Web-Based Portfolio Assessment:

An Open Source Solution for Platform Design

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Master’s Thesis Proposal

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Abstract

This proposal describes a web-based, summative assessment application that will be used for scoring constructed responses to predetermined writing tasks included in student portfolios. The summative assessment application will follow the same evidence-centered design approach as the paper-based model currently in use at New Jersey Institute of Technology, thus ensuring that the evidence of student proficiency collected during the assessment process accurately reflects the aims of the writing program itself. However, by enabling readers to enter their scores directly into the web-based application, the automated process not only removes the opportunity for human transcription errors, but also eliminates the time and manpower costs associated with the transcription. More importantly, however, the web-based application allows the assessments to be completed by a community of readers in a holistic environment; portfolios requiring adjudication are immediately identified and assigned to a third reader, thereby ensuring that all portfolios are scored during the same holistic assessment period. To ensure faculty acceptance of the web-based application, usability testing will examine the ease with which the community of portfolio readers adjust to the new methodology. Finally, this small scale solution will serve as a proof of concept for later research – we believe the application has the potential to be expanded over time into a robust platform for outcomes assessment of many forms of constructed response tasks across disciplines. Therefore, the application will be designed following the principles of open source development.
Background

Students are accustomed to assessments throughout their educational experience. From grade-level report cards to standardized tests such as the Scholastic Aptitude Test (SAT), students, teachers, and school administrators measure success based on the results of student assessments. However, as early as 1937, concerns emerged regarding the efficacy of assessments. In an article in *School and Society,* Carl C. Brigham of Princeton University lamented, “The pupil will gain if he is properly measured, but in the mad surge to measure two million pupils, no one is trying to describe just one pupil accurately” (p. 757).

Before examining the effective design of assessments, it is important to understand that there are two types of assessments in use in education. Formative assessment is the “assessment carried out during the instructional process for the purpose of improving teaching or learning” (Shepard, 2006, p. 627). Methods of formative assessment can include teacher observations, quizzes, and other measures that are capable of tracking the development of a student’s knowledge and understanding throughout the instructional period. The information gained through formative assessment can then be used to modify instruction methods based on student feedback and progress.

Summative assessments, on the other hand, typically occur at the end of the instructional period and are used for the purpose of “certifying student proficiency” (Shepard, 2006, p. 627). Summative assessments are particularly important for institutions of higher learning because successful summative assessments are a “means for creating and promoting highly effective and attractive programs for students, faculty, employers, alumni, granting agencies, and even donors” (Allen, 2004, p. 95).
Web-Based Portfolio Assessment

Summative assessments enable what Elbow calls the “exit crunch” model of higher education. Instead of accepting only the most qualified applicants and weeding out undesirable students prior to admission (the “entrance crunch” model), many universities accept a broad range of students and use both formative and summative assessments to weed out those students incapable of completing the required curriculum (Elbow, 2003). In exit crunch universities such as New Jersey Institute of Technology (NJIT), summative assessments provide “evidence of [our] students’ learning and abilities” (Allen, 2004, p. 95); they delineate “what students learn and what they are capable of doing as a result of their educational program” (p. 96). Summative assessments allow students to display their competency in a variety of areas and then challenge their notions of their own skills by holistically examining their competencies against those of their peers.

At the program level, summative assessment must measure the efficacy of an educational program in developing the particular skills required for students to succeed within that domain. However, research into existing program assessment models indicated that few, if any, specific measures of educational assessment existed. In the case of technical communication assessment, Coppola and Elliot (2007) developed a set of criteria from “published survey data and reports, the advice of our professional advisory board, and our own practitioner experience,” resulting in the development of eight core competencies of technical communication: “writing and editing, document design, rhetoric, problem solving, collaboration, interpersonal communication, specialized expertise, and technology” (p. 460). Faculty work with students throughout the educational period to develop writing assignments that display mastery of the core competencies; the best of these assignments are then assembled into a portfolio for summative assessment. If the results of the assessment indicate that the general population of students is lacking in any of
these measurements, faculty must reexamine the instruction of that competency within the program curriculum.

