

July 2011
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BRIEF SUMMARY: *REPORT ON YEAR II INSTITUTIONAL LEVEL ASSESSMENT – GLOBAL AWARENESS AND QUANTITATIVE REASONING – SPRING 2011*

Following is a brief summary of the Report on Year II Institutional Level Assessment – Global Awareness and Quantitative Reasoning – Spring 2011. For full details, please review the complete report which follows.

For the Year II Institutional Assessment, the institutional assessment co-chairs created a uniform assignment that would tap into the abilities described in two outcomes developed by the Core Academic Skills Assessment Committee, namely Global Awareness and Quantitative Reasoning.

The assignment created was a scenario which presented a real-world problem faced by the United States; a graphical display of information relevant to solving the problem; and brief descriptions of situations in six fictional counties including information on political, economic and cultural factors.

The method used involved identifying students and their classes and enlisting the assistance of the class instructors who were asked to administer the assessment to all students in their classes.

The students assessed whose products were ultimately rated were those who had earned between 45 – 59 credit hours at NECC, exclusive of developmental coursework, prior to the beginning of the spring 2011 term. In all, ten instructors administered the assessment in their classes, resulting in a total student yield of 43.

Three faculty members with backgrounds in social studies or mathematics were recruited to assist with the ratings of the collected student products by applying a rubric specifically developed for this assignment.

Focusing on the percentage of products rated as “Skilled”, and using the standard of at least 20%, findings include that:

- The standard was met with respect to two criteria – “Interprets quantitative information presented in graphs” (30.2%) and “Applies math skills” (44.2%).
- The percentages for the other seven criteria ranged 0 to 7.

Concerning the percentage of products rated as either “Competent” or “Skilled”, and using at least 80% as the standard, findings include that:

- The standard was not met for any of the nine criteria.
- The criterion with the highest percentage of students (62.8) rated in the “Competent” or “Skilled” categories was, “Interprets quantitative information presented in graphs”.

- For two of the criteria, only about half of the students were rated as “Competent” or “Skilled”, and for a third criterion, the percentage was 44.2.
- Five criteria had percentages ranging from just 14.0 to 25.6 for these two rating categories combined.

Based on the ratings, the conclusion was that student skills in the two core skill areas assessed fall short – often far short – of demonstrating a satisfactory level.

Observations shared by the faculty raters include:

- There is a lot of work to be done with students on basic skills, including grammar, writing mechanics, and spelling.
- Critical thinking is a missing component.
- With respect to global awareness, students were “ignorant” and “naive”.
- Students appear to lack understanding of cultures and government.
- Students may have produced better work if the assignment had been graded.
- Although motivation may have played a part in the quality of the responses, English skills are still lacking.
- Overall, raters expressed that they were “discouraged”, disheartened”, “saddened” and “disappointed” in the results.
- The rubric didn’t allow for scoring creativity or thoughtful/critical thinking. However, there were likely only one or two cases where this was exhibited.

Recommendations include that information on the project – the process and results – should be shared with faculty in the context of perhaps a general meeting. Faculty – both those who submitted samples and those who did not - would no doubt provide opinions and insights which may be very helpful in any interpretations, conclusions, and decisions about this assessment, and also with respect to work on this and other topics in the future. Action plans could then be developed based on this input.

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REPORT ON YEAR II INSTITUTIONAL LEVEL ASSESSMENT – GLOBAL AWARENESS AND QUANTITATIVE REASONING – SPRING 2011

Background

Development of core academic skills for assessment. During 2008, a committee of faculty and administrators was formed to review the three then existing college-wide associate degree competencies (Writing, Critical Thinking, and Computer Fluency), and to revise and update them as necessary. The committee was further charged with creating a broader vision for general education, applicable to all students at NECC. Ultimately, this vision included the identification of five core skills that students were expected to develop in the course of their studies. The end product was a document entitled *A Vision for Core Academic Skills at Northern Essex Community College* (<http://facstaff.necc.mass.edu/wp-content/uploads/2009/07/vpaa-draftcore-academickills.pdf>). (Also see Appendix 1.) This document was widely distributed and discussed, and ultimately endorsed by members of the college community.

In spring of 2009, the vision statement was reviewed by members of the Core Academic Skills Assessment Committee, which included five faculty members and two administrators. Their charge was to develop tools and methods to assess the identified skills college-wide. The first step in this process was to develop measurable outcomes statements derived from each of the five identified core academic skills as described in the vision statement. Towards this end, five committees, each focusing on one of the identified skills, worked to operationalize the vision statements (see Appendix 2).

Upon completion of this work, the Core Academic Skills Assessment Committee extracted one key outcome from each of the skills committee reports and further refined it into measurable terms. These outcomes, to be assessed at an institutional level, are as follows:

Communication: Students will be able to produce clear and well-organized writing using standard American English that thoroughly addresses the assignment and is appropriately geared toward the intended audience.

Global Awareness: Students will be able to compare and contrast a single situation or institution from the perspective of three cultures of the world, at least two of which are outside the United States.

Information Literacy: Students will be able to demonstrate use of multiple search systems to identify sources appropriate to their research and to critically evaluate and cite those sources.

Quantitative Reasoning: Students will be able to apply mathematical concepts and skills to solve real-world problems and/or display and interpret quantitative information in text, graphs, and tables.

Science and Technology: Students will be able to describe the steps required and to evaluate an experiment with respect to the correct application of the scientific method.

Assessment process development. After the skills statements were translated into measurable outcomes, the Core Academic Skills Assessment Committee worked to develop a process to assess the outcomes. The committee recommended that the college assess one outcome with a pilot in the spring of 2010. Many factors influenced the committee's decision about which students to target for assessment, including that committee members:

- Did not want to limit the pool to graduating students since many NECC students transfer before acquiring all the requisites for a degree,
- Wanted to capture students who had attended NECC long enough to acquire the core skills, and
- Believed it important to work with a manageable number of students.

Year I Institutional Assessment

Institutional assessment pilot. Communication, with a focus on writing skills, was chosen for the pilot and two individuals – an administrator and faculty member – were designated as institutional assessment co-chairs. For details on the process used for the pilot, and the results, see *Report on Year I Institutional Level Assessment – Communication (Writing Skills) - Spring 2010* at <http://facstaff.necc.mass.edu/wp-content/uploads/2010/02/201001-IAR.pdf>.

The major issue identified by the raters of the collected student writing products with respect to the process was the wide variability in the types and length of student products and the level of detail provided by instructors to students for completing the assignments. Even after reading the assignments, raters were sometimes not clear on what was expected, which made it difficult for them to rate the product on some of the criteria. Raters wondered if students may have been similarly unclear. No information was available on any class discussions of the assignment. Raters recommended that perhaps a uniform writing assignment be provided the next time writing is assessed on an institutional level. This could help eliminate some of the product variability which may have clouded students' actual skills and interfered with raters' ability to fully apply the rubric criteria.

Year II Institutional Assessment

Method: Instrument. Based on the feedback provided by the raters during the Year I Institutional Assessment which pointed to the desirability of presenting students with a uniform assignment, the institutional assessment co-chairs decided to create a uniform assignment that would tap into the abilities described in two outcomes developed by the Core Academic Skills Assessment Committee, namely Global Awareness and Quantitative Reasoning:

Global Awareness: Students will be able to compare and contrast a single situation or institution from the perspective of three cultures of the world, at least two of which are outside the United States.

Quantitative Reasoning: Students will be able to apply mathematical concepts and skills to solve real-world problems and/or display and interpret quantitative information in text, graphs, and tables.

The assignment created was a scenario which presented a real-world problem faced by the United States; a graphical display of information relevant to solving the problem; and brief descriptions of situations in six fictional counties including information on political, economic and cultural factors. Students were then presented with a series of questions asking them to propose a solution to the problem based on the numerical data presented in a graph and to articulate the perspectives of the countries that would be involved. Quantitative skills required included simple addition and subtraction, and the ability to interpret information presented in a bar graph.

The first version of the scenario, developed in the fall and winter of 2010, was then presented to a committee of faculty members whose disciplines were associated with the areas of Global Awareness and Quantitative Reasoning. Recommendations were incorporated into the version which was pilot tested in the spring of 2011. Further modifications resulted from that test and are described below.

Method: Administration. The decision to use a common assignment suggested a number of possible options for administering the instrument at NECC after students meeting the criterion were identified. These possibilities and the rationale behind rejection or acceptance decisions included:

Option 1: Asking students who meet the criterion to volunteer to complete the assignment at specified days and times outside of regular class time, with or without incentives. This was rejected because prior experience suggested that students would be unlikely to volunteer. Further, with likely widely varying schedules, multiple days/ times would have to be provided and staffed, with again the likely result that students wouldn't appear. Providing an incentive to volunteers was considered, but for any incentive to really attract, it would have to be quite significant, which raises a cost issue. Even if that were overcome, the representativeness of a group of volunteers, with or without an incentive, is questionable.

Option 2: Having the institutional co-chairs and perhaps other faculty members go to the various classes with identified students to administer the assessment. Anticipated scheduling and staffing issues precluded this possibility.

Option 3: Asking instructors with identified students to administer the assessment in their classes and, to address the motivation issue, make the assessment part of a student grade. The likelihood of faculty and student cooperation in this, considering the wide variety of courses these students were taking, was thought to be unlikely because grading criteria are presented to students on the course syllabus and would constitute a change to course requirements.

Option 4: Identifying classes with at least of certain number of target students, in a way so as to minimize duplication of any of the students across classes, and asking instructors to administer the assignment in their classes. Questions about the extent of student motivation in this context were discussed. This option appeared to be most reasonable.

In the end, Option 4 was selected. As far as motivation, we decided to prepare standardized instructions that would emphasize the importance of this task, and to provide this same message to the instructors. Because some classes would be on a 50 minute schedule, one constraint was that the assignment had to be able to be adequately completed within this time frame.

To help ensure standardization of conditions for the assessment, detailed instructions were developed for classroom instructors. These included instructions to be read aloud to students prior to the distribution of the scenario and an answer sheet.

Pilot Test. In early March, 2011, the scenario and the instructions were pilot tested in an NECC Honors class. The purpose was to obtain student feedback in a post-test survey concerning the sufficiency of the time to be allotted for this assignment, perceptions concerning the difficulty of the assignment, and perceptions concerning the adequacy of preparation for this assignment from NECC coursework. Additionally, the instructor was asked to provide feedback concerning the assignment and the instructions.

Of the 16 students tested, 15 completed the post-test student survey (see Appendix 3) with the following results:

- All indicated that the time allotted was at least adequate.
- On a 5 point scale ranging from “Very easy” to “Very difficult”, eight students indicated the assignment was “Just about right for me” or “Somewhat easy”. Six thought the assignment was “Somewhat difficult” and one “Very difficult”.
- Fourteen students answered the question about NECC coursework-based preparation. Of these, eight students felt either somewhat or very well prepared for the assignment, while six felt somewhat or totally unprepared.

The student pilot data supported the use of this instrument within the constraints of a 50 minute class session. Although about half of the students (N=7) rated the assignment as somewhat or very difficult, none of these students had accumulated the credit hours that would be used as a criterion for selecting students for this assessment, namely 45-50 credit hours. Of the seven students, six had earned 24 or fewer credit hours at NECC at the time of testing. One had earned 35. The extent of coursework preparation was really the underlying factor to be measured with this assessment. It was interesting to note that among this group of students whose earned credit hours ranged from 10 to 39, most felt prepared to address the assignment.

Instructor feedback from the pilot indicated that the students might not be clear concerning what was expected in terms of a response. Were they to write a coherent essay or simply answer each question? Also, the instructor thought that the questions for students should include a reminder concerning the main element of the problem which was the amount of oil needed per day by the United States. These comments from the instructor were addressed by modifying the section of the scenario which posed the questions for students to answer. (See final instructions and scenario in Appendix 4.)

Identification of students. As in Year I, the students identified for assessment were those who had earned 45 – 50 credit hours at NECC, exclusive of developmental coursework, prior to the beginning of the spring 2011 term. After the registration “freeze” date, a list was obtained of all

students who met the criteria for assessment; the total was 178. Information was also obtained concerning the classes these students were enrolled in during the spring term. After reviewing the lists, it was apparent that many of these students were represented in multiple classes, and also that there were few classes in which more than one or two of the identified students were enrolled. In the interests of efficiency, classes in which at least three targeted students were enrolled were identified. From this list of 28 classes, after eliminating certain classes due to duplications of students, 17 were selected for instructor contact. The maximum yield in terms of number of students from these classes was 68.

Instructor contacts. On January 13, 2011, all faculty (full-time, half-time, and DCE) were sent an email to generally inform them about the work being planned for the spring term (see Appendix 5). On March 4, an email with specifics about the assessment was sent to the fifteen instructors associated with the 17 identified classes (see Appendix 6), with a follow-up on March 21 (see Appendix 7). Of the 15 instructors, five who were each associated with one class declined including two who cited difficulties doing this assignment in an online class. The new potential student yield was 46.

