Chapter XIII: PORTFOLIO ASSESSMENT

Portfolio Assessment

Who takes it?
All students matriculating in or after the fall of 1999 develop and submit portfolios as a requirement for graduation. In academic year 2006-2007, 1096 students submitted portfolios.

When is it administered?
Students submit during their senior year. Most students complete the process as part of their capstone experience.

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

What office administers it?
The director of the portfolio administers it in conjunction with each discipline/program. The Office of Assessment and Testing also provides support.

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 or June. The results are available late in the fall or early in spring.

What type of information is sought?
Faculty evaluators and the Assessment Committee designate the types of works requested from students. Many of the requested items have remained constant. In the 2006-2007 academic year, a portfolio included works demonstrating *critical thinking and writing*, *interdisciplinary thinking*, *historical analysis*, *scientific reasoning*, and *aesthetic analysis*. The portfolio also included a work or experience the student considered *most personally satisfying*, and *a cover letter* in which students reflect on ways they have changed while at Truman and offers any other thoughts they care to express about their experiences. Other items may be included, and some disciplines may require additional items relating specifically to their major.

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

Are the results available by division or discipline?
Results by discipline are not made available to the general public. Discipline reports are shared with chairs and deans of the respective departments.

To whom are results regularly distributed?

The overall results of portfolio assessment are available to all members of the Truman community through this Assessment Almanac. More detailed data are accessible in consultation with the Portfolio Director. Specific findings are shared with faculty and administrators through planning workshops, faculty development luncheons, and other forums. In the past, data and specific findings have been useful to the university in preparing a self-study report for reaccredidation by the Higher Learning Commission. The Faculty and Student Senates have used the reports in developing planning documents and in curriculum review. Some faculty use the information to reform their curriculum, improve their major, and engage in self-study. Portfolio findings have also affected the assignments and syllabi of faculty that have participated as portfolio readers.

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

2007 Liberal Arts and Sciences Portfolio

Since 1988, Truman State has utilized a locally designed senior portfolio for sampling and assessing student achievement and learning. They have been a graduation requirement since 1999. This volume reports and analyzes the 2006-2007 academic year portfolio assessment findings, concluding with a discussion about changes to the portfolio project and about the use of the data for improving teaching and learning.

In May and June 2007, portfolios from 1096 students, representing nearly 100% of graduates, were read and evaluated by faculty readers. The number of degrees conferred may not match the number of portfolios in any given year for two primary reasons. First, students who earn multiple degrees need only submit one portfolio. Second, many students submit as part of their capstone course rather than in their final semester. For example, some students submitted their portfolio in May 2007, but graduated in December 2007.

Fifty-two faculty and staff members read and evaluated the portfolios, representing all ranks and twenty-three academic disciplines. Fifteen of the faculty participants were new readers. In order to ensure that the reading process was completed, several faculty volunteered to read more than one week. The portfolio director, who is a faculty member, organized the readings sessions, trained readers in holistic evaluation, and facilitated discussions. Newer readers were encouraged to seek advice of those with more experience when confronted with difficulties. Furthermore, two student employees assisted with data entry and sorting. Their help was critical to the success of this large assessment process. Reading sessions were scheduled over the three weeks from May 7 to 25, 2007. One third of the readers participated during each week, gathering daily at 9:00 AM and ending at 4:00 PM with an hour for lunch and a morning and afternoon break. Every week readers evaluated Interdisciplinary works and Critical Thinking & Writing works; however, Aesthetic Analysis was scored only during the first week, Historical Analysis only during the second week, and Scientific Reasoning only during the third week.

PORTFOLIOS BY MAJOR	
Accounting	72
Agricultural Science	16
Art	32
Biology	80
Business Administration	136
Chemistry	33
Classics	4
Communication	31
Communication Disorders	85
Computer Science	20
Economics	6
English	103
English: Linguistics	3
Exercise Science	63
French	14
German	2
Health Science	44
History	50
Interdisciplinary Studies	4
Justice Systems	30
Mathematics	14
Music	28
Nursing	37
Philosophy and Religion	14
Physics	9
Political Science	22
Psychology	100
Sociology/Anthropology	18
Spanish	12
Theater	14

The 2007 Portfolio Contents
- Critical Thinking and Writing
- Interdisciplinary Thinking
- Scientific Reasoning
- Historical Analysis
- Aesthetic Analysis
- Most Personally Satisfying Experience
- Reflective Cover Letter

The 2007 portfolio focused on students' critical thinking across the liberal arts and sciences curriculum. It elicited student works demonstrating "critical thinking and writing", "interdisciplinary thinking", "scientific reasoning", "historical analysis" and "aesthetic analysis". A sixth prompt asked 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.

2007 Portfolio Findings

This report presents the findings of the 2007 Portfolio Project for the entire group of participating seniors. For ease of comparison, the language and format from previous reports are used when possible. The findings are also grouped based on students' majors: "Arts/Humanities", "Science/Math", and "Professional" studies. The groupings are not perfectly precise. For example, some SOAN majors may be better classified as Science rather than Humanities, but the groupings are kept consistent with previous years. The accompanying table shows how the various disciplines are characterized in this scheme. When a student listed more than one major, grouping was based on the first major.

Major Groups		
Arts/Humanities	Science/Math	Professional
Art	Agriculture	Accounting
Communication	Biology	Business Administration
Classics	Chemistry	Communication Disorders
English	Computer Science	Justice Systems
English: Linguistics	Economics	Nursing
French	Exercise Science	
German	Health Science	
History	Mathematics	
Interdisciplinary Studies	Physics	
Music	Political Science	
Philosophy and Religion	Psychology	
Sociology/Anthropology		
Spanish		
Theatre		
377 Portfolios	413 Portfolios	306 Portfolios

Because this assessment relies on students to first retain 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 prompts for each portfolio category. In their reflective cover letters, students report a wide range of motivation levels and frequently are quite frank in stating that they compiled their portfolio quickly and with little thought because other 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.

In addition to the ratings of quality, we have kept track of the sources of items selected by seniors for their portfolios. We characterize that data by indicating several of the most common sources (disciplines and courses) for each category. In some cases, students could not recall all of the details of when and why the work was created; except where a large percentage of students were missing data, we include percentages only for those students who did report the information. Finally, we report findings regarding the occurrences of submissions that are collaborative or dealing with issues of race, class, gender or international perspectives.

Critical Thinking and Writing

Seniors submit works to demonstrate their abilities as critical thinkers and writers. In 2007, items were elicited with the following prompt:

Please include an example of your best writing that demonstrates your critical thinking skills. As stated in Truman's LSP outcomes, good writing is a reflection of good thinking. Thus, as a result of an intellectual process that communicates meaning to a reader, good writing integrates ideas through analysis, evaluation, and the synthesis of ideas and concepts. Good writing also exhibits skill in language usage and clarity of expression through good organization.

Faculty readers will evaluate your writing sample with attention to four areas:

1. *Thinking (developing ideas, making connections between ideas, integrating ideas to make meaning) For further information regarding the nature of critical thinking, review the prompt entitled "Critical Thinking Definitions".*
2. *Organization (communicating a purpose, writing clearly, making strong arguments, drawing conclusions)*
3. *Style (employing appropriate voice and tone, having an audience in mind, choosing appropriate words, using appropriate sentence structures)*
4. *Mechanics (adhering to the accepted conventions of grammar and punctuation, spelling words correctly)*

As you consider this category, you may find that a submission from another category demonstrates strong critical thinking and writing. If so, feel free to use that item for this category as well.

NOTE: Do not submit a writing sample from ENG 190 ("Writing as Critical Thinking") simply because this course focuses on critical thinking and writing. Typically students compose their best critical writing later in college.

Out of the 1096 portfolios collected, 1085 (99%) submitted readable examples of critical thinking. The others provided an unreadable electronic file, or had some other problem that prevented reading of the submission. Faculty readers evaluated the works for the quality of critical thinking evidenced, and rated the thinking as "strong", "competent", "weak", or "none". In

Critical Thinking at a Glance
- Number of submissions read: **1086**
- Median critical thinking (on a 0 – 3 scale): **2**
- Mean critical thinking score (on a 0 – 3 scale): **1.88**
- Highest scoring "group": **Arts/Humanities**
- Most frequent source (course): **ENG 190**
- Most frequent source (discipline): **ENG**
- Trend: **Relatively stable**

conjunction with the writing assessment project, a scoring rubric was developed that included descriptors for evidence of critical thinking. The following table presents the phrases used for evaluating critical thinking.

Critical Thinking Scoring Rubric

0 No Evidence	1 Weak Competence	2 Competence	3 Strong Competence
displays no real development of ideas	develops ideas superficially or inconsistently	develops ideas with some consistency and depth	displays insight and thorough development of ideas
lacks convincing support	provides weak support	develops adequate support	develops consistently strong support
exhibits no attempt to make connections between ideas	begins to make connections between ideas	makes some good connections between ideas	reveals mature and thoughtful connections between ideas
includes no real analysis, or synthesis, or interpretation, or …	begins to analyze, or synthesize, or interpret, or …	shows some analysis, or synthesis, or interpretation, or …	shows sophistication in analysis, or synthesis, or interpretation, or …
demonstrates no real integration of ideas (the author's or those of others) to make meaning	begins to integrate ideas (the author's or those of others) to make meaning	displays some skill at integrating ideas (the author's or those of others) to make meaning	is adept at integrating ideas (the authors or those of others) to make meaning

In 2006, 68% of seniors submitted material judged as demonstrating "competence" or "strong competence." Less than 5% 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 or showing strong competence decreased slightly relative to 2006, but is quite similar to that in 2005.