A critical factor in the portfolio method of summative assessment is how to accurately measure student mastery of the core competencies. Although standardized tests exist, research has shown that learning occurs in context, and therefore the most effective method for measuring learning should also be within that same context. There is “no perspective completely without context. There is no realm of pure exterior. All perspectives are grounded at some level in their particular” (Marcus, 1998, p. 12). Portfolio assessment – allowing students to create a portfolio of their work that they feel best exhibits their mastery of the core competencies – provides an opportunity for full construct representation; it allows experienced readers (the teachers in the program) to examine students’ successful acquisition of the desired target behaviors as defined by the core competencies. The use of a community of readers brought together in an environment of open discussion and mutually agreed upon standards ensures holistic assessments of not only student proficiency but programmatic success as well. This communal assessment allows “pedagogical and curricular values to be taken into account when a teaching program provides ways for faculty to interact” (Hamp-Lyons and Condon, 1993, p. 186).

Our web-based assessment application will allow faculty and administrators to assess the desired target behaviors using rubrics that have already been established as valid instruments through their use in existing paper-based methods used to assess both students and the writing program in general. On a broader level, the successful implementation of this assessment model in one department can serve as a roadmap for implementation of similar assessment methodologies in other departments and eventually in other institutions. The model can be validated because the data collected as part of the assessment can be used to identify “points for
defensible decision making related to the curriculum, pedagogy, course sequencing, staffing, recruiting, and other matters directly related to the quality of the program” (Allen, 2004, p. 100).

**Literature Review**

The history of outcomes assessment begins with the formation of the Middle States Association of Colleges and Schools (MSA) in 1887; this organization would eventually create the Middle States Commission on Higher Education as one of its four components. Although initially begun by college presidents with the goal of working together to bring about legislation favorable to universities, the Association’s efforts to standardize “academic credentials led to the creation of The College Board and the Carnegie Unit as ways to assure quality of academic offerings and the trustworthiness of the participating institutions” (Middle States Commission on Higher Education, 2009, p. 2) The Middle States Commission on Higher Education has similarly evolved, shifting its focus from standardization to inspection and finally to evaluation – “a qualitative assessment of achievement rather than an a priori commitment to a process” (Challener, 2008, p. 22).

At the institutional level, one method used to achieve qualitative assessments is the use of portfolio assessments in writing programs. Having established the core competencies that must be displayed by students, Coppola and Elliot (2007) created rubrics to measure these competencies based on work collected in student portfolios. Scored on a Likert-type scale, each core competency can receive a value from one to six from each reader, and each portfolio is read by at least two faculty members. (In situations where the two readers’ scores are not matching or adjacent, a third reader is assigned to adjudicate.) Analysis of portfolio assessment revealed not only strong inter-reader reliability but also a significant relationship between student core competency scores and their overall portfolio scores. Examination of the data also identified
core competencies which were not being adequately addressed by the educational program, allowing faculty and administrators to take appropriate actions to effect programmatic change.

An accurate qualitative assessment will not succeed, however, if it proves unwieldy for the raters. Therefore, close attention will be paid to the usability design of the application. In *A Practical Guide to Usability Testing*, Dumas and Redish (1999) state that usability “means that the people who use the product can do so quickly and easily to accomplish their own tasks” (p. 4). The goal of the application’s usability design will be to create a user interface that will allow easy acceptance of our application as a superior alternative for performing portfolio assessments. To accomplish this goal, several usability testing methods will be adapted from both traditional methods and the exploratory learning method based on the concept of pattern-based exploration (Zhao, Deek, and McHugh, in print) which encourages non-expert users to discover knowledge through usability inspection.

