Colorado Northwestern Community College

Assessment of Student Learning Report

2001-2002

Table of Contents

Introduction

CNCC will implement and sustain a comprehensive assessment process to foster innovation and continuous improvement in student learning.

The above goal is one of five that support Colorado Northwestern Community College's mission statement and five-year strategic plan. For the past year and a half, the Assessment of Student Learning/Institutional Effectiveness Committee (Assessment Committee/Committee) has been working hard to make this goal a reality.

In early Fall 2001, a nine-member Assessment of Student Learning Committee was created and significant human and financial resources were dedicated to the College's assessment effort. Gloria Dohman, assessment director at North Dakota State College of Science (NDSCS), presented an assessment workshop to faculty at the Fall 2001 Development Day. Soon after, results of a "levels of implementation" survey of 35 instructors and administrators indicated a "beginning" or Level 1 status for assessment of student learning at the College. Throughout the remainder of 2001 and into 2002, Assessment Committee members met regularly to create a workable assessment plan that employees would actively engage in. Despite the inevitable confusion, a fairly comprehensive assessment of student learning strategy was implemented for the 2001-2002 academic year and the groundwork for a complete assessment reporting cycle in 2002-2003 was established.

At the College's February 2002 Development Day, program chairs and instructors filled out worksheets that identified the goals, learning outcomes, and classroom assessment strategies critical to their courses and programs. Individual instructors defined measures that would assess their chosen outcomes and developed strategies for collecting assessment data. Accountability was encouraged through committee-generated report forms that instructors were required to submit to the Committee early in the fall 2002 semester. In April 2002, the Assessment Committee administered the ACT-CAAP exam and determined that graduating sophomores were near or above the national 2-year college norms in reading, writing, and mathematics.

A significant change in assessment planning resulted from the participation of a five-person CNCC Assessment team at the June 2002 AAHE-NCA Assessment Workshop in Kansas City. A Team capstone report led to the creation of two institutional assessment outcomes, critical thinking and communication. These two institutional assessment outcomes were implemented for the 2002-2003 academic year and many CNCC instructors, full and part-time, incorporated the outcomes and related assessment strategies into their syllabi for the fall 2002 semester.

Assessment reporting efforts for the spring of 2002, collected and documented in the fall 2002 semester (see Appendix 1), revealed the strengths and weaknesses in the College's assessment effort for this period. The 2001-2002 assessment report is only partially complete because of faculty and Committee confusion about assessment techniques and data collection. The Committee recognized this shortcoming and identified ways to strengthen its 2002-2003 assessment plan through report forms that call for better numerical and narrative data collection. In addition, the Committee is making progress toward evaluating content and conclusions arrived at by department chairs in their 2001-2002 reports. The Committee is attempting to raise the reporting standard by developing a model report that contains all the information that should be included in a substantive assessment report.

The Committee recognizes that faculty have a right to maintain a large degree of freedom in instructional methods and techniques in their classrooms. It also recognizes that greater collaboration within and between disciplines will encourage faculty to become more uniform in their assessment techniques and data collection. The math department, for example, plans to administer a number of the same questions to the MAT 121 (College Algebra) classes in six agreed upon content areas at the end of the term and

across the campus community. Through curriculum-specific strategies such as this, the Committee hopes to foster a common core assessment at all of the campuses that make up the College. As faculty and students begin to weave assessment and accountability into the fabric of teaching and learning, the Committee is confident that data quality and reporting efforts will become more meaningful.

A final aspect of CNCC's attempt to foster improved teaching and learning is related to its faculty evaluation process. Considerable effort has gone into creating a state-mandated Faculty Performance Plan and the Assessment Committee feels strongly that all faculty should be assessing student learning and related teaching strategies. The evaluation procedure at CNCC is being revised to include an assessment component and the Committee has suggested that faculty could benefit from providing written comments that address areas of weakness identified in their student evaluations.

This report summarizes the 2001-2002 data collected from these areas:
- Academic Programs
- Collegiate Assessment of Academic Proficiency (CAAP)
- Student Opinion Survey
- Faculty evaluation

Program/Department Reports

The following academic programs/departments at Colorado Northwestern Community College submitted annual reports for the 2001-2002 academic years (See Appendix 1).

Aviation Maintenance Technology
Aviation Technology
Business Information Technology
Criminal Justice
Developmental Studies
Humanities and Social Sciences
Math and Sciences

Dental Hygiene did not submit a report, and Cosmetology, a new CNCC program, is in the initial stages of developing program goals and student outcomes.

