Of these, the Communicative Mode is the only one not currently envisioned as assessable via the portfolio. Existing portfolio categories already cover the Scientific, Aesthetic, and Mathematical Modes, although these portfolio categories need to be revisited in light of the new thinking that evolved with the development of the Modes of Inquiry. As a result of numerous campus-wide conversations, new portfolio categories would be developed over a period of time to enable assessment of student thinking relevant to the other three modes: historical, social scientific and philosophical/religious. Furthermore, it was deemed undesirable to increase the burden of assessment on students by augmenting the contents of the portfolio, and impractical to read a larger portfolio, especially considering that the number of portfolios will increase as the portfolio becomes a graduation requirement. A consensus emerged that the introduction of new portfolio categories should be accompanied by the temporary retirement of others in order to keep the portfolio at its current size.

<u>Historical Analysis at a Glance</u>	
• Number of submissions:	<b>427</b>
• Percent of "no submissions":	<b>3</b>
• Mean score (on a 0-3 scale):	<b>1.31</b>
• Highest scoring "group":	<b>Arts/Humanities</b>
• Lowest scoring "group":	<b>Professional</b>
• Most frequent source (course):	<b>HIST 104</b>
• Most frequent Source: (discipline):	<b>History</b>

“Historical Analysis” was developed in the fall of 2000, and implemented in the spring of 2001. Its introduction was accompanied by the temporary retirement of “Quantitative/Mathematical Reasoning”. Thus only 427 (42%) of the current portfolios requested submissions for Historical Analysis.

A committee consisting of three faculty members from the discipline of history, two art history professors, a music history professor, and the portfolio director developed the historical analysis category in the fall of 2000. The committee began its work by writing a prompt for students to respond to. They discussed the LSP’s Historical Mode outcome statements and reviewed prompts for other portfolio categories. The resulting prompt reflects the importance of historical *context*, *contingency* and *causality* explicitly referenced in the mode’s outcome statements:

*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.*

Next, the committee focused on the assessment process for this category. Around 25 papers from history, art history, and music history courses were culled from last year’s portfolios. It is important to note that these papers were originally submitted by students to fulfill the prompts of other portfolio categories such as aesthetic analysis and evaluation, interdisciplinary thinking and growth as a thinker. The committee read and discussed these papers using them to develop a scoring protocol. Some of these papers were used as range finders in the May reading, although papers submitted in this category in the current set of portfolios may provide better range finders for future readings. Ultimately, the committee agreed on the scoring-range descriptors printed below, which were used by readers assessing items submitted in this category in 2001.

### **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)

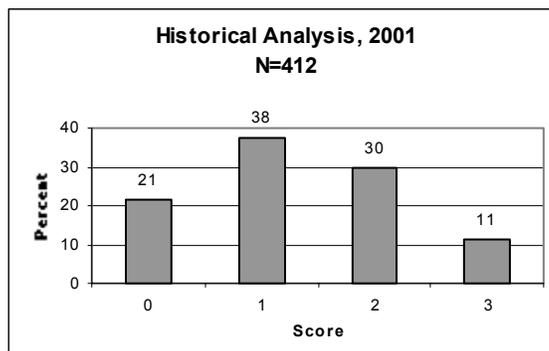
#### **0 No Competence**

- ❖ Report historical “facts”
- ❖ Ignore historical context
- ❖ Neglect to deal with change over time
- ❖ Contain no analysis

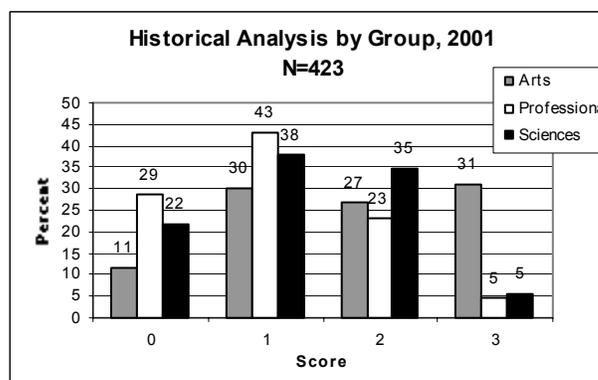
Of the 427 portfolios that requested an item in this category in 2001, only 3% of participating seniors chose not to submit an item demonstrating “historical analysis”. Another 1% submitted “self-reports”, which readers did not attempt to evaluate.

Altogether 412 submissions were each evaluated by one faculty reader who read the works “holistically” while keeping in mind the descriptors for this category.

The results, shown in the table, establish a baseline that can be used in comparing results from future years. The distribution of scores is centrally peaked with 38% of students scoring a one (minimal competence), 30% of submissions scoring a two (competent) and 11% deemed strongly competent. Twenty-one percent of submitted items scored a zero, indicating “no evidence of historical analysis”. Many of these items just reported historical facts, while neglecting to engage in any analysis involving historical context, causation, or contingency.



When the data are sorted according to the major groupings, it is not surprising to see that students majoring in the Arts/Humanities disciplines scored significantly higher than students with Science/Math and Professional majors. Thirty one percent of students in the Arts/Humanities group submitted strongly competent items as compared with only 5% of the items from both the Science/Math and Professional major groups. While 58% of Arts/Humanities students scored at least “competent” (i.e., scores of 2 or 3), only 40% of Science/Math students, and 28% 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. More than half of the items in this category came from history courses. English courses accounted for 63 submissions and Political Science courses accounted for 24 submissions. 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 about one fourth of the total number. Composition II (ENG 314) was the next most common source with 29 items, followed by American Institutional History (HIST 298) with 27 items.

HISTORICAL SOURCES			
Top Ten Courses		Top Ten Disciplines	
Hist 104	51	HIST	224
Hist 105	41	ENG	63
Eng 314	29	POL	24
Hist 298	27	BSAD	17
Hist 120	14	ART	12
Hist 131	14	PHRE	10
Hist 132	13	ECON	7
Hist 133	10	PSYC	5
Pol 161	9	SOAN	5
Eng 100	8	COMM	4

Thirty one percent of the submissions were produced in the senior year, 25% in the junior year, 24% in the sophomore year and 20% in the freshman year.

Sixty two percent of the items submitted were the result of work in core classes, 22% were assignments in major courses, and 11% were from elective courses and 5% were produced in classes taken to fulfill minor requirements.

Of the 412 portfolios read for historical analysis, 16% dealt with issues of race, 16% with international perspectives, 9% with issues of gender, and 6% with class issues. Only 1.5% of the items submitted were collaborative works.

## 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.*

In 2001, 8% of seniors did not submit materials to demonstrate “an ability to reason scientifically”. This percentage is less than the non-submission rate of 10% found in 2001 and equal to the 1999 rate. Most seniors who did not submit an item showing scientific reasoning explained on their cover sheets that they had not saved work from their core science classes. Only 1% of seniors submitted self-reports (3% in 2000) of work they recalled doing. Self-reported work was not evaluated by faculty readers.