**Outcomes Assessment in a Web-Based Environment**

In her report on the state of higher education in the United States, Margaret Spellings (2006) focuses on the importance of outcomes assessment as a means of “demonstrating [higher education’s] contribution to the public good” (p. 11). Outcomes assessment should be used not only to determine the “growth of student learning taking place in colleges,” but also to “assess general education outcomes for undergraduates in order to improve the quality of instruction and learning” (p. 25). In short, Spellings recommends that institutions “develop interoperable outcomes-focused accountability systems designed to be accessible and useful to students, policymakers, and the public…” (p. 25).

An examination of commercial platforms designed to perform summative assessments reveals that these types of applications already exist. They include the Academic Profile or the
Major Field Tests from the Educational Testing Service and the Collegiate Assessment of Academic Proficiency from the American College of Testing. These tests are useful for demonstrating that “learning has occurred” (Middle States Commission on Higher Education, 2007, p. 30). Although these commercial learning assessment applications can provide a general measure of student knowledge, evidence-centered outcomes assessments can “demonstrate that certain goals expressed in [the educational institution’s] mission were achieved through exposure to the entirety of its curriculum” (Middle States Commission on Higher Education, 2007, p. 30).

Similarly, automated, web-based applications have been created specifically to test and analyze college-level writing. The iMOAT suite of web services developed at the Massachusetts Institute of Technology performs student evaluations based on essays submitted through their online system. Students can review the readings and test questions from home, take the necessary time to plan, write and edit their essay responses, and then receive detailed feedback with their results (MIT, 2003).

An examination of other web-based assessment tools reveals that a number of applications exist, but each targets a narrow aspect of learning assessment. For example, Aframe from Salmat Learning is designed specifically for corporate employee training and assessment. Vantage Learning, on the other hand, has created formative assessment tools specifically for writing programs in the K to 12 grade levels. The Grady Profile, developed by Aurbach and Associates, allows teachers to create portfolios of student work and evaluate them using alternative assessment methods. Although similar in concept to the ideas proposed in this thesis, the Grady Profile application does not allow for scoring in a holistic environment by a community of readers; it therefore lacks the benefits provided by assessment performed by an integrated group of evaluators.
Because the assessment instruments used in this research are evidence-centered by design, they address areas of assessment not addressed by the commercial assessment solutions currently available. Our developed methodology will enable evidence-centered outcomes assessment at the university level using proven instruments (rubrics) to measure students’ responses to constructed response tasks. Using these rubrics, the complexities of college-level writing can receive fuller construct representation through the thorough reviews of expert readers engaged in holistic evaluations. This open forum guarantees unbiased assessments not only of each student’s writing skills but also of the efficacy of the writing program itself.

Based on the evidence-centered design of the assessment and its ability to display fuller construct representation, the initial implementation of this application will provide evidence not only of the validity of this assessment approach to a university writing program, but will inform future research in developing evidence-centered assessment models in a web-based environment. We believe that our research will guide the development of information models that will allow for the assessment of construct representations from other disciplines. Additionally, our research will guide the development of formative assessments using similar, evidence-centered models. The application will therefore be developed following the guidelines of open source software. Not only does open source development reduce implementation costs, but it is widely accepted in academia. “Open source is transparent. The source code itself is viewable and available to study and comprehend. The code can be changed and then redistributed to share the changes and improvements” (Deek and McHugh, 2008, p. 1). By developing our application with a goal of providing it as an open source kernel, others will be able to build upon our work.
Objectives

The objective of this thesis is to design, develop and evaluate a web-based application that will allow faculty to perform evidence-centered student portfolio assessments in a real-time, web-based environment. The student writing tasks included in the portfolio assessments are constructed responses incorporated into the curriculum of the writing department of the university. These constructed responses are specifically designed and included in the curriculum to enable a summative assessment of students’ mastery of the core competencies. These assessment rubrics were specifically designed to evaluate student constructed responses; they have already been tested and proven as valid instruments for assessing not only student writing but the writing program itself through their use in the current, paper-based assessment method (Coppola and Elliot, 2007).