Distribution of materials to instructors: Administration in classes. Beginning in April 2011, packets were distributed to the 10 faculty members, associated with 12 classes, who indicated they would participate. These packets included copies of the scenario, instructions to be read to students, and answer sheets for students' use. In one case, the instructor was unable to use class time to administer the assignment, so one of the IA co-chairs met 3 of the 4 students after the class and they did their assignment. Observations made as products were being submitted by the instructors showed that many of the targeted students were not assessed during the class period, apparently because they were absent. In one case, when two targeted students were absent from their classes when the assignment was administered, it was determined that both were students in a class being taught by another faculty member. These students were approached after that class, and they agreed to complete the assignment at that time. Overall, however, student absences reduced the number of products initially collected. These absences also changed the duplicates situation, so an additional instructor was contacted because he had four students who were originally duplicated elsewhere, but had not done the assignment. This instructor agreed to administer the assignment in his class.

Collection of student products. Ultimately, nine instructors administered the assessment in nine classes, resulting in a total student yield of 28. Adding in the two students who took the assignment outside of their class resulted in a total of 30 students tested who met the criterion.

In addition to the products for these 30 students, other students in the classes had also completed the assignment, and information was obtained regarding the number of credit hours they had completed, again exclusive of developmental coursework and transfer credits. In an attempt to increase the number of student products for evaluation, the decision was made by the co-chairs and the three faculty members recruited to work on the ratings (see below) to increase the range of credit hours as the criterion for inclusion in this assessment. Instead of limiting the students to just those with 45-50 credit hours, the range was increased to 45-59 credit hours, reasoning that any students who began the spring term with those numbers of credit hours could reasonably complete their program by the end of the spring term. This increase led to the identification of

more student products to be included for evaluation, with the overall total now being 43. These 43 students were enrolled in a range of 16 different majors, representing all four of the academic divisions at the college. For example, the programs represented included Practical Nursing, Early Childhood Education, Liberal Arts, and Engineering Science.

Faculty feedback. To obtain information from faculty members concerning this year's institutional assessment, as a way of creating a context within which to evaluate the student products submitted, a survey was developed for those faculty members who administered the assessment in their classes. (See email and survey in Appendix 8.) Five faculty members responded with the results as follows:

- Four of the five thought the instructions were "Very clear"; one thought they were "Somewhat clear".
- Four thought the instructions read to the students were "Very clear" to the students; one thought they were "Somewhat clear".
- In terms of the amount of time given for the assignment, all thought that, "It was just a little too much time; students finished a little early."
- With respect to difficulty level, one instructor checked "Not sure/don't know"; two thought it was "Somewhat difficult"; one thought it was "Somewhat easy"; and another "Just about right".
- With respect to effort put into the assignment by the students, one instructor indicated "A lot of effort"; two thought "Some effort"; and one checked "Not much".

Instructors were also invited to provide their general impression of the assignment and/or the process, as well as any other additional comments. These comments are as follows:

Some students put a lot into the assignment, others did the minimum. The effort on this assignment was, for most, typical of the effort the student puts into school in general. I thought the assignment topic seemed somewhat random, but the type of questions matched the type of thinking we teach in Statistics class, so that was interesting.

Many of the students in my class had said they already completed the same assignment in another one of their classes, which seemed like a waste of time. I assume those students were the targeted students you are trying to follow. Perhaps there's a better way to choose the classes that should participate.

My suggestion would be to have more information about the assessment before the students actually take the survey.

Many students did not spend as much time as they should have on the assignment because they felt that the assignment should have been relevant to the class in which they were doing the assignment. If at all possible in the future perhaps a number of different assignments could be composed relevant to the subject matter taught in the classes to which they were going to be distributed.

As few students grumbled about it at first but once they began they settled into the assignment.

My students didn't seem to care very much about the assignment. I think this is because of the time in the semester when it was given. The students were very involved in their own projects at the time and saw this as an interruption to the course instead of a way to help the school. I think the large amount of time the assignment took was also a contributor to the response from my students – the activity took a good amount of time and I think my students were in a rush to complete it so that they could work on their own projects. I did encourage my students to take the assignment seriously though and I very much hope they did.

Identification of raters. Three faculty members were recruited to assist with the ratings of the collected student products. These were individuals with backgrounds in social studies or mathematics.

Development of rubric. A rubric to evaluate the products submitted was drafted by the co-chairs in the spring of 2011. Sources of information included the description of the two core skills being evaluated as contained in the Vision Statement (Appendix 1), the statements drafted by the Core Skills Assessment Committee (see above, Page 1), the descriptions of Global Awareness and Quantitative Reasoning provided by faculty committees formed after the development of the Vision Statement with further descriptions of those skills and identifying possible assessment methods (Appendix 2), the descriptions of Global Awareness and Quantitative Reasoning provided by faculty committees who drafted standards for courses that would be described as “intensive” with respect to those skills (Appendix 9), and descriptions included in a number of AAC & U’s VALUE Rubrics – specifically those relating to Intercultural Knowledge and Competence, Quantitative Literacy, and Problem Solving (Appendix 10).

The draft rubric was presented to the three member Institutional Assessment faculty raters’ group for review, and a change was made to one criterion. This review by the committee provided not only feedback on the rubric itself, but an opportunity for the faculty members to become familiar with the assignment and the criteria to be used for judging. The final version of the rubric with 9 criteria and a four-point rating scale is included in Appendix 11.

Preparation of products for rating. All products collected were assigned a unique identifier. Products were then copied with student names eliminated. Each student was to be represented by a single product. In one case, a student completed the assignment twice, in two different classes. Because instructors administered the assignment on different dates, the assignment selected was the one completed earlier.

Rating session. The co-chairs reviewed the assignment and the rubric with the three raters, so that a thorough understanding of the assignment demands and the rating criteria would be achieved. Rules for the rating process included that raters would not discuss their ratings with each other, and that they would not make notes on the student assignments so that the independence of ratings could be maintained.

Four student products were selected for the norming session. Each of these products was rated independently followed by discussions concerning the various rating choices made. The co-chairs also participated in these norming sessions. After the fourth product, raters felt that they had achieved greater uniformity of interpretation of the rubric and decided they could proceed.

The rules governing the rating of samples were established as follows:

- 1) Every product would be read by at least two raters, who would score each of the nine different criteria on the rubric rating scale.
- 2) If the ratings from two readers differed by more than one point in *any* of the criteria, the product would receive a third reading.

After rating, raters put their initials on the assignment so that they did not mistakenly read the same sample twice. They were instructed to keep the rubric separate from the product, and to record the student identifier on the rubric. The rubrics were regularly collected by the co-chairs and examined so that products requiring a third reading could be ascertained and immediately filtered back into the pool. In all, there were 14 assignments which required a third reading.

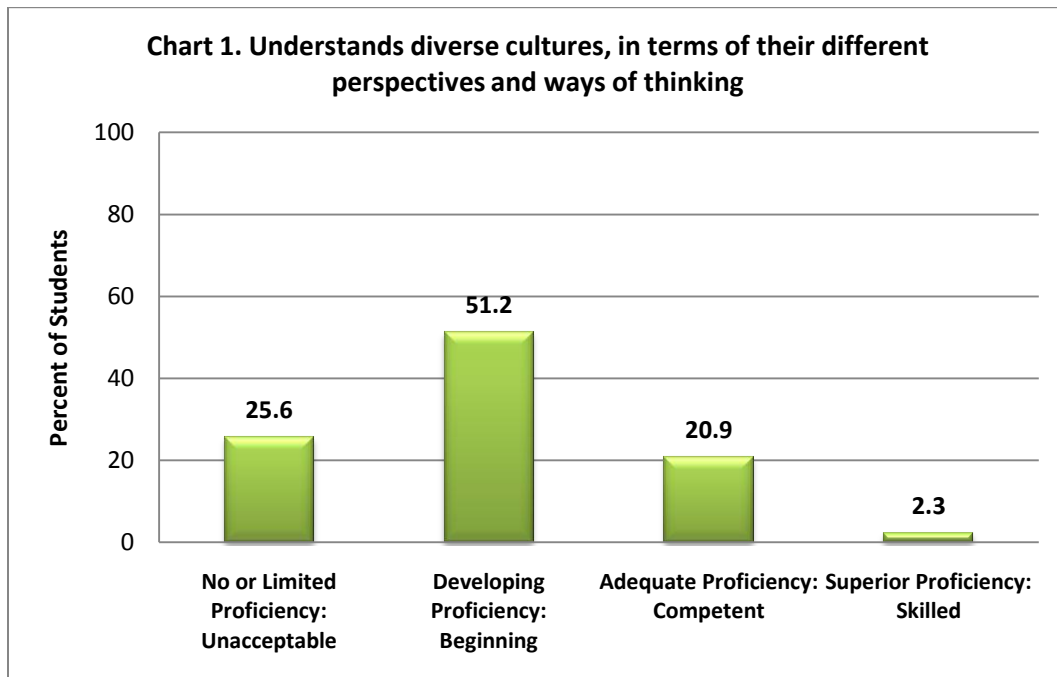
Post-rating focus group: Feedback from raters. Immediately following the completion of the ratings, raters were asked to provide feedback on the process, and to make recommendations going forward. Raters were also asked to submit a brief written summary of their overall evaluation of the experience. Rater feedback results are presented below.

Feedback from faculty on performance expectations. As another approach to providing a context for the results, the 15 faculty members in the Social Sciences and Foundational Studies Division who were teaching in the summer of 2011 were asked to provide information in the way of expectations concerning students performance in Global Awareness and Quantitative Reasoning (see Appendix 12). That is, faculty were asked to estimate the percentages of students who were rated as either “Unacceptable”/ “Beginning” versus “Competent”/ “Skilled” in each of the nine rubric criteria. Results are presented below.

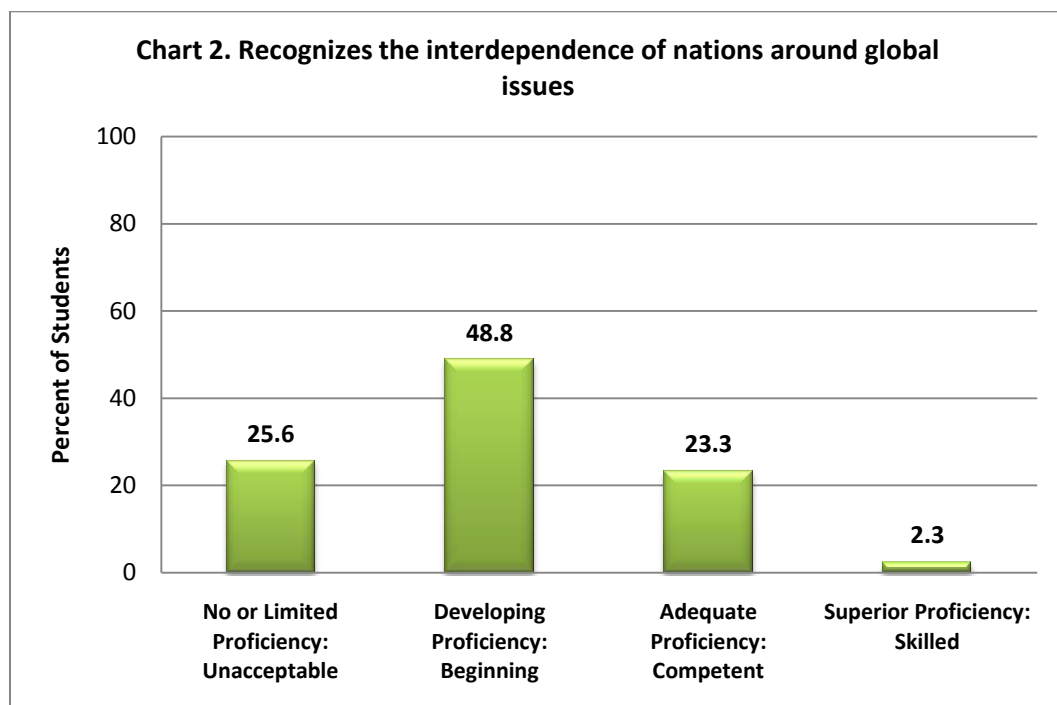
Data decisions: Ultimately, each product had scores from two raters. If a third rater was used, the two sets of ratings selected to be used were those which were closest in scores, meaning that each of the criterion ratings was either the same or not more than one point apart. (Note: In just one case involving one criterion, the two scores were 2 points apart.) In situations requiring a choice, the lowest scores were selected. (For example, if in comparing the three sets of ratings, there was a choice between two that matched higher and two that matched lower, the latter was selected.)