The 2001-2002 annual department reports reflect that most classroom assessment efforts continued to be maturing. Instructors identified measurable student outcomes in the areas of critical thinking and communication and are continuing to develop methods for assessing these outcomes. Classroom data collection occurred in some departments, most notably in Math and Sciences, but generally programs/departments have identified gathering, compiling, and analyzing assessment data as priorities for 2002-2003.

Collegiate Assessment of Academic Proficiency (CAAP)

Because a comprehensive classroom assessment process based on locally developed outcomes and assessment practices was still in the initial stages, the Assessment Committee determined that a standardized assessment of student learning measure was needed. The CAAP was selected for these reasons:
- CAAP provides comparative national data
- CAAP tests in Writing Skills, Mathematics, and Reading assesses outcomes CNCC has identified as important
- CAAP was recommended by other institutions of higher learning

Sixty-one graduating CNCC sophomores took the CAAP test in April 2002. Although they were not **required** to take the test, they were strongly encouraged. The Writing Skills, Math, and Reading tests were administered to students on the Rangely, Craig, South Routt, and Meeker campuses. CNCC student scores and national average student scores for the tests and subtests are presented below.

Scores for these objectives tests (Writing Skills, Mathematics, Reading) are reported on a scale that ranges from 40 (low) to 80 (high) for the total test score and 5 (low) to 25 (high) for the subtest scores.

	CNCC	National
Writing Skills	**62.4**	**62.6**
Usage Mechanics	16.2	16.3
Rhetorical Skills	16.2	16.3
Mathematics	**56.5**	**56.3**
Algebra	14.2	14.0
Reading	**59.5**	**61.1**
Arts/Literature	14.4	15.3
Social Sciences	15.0	15.6

Analysis of these scores demonstrates that CNCC students performed very close to the national average. Scores were slightly above the national average in Mathematics and slightly below the national average in Writing Skills and Reading. However, errors in the sampling process have called the validity of these scores into question.

The CAAP did provide national comparison data.; however, the instrument did not target CNCC's specific learner outcomes. Additionally, the cost of the instrument and logistical problems surrounding test administration cast doubt on its effectiveness for Colorado Northwestern. In the future, local assessment instruments will be created to assess student outcomes in writing, reading, and mathematics. These instruments will provide the longitudinal data to determine institutional trends in student performance.

The Assessment Committee has selected the Test of Everyday Reasoning, a standardized assessment of critical thinking skills, to use as a pre/post test of critical thinking skills. The test is being used for the first time during the 2002-2003 academic year.

Student Opinion Survey

481 CNCC students completed the ACT Student Opinion Survey in April 2002. Twelve items from the survey constitute the section entitled "College Environment: Satisfaction level with the Academic Aspects of this College." These items are listed along with CNCC's Average and the National Norms Average.

Satisfaction Scale: 5=very satisfied, 4-satisfied, 3=neutral, 2=dissatisfied, 1=very dissatisfied

	CNCC	National
Class size relative to the type of course	4.33	4.24
Attitude of the teaching staff toward students	4.24	4.14
Out-of-class availability of your instructors	4.03	3.91
Testing/grading system	4.03	3.96
Challenge offered by your program of study	4.03	4.01
Availability of your advisor	4.03	3.85
Quality of instruction in your major area of study	4.02	4.03
Value of the information provided by your advisor	3.99	3.86
Preparation you are receiving for your chosen occupation	3.91	3.91
Course content in your major area of study	3.91	3.97
Flexibility to design your own program of study	3.80	3.91
Variety of courses offered at this 2-year college	3.64	3.89

Students rated eight of the twelve academics-related issues at or above the national average and four issues slightly below the national average. The results of this survey (even though not developed specifically for CNCC) do indicate that students are generally "satisfied" with the academic aspects of Colorado Northwestern. In fact, when evaluating student opinions of "College Environment: Satisfaction with All Aspects of this College," the **Top 5** items were academics-related.

> Class size relative to the type of course
> Attitude of the teaching staff toward students
> Out-of-class availability of your instructors
> Testing/grading system
> Challenge offered by your program of study

The Student Opinion Survey results were valuable for assessment of institutional effectiveness. A committee was formed to address problems identified in student services departments, and changes were implemented based on the results. However, the survey did not provide specific data concerning CNCC's academic programs and student outcomes. A local student opinion survey, designed to assess well-defined objectives and outcomes, would be more effective and is currently being developed.