Although the paper-based assessment method shown in Figure 1 has proven successful in capturing student proficiency and inter-reader reliability, the method has three significant disadvantages: 1) the manual transcription of the data from paper to computer is prone to human error; 2) manual data transcription is costly in terms of both time and manpower; and 3) if
adjudication of scores is required, this fact is not known until well after the assessment period has ended, meaning that adjudicated readings do not receive the benefit of the communal environment in which the holistic readings take place during the actual assessment period. These failures will be eliminated by the creation of the web-based application, as shown in Figure 2.

As with the paper-based assessment method, the web-based application will be developed with a focus on evidence-centered design. In assessment, “One cannot simply construct ‘good tasks’ in isolation … and hope that someone down the line will figure out ‘how to score them’” (Mislevy, 2003, 2007). The original paper-based rubrics were specifically created by the NJIT community of writing instructors to provide evidence of student mastery of the core
competencies established by the program; these rubrics will be integrated into the web-based solution, thereby ensuring validity of the solution and the data collected therein.

Validity will further be established by ensuring that all portfolios receive the benefit of being assessed in the same holistic environment by a trained community of faculty readers. Before any portfolios are assessed, faculty members discuss several sample readings to reach a consensus of scoring standards. Because portfolios requiring adjudication are immediately assigned to a third reader, the application ensures consistent reading and scoring. The data collected will also allow an examination of inter-reader reliability.

Usability testing will ensure that the application is not only well-designed but that it will be accepted by the community of faculty readers. Usability puts a focus on the user; an application is usable when it allows users to be productive. As such, the participants in our usability studies will be real users of the application (faculty members within the writing program). They will be asked to perform actual tasks, and their responses will be observed and recorded. Upon completion of the tasks in the usability study, a survey instrument based on a Likert-type scale will be distributed to each study participant soliciting their input on the usability of the application.

The use of open source principles will enable the application to be shared with other institutions which can then adapt the instruments to their own programs. Although not developed within an open source environment, the application will be provided as a kernel in SourceForge.net so that others may use our research to develop assessments appropriate to their institutional requirements.

In general, this application serves as a proof-of-concept for future research into the development of a more powerful application that holds the potential to track not only student
summative assessments but also formative assessments throughout the instructional phases of their studies. Such an application could provide critical information regarding a student’s development of expertise in particular areas of study.

**Plan of Work**

The development of the web-based assessment application will be performed in stages. The first step will be to evaluate the data to be collected so that an efficient relational database can be designed. During this initial stage, data from previous assessments will be reviewed to ensure proper database design, taking into account the rules of normalization (Nixon, 2009). The main goal of normalization is to ensure that “each piece of information appears in the database only once” (p. 203), thereby ensuring an efficient database design.

Once the design of the database is complete, development of the application will begin. Concurrently, rapid prototyping will be used to ensure usability even at the earliest stages of development through the creation of non-functioning HTML pages displaying the proposed user interface. Expert reviews of the user interface and module functions will be performed to ensure correct presentation, operation, and progression of data.

Upon completion of the application development, testing with real users will be performed to ascertain the usability of the application. The application will include three assessment instruments: a freshman-level rubric, a junior-level rubric, and a graduate-level rubric (included in Appendix A). Usability will be tested for each of these rubrics individually to ensure that any issues have been addressed.

The final stage of the application’s development will involve automating the exporting of the data from the MySQL database to an Excel spreadsheet properly formatted for analysis by SPSS or SAS.
The development of the code will be modular, with a focus on ensuring open source compatibility so that the application can easily be maintained and expanded to suit additional assessment requirements. Development will be performed in the cloud using Amazon Web Services (AWS), the Amazon Elastic Compute Cloud (ECL), PHP, HTML, LAMP, and MySQL; the completed application will reside in the cloud as well. By locating the application in the cloud, we eliminate the need for a dedicated server to be purchased and housed on the university campus, making it a cost-effective option that provides not only dependability but flexibility. Because payment is based on usage, the cost of cloud computing will be minimal.