Ratings results. For the purposes of analyses, average ratings less than 1.5 were categorized as “Unacceptable”; between 1.5 and 2.4 as “Beginning”; between 2.5 and 3.4 as “Competent”; and 3.5 or greater as “Skilled”. The percentages of assignments (students) who fell into each category for each of the nine criteria were calculated, and are represented in the following nine charts:

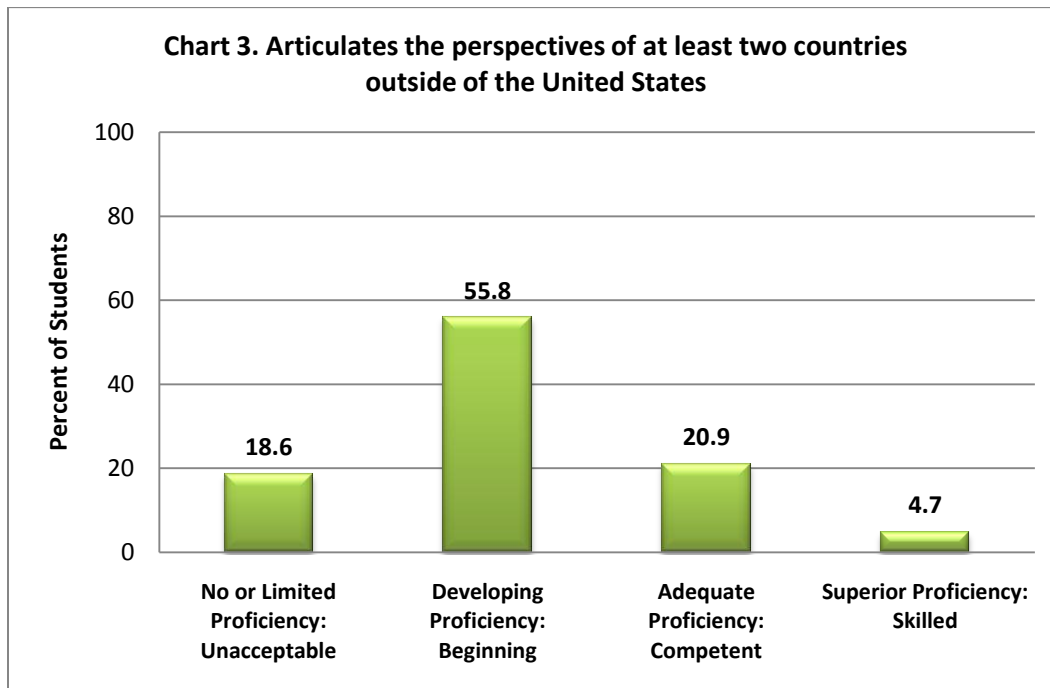
**CHARTS 1-9. INSTITUTIONAL ASSESSMENT GLOBAL AWARENESS AND
QUANTITATIVE REASONING RUBRIC RATINGS SUMMARY: STUDENTS IN
SPRING 2011 TERM WITH 45-59 INSTITUTIONAL CREDIT HOURS**



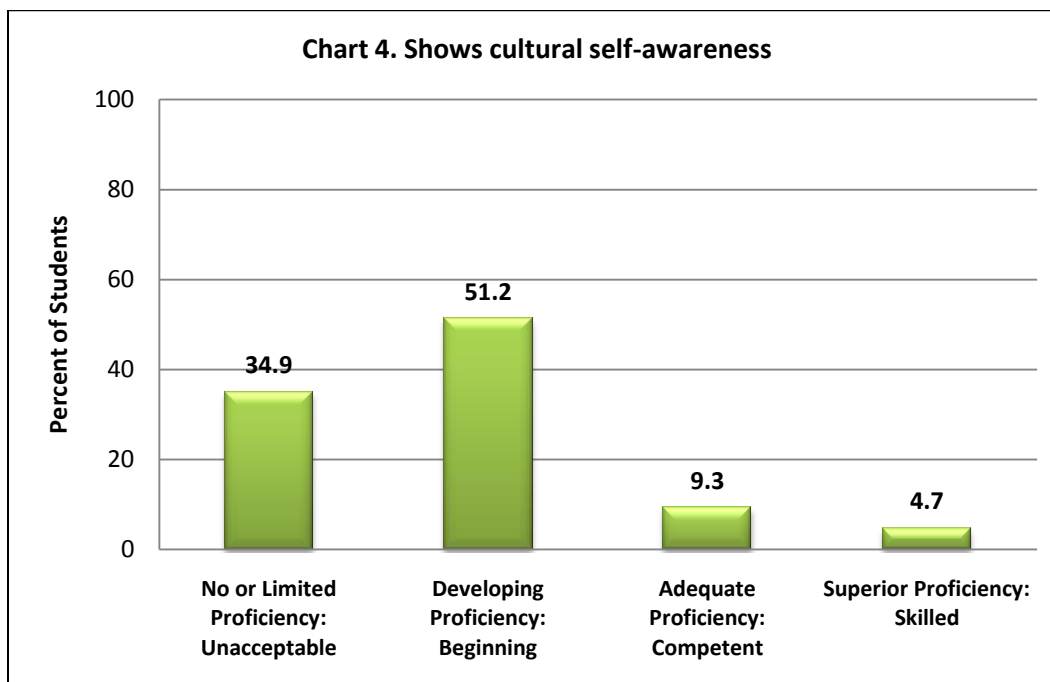
Percent "Competent" or "Skilled" = 23.2.



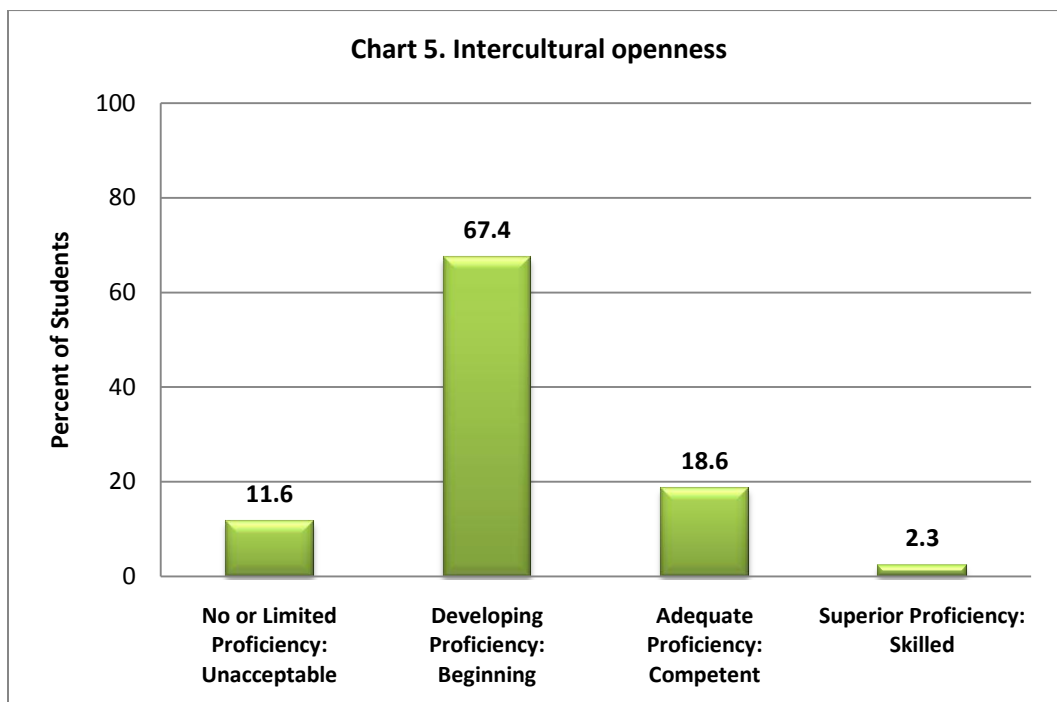
Percent "Competent" or "Skilled" = 25.6.



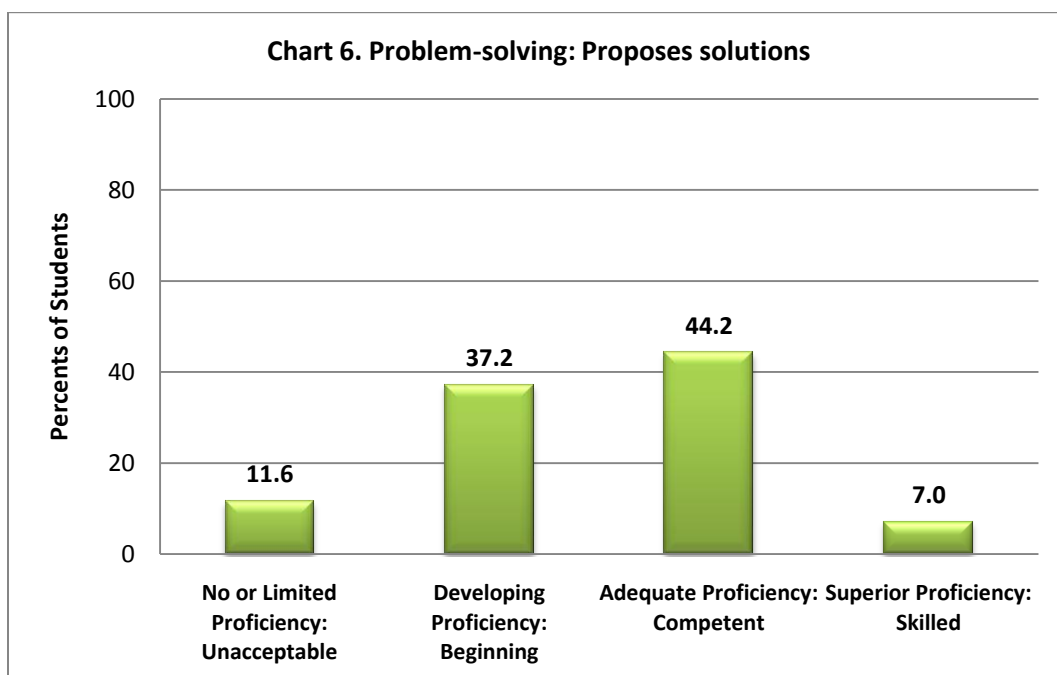
Percent “Competent” or “Skilled” = 25.6.



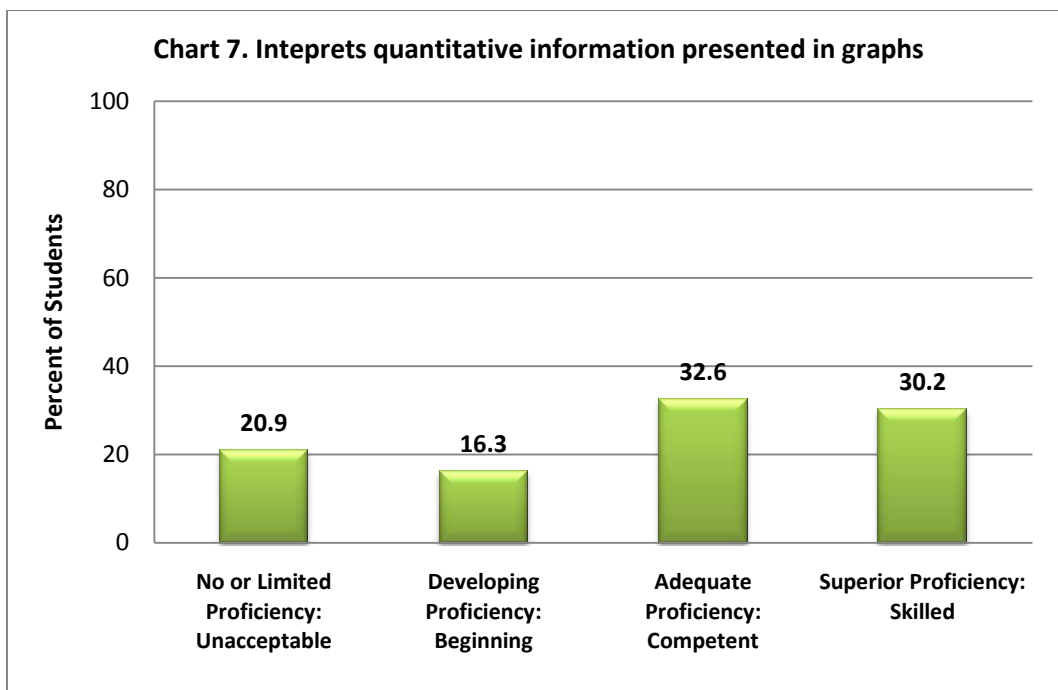
Percent “Competent” or “Skilled” = 14.0.



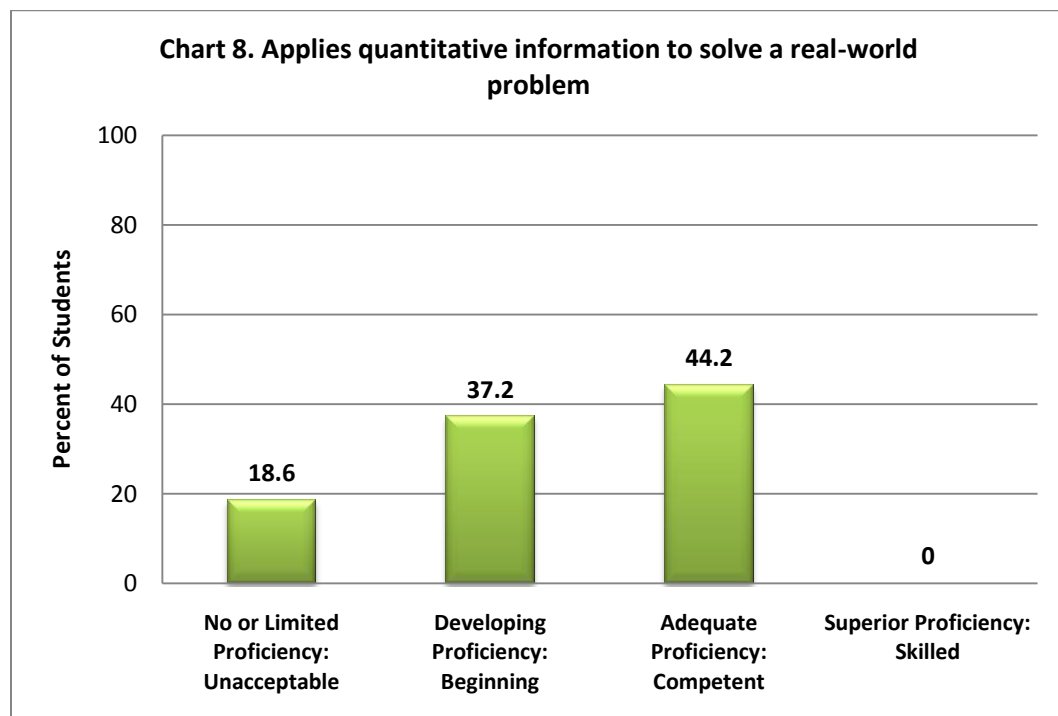
Percent “Competent” or “Skilled” = 20.9.