Faculty Evaluation

The current faculty evaluation process was set forth in the Faculty Evaluation Manual in 1993. This process is directed by the Vice President of Instruction and combines a faculty self-evaluation, classroom observation, student evaluations, and an administrator's summary report. The faculty self-evaluation process consists of Instructional Responsibilities (Part I), and a Faculty Self-Evaluation Form (Part II). Part I outlines the instructor's course load and enrollment. Part II documents a) the goals set by the instructor and progress made toward them; b) steps the instructor has taken to enhance teaching effectiveness; c) the instructor's service to college through committees, student activities, community

service, etc; d) a description of the instructor's professional/personal growth throughout the last year; and e) the goals the instructor has projected for the next year.

The Classroom Observation component measures five areas: 1) the instructor's preparation and organization; 2) instructional technique and resources; 3) management of classroom situation; 4) communication of subject matter; and 5) student responsiveness. Student evaluations of instruction utilize a 36 question, 5 point scale questionnaire and a 3 question narrative that assess the same areas as the classroom observation instrument. Information is gathered from these documents and combined into an administrator's report that culminates in an overall rating of performance. The administrator's report is then approved by the Vice President of Instruction. Currently a new, state-mandated, faculty evaluation plan is under review and pending approval from the state.

Despite the presence of a plan, faculty evaluations have been sporadic in their completion and inconsistent in their method and content since 1991. The Craig Campus completed faculty evaluations until 1998 under direction of the academic dean. They utilized various methods prior to 1994 when the faculty evaluation manual established standard procedures. Consistent evaluations on the Rangely campus ended in 1991 with the replacement of the Vice President of Instruction. Student evaluations of instruction, however, have been collected for each instructor every semester since at least 1996. The 2001-2002 school year saw the reinstatement of faculty evaluations of full-time faculty across campuses under the direction of the Vice President of Instruction and the department chairs, with the exception of the 36-question, 5-point student evaluation. Evaluations for the 2002-2003 year are in process under direction of the department chairs using the 1993 plan (with the exception of adjunct and part-time instructors), and student evaluations of instruction are still consistently being collected. However, these efforts have yet to be directed by the Vice President of Instruction pending state approval of an evaluation plan.

Conclusion

Colorado Northwestern Community College has always been committed to student learning. Analysis of the data collected over the past year has identified strengths and challenges in the assessment program.

Strengths
- Colorado Northwestern has identified two learner outcomes, critical thinking and communication, as priorities. By narrowing the scope of our assessment, we are able to focus our efforts and achieve success. As we mature in assessment, this scope will be expanded.
- Each academic program/department has identified goals, student learning outcomes, measures to assess outcomes, and how assessment data will be collected.
- CNCC graduating sophomores scored very close to the national average in Writing Skills, Reading, and Mathematics on the Collegiate Assessment of Academic Proficiency.
- CNCC students report that they are generally satisfied with the academic aspects of the college; in fact, when evaluating student opinions of the college environment, the top five items were academics-related.
- Each academic program/department has identified broad strengths, weaknesses, and strategies for improvement.
- Faculty are becoming more knowledgeable about assessment through campus training opportunities, participation in assessment workshops, self-directed learning, and discussion with other faculty.
- Communication among faculty on both campuses and the service area centers has increased dramatically within the past year.
- Six academic program/department chairs are members of the Assessment Committee which has increased overall awareness of the assessment process and input into the process.

- The Test of Everyday Reasoning has been identified as a valid measure for pre/post testing of critical thinking skills. The instrument is being used for the first time during the 2002-2003 academic year.

Challenges
- Most departments/programs did not collect or report numerical data concerning the two student learning outcomes, critical thinking and effective communication.
- As reflected in the annual reports, several academic programs/departments do not understand the concept of classroom assessment.
- A formal assessment process/cycle has just been established. Several cycles will be required to refine the process and accumulate enough meaningful assessment data to affect instructional change to a large extent.
- CNCC faculty need to develop meaningful local terminal assessments in the areas of communication and mathematics.
- CNCC faculty must continue to develop college-wide assessment instruments for courses.
- Assessment training for new faculty members and adjunct faculty is not in place.
- The poor financial state of the college has resulted in fewer employees and increased responsibilities.