Readers evaluated 922 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.

In 2001 the most common finding was “no evidence”, while “strong competence” was found least often. This is the second consecutive year that submissions scored a zero outnumbered submissions judged “minimally competent”. When examined longitudinally over a three-year interval, a disturbing trend toward lower scores is observed. Scores of zero increased by nine percentage points over the last three years while scores of three have held steady. Mean scores have fallen from 1.35 in 1998 to 1.22 in 1999 to 1.13 in 2000 to 1.08 in 2001.

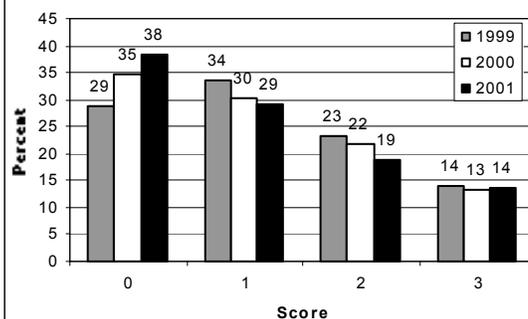
The major group data in 2001 are similar to the 2000 findings in that they show that seniors in math and science majors account for most of the higher scores, while most of the items judged “no evidence” came from seniors majoring in arts and humanities disciplines. One noticeable difference is that judgements of “strong competence” were up by three percentage points for both Professional and Arts/Humanities major groups.

Not surprisingly, the four disciplines in the Division of Science were the sources of many of the submissions. Courses in the Biology discipline accounted for 265 (237 in 2000) of the submissions, followed by Chemistry with 114 (also 114 in 2000), Psychology with 105 (63 in 2000), Agricultural Science with 65 (also 65 in 2000), and Physics with 65 (54 in 2000). The top individual classes were BIOL 100, AGSC 100, CHEM 100, PHYS 100, and BIOL 107.

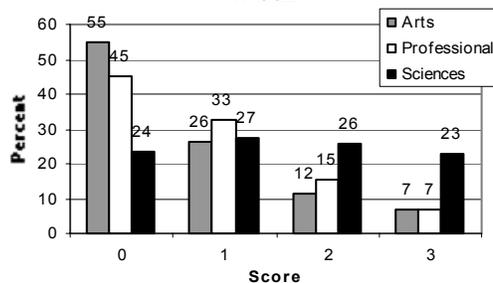
### Scientific Reasoning at a Glance

- Number of submissions: **922**
- Percent of “no submissions”: **8**
- Mean score (on a 0-3 scale): **1.08**
- Highest scoring “group”: **Math/Science**
- Lowest scoring “group”: **Arts/Humanities**
- Most frequent source (course): **BIOL 100**
- Most frequent Source: (discipline): **Biology**
- Three year trend: **Toward lower scores**

### Scientific Reasoning, 1999-2001



### Scientific Reasoning by Group, 2001 N=952



Thirty-two percent of the submissions were produced by students in their senior year, 29% in the junior year, 23% in the sophomore year, and 16% were generated by freshman students. Forty nine percent of the submissions were generated by students satisfying requirements of their majors, 38% were from LSP courses, and minor and elective courses each accounted for 6%.

Three percent of the submissions for scientific reasoning dealt with issues of gender. Two percent of science submissions had an international perspective. Issues of race and class were each brought up in one percent of the submissions.

Fully 31% of submissions were the results of collaborative work (29% last year). This is largely because group work in the science lab is a common practice.

<b>SCIENTIFIC REASONING SOURCES</b>			
<b>Top Ten Courses</b>		<b>Top Ten Disciplines</b>	
Biol 100	81	BIOL	265
Agsc 100	64	CHEM	114
Chem 100	50	PSYC	105
Phys 100	33	AGSC	65
Biol 107	26	PHYS	65
Biol 301	22	ENG	61
Biol 304	21	ES	45
Eng 314	20	BSAD	35
Psyc 466	18	POL	22
Biol 108	16	COMM	17

## Aesthetic Analysis and Evaluation

Examples of student work demonstrating aesthetic analysis and/or evaluation were elicited with the following prompt:

*Please include something that demonstrates you making an aesthetic analysis and/or evaluation of some artwork or creative work. (Examples might be critiques, research or reviews of painting, poetry, sculpture, literature, film, theatre, music and other performances.) If you choose to include artwork you have created or a description of a personal aesthetic experience, please take the time to write a formal analysis and evaluation of your work as you reflect on your submission below.*

The Art faculty requested the prompt for “aesthetic analysis and evaluation” after the 1993 Portfolio Assessment. The data have been used to review and redesign courses offered under the Humanities section of the old core and now under the Fine Arts mode of inquiry in the LSP. Six percent of seniors did not submit an item to demonstrate "aesthetic analysis and evaluation", down from 8% a year ago, but still higher than the 5% of 1999. Another 2% (3% in 2000, 5% in 1999) submitted self-reports in which they described occasions when they participated in some aesthetic analysis or evaluation. Without artifacts or texts to evaluate with these self-reports, faculty readers could not assess the quality of the aesthetic reasoning.

<u>Aesthetic Analysis and Evaluation at a Glance</u>	
• Number of submissions:	<b>939</b>
• Percent of “no submissions”:	<b>6</b>
• Mean score for “analysis” (on a 0-3 scale):	<b>1.62</b>
• Mean score for “evaluation” (on a 0-3 scale):	<b>1.27</b>
• Highest scoring “group” - analysis:	<b>Arts/Humanities</b>
• Lowest scoring “group” – analysis:	<b>Professional</b>
• Highest scoring “group” - evaluation:	<b>Arts/Humanities</b>
• Lowest scoring “group” – evaluation:	<b>Math/Science</b>
• Most frequent source (course):	<b>MUSI 204</b>
• Most frequent Source: (discipline):	<b>ENG</b>
• Trends:	<b>Decreasing scores for analysis and for evaluation</b>
	<b>Better analysis than evaluation</b>

Most of the 939 submissions evaluated were written papers, but some seniors submitted original artwork they created, cassette and video tapes of performances, and various other items. When students submit their own creative work, the prompt directs them to analyze and evaluate that work and include it with the submission. In this instance faculty readers consider student commentary written expressly for the Portfolio in their evaluative capacities.

Readers made two judgements for each submission, assessing it for the quality of the aesthetic analysis, and separately assessing the quality of aesthetic evaluation. Readers use the scoring categories of “no evidence”, “weak competence”, “competence” and “strong competence” for each assessment.