When the data are sorted according to major groups, Arts/Humanities majors demonstrate somewhat stronger critical thinking skills than those with Science/Math or Professional majors. Thirty four percent of submissions from Arts and

Critical Thinking, 2005-2007

Humanities majors were rated as strongly competent and over 75% were rated at competent or above. For

Critical Thinking by Group, 2007
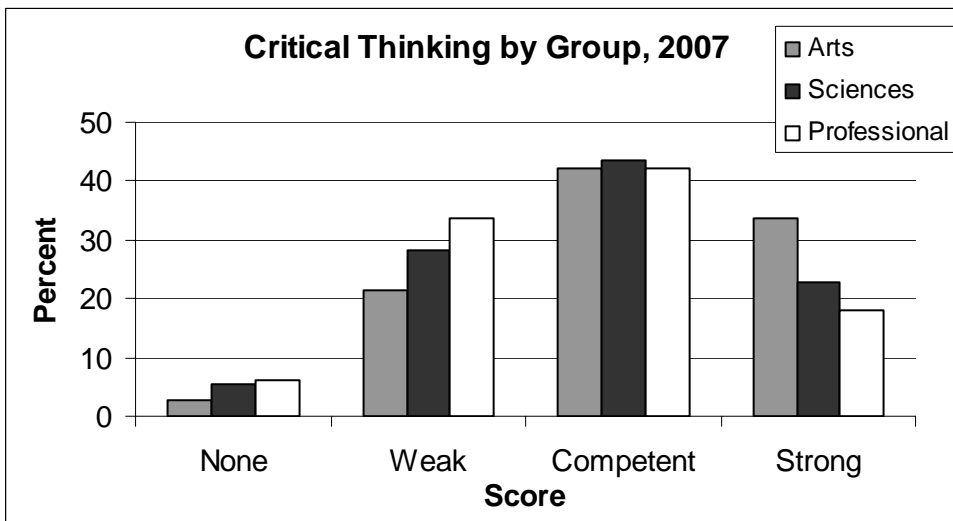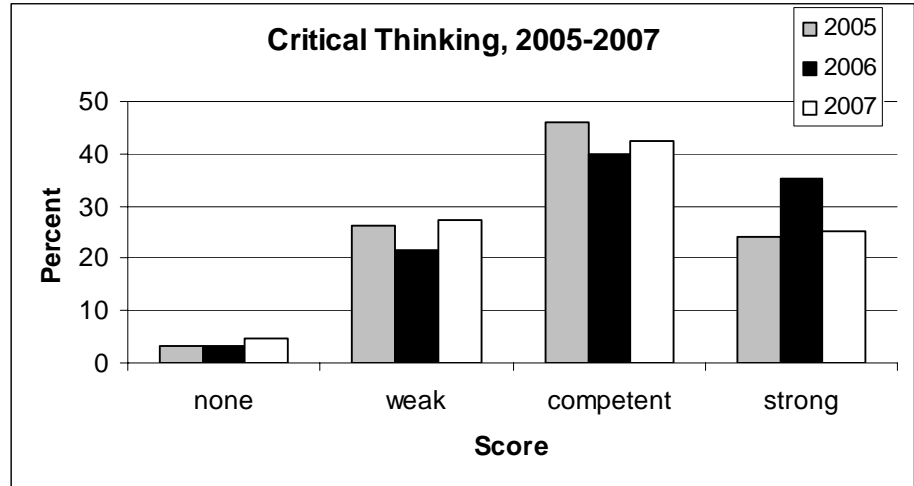
comparison, 66% of Science/Math majors and 60% of Professional majors were rated at "Competent" or above. No group had more than 7% of submissions demonstrating no competence. One hundred and seventy-eight of the submissions for this category were read again by a second faculty reader. Spearman's rho correlation between

the scores was .430. While this easily reaches statistical significance for the sample we have, it is still rather low for inter-rater reliability. In the past, interrater reliability has sometimes been calculated by the "split rate." When two readers give a submission nonadjacent scores (e.g. a zero and a two), this is a split. By these standards, over 9% of the double-read submissions were splits.

Despite the suggestion on the prompt, Writing as Critical Thinking (ENG 190) was the most common single source of submissions. English was also the most popular discipline overall, with both ENG 209 (Applying Literary Theory) and ENG 265 (American Literatures: Chronology) making the list of ten most frequent sources of submission. JINS and Philosophy & Religion were also frequent sources of submission.

As in previous years, the majority of works chosen for this category were generated in the last two years of study. Thirty-five percent of the submissions were examples of work done within the senior year, 38% were from the junior year, 17% came from the sophomore year and 9%

Critical Thinking and Writing			
Top Ten Courses		**Top Ten Disciplines**	
ENG 190	51	ENG	199
BSAD 460	30	JINS	166
ED 389	21	PHRE	89
ENG 209	20	BSAD	83
PHRE 188	20	COMM	82
COMM 330	14	POLI	43
JINS 350	14	PSYC	39
BSAD 551	13	HIST	34
ENG 265	13	ES	31
PHRE 185	13	BIOL	29

were produced during the first year. Furthermore, submissions produced later in a students career produced higher scores. Submissions from the seniors year had and average score of 1.95, while submissions from the first year scored only 1.56. Fifty percent of the submissions fulfilled assignments for classes in the major, 35% for Liberal Studies Program classes, and the rest were products of elective courses, minor requirements or other sources. Of the items submitted, 7% dealt with issues of gender, 4% with issues of class, 6% with issues of race, and another 8% had international or intercultural perspectives. Eight percent were the product of collaborative effort. In their reflections, four students reported that they had never completed a work that demonstrated good critical thinking, and five indicated their submission was weak because their best work had been lost.

## Analytical Writing Assessment

In addition to reading submissions for critical thinking, faculty readers assessed them for evidence of writing skills. As with other categories where works are scored, a group of student-produced writing samples were used to assist faculty in identifying relevant factors. A scoring rubric, first drafted by members of the Writing Assessment Committee, was used in conjunction with the assessment. Unlike other categories, readers were trained to conduct an analytical assessment, reviewing and scoring each submission in terms of organization, style, and mechanics. The descriptors for these categories are presented in the following rubric:

Rubric for Analytical Writing Assessment

|	0	1	2	3
Organization	lacks introduction	includes weak introduction	includes adequate introduction	includes strong introduction
	lacks controlling idea	displays controlling idea	displays adequately developed controlling idea	displays clear, well-developed controlling idea
	lacks clarity	exhibits weak clarity	exhibits adequate clarity	exhibits excellent clarity
	lacks logical structure	exhibits weak logical structure	exhibits adequate logical structure	exhibits strong logical structure
	lacks conclusion	includes weak conclusion	includes adequate conclusion	includes well-supported conclusion
Style	tone or voice is off-putting	contains inconsistent tone or voice	contains occasional lapses in tone or voice	maintains a consistent tone and voice
	seems to have no audience in mind	shows little audience awareness	shows audience awareness	shows consistent audience awareness
	frequently chooses inappropriate words	sometimes chooses inappropriate words	chooses appropriate words	exhibits skill in word choice
	exhibits frequent inappropriate sentence structure	exhibits occasional inappropriate sentence structure	exhibits appropriate sentence structure	exhibits sophisticated sentence structure
	uses no appropriate stylistic conventions	uses few appropriate stylistic conventions	uses appropriate stylistic conventions	skillfully uses appropriate stylistic conventions

	0	**1**	**2**	**3**
Mechanics	lacks command of mechanical conventions: grammar, punctuation, or spelling errors present major distraction to readers	demonstrates weak command of mechanical conventions: grammar, punctuation, or spelling errors are occasionally distracting to readers	demonstrates adequate command of mechanical conventions: grammar, punctuation, or spelling errors are minimally distracting to readers	demonstrates excellent command of mechanical conventions: grammar, punctuation, and spelling small errors do not distract readers

Based on this scoring rubric, the median score of the 1086 submissions was "competent" (2) for each of three categories. The mean was 2.08 for organization (compared to 2.23 in 2006), 2.09 for style (2.18 in 2006), and 2.16 for mechanics (2.22 in 2006). Again this year, readers found that students are generally competent in all three

Quality of Organization by Group, 2007

aspects of writing for which they were evaluated. Furthermore, scores in each category are correlated with other categories: the correlation between organization and mechanics is .47, while the correlation between organization and style is .58.
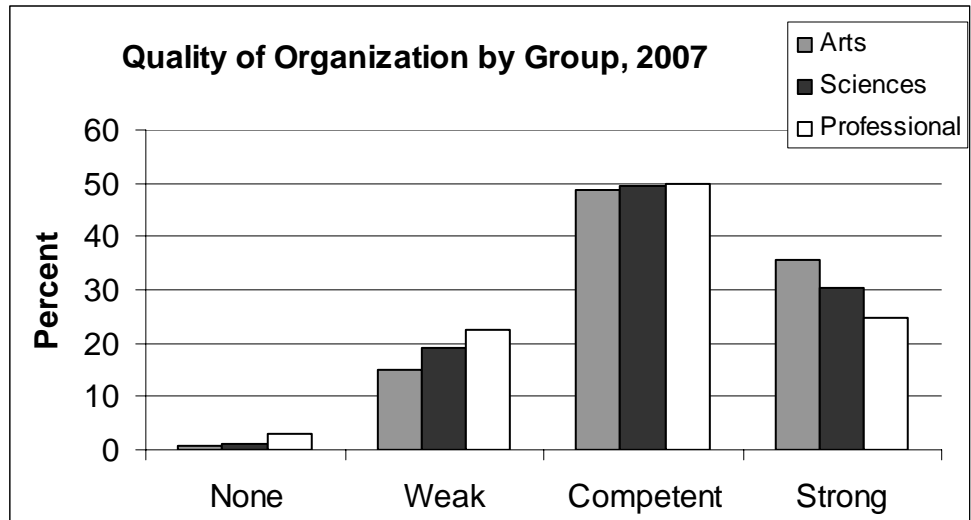
When scores are broken down into groups, similar patterns emerge. The charts presented here detail group scores for each category. Scores for organization show that 84% of submissions from Arts/Humanities were judged as competent or strongly competent. By comparison, 80 % of Science and Math majors' submission and 75% of Professional majors' submissions were scored in the highest two categories.
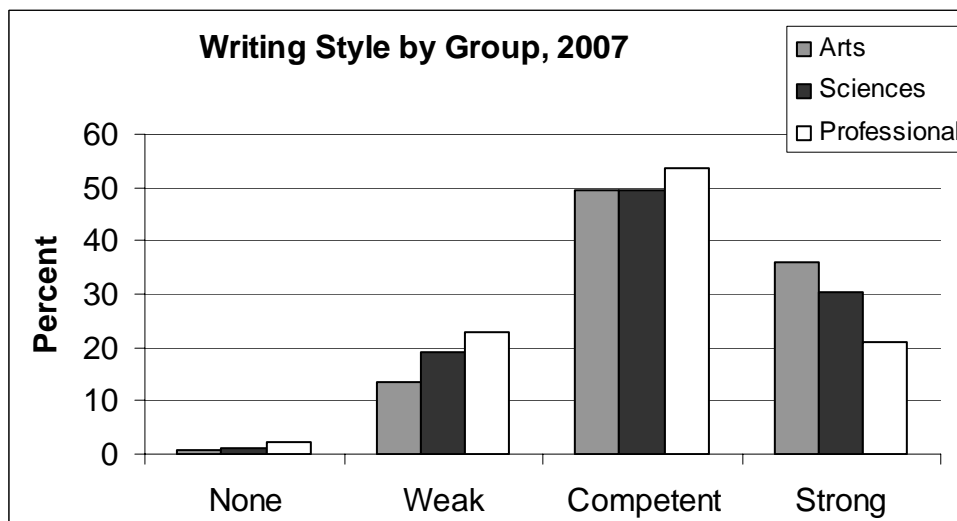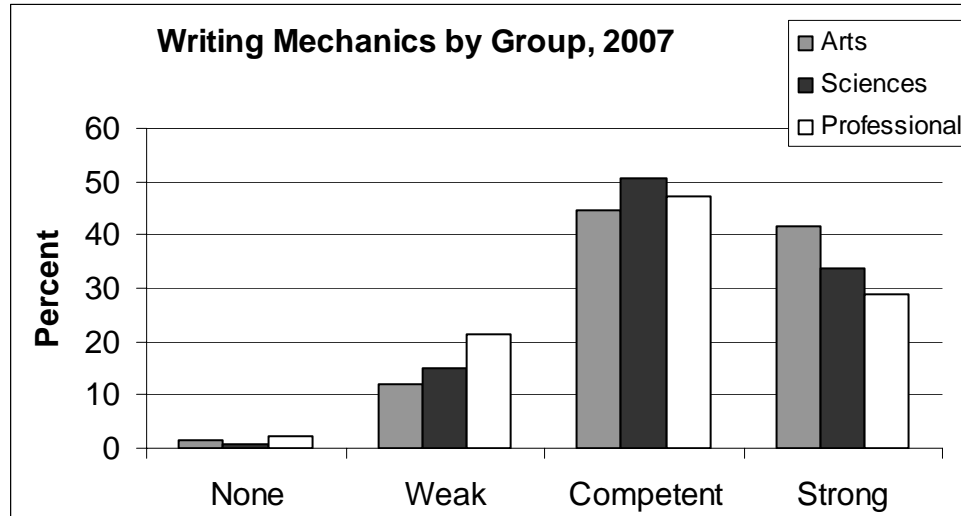
Judgments of writing style of each group were quite similar to that of organization. Eighty-four percent of Arts/Humanities submissions were scored in the highest two categories. Eighty percent of Science/Math submissions and 75%

Writing Style by Group, 2007

of Professional majors' submissions received the highest rating.