Strategies to Address Challenges
- Assessment Committee members will mentor individual instructors and program chairs in identifying, measuring, and reporting students outcomes.
- The Assessment Committee will continue to coordinate assessment-related workshops for all CNCC faculty at institutional development days.
- The College will support collaboration within programs/departments by providing necessary resources.
- The College will support assessment efforts by providing resources for external training in assessment and teaching and learning.
- The Assessment Committee will encourage programs/departments in their efforts to develop college-wide assessment instruments.
- The Assessment Committee and the College will recognize instructors who implement exemplary assessment and instruction.

**CNCC Assessment of Student Learning
Program/Department Report Form for 2001-2002**

Program: **Aviation Maintenance Technology** (AMT)   Date: **November 1, 2002**
Individual(s) Responsible:	**Brad Simson**

1. What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

   Over the 2001-2002 school year we focused on our AMT goal #3 "To provide students the technical training necessary for Federal Aviation Administration Airframe and Powerplant certification."

   We instituted a pretest assessment to determine our students' preparedness to take their FAA written exams. The pretest is a comprehensive exam covering all FAA subject areas. We require an overall score of 80% on the exam with a minimum 70% on each subject area. If a subject area is not passed, the student must take an individual subject area test and pass it at the minimum 70% level.

   Tracking for this pretest system includes keeping a record of all comprehensive scores with a breakdown of individual subject area scores. Subject area retest scores are also kept.

   As this assessment data continues to accumulate, we will be able to establish trends in student's strengths and weaknesses, and take corrective action. It is estimated that several years of data (3-5) will need to accumulate before any meaningful trends can be established.

   Since fully implementing this FAA pretest system, our students have shown a 100% pass rate for the FAA written exams. Although scores on the FAA written exams do not directly indicate performance on specific outcomes, the pretest system has provided us valuable information about the preparation of our students to test in the 45 FAA-required subject areas.

2. What, if any, weakness have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

   Up to this point our assessment efforts have been centered largely on grades. Our work in developing specific assessments that target individual learning goals is still in its infancy.

3. What specific steps will be taken to address identified weaknesses or to improve strengths?

For the 2002-2003 school year our department is developing specific assessments that focus on the two primary CNCC learning outcomes, critical thinking and communication. These assessments will be incorporated in a selection of AMT classes. Our focus will be a few courses where the subject area lends itself well to assessing these outcomes as they apply to aviation maintenance.

Additionally, the use of classroom assessment techniques such as "muddiest point" and "minute papers" will be expanded to provide formative information about students' learning.

4. What overall improvement in your program has resulted from student assessment efforts?

Scores on FAA certification exams have improved noticeably. Trends in student learning in individual subject areas are expected to emerge as more data is available.

5. Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.

Feedback primarily consists of written comments and verbal feedback on lab projects, exams, quizzes and worksheets. Additionally, feedback is normally provided the next day when classroom assessment techniques such as "muddiest point" and "minute papers" are used.

6. Did your assessment information require a change in financial resources? If so, please attach relevant materials.

No financial resource changes were noted based on 2001-2002 school year assessment data.

CNCC Assessment of Student Learning
Program/Department Report Form for 2001-2002

Program: Aviation Technology	Date: November 1, 2002
Individual(s) Responsible:	Mike M. Brennan

1. What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

A. Instructor training and standardization
B. Mandatory scheduling
C. Equipment is in very good shape and maintenance
D. Excellence and professionalism of Flight Instructors

2. What, if any, weakness have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

A. Lack of remedial training for weak students
B. Student advising
C. On-time completions

3. What specific steps will be taken to address identified weaknesses or to improve strengths?

A. Schedule remedial training and make-up blocks, utilizing Faculty and Associate Instructors
B. Maintain Student/Advisor relationship, i.e., no "filling in" for another advisor
C. Provide information in class allowing students to see how much progress they should be making

4. What overall improvement in your program has resulted from student assessment efforts?

We are developing and implementing a remedial training plan, which should improve on-time completions and strengthen the over-all quality of the graduates.

5. Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.

At the present time, we have not provided anything except grade results.

6. Did your assessment information require a change in financial resources? If so, please attach relevant materials.

Not to date.

Program: Business Information Technology	Date November 1, 2002
Individual(s) Responsible:	**Darlene Ringhand, Department Chair after 9/1/02**

1. What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

Our department remains learner-centered with our goals focused on the student. Advising, tutoring students when necessary and using assessment tools to help improve student learning and retention are goals for the department. All of our courses take critical thinking, written and oral communication skills, and technical skills into consideration during each semester.