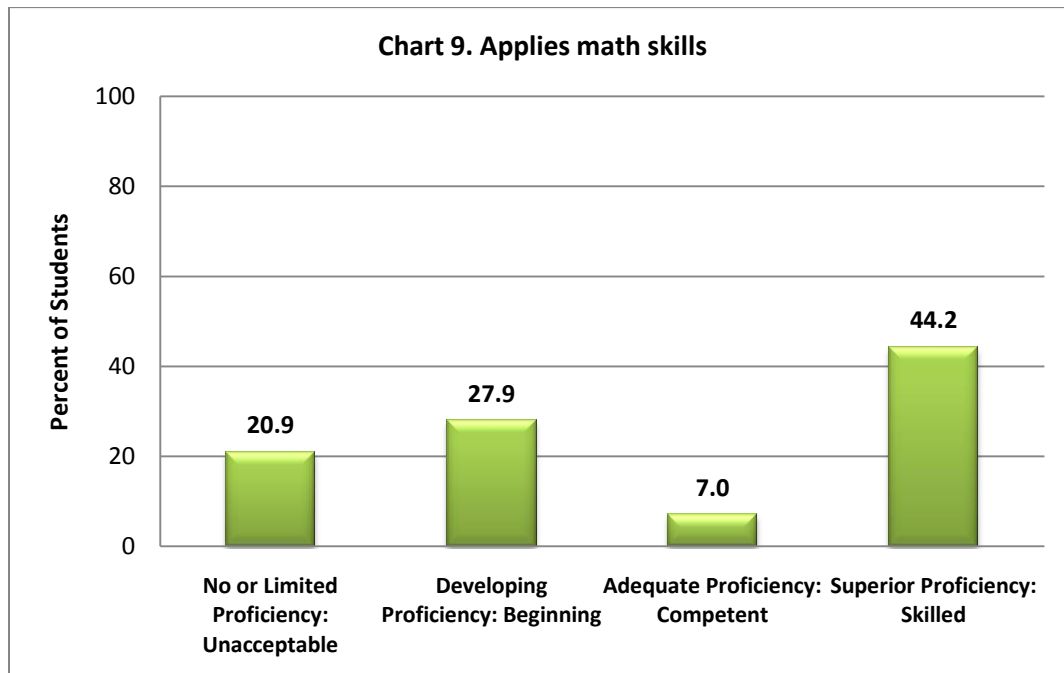
Percent “Competent” or “Skilled” = 51.2.



Percent “Competent” or “Skilled” = 62.8.



Percent “Competent” or “Skilled” = 44.2.



Percent “Competent” or “Skilled” = 51.2.

Standards. For the Year I Institutional Assessment, faculty input was requested to develop a standard to use in judging students’ performance and evaluating the ratings results. At that time, an email was sent to all faculty asking them to share their opinion as to what percentage of the samples (students) evaluated should fall into the “Skilled” category as well as into a combination of the “Competent” or “Skilled” categories (see Appendix). Considering that the same rating categories were used in this year’s assessment, and that expectations concerning abilities at this particular point in student’s academic careers could reasonably be expected to transcend skill areas, we applied the standards developed based on the faculty input in Year 1. Namely, the decision was made to use at least 20% as the standard for evaluating the percentages of products scored in the “Skilled” category, and at least 80% as the standard for the “Competent” or “Skilled” categories combined.

Standards and ratings results. Focusing on the percentage of products rated as “Skilled”, and using the standard of at least 20%, findings include that:

- The standard was met with respect to two criteria – “Interprets quantitative information presented in graphs” (30.2%) and “Applies math skills” (44.2%).
- The percentages for the other seven criteria ranged 0 to 7.

Concerning the percentage of products rated as either “Competent” or “Skilled”, and using at least 80% as the standard, findings include that:

- The standard was not met for any of the nine criteria.
- The criterion with the highest percentage of students (62.8) rated in the “Competent” or “Skilled” categories was, “Interprets quantitative information presented in graphs”.
- For two of the criteria, only about half of the students were rated as “Competent” or “Skilled”, and for a third criterion, the percentage was 44.2.
- Five criteria had percentages ranging from just 14.0 to 25.6 for these two rating categories combined.

Summary of rater feedback. Immediately following the rating sessions, raters were asked to participate in a brief focus group session with the co-chairs during which they were asked to share their overall impressions of the process and the student work. Observations made in this session include the following:

- There is a lot of work to be done with students on basic skills, including grammar, writing mechanics, and spelling.
- Critical thinking is a missing component.
- With respect to global awareness, students were “ignorant” and “naive”.
- Students appear to lack understanding of cultures and government.
- Students may have produced better work if the assignment had been graded.
- Although motivation may have played a part in the quality of the responses, English skills are still lacking.
- Overall, raters expressed that they were “discouraged”, disheartened”, “saddened” and “disappointed” in the results.
- The rubric didn’t allow for scoring creativity or thoughtful/critical thinking. However, there were likely only one or two cases where this was exhibited.

Raters were also asked to write a brief summary of their overall impressions of the students’ work in the areas addressed by the assignment (Global Awareness and Quantitative Reasoning) as well as any other areas, the general method, and the process. Following are some of the comments made:

Rater 1:

My overall sense of the students' work in the areas addressed by the assessment, such as global awareness, quantitative reasoning, writing and critical thinking would be that of concern. I am concerned because in many cases the students' answers indicated either minimal or no mastery, or, just adequate mastery. The quality of the students' answers also pointed to problems with reading comprehension, grammar usage, spelling and/or diction.

Therefore, my own feeling is that we need to "go back to the basics." Are we assuming too much? Are high school graduates not as prepared as we think they might/should be for college? Are we reaching too high with our expectations? There may not be a clear-cut answer and we may not completely know for sure, but judging from the answers that we did receive, at the very least we need to look at what is being taught.

As far as the method and process that we used to assess the two skills, it was adequate but I believe that it could be improved. For example, to get a really good representative sample of the student body, I believe that more students should have been assessed. Also, since students' responses were written rather than typed, it was difficult at times to read their writing, which left me questioning myself if I had really given them a fair rating. Also, the choices of ratings were somewhat difficult to employ as well. For example, many times I couldn't decide between a "2" and a "3." I realize that we can't create a new category of "2 and 1/2," but maybe 5 choices instead of 4 would be better in order to create more distinction among the choices.

Rater 2:

Overall, I was disappointed by the answers given by the students. I found only two students who were capable of thinking "outside the box", demonstrating good critical thinking skills. I found that students did not fully understand or answer questions completely, showing a lack of understanding of the questions and demonstrating poor writing skills. Their interpretation of the information given demonstrated weak global awareness, misunderstanding of definitions and showing a misconstrued knowledge of the United States' philosophy regarding national issues. The math component was relatively simple, and I found that most students could answer the computation component. However, the students struggled with extracting information from the graphs.

Overall, I felt that the students' quality of work was middle school level. It was quite disheartening.

Rater 3:

I would say the products we evaluated were fair to poor in the areas of global awareness and quantitative reasoning. Overall, the quality of the quantitative reasoning was higher than that of the global awareness. However, I feel that the assignment the students were given required a pretty elementary level of quantitative reasoning. SO, to say that the students did "fair" on that level of quantitative reasoning, is not saying much. I think the level of quantitative reasoning they were required to do for the assignment was around a middle school level, and still several of the students were not able to interpret the data from the graphs correctly, or perform simple calculations (i.e. addition/subtraction).

The global awareness demonstrated by the assignments was overall of relatively poor quality. However, in terms of the global awareness skill, the biggest problem was that students gave vague or very short answers that did not reveal whether they had any global awareness skills or not. An answer that did not really address the question could not be evaluated well in terms of global awareness, so those answers had to be rated low. In some cases, the global awareness could have been there, but not demonstrated by the student's answer.

This leads me to the ultimate conclusion that one of the major problems with these assignments was that students did not appear to make a concerted effort to give well-thought-out answers. Perhaps this was because they knew the assignment was not being graded. Whatever the case, many answers revealed a clear lack of critical thinking,

particularly in the global awareness arena. With a few notable exceptions, the answers given generally demonstrated very little depth of analysis, as well as exhibiting (sometimes disturbingly) poor grammar and writing skills.

Faculty expectations data. As noted above, 15 faculty members in the Social Sciences and Foundational Studies Division who were teaching in the summer of 2011 were asked to provide information in the way of expectations concerning students' performance. That is, faculty were asked to estimate the percentages of students who were rated as either "Unacceptable"/ "Beginning" versus "Competent"/ "Skilled" in each of the nine rubric criteria. Six supplied the requested information; another three faculty members involved in other campus activities also participated for a total of nine responses.

In general, results were mixed. That is, three faculty members thought that only low percentages of students would do well (that is, be rated as "Competent"/ "Skilled") across the nine criteria, while two thought that high percentages would do well. Four faculty members expected mixed results, differentiated by criteria. Within each of the criteria, with the exception of two, there was a split among faculty members as to whether students would do well or not. The two exceptions were "Recognizes the interdependence of nations around global issues", where only a few predicted the students would do well, and "Shows cultural self-awareness", where only a few predicted the students would **not** do well.

Given the lack of a clear pattern, it is tempting to consider that instructors' experiences with students vary greatly, and are influenced by the particular students attracted to the classes they teach as well as by the extent of interaction with these students particularly as concerns the skills addressed. However, the low number of faculty members responding limits the ability to speculate with any confidence.

Overall discussion and summary. Based on the ratings of assignments completed by a sample of students at NECC who had completed between 45 – 59 institutional credit hours, student skills in the two core skill areas assessed fall short – often far short – of demonstrating a satisfactory level. However, in the absence of baseline data showing the skill levels of students when they enter NECC, it is not possible to measure the effect of the NECC curricular experience. One possibility is that given where the students start, they have made remarkable strides through NECC coursework. Similarly it is possible there has been no change, or even a decline. Also, because of the non-traditional nature of many NECC students' enrollments, which may for many extend over years and include "stop-outs", other external experiences such as coursework at other colleges and employment may have affected academic skills. Related to coursework at other colleges, six of the 43 students had earned transfer credits, although only one had a significant number (15). One had nine credit hours, two had six, and two had three transfer credits. The nature and effect of these transferred classes on the assessed skills, however, is not known.

Factors which contributed to a lower than expected number of student products being collected included that five of the fifteen initially identified instructors declined to participate. Also, even among those faculty members who did participate, targeted students were often absent from class on the day the assignment was given.

Ultimately, though, 43 products were collected from students who were enrolled in a variety of programs, suggesting that the sample was at least in some ways representative.

The evidence provided by this assessment suggests that NECC students close to earning enough credits for an associate's degree as a group fail to meet the skills standards set by faculty. With respect to certain criteria, this failure is quite profound, especially considering that the mathematical skill level demands of the assignment were quite basic.

Information from last year's institutional assessment may be helpful in planning improvement activities. The ratings for writing samples submitted for 18 students who had earned between 40 and 50 credit hours at NECC, and who had participated in "Writing Intensive" (WI) courses were compared with sample ratings for the larger institutional assessment (IA) group without the WI students. Results were that in all criteria except one, ratings for the WI samples were superior to those for the IA samples with respect to the percentages rated "Competent" and the percentages rated either "Competent" or "Skilled". This finding suggests that exposure to classes that emphasize certain skills can make a difference.

More to the point, it is probably important that skills not be taught in isolation, for example, in particular courses designated for skill development. Rather, it is likely that a better approach would be to work towards integrating the skills across the curriculum to provide students with multiple opportunities for skill development, and experience in the interconnectedness of skills and disciplines. The scenario used in this assessment clearly shows the relationship between skills and disciplines, and the need for skill applications across situations that vary in content.

Generally, raters were discouraged. This feeling seems to be as much associated with the lack of writing skills exhibited by students as the lack of skills in the main areas being assessed. Perhaps the weak writing skills resulted from the nature of this assignment, which called for students to write on a topic in class without the benefit of multiple drafts, instructor review, and a computer with corrective features. If this ability to compose on the spot is not likely to be demanded in their futures, then perhaps this type of assignment is not the best method to evaluate writing skills. Research in the field of Composition Studies also indicates that writing skills deteriorate when the writer does not understand the subject matter. It should also be noted that the raters for this assessment were not trained or normed for writing evaluation.

As another possibility, it is important to recall the results from last year's institutional level assessment of writing skills. In that assessment, raters evaluated student products which had been prepared in response to a classroom assignment and which were going to be graded by their instructor. With the exception of one criterion – Critical Thinking – students did fairly well, with the percentages of students scoring as "Competent"/ "Skilled" approaching the standard of 80% for the other six criteria used. That evidence supports that students in the aggregate with high numbers of NECC credit hours have acquired writing skills, but may in the case of this year's assignment, simply not have been motivated to exhibit those skills – a learning/ performance distinction.