For the final element, mechanics, 86% of Arts and Humanities majors rated as comment or strongly competent. Eighty-four percent of Science/Math submissions were scored this way, and 76% of Professional majors' works received this score.

Writing Mechanics by Group, 2007

Legend: ■ Arts ■ Sciences □ Professional

Y-axis: Percent (0 to 60)

X-axis categories: None, Weak, Competent, Strong

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.

To illustrate interdisciplinary thinking, consider reviewing the examples from the "Book of Fours," which is available on the Portfolio Project website. These outstanding works were submitted by Truman students for this category and demonstrate a strong command of interdisciplinary thinking skills.

Altogether 1090 submissions for interdisciplinary thinking were evaluated. To evaluate inter-rater reliability, 411 of the submissions were read a second time by a randomly selected faculty reader. In all cases the reader evaluated works "holistically" while keeping in mind the following descriptors:

Interdisciplinary Thinking at a Glance	
• Number of submissions read	**1090**
• Median score (on a 0-4 scale):	**2.0**
• Mean score (on a 0-4 scale):	**1.8**
• Highest scoring "group":	**Arts and Humanities**
• Most frequent source (course):	**JINS 351**
• Most frequent source (discipline):	**JINS**
• Trends in recent years:	**Stable scores**

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

Overall, inter-rater reliability was poor, suggesting that the definition of interdisciplinary thinking was not entirely consistent across raters. Spearman correlation between raters was .50 and Kappa was .19. This was similar to patterns in 2006. In previous years, reliability was assessed by the number of splits – differences between raters of 2 or more points. The split rate was 18% in 2003, 24%

Interdisciplinary Thinking, 2005-2007
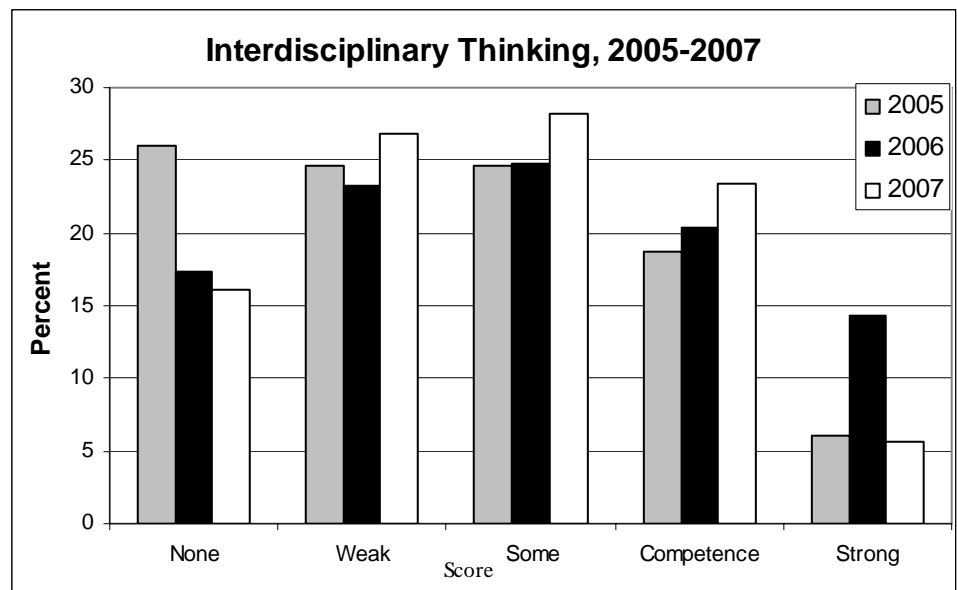
in 2004 , 25% split rate in 2006, and 22% in 2007. (For comparison, random scoring with the five level scale used here would result in a 48% split rate.)

For those submissions read by two different evaluators, the overall score on a 0- to 4-point scale is the average of the two individual scores .The histogram shows the results for "interdisciplinary thinking" in 2007 with the results for 2005 and 2006. Because of the change to double reading of submissions, the actual scores for 2006 and 2007 include some half numbers. For readability of the chart above, half scores were combined with the score below them. (such that 3.5s were grouped with 3s). Another way to consider these data is to examine those judged competent and above. The total percent of submissions receiving a score of 2 or better was 57.2%, similar to the 59.5 % found in 2006 and notably higher than the 48.4% in 2005

Interdiciplinary Reasoning by Group, 2007
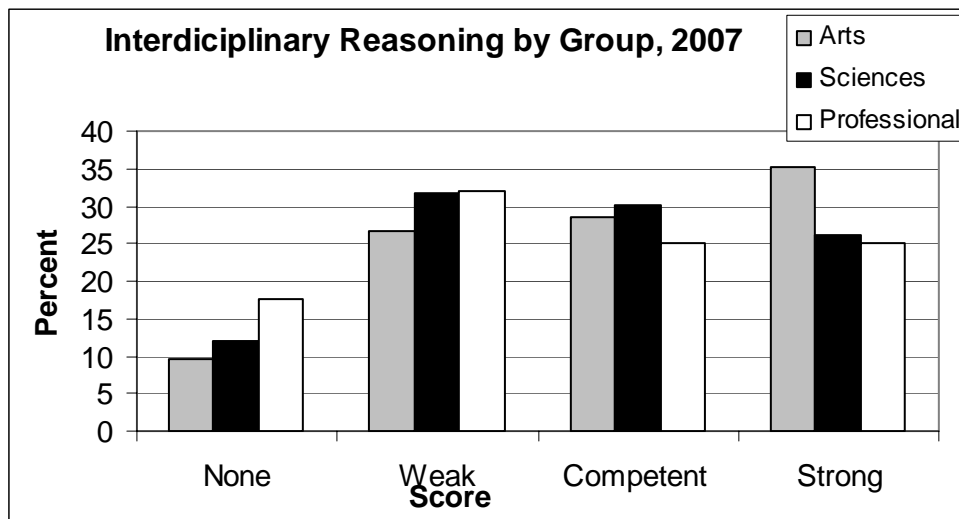
The data sorted by major group are summarized in the chart on the left. Again, half scores are combined with the score below them. Students in the Arts and Humanities were somewhat more likely to submit strong works. This is a small change from 2006 where the strongest submissions came from Math & Science majors. In both 2006 and 2007, students with Professional majors were more likely to submit works that received a score of 0.

This year, JINS courses produced 60% of the submissions, down slightly from 63% in 2006. The remainder of the submissions were widely scattered across disciplines. In fact, of the top 20 courses used for submissions in this category, all were JINS. Concomitantly, 66% of submissions came from LSP courses, while 24% were drawn from the major. The rest were drawn primarily from electives (5%), academic minor requirements (4%). Furthermore, submissions from JINS courses had a mean score of 2.02, while all other submissions had a mean score of 1.57. These data continue to support the notion that the JINS course in the Liberal Studies Program is promoting better comprehension and demonstration of interdisciplinary thinking.

Most of the work reflected in the interdisciplinary submissions was accomplished by students in their junior and senior years (63% and 21%, respectively). Only 11% came from the sophomore year and 4% from the first year. Seven percent of the items were the result of collaborative work.

Portfolio readers note items dealing with race, class, gender, and international issues. In the interdisciplinary category, 11.2% of

Interdisciplinary Thinking			
Top Ten Courses		**Top Ten Disciplines**	
JINS 351: Faust Tradition	32	JINS	645
JINS 325: Rural America	27	ENG	49
JINS 341: Sport & Society	26	BSAD	42
JINS 301: Music in Religious …	25	COMM	36
JINS 335: Ecology v. Land use	23	PHRE	34
JINS 336: The Environment	23	HLTH	22
JINS 364: Aesthetics of Food	23	ART	21
JINS 306: The Rock Generation	21	PSYC	20
JINS 316: Portrayal of Women	19	ES	16
JINS 345: Page to Stage to Screen	19	SOAN	16

submissions dealt in some way with gender issues, 11.2% with international issues, 9.5% with race, , and 8.5% dealt with class. Eleven students stated in their reflection that they had never completed an interdisciplinary work. At an average score of 1.2, their scores were somewhat lower than the remaining scores but still notably nonzero.

Eighteen students stated their submission was weak because their best work had been lost; however, the average of their submissions was 1.72, quite similar to the overall average.

Historical Analysis

The following prompt elicited 1087 submissions for Historical Analysis:

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.

Historical Analysis at a Glance	
• Number of submissions:	**1087**
• Median score (on a 0-3 scale):	**1.0**
• Mean score (on a 0-3 scale):	**1.5**
• Highest scoring "group":	**Arts/Humanities**
• Most frequent source (course):	**HIST 105**
• Most frequent Source: (discipline):	**History**
• Trend	**Stable Scores**

These submissions were evaluated with the descriptors below.

Some Descriptors of Competence in Historical Analysis

3 Strong Competence
Strong demonstration of historical analysis includes one or more of these features. The submission may:
❖ Evaluate historical resources.
❖ Actively engage historical context and chronology.
❖ Use good analytical thinking in making an argument.
❖ Show clear awareness of causation in examining changes over time.

2 Competence
Submissions that demonstrate competent historical analysis may:
❖ Employ historical resources.
❖ Show some awareness of historical context and chronology.
❖ Be uneven in supporting arguments.
❖ Demonstrate some awareness of causation in examining changes over time.