Assessment

The assessment of the application is a crucial step in the development process; two levels of assessment will be performed. At the development level, testing will provide evidence that the application functions according to expectations. To provide evidence of this, sample scores will be input into the application and then analyzed to ensure adherence to the methods currently in use in the paper-based assessment model.

Concurrently, usability assessments will address the design of the user interface. Upon completion of the non-functioning HTML pages, they will be distributed in document format to expert reviewers, including two practicing expert in the area of usability:

- Susan Flower – consultant with FAST Consulting, sole proprietor of Fast Smart Web Design, and editorial board member of User Experience magazine
- Les Perelman – Director of Writing Across the Curriculum in Writing and Humanistic Studies at MIT, Associate Dean in the Office of the Dean of Undergraduate Education, and Principal Investigator for the MIT Online Assessment Tool (iMOAT)
These experts’ input will also be solicited when designing the user-based usability tests which will be developed using a six-point, Likert-type scale to measure user responses to statements regarding the ease of use of the application. Usability testing will be performed using four readers per rubric, as shown in Figure 3. Additionally, the administrative interface of the application will be tested with one administrator from each section, as well as a system administrator from the Department of Humanities. The application is being designed in such a way that the interface for all raters, regardless of level, will be the same. Therefore, the same rubric can be used for all rater usability tests. Similarly, the administrator interface is identical regardless of the level currently being rated; in this way, the same rubric can be distributed to all administrative usability testers.

FIGURE 3 USABILITY TESTING MODEL
The technique of co-discovery may be effective in our usability testing. Instead of testing one rater at a time, research has shown that when participants speak with each other during usability testing, they often provide more useful information than when a single participant is asked to think out loud (Dumas and Redish, 1999). Testing novice participants together will provide more meaningful usability feedback because they will not have an expert participant to lead them through the process.

For each rubric, we will identify two novice faculty participants and two experienced faculty participants. For the purposes of our study, we will measure experience by faculty use of the Moodle course management system.

Novice users Faculty members who use Moodle simply as a syllabus archive or who have minimal web-based experience for instructional purposes

Experienced users Faculty members who use Moodle as a comprehensive learning management system and, thus, have demonstrated experience using the web for instructional purposes

A difficulty may arise in identifying novice participants at the graduate level; the graduate writing program (Master of Science in Professional and Technical Communication) is a distance learning program, meaning that all instructors have at least some level of proficiency with Moodle and web-based learning and assessment methods.

The participants will be asked to score the application based on a usability model designed to examine the user interface. A Likert-type scale will be used to develop an application usability rubric. Data collected from the participants will be analyzed for general usability and to detect if any differences exist between the user experiences of the novice and experienced users.
Modifications to the interface design can be made based upon feedback from the usability assessment.

**Personnel**

The personnel involved in this project, along with their responsibilities, are as follows:

- Regina Collins  
  Developer of web-based assessment application, author of Master Thesis
- Dr. Norbert Elliot  
  Advisor
- Dr. Fadi P. Deek  
  Co-Advisor
- Dr. Andrew Klobucar  
  Reviewer

Other personnel may be contacted for assistance as the need arises.

**Budget**

Use of Amazon Web Services (AWS) and Elastic Computing Cloud (EC2) will eliminate the need for a dedicated server for this application. Prices for cloud computing are shown in Table 1.

<table>
<thead>
<tr>
<th>Service</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small on-demand instance</td>
<td>$0.085 per hour for Linux/UNIX usage $0.12 per hour for Windows Usage</td>
</tr>
<tr>
<td>Elastic Block Storage</td>
<td>$0.10 per GB-month of provisioned storage $0.10 per 1 million I/O requests</td>
</tr>
</tbody>
</table>

**TABLE 1 CLOUD COMPUTING COSTS**

Table 1 shows pricing for a small instance on AWS. Amazon defines a small instance as 1.7 GB of memory, 1 EC2 Compute Unit (1 virtual core with 1 EC2 Computer Unit), 160 GB of local instance storage, 32-bit platform
An additional $1,000 should be allocated for purchase of a Linux laptop for development and demonstration purposes.