The rubric, however, called primarily for the evaluation of the Global Awareness and Quantitative Reasoning skills. With respect to both of those, students were still found lacking,

and in some cases, greatly lacking. One explanation besides lack of relevant skills is general lack of motivation – perhaps especially in the absence of any incentives including grades - to complete this assignment, as was suggested by some faculty members who administered the assignment. This possibility and others will need to be considered in reviewing and interpreting these results.

It would seem at this point that information on the project – the process and results – should be shared with faculty in the context of perhaps a general meeting. Faculty – both those who submitted samples and those who did not - would no doubt provide opinions and insights which may be very helpful in any interpretations, conclusions, and decisions about this assessment, and also with respect to work on this and other topics in the future. Action plans could then be developed based on this input.

APPENDICES

APPENDIX 1

A Vision for Core Academic Skills at Northern Essex Community College

Northern Essex Community College (NECC) students will emerge from our caring academic community prepared and motivated to become self-aware, engaged members of the communities in which they live and work. To do so, it is essential that all NECC students learn to think critically and gain problem solving skills. By helping them to look at their assumptions, ask penetrating questions, formulate hypotheses and draw conclusions based on sound evidence, we prepare them for the complex challenges they will face as citizens, in their careers, and in their personal lives.

Critical thinking requires the development of these five core academic skills:

Communication: Students will develop and express ideas by applying the tools of discussion, debate, research and inquiry. They will demonstrate the capacity to listen, speak, read and write with increasing complexity and sophistication, attending both to purpose and to the diversity of audiences, and to communicate their ideas using appropriate oral, written, visual or technological means.

Global Awareness: Students will develop an understanding of the diverse cultures, ways of thinking and historical traditions in today's world. They will learn to use this knowledge to address increasingly interdependent global issues such as the environment and human rights.

Information Literacy: Students will learn to identify their information needs, then locate, evaluate, and appropriately integrate information to accomplish a specific purpose. Students will demonstrate the ability to use current technology as well as other research resources to successfully find, and then effectively communicate the information.

Quantitative Reasoning: Students will learn to interpret and manipulate quantitative information and apply mathematical concepts and skills to solve real-world problems.

Science and Technology: Students will learn to explain how science and technology influence each other and how both can be used to explore natural and human-created systems.

APPENDIX 2

Core Academic Skills Assessment

Communication- Students will develop and express ideas by applying the tools of discussion, debate, research and inquiry. They will demonstrate the capacity to listen, speak, read and write with increasing complexity and sophistication, attending both to purpose and to the diversity of audiences, and to communicate their ideas using appropriate oral, written, visual or technological means.

Outcomes:

1. By the conclusion of their studies at Northern Essex, students will be able to produce clear and well-organized writing that responds appropriately both to purpose and audience using standard American English.
2. By the conclusion of their studies at Northern Essex, students will be able to produce clear and well-organized oral presentations that respond appropriately both to purpose and audience using standard American English.
3. By the conclusion of their studies at Northern Essex, students will be able to produce visually engaging communication, employing effective type and images for both printed output and for oral presentation using display technology.
4. By the conclusion of their studies at Northern Essex, students will be able to evaluate and produce well-reasoned, persuasive written or oral arguments, attending to purpose, audience, and competing perspectives.

Possible evidence that could be gathered/demonstrated in support of these outcomes:

Written Communication – written report, paper, essay, letter (sample rubric attached)
Oral Communication – Oral report, presentation, client interview
Visual – PowerPoint presentation, poster board presentation, papers with photos and illustrations
Persuasive oral or written argument – discussion postings in an online course; oral debate

CORE ACADEMIC SKILL

(Global Awareness)

VISION STATEMENT

Global Awareness: Students will develop an understanding of the diverse cultures, ways of thinking and historical traditions in today's world. They will learn to use this knowledge to address increasingly interdependent global issues such as the environment and human rights.

COLLEGE LEVEL ASSESSMENT

Global Awareness: Students will be able to compare and contrast a single situation or institution from the perspective of three cultures of the world, at least two of which are outside the United States.

Method of Assessment: Research paper in...

PROGRAM LEVEL ASSESSMENT

(Business Management)

Global Awareness: Students will be able to explain the influence of customs and culture on business practices in at least three countries (other than the United States)

Method of Assessment: Oral presentation in BUS105.

Core Academic Skills Information Literacy

Information Literacy: Students will learn to identify their information needs then locate, evaluate, and appropriately integrate information to accomplish a specific purpose. Students will demonstrate the ability to use current technology as well as other research resources to successfully find, and then effectively communicate the information.

Performance Indicators:

- **The student will confer with instructor and participate in discussions to** clearly define and articulate their **information** goals, defining their goals with a thesis statement.
- **The student will further develop and refine their thesis statement and formulate a** research strategy **based on** their **information** goals. The research strategy will include a discussion regarding the target audience and appropriate information sources for that audience. It will also include an outline illustrating an ability to organize their thoughts in a coherent manner.
- **The student will critically evaluate their sources**, demonstrating an ability to distinguish between scholarly and non-scholarly sources. The student will also assimilate existing information with original thought, citing sources appropriately. The student will also look for bias in their sources and evaluate the validity of the information by identifying multiple sources of the information and/or conflicting viewpoints.
- **The student will use various search systems (including on-line and library sources) to retrieve necessary information for answers to their formulated questions.** The student will provide a list of the search systems used along with their final project.
- **The student will then manipulate digital, text, images, and data as needed in an organized manner that supports the purposes and format of their thesis in a written and/or oral manner.** In this final product, the student will demonstrate an overall understanding of the information gathered by tying together the information gathered from multiple sources and presenting a concise summary/conclusion in their own words. This may also be accomplished by demonstrating an ability to answer unprepared questions regarding the thesis following an oral presentation.

Response to Quantitative Reasoning Core Academic Skills

Committee Members: Habib Maagoul, Trisha Machado, Jim Sullivan

Quantitative Reasoning: Students will learn to interpret and manipulate quantitative information and apply mathematical concepts and skills to solve real-world problems.

Recommendations:

1. Quantitative Reasoning Assessment – at a certain point (still to be determined) in the NECC student's academic career (perhaps at 40 or so credits or at start and midpoint of earning credits) an assessment will be given testing mastery of quantitative reasoning. Wellesley College has a very good example of this. Jim Sullivan has offered to share this with the committee and help select/prepare questions.
2. Successful Completion of NECC Designated Courses – certain courses at NECC will be designated as meeting the Core Academic Requirements. Once a designated course is successfully completed by a student, it becomes the necessary evidence to show mastery. Trisha Machado offered her MacroEconomics course as an example of a course that could satisfy all five of the Core Academic Skills and would be willing to share that with the committee. Jim Sullivan suggested that his Nature and Numbers Learning Community course would also satisfy the requirements and offered to share that with the committee as well. It is hoped that other faculty would offer to have their courses designated for all five Core Academic Requirements, and at the very least, every faculty member can offer to designate their courses as meeting one or more of the Core Academic Requirements.
3. E-Portfolio – operating under the assumption that NECC is interested in adopting E-Portfolios, students could satisfy the Quantitative Reasoning requirements by including a QR section in their portfolio. Examples of work that could be included: QR Reflective Paper, Review and Analysis of an advertisement or photo that describes the role of QR, Review a graph and write about what the graph could be depicting, etc... These are just a few examples of what could be included. It is not a limiting list.
4. Journal – students keep a journal documenting where Quantitative Reasoning impacts their daily lives and academic endeavors. This journal activity could be incorporated into a specific course to be determined or included in their E-Portfolio.

1. Students will be able to document the use of the scientific method in the natural and technological sciences.

Measure: Students will perform one of the following while using electronic databases:

- a. Design and document an experiment using the scientific method with projected outcomes through the use of graphs, charts, and other acceptable means.
- b. Critically analyze a peer-reviewed scientific or technological article, while outlining the use of the scientific method in that study.

2. Students will demonstrate pure technological fluency and its application to the sciences using sound ethical and moral judgment:

Measure: Research and produce documents while respecting copyright issues in all forms of media and intellectual property.

APPENDIX 3

NAME: _____
CLASS: _____

Dear Student,

We would appreciate your opinions about the assignment you did today in class. Your thoughts will be very helpful to us in reviewing the assignment and the overall assessment process.

1. How do you feel about the amount of time given for this assignment?

- _____ It was way too much time; I finished long before the time was up.
_____ It was just a little too much time; I finished a little early.
_____ It was just the right amount of time; I was finished just about on time.
_____ It was just a little bit short of being enough time; I did not quite finish.
_____ It was definitely not enough time; I didn't get anywhere near finishing.

2. How would you rate the difficulty of the assignment?

- _____ Very easy
_____ Somewhat easy
_____ Just about right for me
_____ Somewhat difficult
_____ Very difficult

3. How well did your previous coursework at NECC prepare you to complete the assignment?

- _____ I was very well-prepared for the assignment.
_____ I felt somewhat prepared for the assignment.
_____ I felt somewhat unprepared for the assignment.
_____ I was totally unprepared for the assignment.

4. How much effort did you put into completing this assignment today?

- _____ A lot of effort; I did my best.
_____ Some effort; I did just enough to answer the question.
_____ Not much; I did just enough to hand something in.
_____ Little or no effort; I really couldn't get into it.

Additional Comments:

Thank you for your participation!

APPENDIX 4

March 2011

Dear Instructor:

Thank you for agreeing to administer this year's Institutional Assessment in your class!

Before distributing any materials, please read the following aloud to your students:

*As part of NECC's efforts to assess student learning outcomes, each year, a sample of students is asked to respond to an assignment. After we collect the assignments, we will remove your names before the assignments are evaluated. **Only overall student performance will be reported.***

This year, our class was selected to participate. For this purpose, I will be passing out the assignment along with an answer sheet for you to write your response.

Please remove all materials from your desk, and make sure any electronic devices are turned off. Also make sure you have something to write with.

You will have about 40 minutes for this task. Do you have any questions before we begin?

When you receive the assignment, please write your name on the assignment itself as well as on your answer sheet. Then you may begin. If you have questions after the materials are distributed, or if you need more paper, please signal me by raising your hand.

Please work quietly and privately. When you are finished, please bring your completed assignments to me.

Now distribute the assignment and the answer sheets and signal that they may begin.

Note: There has been some question about whether instructors, particularly those with 50 minute class sections, should tell the students they may leave when they are finished. We feel this may encourage them to hurry through the assignment. It may be best, then, to tell them that even if finished, they must wait until the end of class to be dismissed.

After this assessment, please make sure you collect all materials, including the assignments themselves. This is necessary to preserve the integrity of this assessment. Also please check that all answer sheets have student names. This is important for our process.

Return all materials to:

**Ellen Wentland
Assistant Dean of Educational Effectiveness
B-120
978-556-3969
ewentland@necc.mass.edu**

Thank you!

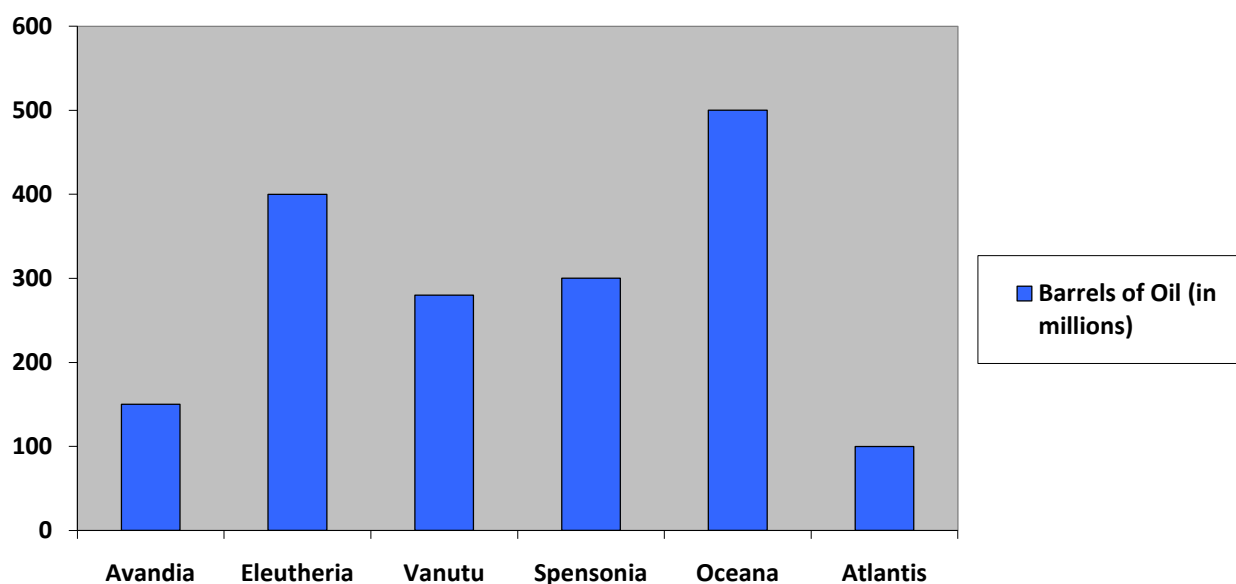
Spring 2011

NAME: _____

CLASS: _____

NECC SPRING 2011 COLLEGE OUTCOMES ASSESSMENT

The year is 2022. The United States needs 1 billion barrels of oil per day to function at its present level of usage. The U.S. only produces 450 million barrels of oil per day. In order to acquire the remaining oil, the U.S. will need to purchase, trade, and/or ally itself with other countries around the world. The graph below shows the excess oil capacity of some key oil-producing nations; that is, the amount of oil they produce beyond the amount they need for themselves.