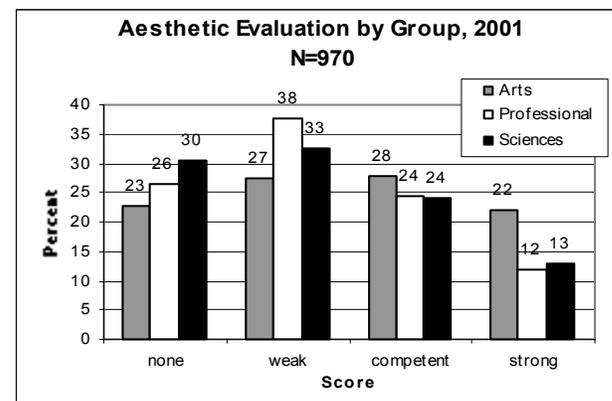
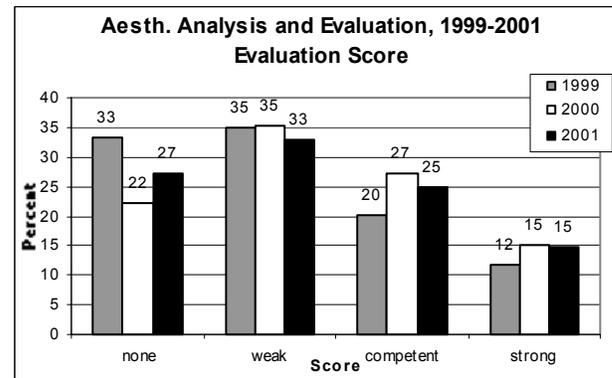
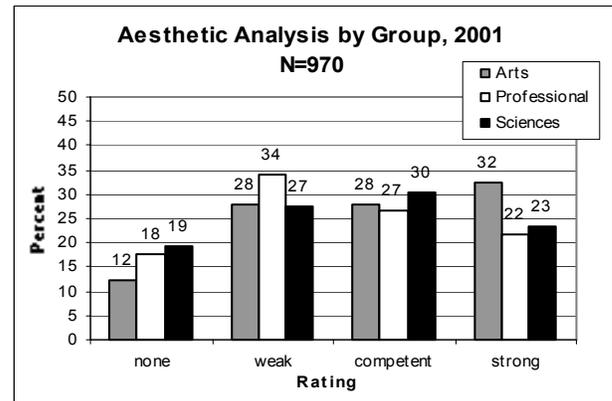
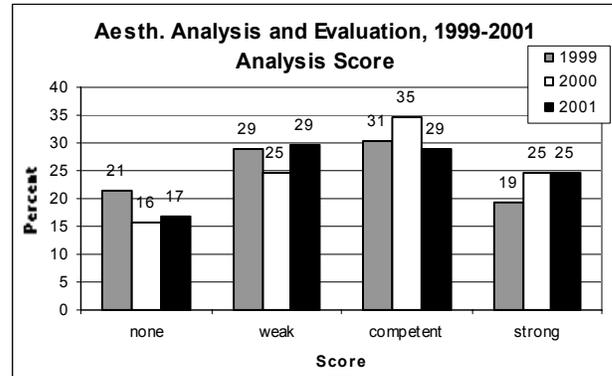
When assessing aesthetic analysis, faculty readers were looking for students dealing with the constituent parts of a work of art; distinguishing and describing the parts and discussing how they interrelate and work together in forming the whole. The results show a small shift from “competence” to “weak competence”. The percentage of “strong competence” remained the same at 25%. A 6% drop in the percentage of scores of “competence” was balanced by a 6% increase in scores of “weak competence”. Judgements of “no evidence of aesthetic evaluation” remained at nearly the same level as found in 2000. As a result of the small shift in the middle of the scoring range, the mean aesthetic analysis score has fallen from 1.70 in 2000 to 1.62 in 2001 (where “no evidence” = 0 and “strong” = 3).

When the data are sorted by major group, we see only small variations with students majoring in Arts and Humanities receiving more ratings of “strong competence” and fewer of “no evidence” as compared to the other groups. Math/Science majors received the most ratings of “competent”, and students with Professional majors received the most judgements of “weak competence”.

When assessing aesthetic evaluation, faculty readers were looking for students making supported judgments about a work of art; criticizing, explaining and interpreting the work while displaying understanding of genre and historical context. The aesthetic evaluation scores in 2001 also gave back some of the progress made in 2000. While ratings of "strong competence" basically held steady at 15%, ratings of "competence" and "weak competence" each fell by more than 2% as ratings of "no evidence" increased by 5% from 2000 to 2001. These findings caused the mean aesthetic evaluation score to fall from 1.34 in 2000 to 1.27 in 2001 (where “no evidence” = 0 and “strong” = 3).

The group ratings show that students with Science/Math majors received the most low ratings, and, as one might expect, students with Arts and Humanities majors were judged as relatively stronger at aesthetic evaluation than were students in the other two groups.

Historically, the portfolio entries demonstrate more aesthetic analysis than aesthetic evaluation. Each year, the assignment sheets that seniors append to entries and the students’ descriptions of their assignments focus more on analytical thinking and less on evaluative thinking. The same difference is noted this year. The mean score for aesthetic analysis is 1.62, closer to a rating of “competence” than to “weak competence”. The mean score for aesthetic evaluation is 1.27, above but close to a rating of “weak competence”. Fifty-four percent of submissions (down from 60% a year ago) were judged as “competent” or “strong”



examples of aesthetic analysis while only 40% (41% in 2000) were judged as “competent” or “strong” examples of aesthetic evaluation. Conversely 27% (up from 22% in 2000) had no evidence of aesthetic evaluation while only 17% (16% in 2000) were found lacking analysis.

As in 1999, ENG courses surpassed ART courses as the most common source of submissions in this category. (In 2000 ART courses surpassed ENG courses.) MUSI courses were the next most common source accounting for 180 submissions. The most common courses from which submissions for aesthetic reasoning were drawn were the old Music Appreciation (MUSI 204), accounting for 144 submissions and Intro to Visual Arts (ART 203) accounting for 113 items. These were also the two most popular source courses in 2000. Composition II (ENG 314) moves up from number 5 in rank to number 3 with 84 submissions. There is a noticeable drop in the submissions from the old Basic Approach to the Arts (AEST 200) which decreased from 60 submissions in 2000 to 36 in 2001 while the total number of portfolios has risen. English Composition I (ENG 100), Writing as Critical Thinking (ENG 190), and II (ENG 314) together accounted for 118 submissions for aesthetic reasoning.

AESTHETIC ANALYSIS SOURCES			
Top Ten Courses		Top Ten Disciplines	
Musi 204	144	ENG	256
Art 203	113	ART	187
Eng 314	84	MUSI	180
Thea 275	64	THEA	72
Aest 200	36	AEST	43
Art 223	22	HIST	29
Eng 100	22	COMM	28
Art 222	16	PHRE	20
Eng 222	14	BIOL	15
Eng 190	12	SPAN	12

The greatest percentage of items submitted for aesthetic analysis and evaluation, 30%, were produced by students in their freshman year. Sophomore work accounted for 25% of the submissions. Twenty-three percent of the submissions were produced in the junior year, and seniors produced the remaining 22%.