**Time Line**

The development of the web-based portfolio assessment application will occur on a rather compressed schedule due to the fact that the Master thesis must be submitted to the Dean of Graduate Studies no later than May 3, 2010, meaning that it must be reviewed, defended, and ready for submission by mid to late April. However, because the project is clearly defined and limited in scope, all personnel involved believe that the milestones are achievable. Figure 4 illustrates a Gantt chart of the proposed time line.

![Gantt chart](image)

**FIGURE 4 THESIS TIME LINE**

As illustrated in Figure 4, the majority of the time for this thesis is allocated towards development of the project and its documentation in the form of the thesis. During this period,
the application will be frequently tested to ensure that all modules work together and achieve the desired results. Although usability testing will be performed after the application is complete, usability will be examined through review of the developing application by the thesis advisory committee and by expert reviewers through the use of mock-up web pages. Final usability testing of the completed application will occur in early April with analysis of the results immediately following so that the findings can be incorporated into the thesis prior to its submission to the Office of Graduate Studies in late April.

Conclusion

The development of a web-based portfolio assessment application provides demonstrable benefits to a variety of postsecondary shareholders: students, faculty, administrators, and accreditation agencies.

<table>
<thead>
<tr>
<th>Shareholder</th>
<th>Benefit of Web-Based Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>• Guaranteed consistency in portfolio reading and rating through holistic environment</td>
</tr>
<tr>
<td></td>
<td>• Immediate availability of portfolio scores</td>
</tr>
<tr>
<td>Faculty</td>
<td>• More efficient and user-friendly environment for scoring portfolios</td>
</tr>
<tr>
<td></td>
<td>• Faster feedback regarding writing program</td>
</tr>
<tr>
<td>Administrators</td>
<td>• Time and cost savings through elimination of transcription of data from paper-based assessments</td>
</tr>
<tr>
<td></td>
<td>• Evidence of efficacy of faculty and curriculum</td>
</tr>
<tr>
<td>Accreditation agencies</td>
<td>• Proven, evidence-centered assessment that provides measurable results for the students, faculty, and curriculum</td>
</tr>
</tbody>
</table>
As shown in Table 2, the development of a web-based assessment application brings proven benefits to four distinct groups of shareholders. Additionally, this application will serve as a proof-of-concept for future research into applications that can track student progress in an era of increasing demands for accountability.

<table>
<thead>
<tr>
<th>TABLE 2 THESIS SHAREHOLDERS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>

at the accredited institution
Works Cited


Zhao, Luyin, Fadi P. Deek, and James A. McHugh. (in print). Exploratory Inspection – A User-Based Learning Method for Improving Open Source Software Usability.
Appendix A

The initial web-based application will implement three instruments for the assessment of writing at NJIT. The rubrics for all three writing assessments are shown in this appendix.
Humanities 101-102 Assessment Rubric

**HUM 101-102 Writing, Speaking Thinking**

<table>
<thead>
<tr>
<th><strong>Portfolio Assessment</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Student’s Name: ___________________</td>
</tr>
<tr>
<td>Reader’s Name: ___________________</td>
</tr>
</tbody>
</table>

Provide an analytic reading in which you focus on the FOUR traits identified below:

1. Critical Thinking The contents of the portfolio demonstrate that the student has thought critically in preparing written assignments.

<table>
<thead>
<tr>
<th>Very Strongly Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Very Strongly Disagree</th>
</tr>
</thead>
</table>

2. Revising and Editing The contents of the portfolio demonstrate that the student has drafted and successfully revised papers before they were submitted.