Avandia is small but wealthy nation which shares some western cultural values with the United States. They have a constitutional government, are technologically advanced, and are financially sound. The political views are somewhat more socialist than those of the U.S., meaning that the people pay a higher proportion of their incomes in taxes and the government provides more social services like national health care, child care, education and welfare. Avandia and the U.S. already have a good relationship, but Avandia believes strongly in giving away at least one third of its excess oil to poor and under-developed nations.

Eleutheria is a country that has recently acquired wealth and power in the world due to its increasingly valuable oil reserves. The government is a constitutional monarchy which has been trying to increase the level of education and healthcare in the country, but it has had little success due to large areas of undeveloped rural territory, where clean water and electricity are still scarce. While cultural values differ from those of the U.S., the people are generally not hostile to the U.S. since we provided military aid to their country in a conflict 20 years ago.

Vanutu is a country ruled by military dictatorship. Power has changed hands several times in the last few decades and several underground political groups still operate on the fringes of society. Money (including that from oil) is concentrated in the hands of the greedy and

powerful few, but generally the population enjoys an adequate lifestyle (enough money for food, medicine, the basics). Vanutu's ruling general is hostile to the U.S. government for its repeated criticism of him and his government. The people of Vanutu, however, idealize life in the U.S. and would eagerly oust their oppressive leader.

Spensonia is a country which is largely self-sufficient and tends toward isolationism. The government is elected directly by the people, and their standard of living and level of education are high. Neither the government nor the people are particularly hostile toward the U.S., although they tend to be critical of our "expansionist" tendencies. They maintain a very small military and in the past they have refused to be military allies with the U.S. They intensely dislike the idea of being financially or morally obligated to other nations.

Oceana is one of a few true monarchies remaining in the world. Both the military and the people of Oceana are openly antagonistic to the U.S. Their cultural and religious values differ greatly from ours; in fact, they view the American way of life as morally evil. This same point of view, however, has prevented the growth of education and technology in Oceana, and despite vast oil resources, the country has stagnated. The ruling family realizes the cost, both economical and social, of a poor, uneducated population.

Atlantis is a small island nation with a constitutional democracy very much like that of the United States. In fact, after a devastating military defeat at the hands of the U.S. many years ago, Atlantis allowed the U.S. to establish its new government, which also forbade the creation of any kind of military. In the intervening years, the U.S. has supplied all military aid to Atlantis, but the people of the country are beginning to resent this. The standard of living and level of education are among the highest in the world. The people widely endorse ecological living, and many of them have sacrificed their personal comfort in order to reduce their nation's oil consumption (which is why they now have an excess).

A. Given the information above, how do you think the United States should proceed? Please answer each of the following questions. (Reminder: The United States needs 1 billion barrels of oil per day.)

- 1. Which countries should it approach to acquire oil?**
- 2. How many barrels should it request from those countries?**
- 3. What factors should the United States consider when deciding which countries to pursue a trade relationship with?**

B. Given their unique perspectives, put yourself in the shoes of the leaders of at least two of the fictional countries described above. Then answer each of the following questions.

- 1. How do you think the countries would respond to requests for oil from the United States?**
- 2. What factors might they consider when deciding whether or not to engage in a trade relationship with the U.S.?**

APPENDIX 5

Dear Colleagues,

As you know, the college has begun the process of assessing our newly defined institutional-level learning outcomes. Thanks to many of you, last year we were able to assess the writing skills of our sophomore students. The results of that assessment may be viewed at <http://facstaff.necc.mass.edu/wp-content/uploads/2010/02/201001-IAR.pdf>

This spring we will be looking to assess our students' **Global Awareness** and **Quantitative Reasoning** skills, and again we need your help. **Your class does not need to specifically address these areas in order to participate in the assessment process.** We plan to assess both skills at once with a single in-class assignment, which we will provide for you along with instructions for administering it to your students. Essentially, we are asking that you donate one hour of class time to help the college meet its goals for institutional assessment.

In February, we will begin actively recruiting instructors with students who have completed between 45-50 NECC credit hours. But right now, we hope you'll consider how you might fit this effort into your plans for various classes this spring.

Whether or not you are able to participate this semester, we request that you include the note below on your syllabus, as it is important for students to become aware that institutional assessment is a routine part of their college curriculum.

NECC Outcomes Assessments Note for Students: Northern Essex Community College's commitment to student success involves the evaluation of student work to help ensure that students are achieving the learning outcomes targeted by our programs and the college. This process may involve the collection of student classroom products for evaluation at the program, department, and/or college levels. When collected for this purpose, students' names will be removed from the products so that the assessing is done anonymously. Evaluations carried out at the program, department, and/or college levels will not impact students' course grades. The process of assigning grades will continue to be the responsibility of the course instructor.

Thank you.

Suzanne Van Wert
Ellen Wentland

Co-Chairs
Institutional-Level Outcomes Assessment

APPENDIX 6

March 4, 2011

Dear Colleague;

As you may know, NECC is moving forward with institutional level outcomes assessment. While we will be assessing our students' Global Awareness and Quantitative Reasoning skills, your class does *not* need to specifically address these areas in order to participate in the assessment process. Our plan is to target students who have earned between 45 and 50 credit hours by the beginning of this spring term, and **one or more of your classes has been identified as containing several students who fall within the targeted range.** These classes are as follows:

Instructor Name	Course	Course Name	CRN
Anne Fromer	GOV211	Civil Rights & Liberties	1264
Roland Masse	ACC204	Tax Accounting	1436
Kristen Sparrow	CTE210	Microcomputers	1511
Deidre Budzyna	ECE250	Seminar Early Childhood	1577
Steve Mathis	LIT202	American Lit II	1758
	LIT202	American Lit II	2011
Wayne Kibbe	MKT210	Prin of Marketing	2149
Ellen Yarborough	LIT231	Lit: Art of Movies	2231
Sheila Kane	NUR123	Pharmacology II	2252
Frank DeCaro	HES108	Intro to Healthcare Services	2263
Cynthia Crivaro	SOC106	Sociology of the Family	2445
Linda Mallen	COM112	Interpersonal Communications	1162
Bill Zannini	BUS101	Intro to Business	1443
Paula Bordogna	MAT125	Statistics	1493
Thomas Gorczyca	BIO101	Human Biology	2120
	BIO122	Anat & Phys II	1648
John Moore	CHM111	Intro Chem I	1661

Would you be willing to set aside 50 minutes of class time to participate in this important assessment process? This would involve reading a set of simple instructions, distributing the assessment to all of your students, collecting their answers, and then forwarding them to us. **We would like *all* students, not just those with the accumulated credits, to complete the assessment as this will provide us with additional information.**

Be assured that the samples will be used to evaluate students in the aggregate only. All student, instructor, and class identifying information will be removed from the samples before ratings are done. The information gleaned from these ratings will then be used to evaluate overall NECC students' Global Awareness and Quantitative Reasoning Skills.

Of course we realize that this means you will need to sacrifice class time from your usual instructional routine, and we appreciate your willingness to consider our request. If you can think

of a way we can help you facilitate this process, or if you have any questions, please don't hesitate to contact one of us.

If you are willing to participate, please let us know by March 11. We will make sure to get the necessary materials to you promptly.

Thank you very much for your cooperation and support of this important project!

Ellen Wentland

(978-556-3969)

ewentland@necc.mass.edu

and Suzanne VanWert

(978-556-3392)

svanwert@necc.mass.edu

Co-Chairs: NECC Institutional-Level Assessment

APPENDIX 7

Dear Colleague;

On March 4, I sent you the email copied below. **We cannot move forward with our institutional assessment without students, and we are counting on you!** We are asking for 50 minutes of a class period sometime between now and the end of the term. **Please help us by agreeing to participate.** Your class(es) are listed below.

We would appreciate your reply by Wednesday, March 23!!

Thank you!

As you may know, NECC is moving forward with institutional level outcomes assessment. While we will be assessing our students' Global Awareness and Quantitative Reasoning skills, your class does *not* need to specifically address these areas in order to participate in the assessment process. Our plan is to target students who have earned between 45 and 50 credit hours by the beginning of this spring term, and **one or more of your classes has been identified as containing several students who fall within the targeted range.** These classes are as follows:

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<i>Deidre Budzyna</i>	<i>ECE250</i>	<i>Seminar Early Childhood</i>	<i>1577- Agreed</i>
<i>Steve Mathis</i>	<i>LIT202</i>	<i>American Lit II</i>	<i>1758 - Agreed</i>
	<i>LIT202</i>	<i>American Lit II</i>	<i>2011- Agreed</i>
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Ellen Yarborough	LIT231	Lit: Art of Movies	2231
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Linda Mallen	COM112	Interpersonal Communications	1162
Bill Zannini	BUS101	Intro to Business	1443
<i>Paula Bordogna</i>	<i>MAT125</i>	<i>Statistics</i>	<i>1493- Agreed</i>
Thomas Gorczyca	BIO101	Human Biology	2120
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John Moore	CHM111	Intro Chem I	1661

Would you be willing to set aside 50 minutes of class time to participate in this important assessment process? This would involve reading a set of simple instructions, distributing the assessment to all of your students, collecting their answers, and then forwarding them to us. **We**

would like *all* students, not just those with the accumulated credits, to complete the assessment as this will provide us with additional information.

Be assured that the samples will be used to evaluate students in the aggregate only. All student, instructor, and class identifying information will be removed from the samples before ratings are done. The information gleaned from these ratings will then be used to evaluate overall NECC students' Global Awareness and Quantitative Reasoning Skills.

Of course we realize that this means you will need to sacrifice class time from your usual instructional routine, and we appreciate your willingness to consider our request. If you can think of a way we can help you facilitate this process, or if you have any questions, please don't hesitate to contact one of us.

If you are willing to participate, please let us know by March 11. We will make sure to get the necessary materials to you promptly.

Thank you very much for your cooperation and support of this important project!

Ellen Wentland

(978-556-3969)

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Co-Chairs: NECC Institutional-Level Assessment

APPENDIX 8

Hello kind faculty members!

We want to thank you for participating in this year's Institutional Assessment. You were very generous to give up some class time for this work, and we very much appreciate it. When we have results, we will share them with you!

As a last piece, could you please complete the brief attached survey? Your feedback will help us plan future assessments, and will give us a context in which to evaluate the work that was done in your classes.

Thank you very much for all of your help.

Ellen Wentland
Suzanne VanWert
Co-chairs – Institutional Assessment

May 2011

**NECC SPRING 2011 INSTITUTIONAL ASSESSMENT
FACULTY SURVEY**

NAME: _____
CLASS: _____

Dear Faculty Member:

We greatly appreciate your help in administering this year's institutional assessment in your class(es). This is our second year of conducting institutional-level assessment, and the first time we tried the in-class administration approach.

To help us in decisions regarding future assessment methods, and to provide some contextual information for this year's assessment, we are asking for your feedback concerning your perceptions of the effectiveness of this year's approach. Towards that end, please provide your responses to the following survey questions. Your thoughts will be very helpful to us in reviewing the assignment and the overall assessment process.

1. Were the instructions clear concerning what you were to do?

_____ Very clear
_____ Somewhat clear
_____ Somewhat unclear
_____ Very unclear

2. Do you think that the instructions you read to the students were clear to them?

_____ Very clear
_____ Somewhat clear
_____ Somewhat unclear
_____ Very unclear

3. How do you feel about the amount of time (about 45 minutes) given for this assignment?

_____ It was way too much time; students finished long before the time was up.
_____ It was just a little too much time; students finished a little early.
_____ It was just the right amount of time; students finished just about on time.
_____ It was just a little bit short of being enough time; students did not quite finish.
_____ It was definitely not enough time; students didn't get anywhere near finishing.

4. In general, based on your reading of the assignment and/or any student reactions, how would you rate the difficulty of the assignment for your students?

_____ Very easy
_____ Somewhat easy
_____ Just about right

_____Somewhat difficult
_____Very difficult
_____Not sure/ Don't know

5. In your opinion, how much effort did students put into completing the assignment?

_____A lot of effort; They did their best.
_____Some effort; They did just enough to answer the question.
_____Not much; They did just enough to hand something in.
_____Little or no effort; They really couldn't get into it.

6. What is your general impression of this assignment and/or the process?

Additional Comments:

Thank you for your participation!

APPENDIX 9

Core Academic Skills: Global Awareness

The global awareness skill set is defined in A Vision for Core Academic Skills at NECC as follows: Students will develop an understanding of the diverse cultures, ways of thinking and historical traditions in today's world. They will learn to use this knowledge to address increasingly interdependent global issues such as the environment and human rights.

To achieve this goal, students must pass at least one Global Awareness Intensive course as a requirement for graduation from NECC.

Global Awareness Intensive Courses

What makes a course Global Awareness Intensive: Courses that can be used to fulfill the Global Awareness requirement must meet the criteria below. A course must fulfill criterion # 1 **AND** one element of criterion # 2, **OR** fulfill criterion #3

(1) At least 20% of course (as demonstrated through the course description, text, readings, and/or course activities) must focus on cultures/ societies outside of the United States.

(2) The course includes subject matter in at least **one** of the following:

- Studies of world political, economic, scientific, or artistic interdependence or interrelationships
- Studies that include a cross-cultural analysis comparing the U.S. to non-U.S. cultures, with emphases on such cultural elements as religion, art, folklore, etc.
- Area/geographical studies of non-U.S. regions.
- Studies of world issues such as the environment, hunger, migration, employment, etc.