1 Minimal Competence
Minimally competent submissions may:
❖ Merely list historical resources.
❖ Have limited or confused use of historical context and chronology.
❖ Make an unsupported thesis or argument
❖ Show minimal awareness of causation in examining changes over time.
❖ Simply report historical facts

0 No Competence
❖ Ignore historical context
❖ No thesis, argument, or analysis
❖ Neglects changes over time
❖ Demonstrates lack of knowledge regarding basic historical facts

The chart at right compares the data for Historical Analyses across the past three years. Until 2004, there had been continued decreases in the number of submissions demonstrating no competence. Data for 2006 and 2007 suggest that trend may have stabilized. The median score of 1, and a mean score of 1.50 is quite similar to that from 2005 and 2006.

The chart below presents the data sorted according to the major groupings. In this category, both the median and modal score for students majoring in the Arts/Humanities disciplines was 2, while both Science/Math majors and Professional majors had a median and modal score of 1.

Historical Analysis, 2005-2007

Historical Analysis by Group, 2007
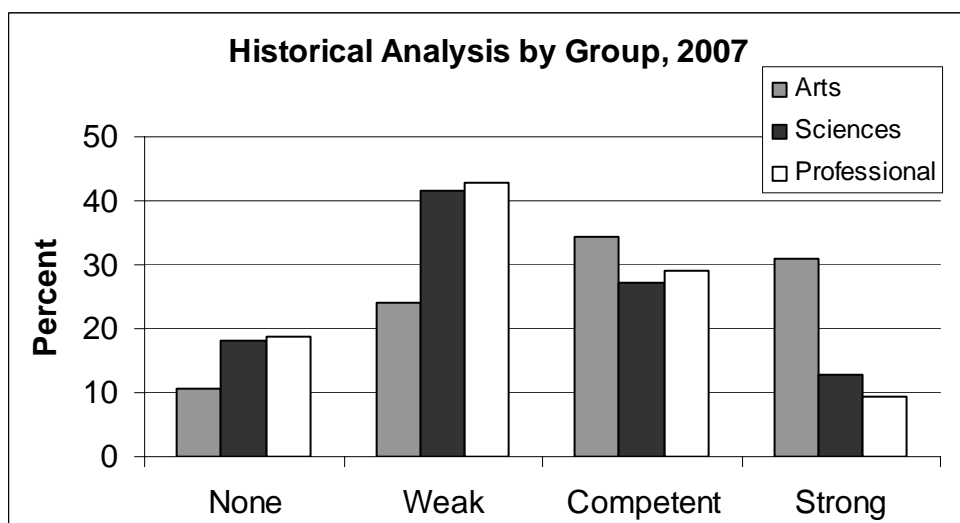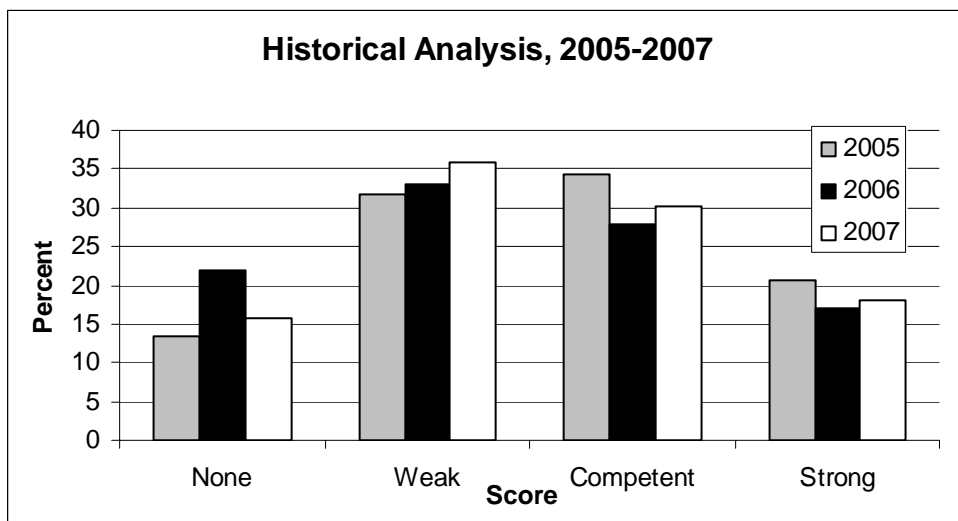
As expected, students frequently chose works from history courses for this category. Thirty-four percent of the items came from history courses. JINS courses accounted for nearly 17% of the submissions and English courses accounted for 7% of the submissions. The U.S. History sequence, HIST 104 and 105 were the two most common courses used as sources for items in this category, together accounting for 15% of the total number. The top five courses were all history courses. This pattern for choice of submission is very similar to previous years.

Approximately 25% of the submissions were produced in the senior year, over 36% in the junior year, 20% in the sophomore year and 19% in the first year. Over 53% of the items submitted were the result of work in LSP classes, 30% were assignments in major courses, 10% were from elective courses and 7% were produced in classes taken to fulfill minor requirements. Of the 1087 submissions read for historical analysis, 14% dealt with international perspectives, 10% with issues of gender, 7% with race, and 4% with class issues. In this category, only 4% of the items submitted were collaborative works. In their reflection, 43 students stated that their best work for this prompt had been lost, and 102 stated that they had

HISTORICAL SOURCES			
Top Ten Courses		**Top Ten Disciplines**	
HIST 105	94	HIST	367
HIST 104	68	JINS	178
HIST 132	38	ENG	76
HIST 131	26	PHRE	51
HIST 133	24	COMM	47
PHRE 185	17	ART	46
PSYC 429	14	ECON	37
JINS 316	12	BSAD	30
JINS 357	12	MUSI	27
ART 223	11	POLI	22

never completed and appropriate scientific work. The average for each of these groups was 1.0. This is lower than the average for remaining students, but still not the near- zero one might expect from the students' descriptions.

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 <u>reason</u> 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.

Readers evaluated 1081 submissions, assessing the competence of scientific reasoning as evidenced in the submissions. 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". Readers were assisted by a set of descriptors, compiled by a group of faculty from the natural science and professional disciplines. This set of descriptors is below.

Scientific Reasoning at a Glance	
• Number of submissions:	**1081**
• Median score	**1.0**
• Mean score (on a 0-3 scale):	**1.2**
• Highest scoring "group":	**Science/Math**
• Most frequent source (course):	**BIOL 100**
• Most frequent Source: (discipline):	**Biology**
• Trends:	**Stable scores**

SOME DESCRIPTORS OF COMPETENCE IN SCIENTIFIC REASONING

3 Strong Competence

The item may have some, many, or all of these features:
- ❖ Explicit discussion of research hypothesis or question
- ❖ Clear understanding of research design, including the method's limitations and strengths
- ❖ Clear understanding of cause and effect appropriate to research level and design
- ❖ Clear indication of inductive or deductive reasoning underlying hypothesis
- ❖ Critical evaluation of results, including alternative explanations of results
- ❖ Meaningful discussion of experiment's limitations
- ❖ Examines results in light of current state of knowledge

2 Competence

The item may have some, many, or all of these features:
- ❖ Attempts to generate and test a hypothesis or answer a research question
- ❖ Examines appropriateness of research design
- ❖ Considers reasoning underlying hypothesis
- ❖ Some interpretation and analysis of results, may consider alternative explanations of results
- ❖ Attempts to deal with experiment's limitations
- ❖ Examines results in light of current state of knowledge

1 Minimal Competence

The item may have some, many, or all of these features:
- ❖ Recognition of problem/hypothesis, but not of derivation of testable hypothesis
- ❖ Description of methodology without thought on appropriateness of methods used
- ❖ Data analysis with minimal discussion or interpretation of results
- ❖ Little or no consideration of alternative explanations of results
- ❖ Ignores experimental limitations
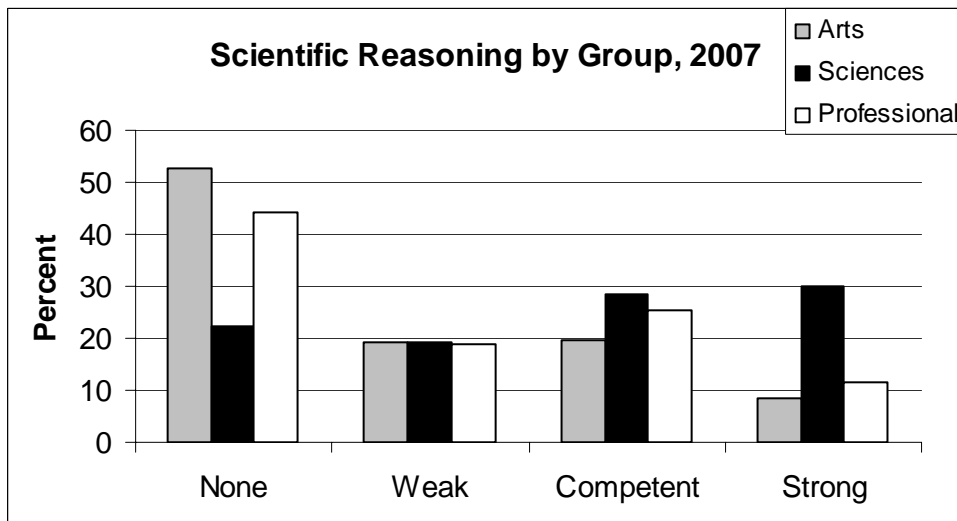- ❖ Fails to examine results with regard to current state of knowledge

0 No demonstration of competence in scientific reasoning
- ❖ No discussion of problem/hypothesis
- ❖ No consideration of methodology for experiment
- ❖ Presents results without interpretation
- ❖ Neglects differences between expected (literature) values and experiment
- ❖ Demonstrates scientific knowledge, but without interpretation or analysis

As in past years, the most common finding was "no evidence". This is the eighth consecutive year that submissions scored a zero outnumbered submissions judged "minimally competent." The chart at right shows that scores over the past three years have been consistently low: 1.1 in 2005, 1.3 in 2006. and 1.2 in 2007. Because some 2006 submissions were double-read, half scores are grouped into the lower category.

Scientific Reasoning, 2005-2007
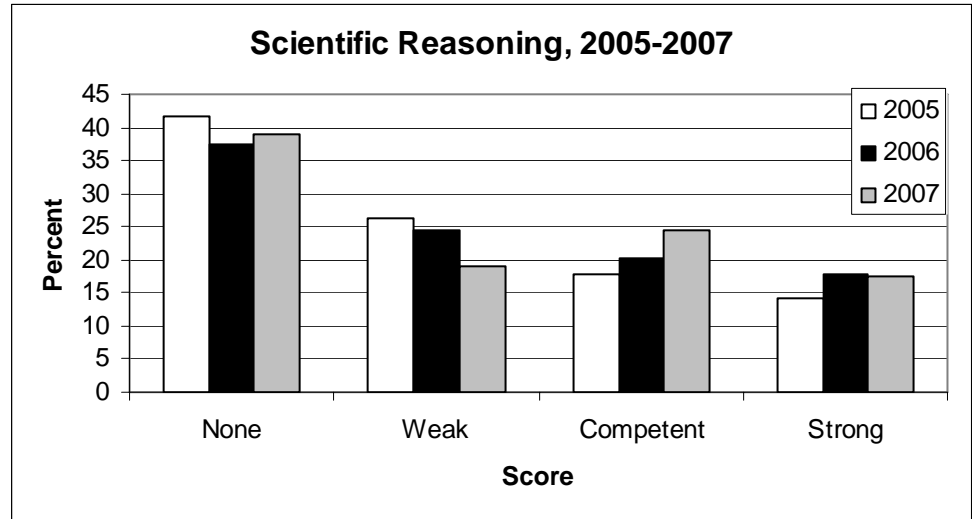
As might be expected, Science/Math majors score better than other majors. Submissions from Science and Mathematics majors had a median score of 2, and a modal score of 3, while Arts/Humanities submissions had a medial and modal score of 0. Majors from the professional group were similar to those in the arts, but had a median score of 1. The means were 1.7 for Science/Math, 1.0 for Professional, and 0.8 for Arts & Humanities.