Sixty-one percent of the submissions were created by students for classes used to fulfill core requirements (75% in 2000 and 69% in 1999), 17% were from major courses (14% in 2000, 17% in 1999), and 20% were from courses used to fulfill minor requirements or were elective courses.

Seven percent of submissions dealt with international perspectives (down from 11% in 2000, but up from 3% in 1999), 5% with race issues (up 1% from last year), 4% with gender issues (down 1% from a year ago), and 2% with class issues (the same percentage as last year).

One percent of submissions were the result of collaborative work.

## 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 which 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.

Four percent (compare with 5% in 2000 and 3% in 1999) of the portfolios did not contain an item or a description representing a “most satisfying experience”, and several students submitted multiple items writing that they had so many satisfying experiences they could not identify a single one to submit. In all, the faculty readers reviewed 975 (805 in 2000) submissions.

Why was it satisfying?	#	%
achieved personal or intellectual growth	339	35%
personal best / pride	175	18%
challenging	129	13%
working as a professional	122	13%
achieved personal goals / culmination	117	12%
no indication	43	4%
collaborative effort	35	4%
enjoyment / fun	28	3%
especially interesting / meaningful	15	2%
involved friendships / people	13	1%
independence / freedom / creativity	10	1%
involved service / helping people	8	1%
emotionally fulfilling	6	1%
applied knowledge or skills	5	1%

Thirty-five percent explained that their satisfaction was the result of having achieved “personal or intellectual growth”, 18% cited having achieved a “personal best”. Thirteen percent described significant “challenge” and another 13% said the experience was satisfying because it modeled “working as a professional” in the real world. Another 12% discussed “culminating experiences” and the “achievement of personal goals”. A variety of other reasons account for the remaining submissions, some of which are listed in the accompanying table. [Note that the percentages exceed 100% because some students described most personally satisfying experiences that clearly fit into several categories.] The distribution of reasons shown in the table is similar to what was found in 2000.

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, the whole college experience, 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. These findings are similar to those from the 2000 Portfolio.

Context	#	%
major	361	37.0%
LAS	149	15.3%
elective	77	7.9%
study abroad	57	5.8%
social fraternity/sorority	56	5.7%
varsity athletics	37	3.8%
research/scholarship	37	3.8%
minor	36	3.7%
internship	23	2.4%
graduating/preparing for future	19	1.9%
music/dance/theater ensembles	17	1.7%
personal activity	15	1.5%
academics in general, achievement	17	1.7%
service organization	12	1.2%
governance	11	1.1%
campus employment	11	1.1%
club sports	10	1.0%
campus media	9	0.9%
general campus/academic life	9	0.9%
religious activity/growth	8	0.8%
social life/friends	7	0.7%
other organization	6	0.6%
honor society	6	0.6%
professional fraternity	6	0.6%
residence life	6	0.6%
volunteer work/service	5	0.5%
extra-curricular activity	4	0.4%
campus event(s)	3	0.3%
off-campus employment	3	0.3%
related to this portfolio	3	0.3%
applied project	2	0.2%
miscellaneous	12	1.2%

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. This is a finding that we have seen repeatedly over at least the last three years, and one that elicits expressions of surprise and gratification from the faculty readers.

Practically every aspect of campus culture was cited as a satisfying experience by at least one student. Participation in sports, involvement with fraternities and sororities, working on SAB projects, involvement with the campus media (Index, Detours, Echo, KTRM, Monitor, etc.), participation in theater performances and musical organizations, ROTC, CCF, and volunteer work, are but a few examples.

Forty-three percent (42% in 2000) of the "most satisfying experiences" occurred in the senior year, 28% (33% a year ago) in the junior year, 10% (down 1% from last year) in the sophomore year, and 9% (up 1%) in the freshman year. The remaining 10% (6% last year) occurred over times spanning more than a year.

Six percent of most personally satisfying experiences dealt with international perspectives (same as 2000). Many of these were study abroad experiences. Four percent dealt with issues of gender (1% in 2000, 3% in 1999), 2% with race issues (3% in 2000 and 1999), and less than 1% dealt with issues of class (4% in 2000, 1% in 1999).

## 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 readers 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 2001 was about 4 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.")

As was the case last year, fewer students express surprise upon being assigned the portfolio project in their senior capstone course. While some still comment that they did not hear about the portfolio between their Freshman Week class and senior seminar, that number is dwindling. More and more, students say they have been expecting and preparing for the assignment throughout their undergraduate careers. Furthermore, many students are maintaining documents for their portfolio electronically. However, this has also created problems in retrieving documents due to various computer failures. The following letter from a Business Administration major describes in typical fashion the process used to assemble the portfolio, while also noting the challenges created by electronic storage of documents:

*Fortunately I had saved most of my papers and notes from the time I was a sophomore up through my last senior year. This made the process of putting my portfolio together much easier. I would have just reprinted the papers from the stored files on my computer but unfortunately most of them were accidentally deleted. I was very lucky to have the hard copies of them in my file cabinet. The whole process took about three days – a couple to sort out the material and to decide what to use where and the last day to organize and write why I chose to use each particular example for the required part of the portfolio.*

Other students also discussed this issue, but were less fortunate. For example, this Business Administration major commented:

*I spent about two days gathering all of my papers off of different computer disks and my Y-drive, and deciding which papers I wanted to submit. However, I had many papers that I had saved on my disk from*

*my senior year, and my disk crashed, therefore I was not able to use some papers that would have been more appropriate than others.*

As students begin to rely more heavily upon computers, this problem will continue to arise. Clearly, it is imperative that students are encouraged to save back-up copies of diskettes, as well as paper copies of papers.

### 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's letters indicate a continued increase in the number of students using the portfolio to do just that.

Cover letters often provide personal and thick description as seniors "sum up" their experiences at Truman. Some writers are specific and laconic. 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 2001 data is similar to that reported in 1999, while showing increased levels of reflection from 2000. Seventy two percent of the letters contained some reflection, up from 67% in 2000, and 33% of them "with findings". The 27% without reflection were mostly letters explaining the contents of their portfolio and the process they used in assembling it.

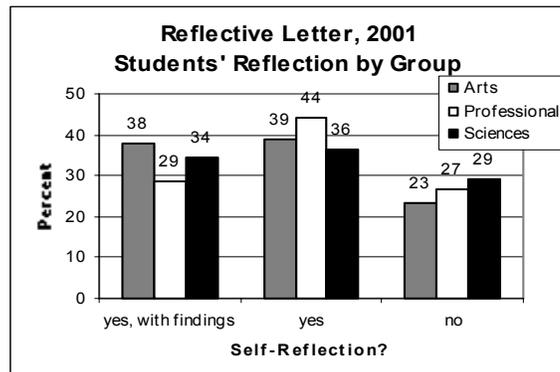
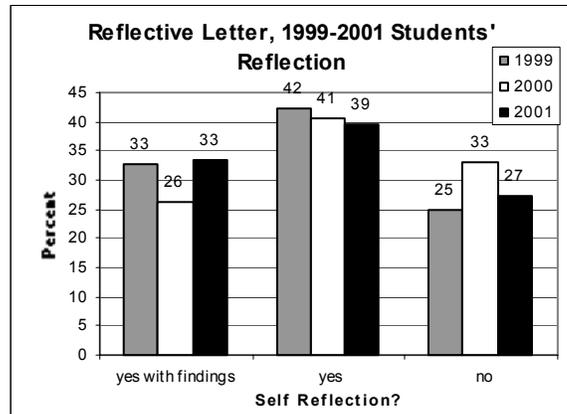
The data by group show Arts and Science students to be more likely to include findings in their self-assessment than are the students in Professional majors. All three groups showed increases over last year's results.