--OR--

(3) The course includes a Study Abroad (international travel) component.

Core Academic Skills: Quantitative Reasoning

The quantitative reasoning skill set is defined in A Vision for Core Academic Skills at NECC as follows: Students will learn to interpret and manipulate quantitative information and apply mathematical concepts and skills to solve real-world problems.

To achieve this goal, students must successfully complete one Quantitative Reasoning Intensive Course as a requirement for graduation from NECC.

Quantitative Reasoning Intensive Courses

What makes a course Quantitative Reasoning Intensive: A Quantitative Reasoning (QR) intensive course has disciplinary or interdisciplinary content outside of mathematics as its main focus but applies mathematical concepts and skills to provide a deeper learning experience. QR intensive courses use mathematics as a tool to improve a student's ability to solve problems in the context of real-world situations.

In order for a course to be considered Quantitative Reasoning Intensive, it must meet all of the following five criteria:

- (1) At least three QR assignments per semester (exclusive of in-class quizzes and exams).
- (2) At least 15% of class time and graded content involves the teaching, learning, and assessment of QR skills.
- (3) Quality of student QR must be an important component in determining student's course grade.
- (4) The courses will include some of the following QR skills, but are not limited to:
 - Graphical and statistical analysis, such as trends over time
 - Descriptive and/or inferential statistics
 - Data analysis
 - Experimental design and creation of data sets with simple evaluation
 - Application of Mathematics in context
 - Reading, Writing, and/or Critical thinking in context with numbers
 - Development of mathematical solutions and equations to solve problems in context
 - Discussion of multiple interpretations of a single data set
 - An emphasis on the difference between cause and effect versus correlation data
 - Proportional reasoning in the context of real situations
- (5) The course syllabus will explain the quantitative-intensive nature of the course and contain a schedule for QR activities and assignments.

APPENDIX 10

INTERCULTURAL KNOWLEDGE AND COMPETENCE VALUE RUBRIC



for more information, please contact value@aacu.org

The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can be shared nationally through a common dialog and understanding of student success.

Definition

Intercultural Knowledge and Competence is "a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts." (Bennett, J. M. 2008. Transformative training: Designing programs for culture learning. In *Contemporary leadership and intercultural competence: Understanding and utilizing cultural diversity to build successful organizations*, ed. M. A. Moodian, 95-110. Thousand Oaks, CA: Sage.)

Framing Language

The call to integrate intercultural knowledge and competence into the heart of education is an imperative born of seeing ourselves as members of a world community, knowing that we share the future with others. Beyond mere exposure to culturally different others, the campus community requires the capacity to: meaningfully engage those others, place social justice in historical and political context, and put culture at the core of transformative learning. The intercultural knowledge and competence rubric suggests a systematic way to measure our capacity to identify our own cultural patterns, compare and contrast them with others, and adapt empathically and flexibly to unfamiliar ways of being.

The levels of this rubric are informed in part by M. Bennett's Developmental Model of Intercultural Sensitivity (Bennett, M.J. 1993. Towards ethnorelativism: A developmental model of intercultural sensitivity. In *Education for the intercultural experience*, ed. R. M. Paige, 22-71. Yarmouth, ME: Intercultural Press). In addition, the criteria in this rubric are informed in part by D.K. Deardorff's intercultural framework which is the first research-based consensus model of intercultural competence (Deardorff, D.K. 2006. The identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies in International Education* 10(3): 241-266). It is also important to understand that intercultural knowledge and competence is more complex than what is reflected in this rubric. This rubric identifies six of the key components of intercultural knowledge and competence, but there are other components as identified in the Deardorff model and in other research.

Glossary

The definitions that follow were developed to clarify terms and concepts used in this rubric only.

- Culture: All knowledge and values shared by a group.

- Cultural rules and biases: Boundaries within which an individual operates in order to feel a sense of belonging to a society or group, based on the values shared by that society or group.
- Empathy: "Empathy is the imaginary participation in another person's experience, including emotional and intellectual dimensions, by imagining his or her perspective (not by assuming the person's position)". Bennett, J. 1998. Transition shock: Putting culture shock in perspective. In *Basic concepts of intercultural communication*, ed. M. Bennett, 215-224. Yarmouth, ME: Intercultural Press.
- Intercultural experience: The experience of an interaction with an individual or groups of people whose culture is different from your own.
- Intercultural/cultural differences: The differences in rules, behaviors, communication and biases, based on cultural values that are different from one's own culture.
- Suspends judgment in valuing their interactions with culturally different others: Postpones assessment or evaluation (positive or negative) of interactions with people culturally different from one self. Disconnecting from the process of automatic judgment and taking time to reflect on possibly multiple meanings.
- Worldview: Worldview is the cognitive and affective lens through which people construe their experiences and make sense of the world around them.

INTERCULTURAL KNOWLEDGE AND COMPETENCE VALUE RUBRIC



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Definition

Intercultural Knowledge and Competence is "a set of cognitive, affective, and behavioral skills and characteristics that support effective and appropriate interaction in a variety of cultural contexts." (Bennett, J. M. 2008. Transformative training: Designing programs for culture learning. In *Contemporary leadership and intercultural competence: Understanding and utilizing cultural diversity to build successful organizations*, ed. M. A. Moodian, 95-110. Thousand Oaks, CA: Sage.)

	Capstone 4	Milestones 3 2		Benchmark 1
Knowledge <i>Cultural self-awareness</i>	Articulates insights into own cultural rules and biases (e.g. seeking complexity; aware of how her/his experiences have shaped these rules, and how to recognize and respond to cultural biases, resulting in a shift in self-description.)	Recognizes new perspectives about own cultural rules and biases (e.g. not looking for sameness; comfortable with the complexities that new perspectives offer.)	Identifies own cultural rules and biases (e.g. with a strong preference for those rules shared with own cultural group and seeks the same in others.)	Shows minimal awareness of own cultural rules and biases (even those shared with own cultural group(s)) (e.g. uncomfortable with identifying possible cultural differences with others.)
Knowledge <i>Knowledge of cultural worldview frameworks</i>	Demonstrates sophisticated understanding of the complexity of elements important to members of another culture in relation to its history, values, politics, communication styles, economy, or beliefs and practices.	Demonstrates adequate understanding of the complexity of elements important to members of another culture in relation to its history, values, politics, communication styles, economy, or beliefs and practices.	Demonstrates partial understanding of the complexity of elements important to members of another culture in relation to its history, values, politics, communication styles, economy, or beliefs and practices.	Demonstrates surface understanding of the complexity of elements important to members of another culture in relation to its history, values, politics, communication styles, economy, or beliefs and practices.
Skills <i>Empathy</i>	Interprets intercultural experience from the perspectives of own and more than one worldview and demonstrates ability to act in a supportive manner that recognizes the feelings of another cultural group.	Recognizes intellectual and emotional dimensions of more than one worldview and sometimes uses more than one worldview in interactions.	Identifies components of other cultural perspectives but responds in all situations with own worldview.	Views the experience of others but does so through own cultural worldview.
Skills <i>Verbal and nonverbal communication</i>	Articulates a complex understanding of cultural differences in verbal and nonverbal communication (e.g., demonstrates understanding of the degree to which people use physical contact while communicating in different cultures or use direct/indirect and explicit/implicit meanings) and is	Recognizes and participates in cultural differences in verbal and nonverbal communication and begins to negotiate a shared understanding based on those differences.	Identifies some cultural differences in verbal and nonverbal communication and is aware that misunderstandings can occur based on those differences but is still unable to negotiate a shared understanding.	Has a minimal level of understanding of cultural differences in verbal and nonverbal communication; is unable to negotiate a shared understanding.

	able to skillfully negotiate a shared understanding based on those differences.			
Attitudes <i>Curiosity</i>	Asks complex questions about other cultures, seeks out and articulates answers to these questions that reflect multiple cultural perspectives.	Asks deeper questions about other cultures and seeks out answers to these questions.	Asks simple or surface questions about other cultures.	States minimal interest in learning more about other cultures.
Attitudes <i>Openness</i>	Initiates and develops interactions with culturally different others. Suspends judgment in valuing her/his interactions with culturally different others.	Begins to initiate and develop interactions with culturally different others. Begins to suspend judgment in valuing her/his interactions with culturally different others.	Expresses openness to most, if not all, interactions with culturally different others. Has difficulty suspending any judgment in her/his interactions with culturally different others, and is aware of own judgment and expresses a willingness to change.	Receptive to interacting with culturally different others. Has difficulty suspending any judgment in her/his interactions with culturally different others, but is unaware of own judgment.

QUANTITATIVE LITERACY VALUE RUBRIC

for more information, please contact value@aacu.org



Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can be shared nationally through a common dialog and understanding of student success.

Definition

Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data. Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

Quantitative Literacy Across the Disciplines

Current trends in general education reform demonstrate that faculty are recognizing the steadily growing importance of Quantitative Literacy (QL) in an increasingly quantitative and data-dense world. AAC&U's recent survey showed that concerns about QL skills are shared by employers, who recognize that many of today's students will need a wide range of high level quantitative skills to complete their work responsibilities. Virtually all of today's students, regardless of career choice, will need basic QL skills such as the ability to draw information from charts, graphs, and geometric figures, and the ability to accurately complete straightforward estimations and calculations.

Preliminary efforts to find student work products which demonstrate QL skills proved a challenge in this rubric creation process. It's possible to find pages of mathematical problems, but what those problem sets don't demonstrate is whether the student was able to think about and understand the meaning of her work. It's possible to find research papers that include quantitative information, but those papers often don't provide evidence that allows the evaluator to see how much of the thinking was done by the original source (often carefully cited in the paper) and how much was done by the student herself, or whether conclusions drawn from analysis of the source material are even accurate.

Given widespread agreement about the importance of QL, it becomes incumbent on faculty to develop new kinds of assignments which give students substantive, contextualized experience in using such skills as analyzing quantitative information, representing quantitative information in appropriate forms, completing calculations to answer meaningful questions, making judgments based on quantitative data and communicating the results of that work for various purposes and audiences. As students gain experience with those skills, faculty must develop assignments that require students to create work products which reveal their thought processes and demonstrate the range of their QL skills.

This rubric provides for faculty a definition for QL and a rubric describing four levels of QL achievement which might be observed in work products within work samples or collections of work. Members of AAC&U's rubric development team for QL hope that these materials will aid in the assessment of QL – but, equally important, we hope that they will help institutions and individuals in the effort to more thoroughly embed QL across the curriculum of colleges and universities.

Framing Language

This rubric has been designed for the evaluation of work that addresses quantitative literacy (QL) in a substantive way. QL is not just computation, not just the citing of someone else's data. QL is a habit of mind, a way of thinking about the world that relies on data and on the mathematical analysis of data to make connections and draw conclusions. Teaching QL requires us to design assignments that address authentic, data-based problems. Such assignments may call for the traditional written paper, but we can imagine other alternatives: a video of a PowerPoint presentation, perhaps, or a well designed series of web pages. In any case, a successful demonstration of QL will place the mathematical work in the context of a full and robust discussion of the underlying issues addressed by the assignment.

Finally, QL skills can be applied to a wide array of problems of varying difficulty, confounding the use of this rubric. For example, the same student might demonstrate high levels of QL achievement when working on a simplistic problem and low levels of QL achievement when working on a very complex problem. Thus, to accurately assess a student's QL achievement it may be necessary to measure QL achievement within the context of problem complexity, much as is done in diving competitions where two scores are given, one for the difficulty of the dive, and the other for the skill in accomplishing the dive. In this context, that would mean giving one score for the complexity of the problem and another score for the QL achievement in solving the problem.

QUANTITATIVE LITERACY VALUE RUBRIC

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Definition

Quantitative Literacy (QL) – also known as Numeracy or Quantitative Reasoning (QR) – is a "habit of mind," competency, and comfort in working with numerical data.

Individuals with strong QL skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They understand and can create sophisticated arguments supported by quantitative evidence and they can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, etc., as appropriate).

Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	Milestones		
		3	2	1
Interpretation <i>Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)</i>	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. <i>For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.</i>	Provides accurate explanations of information presented in mathematical forms. <i>For instance, accurately explains the trend data shown in a graph.</i>	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. <i>For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line.</i>	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. <i>For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.</i>
Representation <i>Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)</i>	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Calculation	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem. Calculations are also presented elegantly (clearly, concisely, etc.)	Calculations attempted are essentially all successful and sufficiently comprehensive to solve the problem.	Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem.	Calculations are attempted but are both unsuccessful and are not comprehensive.
Application / Analysis <i>Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis</i>	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work.
Assumptions <i>Ability to make and evaluate important assumptions in estimation, modeling, and data analysis</i>	Explicitly describes assumptions and provides compelling rationale for why each assumption is appropriate. Shows awareness	Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate.	Explicitly describes assumptions.	Attempts to describe assumptions.

	that confidence in final conclusions is limited by the accuracy of the assumptions.			
Communication <i>Expressing quantitative evidence in support of the argument or purpose of the work (in terms of what evidence is used and how it is formatted, presented, and contextualized)</i>	Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality.	Uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven.	Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)

PROBLEM SOLVING VALUE RUBRIC

for more information, please contact value@aacu.org



The VALUE rubrics were developed by teams of faculty experts representing colleges and universities across the United States through a process that examined many existing campus rubrics and related documents for each learning outcome and incorporated additional feedback from faculty. The rubrics articulate fundamental criteria for each learning outcome, with performance descriptors demonstrating progressively more sophisticated levels of attainment. The rubrics are intended for institutional-level use in evaluating and discussing student learning, not for grading. The core expectations articulated in all 15 of the VALUE rubrics can and should be translated into the language of individual campuses, disciplines, and even courses. The utility of the VALUE rubrics is to position learning at all undergraduate levels within a basic framework of expectations such that evidence of learning can be shared nationally through a common dialog and understanding of student success.