2. What, if any, weakness have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

Our Department could spend more quality time on developing innovative ways to assess students and student learning. Most department members did not attend assessment workshops until 2002.

3. What specific steps will be taken to address identified weaknesses or to improve strengths?

All department members will be or have already attended assessment workshops by the end of 2002. We will continue to focus on student learning and better ways of student assessment.

4. What overall improvement in your program has resulted from student assessment efforts?

Students in the program are benefiting from the assessment process. Clarification of class objectives seems to be improved, and students feel confident of their program of study.

5. Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.

Most faculty within the department use assessment tools to "fine tune" exams by evaluating questions and how they were answered (correctly/incorrectly) so that the learning process for the student can be improved.
Several faculty members in the department use "muddiest point" questions in their classes with great success.
Students receive feedback with weekly homework assignments and periodic tests as well as final projects that take all the skills learned in class and challenge the students to complete a "real world" project. All results are given to the students in a timely manner.

6. Did your assessment information require a change in financial resources? If so, please attach relevant materials.

We have a general budget for our department, and equipment is provided by board of control funding. Software is the only area that could be improved with more financial resources. Industry requests for MS Project and Crystal Report Writer.

CNCC Assessment of Student Learning
Program/Department Report Form for 2001-2002

Program: Criminal Justice	Date: November 1, 2002
Individual(s) Responsible:	**George Fortunato** **Pete Klismet** **Brenna Kenney**

1. What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

   - Quality of instructors (experience level)
   - Facilities and equipment
   - Adjunct staff and support staff
   - We far surpass the minimum level of instruction set by P.O.S.T (Peace Officers Standards and Training) in our academy

2. What, if any, weakness have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

   - Lack of full-time staff does not allow us to do more than basic courses
   - Limited budget for recruiting
   - Limited time for recruiting
   - Lack of time to conduct in-service training

3. What specific steps will be taken to address identified weaknesses or to improve strengths?

   - Much, if not all of these issues, are out of our hands due to budgetary constraints.

4. What overall improvement in your program has resulted from student assessment efforts?

   - Quality of instructional staff has improved dramatically.

5. Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.

   Word of mouth

6. Did your assessment information require a change in financial resources? If so, please attach relevant materials.

   No

CNCC Assessment of Student Learning
Program/Department Report Form for 2001-2002

Program: Developmental Studies (DS)	Date: November 1, 2002
Individual(s) Responsible:	Jan Rogers and Dana Gunderson

1. **What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?**

   Developmental Studies (DS) instructors recognize the importance of assessment, engage in critical and on-going assessment practices, and use assessment data to guide classroom instruction and practices.

2. **What, if any, weaknesses have you identified with respect to your program goals and/or CNCC's institutional assessment goals?**

   The DS department only addressed a communication goal for 2001-2002 instead of a critical thinking goal as well.

   The department has identified problems in the areas of data collection, organization, and analysis of data.

   The department lacks an end-of-program assessment of students' skills.

   The department recognizes the need for long-term tracking of students who completed developmental courses for program assessment purposes.

3. **What specific steps will be taken to address identified weaknesses or to improve strengths?**

   The DS department has identified critical thinking goals and objectives for the 2002-2003 year, which have been included in instructors' assessment plans.

   DS instructors have identified specific methods for data collection within courses. DS Co-Chairs will be responsible for collecting and organizing program data (using guidelines and target dates provided by the Assessment Committee). Data analysis will be conducted by DS instructors during regular department meetings.

   DS instructors in each area (ENG, MAT, REA) are working together across the campuses to decide on joint course assessments for the terminal courses in the DS program: ENG 090, REA 090, and MAT 060.

   The DS department needs assistance from Institutional Research personnel to track long-term progress of DS students.

4. **What overall improvement in your program has resulted from student assessment efforts?**

DS instructors have shown quicker responsiveness to information gained from assessment, changing some teaching practices or adding additional instruction to meet assessed needs.

5. **Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.**

   DS instructors provided written and verbal feedback on communication-related assignments and practices as well as grades or scores based on communicative ability.

6. **Did your assessment information require a change in financial resources? If so, please attach relevant materials.**

   No change in DS financial resources is necessary. However, we do request financial assistance to develop an Institutional Research department at CNCC.