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 an 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 reflective letter was written by a Psychology major:

*As you look through my writings, I hope that you will be able to see the progression that I made as a student here. Unfortunately, a lot of what I have learned at Truman has not been expressed in the form of writing, rather, it is apparent in the way I organize and look at the information that is presented to me. When I started my career as a student, I was only concerned about doing well enough to keep my scholarship and get into graduate school. I did not worry nearly as much about expanding my knowledge or looking deeper into the world around me. Now, although grades and graduate school are still important, I am much more concerned about learning and applying the knowledge I have gained every day. In a sense, I feel I have truly become a consumer of knowledge.*

In this excerpt, a Computer Science major comments on personal growth outside the classroom:



*It has been a great experience to observe how much I have changed as a student and a person in these four years. I believe the majority of these changes I have experienced cannot be measured by the pieces of paper I have turned in. Instead, most of my development has been internal. I believe that my experience at Truman has allowed me to open my heart and mind to many people and opportunities that I would not have [had]...at another institution. For this, Truman has my deepest gratitude.*

*When I began freshman year, I was driven to obtain the “unobtainable” 4.0 and be involved in every corner of this campus in order to possess the perfect resume. Now, as I reflect back to that immature girl who spent numerous hours in the library every night, foregoing sleep, I am dismayed. As I finish my last semester here at the University, I am amazed by my change in attitude over these four years. I have not given up my dream to succeed in life, but I have realized that the college experience can be so much more than a good education. This is a realization that cannot be contained in a simple letter or piece of writing, but can only be portrayed by the actions and contributions one makes to campus life during their stay. It is my wish that only more students can discover this realization earlier in their career here.*

An English major discussed growth in thinking and writing while at Truman:

*Arranging this portfolio has been an enjoyable experience, although it felt strange to look back at everything I have written over the last four years. I found some pieces that I am still proud of and even more that are not as well-written as I remembered. It is funny, and very humbling, to reread papers that I thought were excellent at one point, only to realize how much I still have to learn about writing and thinking both critically and creatively. On the other hand, I was able to see progress in my work. To me, it is clear that the quality of my work has consistently improved. However, this process has reminded me that my most recent work, of which I am currently proud, will probably seem as immature as my early writing does now.*

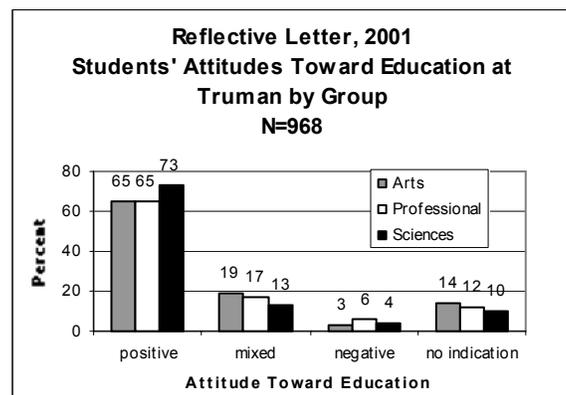
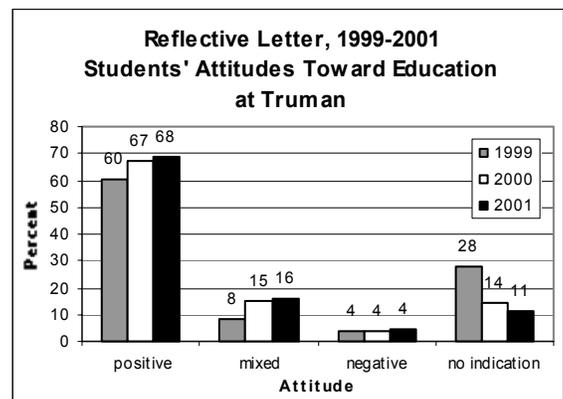
This same theme is echoed in the following excerpt from a Communication major:

*After assembling these works, I feel they are indicative of my strengths and weakness as a thinker and a writer, and they effectively show my growth in these areas. But much, much more importantly they represent where I was in my life when I was writing them. My evolution from a shy 17 year-old into a more confident and mature 22 year-old is documented in those pieces, and the stories behind them are much more interesting than the words on them.*

#### ATTITUDE TOWARD EDUCATION AT TRUMAN

Cover letters continue to show positive trends in student attitudes regarding their education at Truman. ‘Positive’ attitudes increased 1% from last year and 8% from 1999. Additionally, fewer students (11% versus 14%) did not discuss their attitudes in this area. Sixty eight percent of the letters expressed a positive attitude about their education, 16% expressed mixed feelings and, 4% 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.

Students expressing negative or mixed feelings about their Truman experience frequently complain about the university’s preoccupation with its “image”, and its too little interest in the needs of the current students. They say that this attitude is engendered by university policy, by the allocation of resources, and by the obsession with university assessment. They claim that the administration is not concerned with student opinions on crucial campus issues and cite as examples the lack of solicitation of student input regarding the decision to arm campus security, the perpetual problem with student parking, and the archaic registration system. While finding some positive things to say, a Health Science major voiced this perspective:



*While at Truman, I do not doubt that I have grown and developed into the person that I am, because of the people I have met and the experiences that I have had with my peers and professors. With that aside, the one thing that I feel unsatisfied with in my years at Truman is the lack of focus and emphasis placed by the administrative faculty and staff on their current students. In the last couple of years, I have watched many of my peers and friends transfer to other schools or drop out of Truman because they did not feel that they were getting the support or help from the faculty and staff that they deserved. I feel that the administration has not been very friendly to their students and therefore not promoting the most positive environment for their students.*

*I have also noticed that the opinions and suggestions from the student body sometimes go unnoted or are ignored. I feel this only promotes animosity towards the institution, but animosity towards all those that work for it. Students do talk, if only among themselves, and it is within this talking that an indifference and enmity is formed by the student body. If the administrative faculty and staff placed just a little more importance on their current student body, I feel that retention and growth on this campus would improve.*

A Biology major stated this theme in a similar fashion:

*I feel that this University works hard to maintain an image and not hard enough to help the students. One of my reasons for coming to a small university was so that I would be viewed by the university as a student, whose opinion mattered, instead of as a number. Scholarship policies, registration, and the constant hoops that I have had to jump through regardless of how it affected me as a person, showed a lack of consideration for the students on the part of the university.*

This Psychology major found Truman to be reminiscent of high school, failing to educate students outside the classroom:

*I think my years at Truman have been productive ones, but they were nothing like I expected them to be. I expected college to be so much different than high school—especially the people. The longer I was at Truman though, the more it reminded me of high school. The same stereotypes, gossiping cliques, standards of popularity, unwillingness to learn and immaturities were present here also. I guess I expected that people would grow and mature in college. While some do, MANY do not, a fact that is quite sad. Many people are not going to graduate school so Truman was their preparation for the real world. I honestly do not think that many people graduating from here will be ready for the real world because their minds are way too closed. Truman needs to teach people to be open-minded through classes and through social activities. It needs to show people that everyone is valuable as a person and everyone has good qualities on the inside. Truman needs to teach people to be individuals, not to hide behind the identity of a particular group or affiliation. It needs to teach the students how to love of others [sic] and of knowledge. I think Truman fails horribly in these areas. Truman produces intellectually superior students, but intelligence is not the only thing. Truman needs to quit focusing so much on having a good academic reputation and start wondering if the people that leave here are really ready for the big picture. Most of them are not. Most did not find themselves in college like they were supposed to. I think that is very sad!*

A Business Administration major expressed dissatisfaction with the lack of concern for students, and a failure to take student opinions expressed in course evaluations seriously:

*In my years as a student here, I have noticed very little concern for the well-being and opinions of the students. My feelings for my experience at Truman can best be illustrated by emphasizing that given another chance, I would definitely not choose to attend Truman.*

*I feel that the most valuable tool for students to express their opinions is through teacher evaluations. However, many times these evaluations are handed out at the very end of the last class with little to no time left to fill the form out accurately. I am then amazed when many students criticize an aspect of a professors [sic] teaching methods, and the methods continue to be used semester after semester. As a senior I have had the opportunity to take several professors more than once. Each time I am confused that the professor never seems to grow as an educator, even with one to two years of experience between semesters.*

One of the more distressing reflections upon the Truman experience was voiced by this English major:

*I used to love school and reading. However, my four years at Truman State University have sucked all of the love of learning out of me. I am tired. I am exhausted. I want to do nothing more than sleep for the month following graduation. I do believe that I have received a quality education. The*

*majority of my professors have been wonderful. I have made many friends. However, in order for me to work (which I have to do because I did not receive a full ride, but I did receive a Truman scholarship), be involved in ONE organization, take a full load of classes, and keep up with my homework, I have had to give up many nights of sleep. (Please notice that I did not mention a social life. I have not had one for the last year.) I am an English major, and I don't even want to read anymore. After I sleep for a month, I want to sit on my couch eating potato chips in front of the television.*

The excerpts that follow serve as examples of students who are leaving Truman with more positive attitudes about their education here.

First, from a Chemistry major,

*Overall, Truman State University is a great place to live and learn as a college student. I was immediately impressed by the friendliness of the people in Kirksville as well as the faculty. The faculty really goes the extra mile for their students and I have developed friendships with faculty members that have meant a lot to me over the years. Also, I have always been able to ask questions and challenge professors and have found the community and campus to be safe and inviting. I really love that I have been able to pursue my variety of interests: chemistry, music, Spanish, and biology while I was here.*

Next, this reflection from an English major,

*I have learned so much, both academically and personally here at Truman that I wish I never had to leave. The things I have learned and the people I have met are an amazing and unique combination that few other universities could ever possibly offer. I have received a powerful education, with the usual ups and downs, but I have learned and grown from each experience and ultimately feel confident in my ability to do something productive and meaningful when I finally leave Truman's walls. It is the education many hope for and few receive that I have found here at Truman and could never possibly put together in a portfolio for you to see.*

Though some students have found Kirksville to be a liability, this English major discovered its benefits:

*I was extremely happy with my education and experiences here at Truman. The professors are generally friendly and interested in the student, there have been exceptions, but they are few and far between. Kirksville is a strange town, first you hate it, then you accept it, then you learn how to have fun in it, and then it becomes a part of you. During the last two years of college, I enjoyed being in Kirksville more than St. Louis simply because it was quiet and I knew everyone.*

Finally, this Spanish major's letter suggests that Truman has engaged the student on many levels and instilled a love for learning:

*I must say, reflecting on my experiences at Truman State University from the Fall of 1997 until the Spring of 2001, that one word characterizes the entire experience for me: growth. I really don't even know where to begin but the past four years have been a process of discernment in which I have grown physically, emotionally, academically, spiritually, and psychologically. Reading through some of my papers from several years back, I realize that I have come a long way in being able to apply new ideas, think critically, be more assertive, prioritize my academic and extracurricular responsibilities, and of course, be myself.*

*I think it was an invaluable experience because I tried something new. I consider myself lucky enough to have been able to have room in my schedule and still be able to graduate in four years. This is a BIG advantage for Truman: the flexibility of the Liberal Arts and Sciences Core allows for students (like myself) to explore a few different fields and discern if it's right for him/her. I'm thankful that Truman has allowed me the flexibility to do this.*

*I know this may sound a bit "sugarcoated" but I think I have learned so much here at Truman that I think I have the potential to be a great teacher. My classes in calculus, accounting, English, Spanish, ethics, philosophy, science, speech, composition, and many others have forced me to become well rounded in my studies and approach towards life in general.*

*Reflecting on who I am today, I can't even begin to express how grateful I am to have been lucky enough to experience four years of college here at Truman. This has been an extremely beneficial experience and I can only hope that with my strong faith and the wonderful parental and peer support I will be able to work towards that goal of being a great teacher. If I can leave you with a quote I read that I*

*genuinely strive onwards on a daily basis: "to give anything less than your best is to sacrifice the gift". Thanks Truman for challenging me to live up to that standard now and in the years to come.*

## ATTITUDE TOWARD THE PORTFOLIO PROCESS

Overall, seniors continue to express more positive than negative attitudes about the portfolio process. This year, faculty readers found more positive and fewer negative expressions than they did in 2000. In 2001, 10% of seniors provided no feedback, which is comparable to the 9% in 2000. Forty three percent of seniors were positive about their experience with the portfolio, up 3% from last year's findings. Expressions of negative attitudes regarding the portfolio dropped from 25% in 2000 to 20% in 2001. However, this remains higher than the 12% reported in 1999. Twenty-six percent offered mixed opinions, which is the same as 2000. When sorted by group, seniors in the sciences are slightly more positive about portfolio assessment than are students in the other two groups.