<table>
<thead>
<tr>
<th>Very Strongly Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Very Strongly Disagree</th>
</tr>
</thead>
</table>

3. Written Language

   A) Content and Organization: The contents of the portfolio demonstrate that the student writes with purposeful organization and makes connections between ideas that progress clearly from beginning to end.

<table>
<thead>
<tr>
<th>Very Strongly Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Very Strongly Disagree</th>
</tr>
</thead>
</table>

   B) Sentence Construction and Mechanics: The contents of the portfolio demonstrate that the student writes clear, well-formed sentences, using accurate grammar, punctuation and spelling.

<table>
<thead>
<tr>
<th>Very Strongly Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Very Strongly Disagree</th>
</tr>
</thead>
</table>

**Holistic Portfolio Score** Provide an overall, holistic impression of the portfolio.

<table>
<thead>
<tr>
<th>Very Strongly Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Very Strongly Disagree</th>
</tr>
</thead>
</table>

The materials in the portfolio demonstrate excellent work in the class. The materials in the portfolio demonstrate very good work in the class. The materials in the portfolio demonstrate below average work in the class. The materials in the portfolio demonstrate work that is at a level near failure. The materials in the portfolio demonstrate work that is at a level of failure.
Technical Communication (English 352) Assessment Rubric

Web Page
1. The web page is clear and navigable.

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

Writing and Editing
2. The contents of this portfolio exhibit clear style (readable, concise, cohesive).

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

3. The contents of this portfolio demonstrate accurate language usage (grammar, punctuation, spelling).

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

Substance and Content
4. The contents of this portfolio exhibit clear understanding of assignments.

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

5. The contents of this portfolio demonstrate accurate, thorough, relevant, and coherent content and ideas.

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

Audience Awareness
6. The contents of this portfolio demonstrate that the author can adapt tone for audience.

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

Document Design
7. The contents of this portfolio demonstrate cohesion by graphic means (headings, white space) in documents.

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

Information Literacy
8. Citation: This portfolio includes sources that are documented so that the original source can easily be found.

   Very Strongly Agree | Strongly Agree | Agree | Disagree | Strongly Disagree | Very Strongly Disagree

Overall Portfolio Score:
9. The materials in this portfolio demonstrate class work that is:

   Superior | Very Good | Average | Below Average | Near Failure | At Failure
MS-PTC ePortfolio Assessment Rubric

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
<th>Scale: Very Strongly Agree</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Very Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing and Editing</td>
<td>The contents of the portfolio demonstrate that the student has competent writing and editing skills.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Document Design</td>
<td>The contents of the portfolio demonstrate that the student has competent document design skills.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Rhetoric</td>
<td>The contents of the portfolio demonstrate that the student has competent rhetorical skills.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Personal Traits, Work Skills, Problem Solving</td>
<td>The contents of the portfolio demonstrate that the student has competent work and problem solving skills.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Collaboration and Team Work</td>
<td>The contents of the portfolio demonstrate that the student has had experience working in teams.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Oral or Interpersonal Communication</td>
<td>The contents of the portfolio demonstrate that the student has competent oral or interpersonal communication skills.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Specialized Expertise</td>
<td>The contents of the portfolio demonstrate that the student has competent research skills.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
<tr>
<td>Technology</td>
<td>The contents of the portfolio demonstrate that the student has proficiency with technology.</td>
<td>Very Strongly Agree</td>
<td>Strongly Agree</td>
<td>Agree</td>
<td>Disagree</td>
<td>Strongly Disagree</td>
<td>Very Strongly Disagree</td>
</tr>
</tbody>
</table>

Overall Portfolio Score

- The materials in the portfolio demonstrate superior work in the program.
- The materials in the portfolio demonstrate very good work in the program.
- The materials in the portfolio demonstrate average work in the program.
- The materials in the portfolio demonstrate below average work in the program.
- The materials in the portfolio demonstrate work that is at a level of near failure in the program.
- The materials in the portfolio demonstrate work that is at a level of failure in the program.