Definition

Problem solving is the process of designing, evaluating and implementing a strategy to answer an open-ended question or achieve a desired goal.

Framing Language

Problem-solving covers a wide range of activities that may vary significantly across disciplines. Activities that encompass problem-solving by students may involve problems that range from well-defined to ambiguous in a simulated or laboratory context, or in real-world settings. This rubric distills the common elements of most problem-solving contexts and is designed to function across all disciplines. It is broad-based enough to allow for individual differences among learners, yet is concise and descriptive in its scope to determine how well students have maximized their respective abilities to practice thinking through problems in order to reach solutions.

This rubric is designed to measure the quality of a **process**, rather than the quality of an **end-product**. As a result, work samples or collections of work will need to include some evidence of the individual's thinking about a problem-solving task (e.g., reflections on the process from problem to proposed solution; steps in a problem-based learning assignment; record of think-aloud protocol while solving a problem). The final product of an assignment that required problem resolution is insufficient without insight into the student's problem-solving process. Because the focus is on institutional level assessment, scoring team projects, such as those developed in capstone courses, may be appropriate as well.

Glossary

The definitions that follow were developed to clarify terms and concepts used in this rubric only.

- Contextual Factors: Constraints (such as limits on cost), resources, attitudes (such as biases) and desired additional knowledge which affect how the problem can be best solved in the real world or simulated setting.
- Critique: Involves analysis and synthesis of a full range of perspectives.
- Feasible: Workable, in consideration of time-frame, functionality, available resources, necessary buy-in, and limits of the assignment or task.
- “Off the shelf” solution: A simplistic option that is familiar from everyday experience but not tailored to the problem at hand (e.g. holding a bake sale to "save" an underfunded public library).
- Solution: An appropriate response to a challenge or a problem.
- Strategy: A plan of action or an approach designed to arrive at a solution. (If the problem is a river that needs to be crossed, there could be a construction-oriented, cooperative (build a bridge with your community) approach and a personally oriented, physical (swim across alone) approach. An approach that partially applies would be a personal, physical approach for someone who doesn't know how to swim.
- Support: Specific rationale, evidence, etc. for solution or selection of solution.

for more information, please contact value@aacu.org



Evaluators are encouraged to assign a zero to any work sample or collection of work that does not meet benchmark (cell one) level performance.

	Capstone 4	Milestones 3 2		Benchmark 1
Define Problem	Demonstrates the ability to construct a clear and insightful problem statement with evidence of all relevant contextual factors.	Demonstrates the ability to construct a problem statement with evidence of most relevant contextual factors, and problem statement is adequately detailed.	Begins to demonstrate the ability to construct a problem statement with evidence of most relevant contextual factors, but problem statement is superficial.	Demonstrates a limited ability in identifying a problem statement or related contextual factors.
Identify Strategies	Identifies multiple approaches for solving the problem that apply within a specific context.	Identifies multiple approaches for solving the problem, only some of which apply within a specific context.	Identifies only a single approach for solving the problem that does apply within a specific context.	Identifies one or more approaches for solving the problem that do not apply within a specific context.
Propose Solutions/Hypotheses	Proposes one or more solutions/hypotheses that indicates a deep comprehension of the problem. Solution/hypotheses are sensitive to contextual factors as well as all of the following: ethical, logical, and cultural dimensions of the problem.	Proposes one or more solutions/hypotheses that indicates comprehension of the problem. Solutions/hypotheses are sensitive to contextual factors as well as the one of the following: ethical, logical, or cultural dimensions of the problem.	Proposes one solution/hypothesis that is “off the shelf” rather than individually designed to address the specific contextual factors of the problem.	Proposes a solution/hypothesis that is difficult to evaluate because it is vague or only indirectly addresses the problem statement.
Evaluate Potential Solutions	Evaluation of solutions is deep and elegant (for example, contains thorough and insightful explanation) and includes, deeply and thoroughly, all of the following: considers history of	Evaluation of solutions is adequate (for example, contains thorough explanation) and includes the following: considers history of problem, reviews logic/reasoning, examines	Evaluation of solutions is brief (for example, explanation lacks depth) and includes the following: considers history of problem, reviews logic/reasoning,	Evaluation of solutions is superficial (for example, contains cursory, surface level explanation) and includes the following: considers history of problem, reviews

	problem, reviews logic/reasoning, examines feasibility of solution, and weighs impacts of solution.	feasibility of solution, and weighs impacts of solution.	examines feasibility of solution, and weighs impacts of solution.	logic/reasoning, examines feasibility of solution, and weighs impacts of solution.
Implement Solution	Implements the solution in a manner that addresses thoroughly and deeply multiple contextual factors of the problem.	Implements the solution in a manner that addresses multiple contextual factors of the problem in a surface manner.	Implements the solution in a manner that addresses the problem statement but ignores relevant contextual factors.	Implements the solution in a manner that does not directly address the problem statement.
Evaluate Outcomes	Reviews results relative to the problem defined with thorough, specific considerations of need for further work.	Reviews results relative to the problem defined with some consideration of need for further work.	Reviews results in terms of the problem defined with little, if any, consideration of need for further work.	Reviews results superficially in terms of the problem defined with no consideration of need for further work

APPENDIX 11

INSTITUTIONAL ASSESSMENT – SPRING 2011
RUBRIC FOR GLOBAL AWARENESS AND QUANTITATIVE REASONING

CRITERIA	STANDARDS				RATINGS
	No or Limited Proficiency – Unacceptable (1)	Developing Proficiency – Beginning (2)	Adequate Proficiency - Competent (3)	Superior Proficiency – Skilled (4)	
Understands diverse cultures, in terms of their different perspectives and ways of thinking	Demonstrates little or no understanding of elements important to members of another culture	Demonstrates surface understanding of elements important to members of another culture	Demonstrates adequate understanding of elements important to members of another culture	Demonstrates sophisticated understanding of elements important to members of another culture	
Recognizes the interdependence of nations around global issues	Demonstrates little or no understanding concerning the interdependence of nations in addressing global issues, and the complexities involved.	Demonstrates partial understanding concerning the interdependence of nations in addressing global issues, and the complexities involved.	Demonstrates adequate understanding concerning the interdependence of nations in addressing global issues, and the complexities involved.	Demonstrates superior understanding concerning the interdependence of nations in addressing global issue, and the complexities involved.	
Articulates the perspectives of at least two countries outside of the United States (U.S.)	Fails to articulate the perspectives of any country outside of the U. S.	Limited articulation of at least two perspectives of countries outside of the U. S. OR somewhat adequate articulation of one country outside of the U. S.	Adequate articulation of at least two perspectives of countries outside of the U. S.	Sophisticated articulation of at least two perspectives of countries outside of the U. S.	
Shows cultural self-awareness	Shows little or no awareness of own cultural rules and biases	Shows minimal awareness of own cultural rules and biases	Identifies own cultural rules and biases	Recognizes new perspectives about our own cultural rules and biases	
Intercultural openness	Demonstrates an inability to suspend judgments about culturally different others	Demonstrates a limited awareness and ability to suspend judgments about culturally different others	Demonstrates some awareness of own judgments as well as an ability to suspend judgments about culturally different others	Demonstrates a superior ability to suspend judgments about culturally different others	
Problem solving: Propose solutions	Proposes a solution that does not address the problem OR fails to propose a solution	Proposes a solution that partially or only indirectly addresses the problem	Proposes a solution that indicates comprehension of the problem and what is needed to address it	Proposes one or more solutions that indicate a deep comprehension of the problem and its contextual factors	
Interprets quantitative information presented in graphs	Demonstrates an inability to correctly interpret quantitative information presented in a graph	Demonstrates an limited ability to correctly interpret quantitative information presented in a graph	Adequately interprets most of the quantitative information presented in a graph	Correctly interprets all of the quantitative information presented in a graph	
Applies quantitative information to solve a real-world problem	Unable to use graphically presented information to formulate a basic solution to the problem	Uses the graphically presented information to formulate a basic or simplistic solution to the problem	Uses the graphically presented information to formulate a reasonable and adequate solution to the problem	Proposes one or more sophisticated solutions to the problem using the graphically presented information	
Applies math skills	No application attempted	Application attempted, but incorrect	Application attempted, but only partially correct	Application attempted and correct	

APPENDIX 12

Dear Faculty Member,

We would greatly appreciate you taking a few minutes of your time to help us with this years' Institutional Assessment project of **Global Awareness and Quantitative Reasoning**.

The project involved administering and collecting an assignment from students enrolled in a variety of programs who had earned **between 45 – 59 credit hours at NECC**. These assignments were then rated by faculty members using a version of the **rubric shown below**.

We are interested in your expectations concerning how the students were rated using this rubric. In other words, considering that these students had earned between 45 – 59 NECC credit hours, **how do you expect they would have performed?**

Each of the nine criteria listed is presented with a row for you to indicate your expected percentages. **What percent of the students rated do you think scored in the first two combined categories (Unacceptable and Beginner) and what percent in the second two (Competent and Skilled)?** The two percentages for each row should total 100 percent.

Remember that these are who have earned 45 - 59 NECC credit hours, so are likely close to completing a degree program.

INSTITUTIONAL ASSESSMENT – SPRING 2011
RUBRIC FOR GLOBAL AWARENESS AND QUANTITATIVE REASONING

CRITERIA	STANDARDS				TOTAL PERCENT
	No or Limited Proficiency – Unacceptable (1)	Developing Proficiency – Beginning (2)	Adequate Proficiency - Competent (3)	Superior Proficiency – Skilled (4)	
Understands diverse cultures, in terms of their different perspectives and ways of thinking	Demonstrates little or no understanding of elements important to members of another culture	Demonstrates surface understanding of elements important to members of another culture	Demonstrates adequate understanding of elements important to members of another culture	Demonstrates sophisticated understanding of elements important to members of another culture	
EXPECTED PERCENT BY CATEGORY					100%
Recognizes the interdependence of nations around global issues	Demonstrates little or no understanding concerning the interdependence of nations in addressing global issues, and the complexities involved.	Demonstrates partial understanding concerning the interdependence of nations in addressing global issues, and the complexities involved.	Demonstrates adequate understanding concerning the interdependence of nations in addressing global issues, and the complexities involved.	Demonstrates superior understanding concerning the interdependence of nations in addressing global issue, and the complexities involved.	
EXPECTED PERCENT BY CATEGORY					100%
Articulates the perspectives of at least two countries outside of the United States (U.S.)	Fails to articulate the perspectives of any country outside of the U. S.	Limited articulation of at least two perspectives of countries outside of the U. S. OR somewhat adequate articulation of one country outside of the U. S.	Adequate articulation of at least two perspectives of countries outside of the U. S.	Sophisticated articulation of at least two perspectives of countries outside of the U. S.	

EXPECTED PERCENT BY CATEGORY					100%
Shows cultural self-awareness	Shows little or no awareness of own cultural rules and biases	Shows minimal awareness of own cultural rules and biases	Identifies own cultural rules and biases	Recognizes new perspectives about our own cultural rules and biases	
EXPECTED PERCENT BY CATEGORY					100%
Intercultural openness	Demonstrates an inability to suspend judgments about culturally different others	Demonstrates a limited awareness and ability to suspend judgments about culturally different others	Demonstrates some awareness of own judgments as well as an ability to suspend judgments about culturally different others	Demonstrates a superior ability to suspend judgments about culturally different others	
EXPECTED PERCENT BY CATEGORY					100%
Problem solving: Propose solutions	Proposes a solution that does not address the problem OR fails to propose a solution	Proposes a solution that partially or only indirectly addresses the problem	Proposes a solution that indicates comprehension of the problem and what is needed to address it	Proposes one or more solutions that indicate a deep comprehension of the problem and its contextual factors	
EXPECTED PERCENT BY CATEGORY					100%
Interprets quantitative information presented in graphs	Demonstrates an inability to correctly interpret quantitative information presented in a graph	Demonstrates an limited ability to correctly interpret quantitative information presented in a graph	Adequately interprets most of the quantitative information presented in a graph	Correctly interprets all of the quantitative information presented in a graph	
EXPECTED PERCENT BY CATEGORY					100%
Applies quantitative information to solve a real-world problem	Unable to use graphically presented information to formulate a basic solution to the problem	Uses the graphically presented information to formulate a basic or simplistic solution to the problem	Uses the graphically presented information to formulate a reasonable and adequate solution to the problem	Proposes one or more sophisticated solutions to the problem using the graphically presented information	
EXPECTED PERCENT BY CATEGORY					100%
Applies math skills	No application attempted	Application attempted, but incorrect	Application attempted, but only partially correct	Application attempted and correct	
EXPECTED PERCENT BY CATEGORY					100%

We very much appreciate your help! Please let us know if you have any questions.
Thank you!

Ellen Wentland
Suzanne Van Wert
Institutional Assessment Co-Chairs