A great many students admitted that they spent little time on their portfolios. Some expressed anger that they were required to complete this project, which is ungraded, at a time

when they are busy completing projects for courses, preparing for crucial exams, and working out their future lives. Many are dubious about the usefulness of assessment in general and the portfolio in particular, especially when, as some students claim, few of their colleagues take the assignment seriously. Other students acknowledge the potential benefits of portfolio assessment (to the university and to themselves), and are apologetic about having procrastinated resulting in a less than satisfying portfolio.

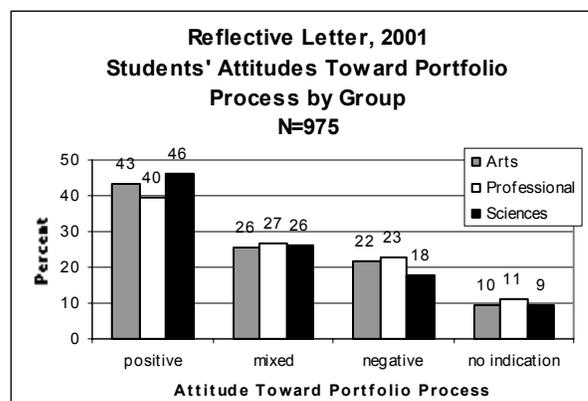
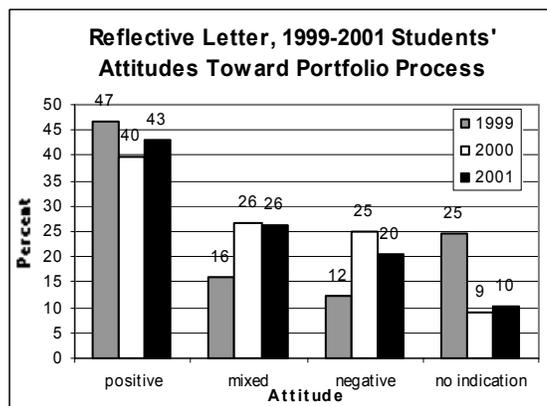
The following excerpts serve as examples of some of the negative attitudes students expressed toward the portfolio process and in several cases toward assessment in general:

This passage is from an English major:

*In all honesty, I do not like the idea of portfolio assessment. It has its merits, but I hated to see the whole of my college experience condensed into a tiny envelope. I think I speak for most students when I say that I did not believe everything I wrote was utter perfection before I turned it in. So much of my best thinking took place among groups of people in class discussions and extra curricular activities. Truman is a unique place in that its small size allows students and professors to become closer over the years. My last semester, despite the workload, has been a wonderful experience. I thought my happiness at finishing would outweigh all my other feelings, but I am finding that I will miss my classmates greatly. A portfolio seems to cheapen the experience. Nothing can summarize the growth I have experienced in college. It knows no limits, least of all those of an 11"x14" envelope or a tiny square disk.*

This excerpt is from a Biology major:

*At present, I would have to say that the portfolio process is just a waste of paper. In general, students don't put enough effort into it to make it beneficial. From what I have heard, there are very few people who care what they submit for their portfolios. Thus, I don't think that our portfolios are very representative of our work here at Truman. Four of the six entries of my portfolio have come from assignments for classes that I have taken to fulfill my core requirements. I don't feel that this is very*



*representative of my work here. I have only submitted two works from my major, both from the same course.*

A Communication major wrote the following:

*On portfolio assessment, I must say that it seems like the current process is a waste of time. I certainly see the necessity and usefulness of assessment, but our process is not a worthwhile one. We are told as freshmen to save our work because someday we will have to fill out our senior portfolios. Then senior year a big white envelope is plopped down in front of us and we are told, okay do this now. This system is not very conducive to the assessment process. I received no guidance whatsoever as to what I should be saving, how it will be used or when I should be doing this. At least there were detailed instructions inside this envelope. Another problem is that the hectic pace of senior year isn't a great time to take many hours out of your schedule to complete this process. As a result of an extremely busy class schedule, work, seeking out jobs and other activities like attending events on campus, I have had little time to really assess my portfolio. I regret this somewhat, but it's the best I can do to fulfill this requirement.*

The following brief statement from an Exercise Science major indicates that student apathy towards portfolios is due in some part to faculty attitudes:

*After talking to some other students who are also putting their portfolio assignments together, I do not feel that this is a meaningful assignment to the students. It may have greater implications to the faculty, albeit, I have also heard from some of the faculty that it is a waste of their time. This could very well be due to the lack of effort from the students. I think that if we, the students, had more help in planning our portfolios (from the beginning of our Truman experiences), that it might be more meaningful for all of us.*

A Nursing student commented on the goal of self-reflection as part of the portfolio process:

*Next, I would like to say that I feel that his portfolio assignment is very frustrating. Not because it takes up too much time or because I think reflection is unimportant, but because I am offended that this university community believes that I am not able to assess my own growth and progress. They seem to think that they must give me yet, another assignment, to guide me along through this process that I am too intellectually immature to do on my own. It is disturbing to me that members of this committee, who very likely do not know me, will be making judgements of my success from these few assignments that happened to meet the criteria that some committee thought was important. As a thinker and a person who is continually growing, I am constantly assessing my intellectual and personal growth. I do this on my own without someone telling me to do so. Is that not the way Truman students should be expected to assess their growth? Why must I prove to a committee of faculty that I can make assessments of my work, growth, and knowledge? I feel that by asking us to assess our work through the portfolio process is underestimating our ability to complete this without being told to do so. I doubt that very many serious, reflective students have gained anything from the portfolio process.*

Finally, this rather colorful statement by a Psychology major reflected some of the more cynical attitudes regarding portfolios:

*Portfolio assessment is probably not valuable to every student. For me, a portfolio is a complete and utter waste of time. I would rather drink pigs' blood or sit through the State of the Union address than spend hours collecting my writings and categorizing them so that they can be opened, looked at briefly, then discarded. I feel like John Hughes is re-filming "The Breakfast Club". I am locked in the library for Saturday detention to evaluate what I have done, only to realize the absurdity of this process.*

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. Some students view the portfolio as a superior assessment instrument because it permits them to demonstrate what they have learned and/or accomplished. Consider the following excerpt from a Psychology major:

*I think portfolio assessment is a key ingredient in the future of education. My test scores and GPA simply do not tell the whole story that is me. This portfolio does not fully address this either, but it does give the reader a broad picture of my interests and abilities that the GRE would not. My liberal arts education here at Truman works well with the portfolio assessment, because my education was broad and covered a lot of ground in a lot of different ways. I got to see the world through many sets of eyes, and each one produced a great image that was a part of a much larger picture. In closing, I am glad I did this*

*portfolio, and I am especially glad I chose Truman State. I have grown as a person, as a thinker, as a husband, and as a human. I will soon be a father, and Truman has allowed me to see so many things that I hope to impart to my child.*

A similar sentiment was expressed by this English major:

*While I do not like many of the assessment activities conducted at Truman, I feel that the portfolio process is probably one of the superior activities. I am impressed at the amount of dedication the University has dedicated to reviewing these portfolios, and at the commitment to using student work to continually improve this institution. I also appreciate that what I am doing in so many classes will actually have a chance to be read by other faculty.*