Scientific Reasoning by Group, 2007

Biology was by far the most popular source discipline, and the disciplines in the top ten remained the mostly the same. However, Exercise Science entered the top ten source of submission this year, replacing Political Science. The top ten courses were also largely Biology. Unlike 2005, BSAD 349 (Organizational Behavior) and CMDS 474 (Speech and Hearing Science) were frequent sources.

Scientific Reasoning Sources			
Top Ten Courses		**Top Ten Disciplines**	
BIOL 100	127	BIOL	294
BIOL 107	41	PSYC	112
AGSC 100	35	JINS	67
PSYC 466	29	CHEM	60
BSAD 349	27	BSAD	56
CHEM 100	22	AGSC	50
BIOL 200	20	ENG	44
CMDS 474	20	PHYS	40
BIOL 325	19	ES	31
PSYC 166	17	STAT	31

Submissions from the senior year accounted for 30%; 32% came from the junior year; 24% from the sophomore year; and 14% were generated by first-year students. Forty-nine percent of the submissions were generated by students satisfying requirements of their majors, 38% were from LSP courses, while minor and elective courses each accounted for 7%. Few of the submissions dealt with race (1%), class (1%), gender (3%) or international issues (3%). Nearly 38% of submissions were the results of collaborative work. In their reflection, twenty-seven students stated that their best work for this prompt had been lost, and fifty-seven stated that they had never completed and appropriate scientific work. The averages for these students were 0.48 and 0.32 respectively. These are notably lower than the average of the other scores, indicating their self-analysis was reasonably accurate.

Aesthetic Analysis

The following prompt for Aesthetic Analysis has been used since spring 2002:

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

Aesthetic Analysis at a Glance	
• Number of submissions:	**1078**
• Median score (on a 0-3 scale):	**1**
• Mean score (on a 0-3 scale):	**1.3**
• Highest scoring "group":	**Arts/Humanities**
• Most frequent source (course):	**ENG 225**
• Most frequent Source: (discipline):	**ENG**
• Trend	**Stable scores**

The following set of descriptors was created by relevant faculty members during the course of readings in 2004, and have been used since that time.

SOME DESCRIPTORS OF COMPETENCE IN AESTHETIC ANALYSIS

3 Strong Competence

The item may have some, many, or all of these features:
- ❖ Reflective interpretation of the cultural artifact or production
- ❖ Sophisticated discussion of the significance or meaning of the artifact or production, incorporating the language of appropriate critical or theoretical discourse/perspective
- ❖ Connection of the artifact or production to its context, with discussion of its significance
- ❖ Analysis of the artifact or production's features and their significance
- ❖ Analysis of the artifact or production's form and its significance

2 Competence

The item may have some, many, or all of these features:
- ❖ Interpretive engagement with the cultural artifact or production
- ❖ Explanation of the significance or meaning of the artifact or production, including some language of appropriate critical or theoretical discourse/perspective

- ❖ Connection of the artifact or production to its context, with some discussion of its significance
- ❖ Discussion of the artifact or production's features and their significance
- ❖ Discussion of the artifact or production's form and its significance

1 Minimal Competence
The item may have some, many, or all of these features:
- ❖ Minimal evidence of engagement with the cultural artifact or production (creative works in visual art, music, literature, theatre, film, dance. . .)
- ❖ Placement of the artifact or production within a context (historical, cultural, period, aesthetic movement. . .)
- ❖ Description of the artifact or production's features (plot, musical elements, colors, lines. . .) without discussion of their significance
- ❖ Description of the artifact or production's form (genre, type. . .) without discussion of its significance

0 No demonstration of competence in aesthetic analysis
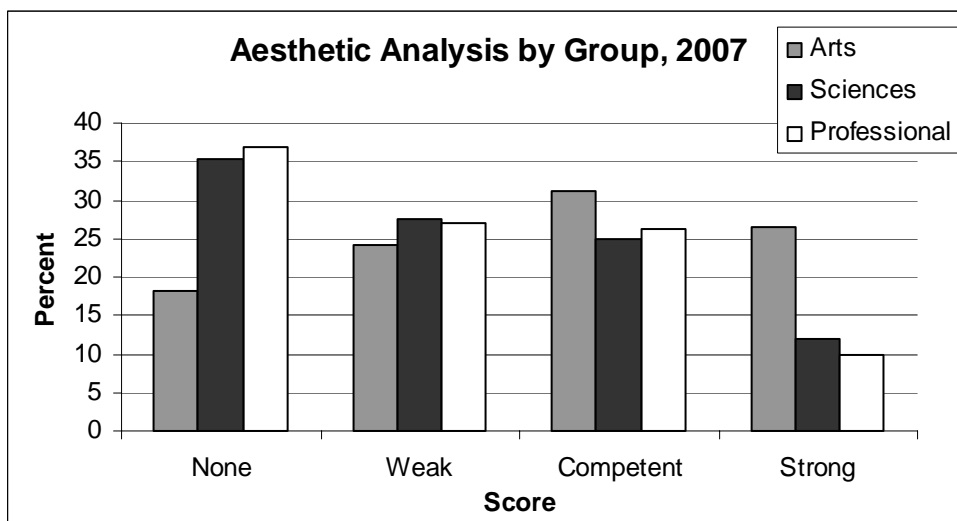The item may have some, many, or all of these features:
- ❖ No evidence of engagement with the cultural artifact or production
- ❖ Analysis of the artifact or production on some basis other than aesthetic
- ❖ No explanation of the work's context, form, structure or significance

The 2007 median score for Aesthetic submissions was 1. indicating minimal competence. The mean score for the 1078 readable submissions was 1.3, compared to last year's mean of 1.5, and 2005's mean of 1.4.
Forty-four percent of 2007 Aesthetic Analysis submissions received a score of competent or strongly competent. These numbers may be slightly lower than those from the past five years, but in every previous year, there were substantially more students who failed to submit a work in this category .
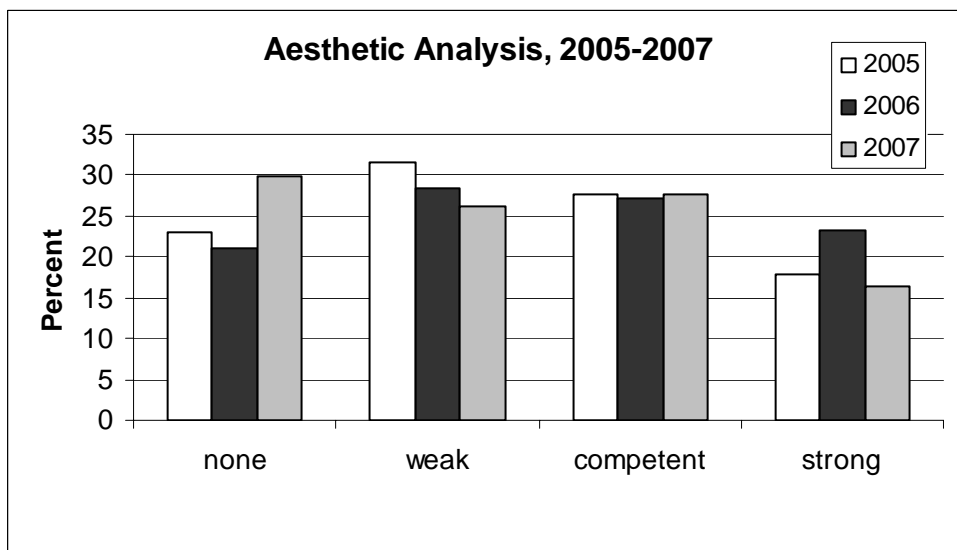
When comparing groups, Arts and Humanities majors scored significantly better than either Science/Math or Professional majors. The median score was 2 for Arts and Humanities majors, and 1 for Science/Math and Professional majors. Additionally, the modal score was 2 for Arts and Humanities majors, but 0 for the other two groups.

Fifty two students did not provide information on the source of their submission in the category. The remaining data are presented for those who did. As one might expect, many entries for this category came from English, Theatre, Music, and Art. JINS courses were also used by 166 students. The top ten disciplines were the same as those used in 2006, and the top five were in the same order. ENG 265 (American Literatures: Chronology) was the most popular single course in this category. Mode of inquiry classes in theater, art and music were popular choices, but courses like COMM 350 (Media Criticism) were also frequent sources of submission.

Aesthetic Analysis Sources			
Top Ten Courses		Top Ten Disciplines	
ENG 265	43	ENG	252
MUSI 205	42	JINS	166
THEA 275	42	MUSI	157
ART 223	38	ART	99
MUSI 204	35	THEA	54
MUSI 207	33	COMM	52
COMM 350	25	SPAN	25
ENG 190	25	BSAD	24
JINS 364	20	PHRE	23
ART 203	18	HIST	22

Twenty-two percent of Aesthetic submissions were created during the senior year. Another 37% were produced during the junior year, while 20% were from the sophomore year and 21% from the first year. Over 57% of the submissions came from LSP courses, while 26% were from major courses. Roughly 7% were from minor courses, and 10% from elective courses. Collaborative efforts comprised only 4% of the submissions. In this group, 7% dealt with international perspectives, 3% considered issues of class, 7% involved gender issues, and 5% examined issues of race. Interestingly, these percentages are nearly identical to those found in 2006. Twenty five students indicated in their reflection that their best work for this category had been lost, and 71 indicated they had never completed an appropriate work for this category. The means for each of theses groups (.71 and .46) were, in fact, lower, than means from the remaining students

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.*

Faculty readers do not evaluate the quality of the materials submitted in any way. Rather they review and describe what it is that a student found to be "most personally satisfying". Over time, repeated motifs have been identified. Readers use a checklist to record the context of the experience and the reason it was especially satisfying to the student.

This year, 1073 of the portfolios contained an item or a description representing a "most satisfying experience." Based on submissions from previous years, faculty readers were asked to examine whether the student found the experience personally satisfying because it 1)represented a personal best, 2) was especially challenging, 3) achieved personal goals 4) modeled working as a professional, 5) achieved significant personal growth, or 6) was a collaborative effort. If none of

Why Was It Satisfying?	Number
Represented a personal best	264
Achieved Personal Goals	229
Modeled working As A Professional	206
Achieved Significant Personal Growth	387
Was especially Challenging	186
Was a collaborative Effort	88
Was especially creative	301
Was an enjoyable educational experience	20

these was a good representation of the student's reasoning, a more detailed explanation was given. Of the 1073 submissions, 129 students did not explain why they found the experience satisfying.