CNCC Assessment of Student Learning
Program/Department Annual Report Form
(Form I)

Program: Humanities and Social Sciences	Date: November 1, 2002
Individual(s) Responsible:	**Mary Karen Solomon**

1. What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

   Faculty are committed to teaching, and to assessing their teaching. Also, most instructors already have clear objectives which they assess, so basically this year we have been working on the most effective ways of assessing the objectives and recording the data.

2. What, if any, weakness have you identified with respect to your program goals and/or CNCC's institutional assessment goals?

   Lack of unity in assessment. We each assess in different ways, so we are working on developing campus-unified tools.

3. What specific steps will be taken to address identified weaknesses or to improve strengths?

   Increased communication via email and meetings to discuss and share methods, and to clarify assessment tools and techniques.

4. What overall improvement in your program has resulted from student assessment efforts?

   At this point, instruction has improved because instructors are concentrating on teaching the two objectives we've focused on for this year in ways that can be measured, and on recording the data.

5. Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.

   Our syllabi include the objectives and list the assignments and tools used in grading and in assessing. Perhaps we need to develop ways to provide direct feedback to students during and at the end of the semester.

6. Did your assessment information require a change in financial resources? If so, please attach relevant materials.

   Not yet.

CNCC Assessment of Student Learning
Program/Department Report Form for 2001-2002

Program: Math and Science	Date: November 1, 2002
Individual(s) Responsible:	**Todd Ward**

1. *What program strengths have you identified with respect to your program goals and/or CNCC's institutional assessment goals?*

    -Our program has in place assessment measures that are (mostly) effective in addressing our students' critical thinking skills.
    -Weaknesses discovered in the assessment process have been addressed by the individual instructors for the improvement of the next assessment cycle.
    -Specific areas in which it was determined students were not understanding concepts were addressed and are likely to improve due to the assessment process.
    -This continuous evaluation, by instructors, of our program's assessment strategies and teaching methods should ensure we continue to meet the needs of a dynamic population of students.

2. *What, if any, weakness have you identified with respect to your program goals and/or CNCC's institutional assessment goals?*

    -Our program is not addressing the institutional goal of "CNCC students will be able to communicate effectively."
    -Some assessment procedures are based solely upon grades and may not provide an effective measure of student learning.
    -Some assessment strategies are not effectively assessing student performance.
    -Some methods of teaching are not effective in meeting program goals.

3. *What specific steps will be taken to address identified weaknesses or to improve strengths?*

    -More muddiest point papers being instituted to assess student understanding of concepts on a frequent basis (MAT109)
    -Multiple pre-post tests are replacing the final exam to better assess student learning throughout the semester (MAT109)
    -Creation of software-specific instructions to aid in a student's ability to use computers to perform data plotting (GIS 101,102, PHY 111,112, NRM 265, MAT 135)
    -Increasing number of graphing projects with the use of "help sessions" to improve students' skills in the use of computers for plotting of information (GIS 101,102, PHY 111,112, NRM 265, MAT 135)
    -Conversion of data from compressed to usable format added to better assess a student's ability to convert data into a usable, meaningful form (NRM 265, GIS 102)
    -New demonstration of symmetry of reflecting around X-axis added to increase student understanding of concept (MAT 121)
    -Institution of pre-post testing of understanding of the scientific method to better assess student comprehension and synthesis (BIO 205, CHE 101,102,111,112,106)
    -Institute the use of unknown organisms during weekly lab exercises to better prepare students for summative unknown identification exercises (BIO 205)

-Search for books that illustrate real-world scenarios of the politics of science to use as a base for discussion of concepts (BIO 111,112)
-Assessment of student communication skills will be modified to work within the math/science programs, and will be implemented
-Assessment methods based solely upon graded work will be reviewed, and modified to include non-grade related modalities

4. *What overall improvement in your program has resulted from student assessment efforts?*

 -The faculty are working on the basis that these assessment procedures will help them to be better instructors and to reach students more effectively.
-Every faculty member within the department is participating, including 1st year instructors. This participation is driving changes within the classroom that are likely to improve students' critical thinking skills.

5. *Describe how you provide feedback to students regarding the student learning outcomes for the institutional assessment goals and their progress in achieving them.*

-Discussion with students regarding their performance on pre-post test exercises
-Daily critique of laboratory skills
-Discussion of assessment goals during first day of class orientation
-Listing and explanation of assessment strategies and goals on course syllabi

6. *Did your assessment information require a change in financial resources? If so, please attach relevant materials.*

-To date it has not made an impact upon expenditures, as there has been no apparent need.