This Biology major sees the portfolio as a valuable assessment tool, and suggests that it occur more frequently:

*I understand that the university wants to see how well they are doing and how much we are learning. I feel that the best way for you to assess how we are doing is ask us what we feel we are learning. I think the portfolio project does a great job of that. Having students report a self-assessment in the form of a portfolio once or twice throughout their time here at Truman would be a great way for the university to see improvement as well as a way for us to show you what we have been doing. In most cases projects and papers we have done are a much better representation of what we have learned and will take away from the university than a sheet full of penciled in bubbles.*

The themes of self-reflection and institutional improvement are exemplified in this passage from a Business Administration major:

*While I do consider the portfolio assessment as just one more assignment to complete amidst my busy schedule of projects that actually receive a grade, I can see the benefit in it. If anything, it gives me the opportunity to review all of my accomplishments and know that I have become a better writer for it. In life, it is always the most challenging to critique oneself. No one truly wants to admit their faults or see their weaknesses. But, to know that the portfolio benefits the University's evaluation process and curriculum, rather than focusing on the student, allows me to view my writing in a more objective fashion. Also, being separated from many of my works for a time weakens the emotional attachment that I had to those papers at the specific time I wrote them. Knowing that I put much time and effort into making them "perfect" inhibited me from seeing areas with room for improvement.*

As in previous years, comments about portfolio assessment scattered throughout the cover letters suggest that many students remain unaware of the personal benefits of collecting artifacts in a portfolio, regardless of how it is stored. More importantly, encouragement of reflection and self-assessment using the portfolio is uneven from instructor to instructor, advisor to advisor. Ironically, the potential to use the LAS portfolio to personalize Truman's planning theme of "deepening an enhanced, self-reflective Liberal Arts Culture" and to demonstrate how it cares for and assists student development while they are here is not being fully realized.

## 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.

### ACCULTURING THE COMMUNITY

In 2001, as in past years, new faculty readers expressed strong opinions about the value of the portfolio assessment process. First time faculty readers tell us that coming into the process, they had little idea what the LAS portfolio is, how it is evaluated, and what value it has for the university, for the seniors who assemble the portfolio, and for the faculty who read and evaluate the portfolios. By the end of the week of reading, faculty participants are transformed. They can articulate many ways the LAS portfolio is valuable to all constituents, 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.

Unfortunately, the LAS portfolio, and the process used to extract useful data from them remains a mystery to many faculty and students at Truman. Faculty readers believe that the more that is known about the LAS portfolio and the portfolio evaluation process, the less cynicism there will be about portfolio assessment campus-wide.

It is anticipated that in requiring a portfolio from all graduating seniors, beginning with the Class of 2003, faculty and students will grow to perceive the portfolio project as a more important aspect of the Truman culture than it is perceived currently. It will underline the value of reflection and self-assessment articulated in the current master plan and equalize the opportunity for all seniors. It should afford all students the opportunity to engage in self-reflection and even out what students have told us they perceive as inconsistency and unfairness in their graduation requirements. It should provide the university with a more complete picture of the curriculum as experienced by all majors.

Truman's residential college program and the extended freshman experience both provide important opportunities to acculturate students to the benefits of reflection and self-assessment available through the development of a personal portfolio. Programming in these two aspects of the Truman culture should ensure that no student reach the senior year without expecting to compile and submit a portfolio of their works.

The most effective means for acculturating faculty about the benefits of portfolio assessment is through the reading sessions. There is no substitute for the deep engagement with student work product and for the intensive cross-disciplinary discussion about student learning that faculty experience during those sessions. In 2001, as in past years, faculty readers endorsed the process of recruiting readers from all disciplines and ranks and recommended that new faculty be encouraged early in their careers to participate.

An additional mechanism for educating students and faculty regarding the portfolio process is to present more materials on the Assessment website. This should include exemplary submissions, frequently asked questions (FAQ's), and guidelines regarding expectations. Currently, students rely primarily upon documents presented to them during the Freshman Week experience, and may misplace or discard them. Helpful, relevant information on the Truman web page may alleviate some of the problems students experience, while also providing an on-going reminder of our commitment to this assessment tool.

## FUTURE PORTFOLIOS

As the portfolio project enters its twelfth year, it has accumulated a history of continuous evolution. Some portfolio "categories" have remained constant, others were tried for a year or two and discontinued, and still others were added after the first year of the project and continue as a valuable component of the portfolio. Responding to the kinds of works students choose to submit for a particular portfolio "category", the prompts used to elicit submissions from seniors are regularly edited to enhance clarity.

The annual portfolio cycle demands new portfolio packets be available for students in the fall. The fall 2001 portfolio will contain the same categories as the spring 2000 portfolios. As in the past, suggestions from faculty readers will result in changes in the wording of some prompts. Perhaps the most significant change will be in the "Growth as a Thinker" category, which will be renamed "Critical Thinking". This category will no longer request two works from students, but will instead ask for the student's best example of critical thinking from their academic career at Truman.

Reliability measures in assessing LAS Portfolios have been developing systematically. Historically, enhancing reliability has been approached by first forming a subcommittee to focus on a particular portfolio category. These faculty members read numerous submissions to that category from past portfolios and engage in intensive discussions regarding what kinds of thinking should be expected from liberally educated Truman students. They consider amending the prompt, they identify range-finding samples, and they develop a list of descriptors to aid the faculty readers in scoring the submissions. During the portfolio readings, subcommittee members serve as "table leaders" overseeing the work of a small group of the faculty readers. Ultimately, reliability is measured by counting "splits" (scores differing by more than one point) for submissions that are scored by two different evaluators. "Interdisciplinary Thinking" was the first portfolio category developed in this way in 1995. "Quantitative Reasoning" was so developed for the 1998 portfolio assessment. With a dramatic increase in the number of portfolio readers from the fine arts (and especially from Music) and with the inception of the dual-faceted "Aesthetic Mode

of Inquiry” in the LSP, the time has come to focus on the “aesthetic reasoning” aspect of the LAS portfolios and to enhance and monitor the reliability of its evaluation.

Finally, the issue of electronic storage and submission of portfolios is becoming more and more relevant. While few students currently submit their portfolio on compact disk, there are increasing numbers of students who submit “virtual entries” for their portfolios, including URL’s to personal web pages and links to files stored on University drives. With the increased emphasis upon electronic storage of data, this trend will continue. The implications for future portfolio assessment are significant, as we face a transformation in the presentation of materials for review.

#### SHARING PORTFOLIO ASSESSMENT FINDINGS

The portfolio assessment generates richer data than any annual report in the **Assessment Almanac** can accommodate. Raw data from the 2001 assessment, which is saved as an *Excel* spreadsheet computer file, will be copied to a computer in the office of the staff assistant for assessment within the offices of the Vice President for Academic Affairs.

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.