The accompanying table presents the reasons why a submission was most satisfying for the remaining submissions. Many students identified several reasons why their experience was satisfying. Thus, the total numbers of reasons is more than the number of submissions. Forty-one percent of submissions explained that one of the reasons for satisfaction was the result of having achieved "significant personal growth", 32% reported that it was especially creative, 28% considered it a "personal best", 24% discussed having achieved personal goals, and 23 % said that is represented working as a professional.

Context	Frequency	%
Major Class	445	42
LSP	167	16
Elective	74	7
Minor Class	56	5
Study Abroad	50	5
Varsity Athletics	29	3
Research	24	2
Social Fraternity/Sorority	23	2
Capstone	22	2
Internship	17	2
Other Organization	17	2
Public Performance / Recital	15	1
Service Organization	14	1
Relationships / Friendships	14	1
Religious Organization	13	1
Other Creative Effort	12	1

Students always point to a wide variety of settings for their most personally satisfying experiences. Many students submit academic work of which they are especially proud. As in the past year, the most frequent settings are academic. Other seniors talk about friends, family, religion, getting married or engaged, campus organizations, particular campus events in which the student played a role and a wide variety of other things. The accompanying table attempts to organize the contexts of students' most personally satisfying experiences into groups.   The great majority of submitted artifacts were papers, essays, projects, and lab reports generated in classes or through independent research activities. It is possible that selecting academic works for other categories primes students to think of academic works that are personally satisfying, but it is interesting that so many students are most proud of some artifact of their academic experience.

Almost 39% of the "most satisfying experiences" occurred in the senior year, 35% in the junior year, 12% in the sophomore year, and 8% in the first year. The remaining submissions occurred over times spanning more than a single year.   Eight percent of most personally satisfying experiences dealt with international perspectives. Many of these were study abroad experiences and reflect the important role of this activity for Truman students. Issues of gender were considered in 3% of the submissions, while 3% dealt with race issues, and approximately one percent dealt with issues of class.

Reflective Cover Letters

Finally, the portfolio asks students to compose a cover letter addressed to the Liberal Arts and Science Portfolio Project Team. In 2007, 98% of seniors submitted a cover letter. While the academic works submitted in other categories provide direct insight into student achievement, the cover letters provide a more personal view of student attitudes and opinions. During the weeks of portfolio assessment and evaluation, the student letters are generally reserved for the last day. While reading student letters, faculty readers are instructed to reserve one or more 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 praise that seniors wish to express.

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 track the number of hours devoted to the portfolio assemble, and look for self-reflection in the letters. When students express attitudes about the portfolio, about assessment and about their education, readers note whether they are positive, mixed, or negative. Finally, they designate 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. Each cover letter excerpted in this report was recommended by faculty readers for sharing with the university community.

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 2006 was 3.9 hours, approximately the same as has been reported the last few years. This average includes all responses that could be put into quantitative form – some students did not address the time they spent on this task, and others gave responses like "I spent a little bit each week for the whole semester" Even as such, a small number of students reporting a very large amount of time makes this average a bit misleading. Forty-eight percent of students reported spending 3 or fewer hours on the portfolio. Eighty-five percent reported 5 or fewer hours. One student reported spending 80 hours on the portfolio. The median score of 3.5 and the modal score of 3 hours are probably more representative. Students' descriptions of the mechanics of portfolio assembly were strikingly similar to previous years. For example, an accounting major reported the following:


Self Reflection in Cover Letters, 2005-2007

I put in about 3 hours of work from start until finish, from collecting the works, to analyzing them, to writing the responses to the prompts.

REFLECTION IN COVER LETTERS

Ideally, the portfolio serves as an opportunity for students to reflect on their experiences at the University. . Faculty readers check "yes" for reflection presented only as generalizations and "yes, with findings" when the writer presents specific insights into their growth or lack of growth. Many students did engage in self-assessment; however, the number of students who share findings of their self- reflection declined relative to 2005, though it is slightly above 2006As in the past, those without reflection were mostly letters explaining the contents of their portfolio and the process they used in assembling it.

The data by group show students in Professional majors to be slightly less likely to state they reflected than are the students in either Science or Professional majors. Students in the Arts and Humanities

Student Reflections by Group
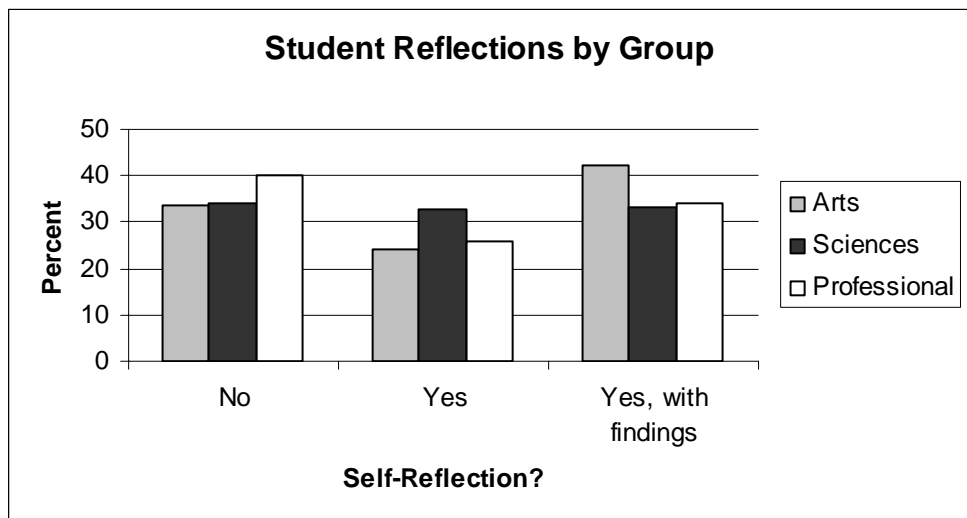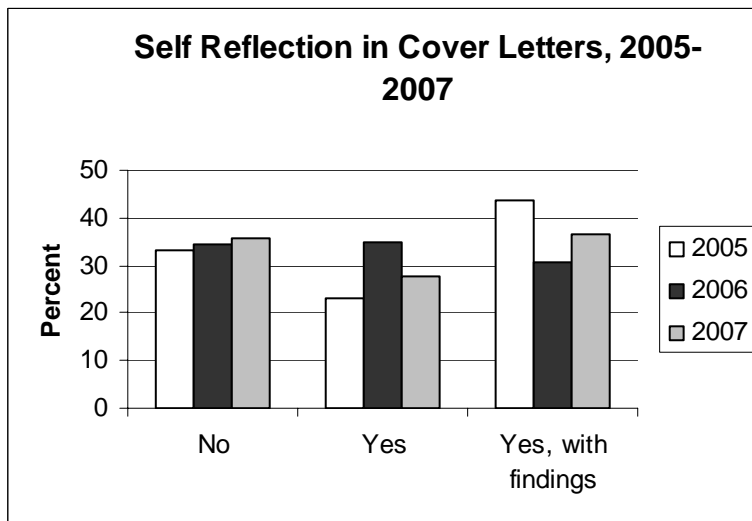
were most likely to include specifics about how they had changed.   Overall, 66% of seniors in the Arts and Humanities included some sort of reflection, as did 65% of students in Sciences, and 60 % of seniors in Professional majors.

Self-reflection within cover letters includes a wide variety of comments. Some students say very little, others provide lengthy accounts of personal experiences. In addition to the prompts, students are asked to complete a form stating whether or not quotes from their portfolios may be included in publications like this one. Only quotes from students who granted permission for anonymous access are used in this Almanac. Unfortunately, this somewhat limits the number of negative comments that can be quoted, but efforts have been made to provide representative samples.

Students discuss their growth due to experiences in the curriculum, in the co-curriculum, and as members of the Kirksville community. Many students commented specifically on the change in their writing. For example, a Business major stated

What I have learned about myself through the portfolio project is that I have used many more writing styles throughout my college career than I may have previously believed.

Others, such as this Exercise major and this political science major, focused on the breadth of their intellectual growth:

Through this process, I learned that I have come a very long way since arriving at Truman three and a half years ago, and yet I was reassured that there are still things I will be able to improve on. I learned that there are things I never thought I would be able to do that I accomplished without even realizing while I was here, such as analyzing artwork.

Varied assignments, projects, and papers have helped me to realize there is often more than one way to approach any particular problem. I have found my education at Truman to be worth every penny, and (speaking with the gift of hindsight) I would have been more than willing to pay substantially larger sums for that which I have been taught both in and out of the classroom.

Attitutes toward Education at Truman by Group
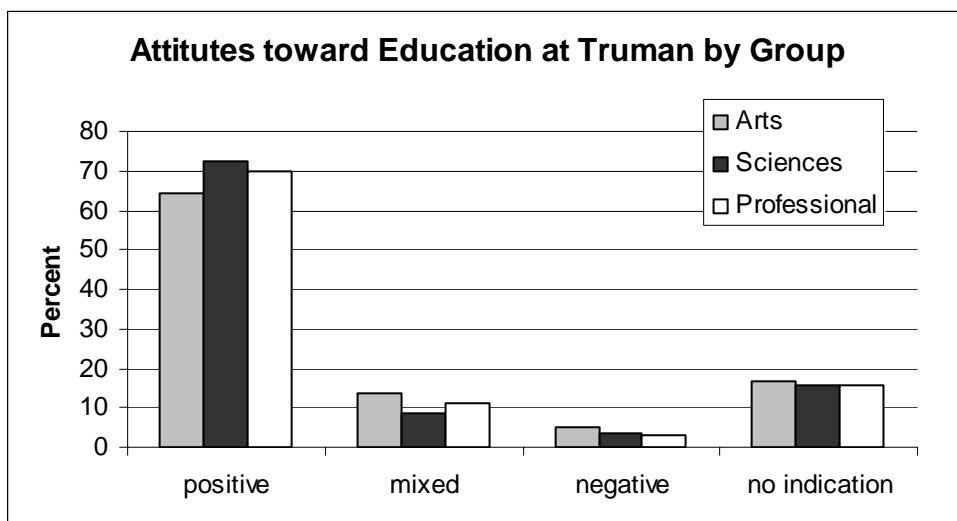
Other students, like this Spanish major and this psychology major, commented on specific experiences within the curriculum.

As for my thoughts on my experiences, I must say that studying abroad was probably the epitome of my Truman experience. I recommend it to all students.
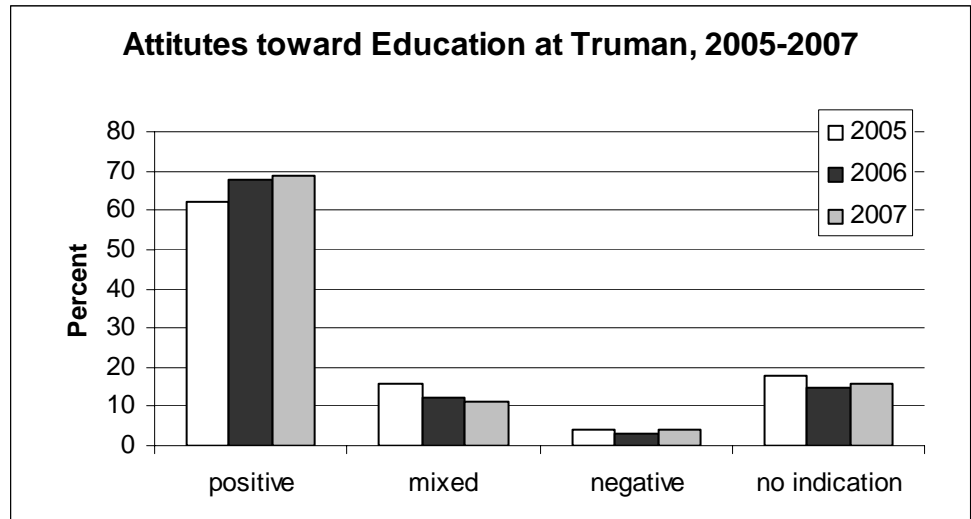
I wasn't able to get into the classes that I needed/wanted. This is the reason that I have two minors- I was taking so many electives because I couldn't take any of the classes that I actually needed to get into that I had enough classes to pick up two minors. Even when I got into classes that I needed I couldn't necessarily get into the classes that I wanted to take.

Finally, the some of the reflection about self-growth includes co-curricular experiences, such as this one from a Sociology/Anthropology major.

> *Making friends with people at Truman has been my most positive experience since they are very warmhearted and sincere. They always try to help me and they stand by me when I need it. I have learned so many things, such as love and friendship, through their kindness and care.*

ATTITUDE TOWARD EDUCATION AT TRUMAN

Student attitudes regarding their education at Truman continue to be primarily positive. Nine hundred and twenty - two students gave some opinion of their overall education. Of those, 69 % expressed a positive attitude about their education, 11% expressed mixed feelings, and 4% expressed negative feelings. Overall, the general pattern of a large percentage of positive attitudes and a small percentage of negative attitudes towards a Truman education has been demonstrated each year.

Attitutes toward Education at Truman, 2005-2007

Legend: 2005, 2006, 2007

Y-axis: Percent (0 to 80)

X-axis: positive, mixed, negative, no indication

This pattern of mostly positive attitudes toward Truman is also true across disciplines and majors. As a group, science and math majors were slightly more likely to express positive attitudes, and majors in the Arts and Humanities were slightly more likely to express mixed attitudes. Students expressing negative or mixed feelings about their Truman experience commented on a wide range of things, from the location of Truman to course offerings. For example, a Business administration major included the following:

> *Approaching my graduation, I am disappointed in the lack of variety of classes that have been offered to me. I will be unable to take several classes that interested me because of the lack of staff to teach the class*

And a French major comments both :

> *My experience here has not been perfect. I didn't always choose the right paths and sometimes was not always guided toward the best path, but I don't think anyone should have a 'perfect' college experience. . .*

and also

> *I leave Truman knowing that these past four years, quickly as they went, have been crucial in shaping my ideals and values, my goals and plans, and in helping me to find the balance I must maintain between relationships and work. Some of my convictions have been deepened and strengthened, others have changed and broadened in ways I would not have expected. Some of my life's passions have been lost in the shuffle of a sometimes frantic undergraduate education, but other that I would never have seen coming have taken their places*

Many students were broadly positive about their educational experiences at Truman. These excerpts from an English major and major and an Agricultural Science major are representative.

Through compiling this portfolio, my already-held belief that TSU is one of the top educational institutions in the country has only been heightened. I have come to fully appreciate the extent to which my critical thinking, analytic, communication, research and overall scholarly skills have developed, and I cannot be more satisfied with my experience over the past two years. My only regret is the fact that I have only been able to enjoy two years at the University due to the fact that I obtained an Associate of Arts degree in my first year following high school at a community college. However, I have made full use of my time spent here and taken every opportunity to enjoy both the scholastic resources and the community/social environment. I have truly valued every interaction with fellow students and professors and know that these have not only made me a better student but also a better individual.

I never intend to stop the lifelong quest for learning and adventure that Truman State University has inspired in me, and will cherish the education, friendship, and leadership I gained here for the rest of my life.

Many students specifically wished to thank faculty for their involvement in students' education. For example, a biology major said

I wanted to thank my professors and other faculty that I have had the privilege of interacting with over the years, in and out of the classroom. Without your care, willingness to help, and immense amount of knowledge, I would not have come away with all of the knowledge and experiences that I have.

And a History major writes:

Thus, if nothing else, I can use this medium to express my gratitude to those few teachers who have left such an indelible mark on my life, challenging me to swim rather than sink, and who have given me an utterly new and much brighter view of life.

ATTITUDES TOWARD ASSESSMENT AT TRUMAN

Students are also invited to discuss their attitudes toward assessment at Truman overall. Altogether, 491students made such comments. The comments were nearly equally divided among positive attitudes, mixed attitudes, and negative attitudes. More precisely, 37% of those responding had positive attitudes, 32% were mixed, and 31% were negative.
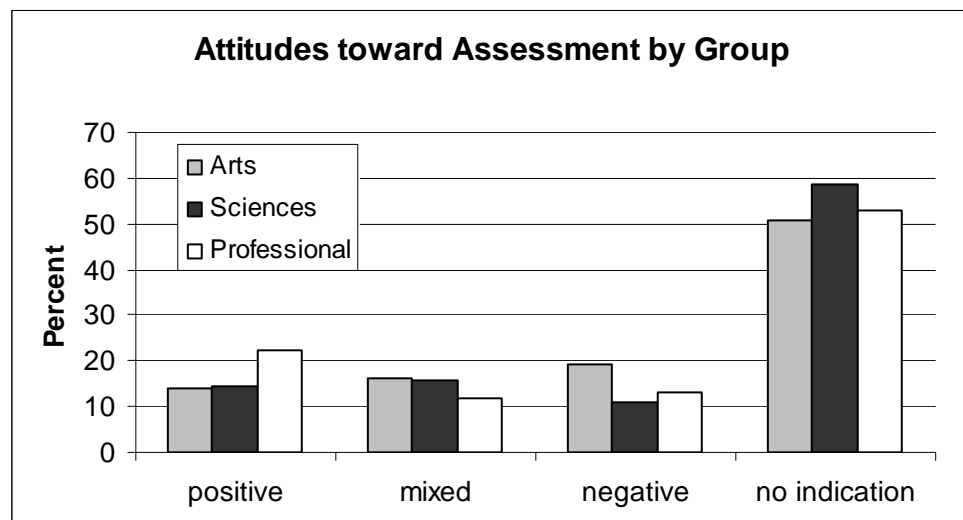
Students in the Professional majors were somewhat more likely to have positive attitudes. The source of these attitudes is hard to track: the tradition of some of the professional majors to directly relate assessment to program prestige may guide some of these attitudes.

Some students expressed preference for one type of assessment over others. For example, and exercise science major stated:

I feel that taking a standardized junior and senior test is a more of a waste of time than is the portfolio. I feel that you can learn much more about how a student has grown through reading the progression in their writing than you can through a multiple choice ACT style exam

These comments of an English major and a Psychology major demonstrate that some students do not see the results of assessment at Truman:

Does Truman do any research or analysis to better improve on Truman's learning system? I've never heard of any such thing. It would be nice to know that these hours I put into writing this were actually worth something

Perhaps if positive changes that the university has made as a result of the portfolio were publicized as part of the motivation to complete the portfolio it would be a better experience for all involved. This is how I feel about the majority of the assessment measures that Truman uses as well. Assessment is good and important but only if the results are USED. For example, the GSQ results are given to faculty members, half of which probably cannot read this SPSS output and the other half of which simply don't care and delete it. Some sort of program should be implemented that takes these assessment measures and actually does something with them. By the way, students with moderate statistical background could do this easily. . .. A lot of psychology majors need internships and this could be a great way to incorporate need fulfillment for both students and the university. *Special note: such internships are available and advertised, but there have been no applications in the past few years.

In considering the value of assessment for university improvement, some students took the opportunity provided by the cover letter to provide to make specific suggestions. For example, an English major writes:

I would recommend that some attention be paid to the possibility of diversifying the availability of classes that satisfy the LSP requirements. As an upper classmen, I realize that there are more classes available to me than 100 level and intro classes, but as a freshman, I had no idea. Besides diversifying the classes available to include things like "Ethics and Science", "Math and Music", or maybe "Geometry in Art" (for spontaneous example) Truman would not only be diversifying their interdisciplinarity, they would also be providing students with classes, readily available to satisfy student interests and give them a better foundation on which to build their future academic experiences. In this way, JINS would not be a general LSP requirement, but a standard for all classes, present in all disciplines, to make Truman and its students shine even more brightly. Interdisciplinary learning should not be an experience for Juniors, it should be implied in all corners of the curriculum at Truman

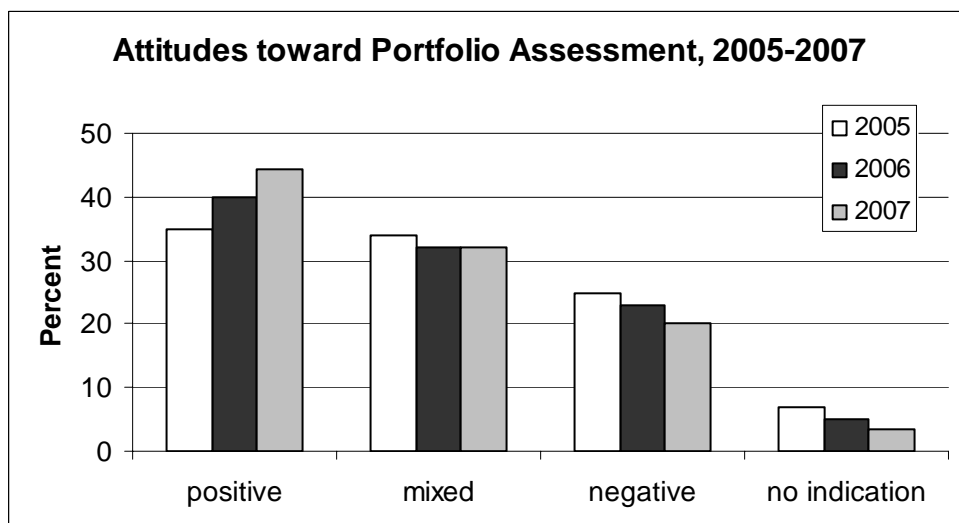And a psychology major suggests:

Also, please don't change the system at Truman. Don't add more temp faculty and reduce the number of tenured ones. Also, I'm not pleased with the reduction (and ultimate elimination) of the theater department. Stagecraft was my most satisfying class at Truman and I hope you don't prevent others from having similar experiences. Plus, theater is very much a liberal arts class and you'd be detracting from Truman's reputation if you eliminated that program. One last thing to faculty members, fight for Truman to remain as good as it used to be!
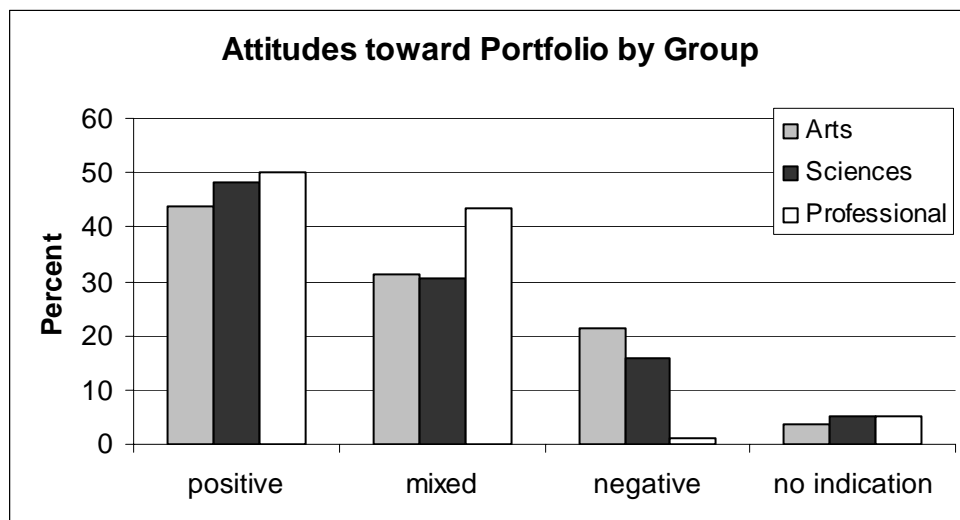
ATTITUDE TOWARD THE PORTFOLIO PROCESS

Overall, seniors express more positive than negative attitudes about the portfolio process, though many also express mixed attitudes. This year, only 3% of cover letters provided no feedback, which is down slightly from the past three years. Forty-four percent of seniors were positive about their experience with the portfolio. Twenty percent of cover letters contained negative attitudes toward the portfolio process. 32% had mixed feelings about the portfolio process. For many of these, they believed it to be a good opportunity, but felt that the requirement came at such a busy time that they did not have time to take advantage of the opportunity. For example, an English major shares the following:

I think the portfolio process in general is good, however the semester in which it is to be done makes the project daunting. Already there are a dozen other things that need to be done to be able to graduate, in addition to class projects for seniors.

Nonetheless, these attitudes may represent an upward trend: keeping up communication with students is always a challenge. However, attempts at communication have been increased. As before, notices are sent to all first-year and transfer students at the beginning of their education, capstone instructors are given specific portfolio information, and portfolio readers are encouraged to remind their students and colleagues of the process. The student newspaper had some articles on the portfolio in 2006, which may have raised awareness of student graduating in 2007. For the past two years, all students with senior status have also received reminder emails, and students who submit graduation application on time receive reminder emails. The Office of Assessment and Testing has also been serving as a point of collection for students who have not already submitted through the capstone course. These attempts may be having the intended effect of making the portfolio less onerous for students, though there is remaining room for improvement.

A Communication major captures some of this difficulty

Honestly, I would like to believe that people actually go through these [portfolios], but it seems to be another one of those mysteries of Truman, whether or not they do. If there was more information about the whole process of the portfolio, who reads them, and why, then maybe it would not seem as skeptical. It is all on the website, but honestly, students are not going to want, nor will they read through that information.

Furthermore, as the data below show, the biggest improvement was in the professional majors; perhaps the faculty within the disciplines have made the experience more positive for their students.

In each of the major groups, more students reported positive attitudes toward portfolio assessment than negative attitudes. Some made the most of the experience by using it as an opportunity to reflect. For example, a Communication Disorders major writes:

I became absorbed in the task and found true enjoyment in reading the multitude of papers I've authored throughout my college career. I honestly feel that life is a "process of becoming," and I can see my personal "becoming" reflected through my growth in the writing process. Definite improvement is observable when examining my work from all four years of undergraduate study. Just as I have grown and matured as a person, I have also grown as a writer (in my ability to express myself). I use more logical reasoning, present clearer points, and synthesize information with greater ease.

And a marketing major writes:

So rewarding was the experience of reading through old papers for the portfolio, that it literally changed my whole opinion of Truman's portfolio assessment. To be frank, I was confident that the portfolio requirement was a well-intended, but ultimately empty, attempt at Truman to somehow prove that it was indeed 'liberal arts'. I questioned what was there to be gained from such practices, stealing faculty time to read through thousands of pages. I now realize that in challenging students to pick and justify their best works from across the various modes of inquiry, Truman's portfolio requirement is essential to finish up the Truman experience.   Even if McClain Hall burned down, and all of the submitted portfolios were destroyed before a single faculty member had made a comment, this portfolio assignment would still have served an important role. At the risk of sounding sentimental, finishing this portfolio revealed more to me about myself – and how I think and write – than the aggregate of what I learned writing the individual papers. Quite literally, the outcome for students is greater than the sum of its parts.

Other students think that the portfolio did not see the benefit of adding this opportunity. For example, a theater major states

It seems that, here at Truman, we are asked countless times to assess our experiences, to take surveys and tests to show how we have changed and improved since we began school. Regardless of what we say our thoughts seem to go unheard, as the administration continues to make decisions that hinder the learning process.

Students with mixed opinions about the portfolio often commented on the amount of time it required. A Communication Disorders shared the following:

This project was bittersweet for me. It required more of my time than I had hoped, but it also forced me to take time to really think about my time and my education here.

Negative opinions about the portfolio also frequently commented on the amount of time required and the lack of direct benefit to the student. Some also not understand that the portfolio is intended to focus more on the general education requirement rather than the major. For example, a biology major then a Business major write

I do not think that this is a very good assessment of the quality of work I usually do because most of the prompts do not deal with the classes I take. I do not really understand the point of a portfolio, but I think it's just another hoop Truman State University makes us jump through to get out.

I feel that this process is unfair to business and accountancy majors because most of these topics do not relate to anything in our field of study.

Faculty Reader reflection

At the end of each reading session; faculty are asked to comment on their experience. Both verbal and written feedback is recorded. This feedback allows readers to share their views on the overall quality of work, to share insights about student achievement, and to speak about evidence of teaching innovation. It also provides the portfolio director with feedback about the process itself.

As in past years, feedback affirmed portfolio reading as a positive experience for faculty development. One new reader commented that the experience "opened my eyes to new ways of teaching and new kinds of assignments for my own classes."   Another reader stated that the experience was "very positive – the exchange of ideas provided new insights into both faculty and student perspectives." Several readers also expressed delight in the opportunity to interact with faculty outside their own academic divisions and departments.

Specifically, several of the conversations of faculty focused around JINS (Junior Interdisciplinary Seminar). Students appear to submit more works from these courses each year. They also submit these works for a variety of prompts, not just for interdisciplinary thinking. While the quality of these works varies, many of the assignments are creative, and produce particularly interesting work.

The largest change to the reading process this year was that faculty read for thirty hours per week rather than forty, which restricted the number of prompts that could be considered each week. Every week readers evaluated Interdisciplinary works and Critical Thinking & Writing works; however, Aesthetic Analysis was scored only during the first week, Historical Analysis only during the second week, and Scientific Reasoning only during the third week. Cover letters and Most Personally Satisfying works were read each week, because they require simple coding rather than scoring. At the end of each week, readers were asked specifically to comment on the length of reading and the limited selection. All were positive about the limited time: several stated that it allowed more concentration, and a small number stated that they would not have been able to participate if the weeks were still forty hours. Feelings about the limited prompts were mostly positive, but not uniformly so. Some new readers saw a disadvantage in advising students on prompts for which they themselves had not read much work. Others liked the variety inherent in reading all prompts: reading all of the prompts for Historical Analysis meant that nearly two whole days of reading were devoted to that category in Week 1. Faculty wisely suggested that the prompts be rotated, such that regular readers would read all of the prompts after three years of participation, even if they read the first week of each reading cycle.

Reliability and Validity

Inter-rater reliability continues to be a concern. For the Critical Thinking and Writing prompt interrater correlations were at .43, and they were .5 for the Interdisciplinary prompt. However, if scoring error is randomly distributed, it should balance out across the large number of submissions, making the averages fairly representative. Furthermore, the scoring meets some of the most obvious tests of criterion validity: science majors score notably higher on the Scientific Reasoning prompt than students in other majors; history majors score notably higher on the Historical Analysis prompt than students in other majors, etc. Furthermore, students who submit work from the junior and senior years score higher than students who submit work from the earlier years. This is true for each prompt except interdisciplinary, where junior and sophomore submissions from JINS courses outscore submissions from the senior year. Similarly, students who report that their best work was lost or that they never completed work appropriate for a prompt generally receive lower scores than remaining students.

Undergraduate Truman G.P.A. was obtained from information systems for most of the graduates. Cumulative GPA correlated. These correlated with scores for Critical thinking (r (1075)= .164), Interdisciplinary thinking (r (1080) = .209), Scientific reasoning (r (1071) = .167) Historical Analysis (r (1075) = .162), and Aesthetic Analysis (r (1068) = .171). One would expect these correlations to be small, because cumulative G.P.A. is influenced by many factors. However, these correlations with portfolio scores indicate that the portfolio is sensitive to some of the variability in overall student ability. In contrast, time to complete the portfolio does not correlate as well with scores for any of the prompts or cumulative G.P.A (r values range from .059 for Critical Thinking to -.028 for interdisciplinary thinking). This is encouraging: students who spend little time assembling the portfolio may still choose appropriate works for each prompt.

Summary and Conclusions

The portfolio prompts have changed little over the past few years, but enforcement of the graduation requirement now means that essentially all students submit works in essentially all categories. Slight decreases in average scores may reflect this increase in submissions, rather than an actual decrease in quality of work. Keeping the content of the portfolio consistent may prove to be an advantage as the university contemplates major curricular changes: consistency in portfolio procedures may allow the effects of curricular changes to be more apparent.

Despite the increase in submissions per category, the quality of academic work submitted by students remains fairly stable. The median scores for Critical Thinking and each of the Analytic Writing categories demonstrate competence. The scores for Interdisciplinary Thinking demonstrate some competence, and the remaining averages were in the weak competence range.

As in past years, problems of document storage and student motivation remain hindrances to interpretation of these scores. Providing electronic document storage for portfolio elements should increase the validity of the measure by ensuring that students have access to all of the works they produced. Having that space available early in a student's career would also open up potential for advisors to use the portfolio as a reflective tool: in addition to talking about whether certain courses had been completed, advisors could ask students to use the portfolio to consider their progress across skills.