



Examples of Student Learning Outcomes Implementation & Assessment

A Report Prepared by:

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Overview of Report

The intent of this report is not to be an extensive review of all SLO work conducted at WCC; but to serve as a “snap shot” with a small sample of the various types of work that has been done in regard to program and course assessments. The SLO work is a faculty-driven process that is supported by the institution with individual accountability for authentic assessment that supports program and/or course improvements to ensure an expected demonstration of student learning.

During my tenure as WCC SLO coordinator it has been my mission to establish a college culture of developing authentic assessments and using results of those assessments to foster positive changes to promote student learning at all levels and in all areas. All of these processes have been proven sustainable and on-going.

I have gained permission from a number of faculty members who represent various areas of WCC to share some of their work. The SLOs are specific to their areas, and their assessment methods vary as appropriate to provide necessary information for proper assessment that feed into individual program reviews.

In this report you will find examples from: an academic instructional support area that deals with basic skills (WCC Academic Reading Center), a student service area (DSPPS), academic transfer programs (History & Math); and career technical education (Accounting & Agriculture).

At WCC all programs have program specific SLOs (pSLOs) that were derived and mapped to one of the 8 core competencies (Institutional Learning Outcomes iSLOs). In the academic areas all courses in a program have course-specific SLOs (cSLOs) that link to a program-level outcome.

In this report you will see examples of both program-level student learning outcomes and a few course-level student learning outcomes. This report does not include any of our data regarding the assessments we’ve conducted for the broad institutional outcomes. However, WCC has concluded a full assessment of all institutional student learning outcomes and is currently in a second assessment cycle.

Thank you for your interest in our work, and please let me know if I can be of any future assistance.

Christopher J. Howerton
WCC SLO Coordinator
WCC Professor of Communication Studies

Examples from WCC Academic Reading Center (ARC)* (Academic Instructional Support – Basic Skills)

WCC ACADEMIC READING CENTER SLOs

➔ **(pSLO1) Communication SLO:** *Faculty, staff, and students will be aware of the full range of services provided by the ARC.*

Assessment Method: End of the semester survey instrument for faculty, staff, and students as well as frequency of use data for the ARC and its workshops.

Assessment Results:

- **12/19/2012** Students, faculty, and staff have strong awareness of the ARC, and usage of the ARC is growing. The ARC had 297 student visits during the Fall 2012 semester. 144 students attended ARC workshops. An online survey of faculty/staff/administration was conducted in the final week of the semester. Of the 18 respondents, 72% have referred students, 100% are aware of the ARC's reading assistance tutoring, and 94% are aware of ARC workshops. Results of a survey administered to 334 students in their English classes in the final week of the semester indicate that 83% of students are aware of ARC's individual reading/study assistance and 76% of students are aware of ARC workshops. Students indicated that faculty announcements and flyers were the two most effective ways to publicize ARC services.
- **12/19/2012** Students indicated that faculty announcements were the most effective way to publicize ARC services, so we will continue to focus on doing in-class presentations at the beginning of the semester, as well as visiting division meetings, adjunct orientations, and increasing faculty awareness with email updates. We will also work with faculty more closely by encouraging them to use our faculty referral form. Also, students who have not used the ARC frequently mentioned that they didn't think they needed help or didn't know if they needed the help, we will work on our publicity materials to emphasize that the ARC offers help at all levels, even for students who feel like they are good readers. We need to emphasize that the ARC offers strategies to help all students get more out of their college reading assignments.

Program Reflection Based on Assessment Data and Changes Implemented:

- **2/19/2014** We have since redesigned ARC publicity materials to emphasize that the ARC serves students at all levels. The IA makes a point of stressing this in her class presentations.

Assessment Results:

- **12/14/2013** The ARC publicized its services using multiple media: campus flyers, bookmarks with ARC info and hours, the ARC blog, its Facebook page, Portal page, and its page on the WCC website. Since our 12/19/2012 results indicated that faculty are the most important vehicle to get information to students, the ARC also presented a flex workshop on its services in August 2013 in which input was solicited on our faculty referral form. Workshops and ARC services were frequently announced via all WCC email, as well as emails targeting specific disciplines. The IA gave an EOP&S presentation as well as 13 class presentations early in the semester in a variety of different disciplines. The results: The ARC's strong cross-curricular focus paid off. We served students in 19 disciplines: Accounting, Anthropology, Biology, Chemistry, ECE, Ecology, Economics, English, Environmental Science, Ethnic Studies, History, Human Services, Math, Philosophy, Psychology, Reading, Sociology, Speech, Statistics. Attendance at ARC workshops more than doubled when compared with the previous semester: 269 students attended the 11 workshops offered during Fall 2013 (117 students attended ARC workshops in Spring 2013). Many faculty are now referring students to these workshops and offering extra credit for attendance. We did see a decline in student visits to the ARC: In Fall 2013 the ARC had 333 student visits, a decrease from the previous semester (433 students). Several factors may account for this: 1. This semester the ARC Instructional Associate participated in the hiring process for a FT WAM Instructional Associate, taking her away from the ARC for many hours during a 2-week period. The result was that during one of our historically busiest weeks the ARC logged only one student visitor. 2. During the previous semester (S2013), we ran a lab course, Reading 47R, in the ARC. This variable-unit lab class required students to log 18 hours or 36 hours in the ARC which resulted in a high number of student visits. Despite this overall decline in student visits, we did note that the ARC is serving more disciplines this semester and has many more repeat users.

Program Action Based on Assessment Data

- **12/14/2013** At the end of Spring 2014 semester we will collect survey data to assess campus awareness of and satisfaction with ARC services. Also, as students report that faculty announcements are the most effective way they hear about ARC services, we will continue to focus on doing in-class presentations at the beginning of the semester, as well campus orientations, and increasing faculty awareness with email updates. We will also work with faculty more closely by encouraging them to use our faculty referral form. Also, we will continue to focus on educating students (and faculty/staff) that the ARC offers help at all levels, even for students who feel like they are good readers.

Program Reflection Based on Assessment Results and Change Implemented:

- **2/19/2014** note: The ARC coordinator now sends out targeted emails to members of each college discipline, informing them of ARC resources / workshops to support their students. The ARC has also compiled a database of student emails which are used to notify students of workshops and ARC activities/resources. ***Our efforts appear to be effective: 125 students attended our first two workshops of the semester, a huge***

increase. Also, student visits so far in Spring 2014 are on track to far surpass previous semesters.

➔ **(pSLO2) Critical Thinking SLO** : *Students, whether through workshop attendance or visits to the ARC, will learn appropriate techniques to read and comprehend college-level reading assignments.*

Assessment Method: Student evaluations of workshops and ARC reading assistance tutoring; an end of the semester survey instrument.

Assessment Results

- **12/19/2012** 334 students returned paper surveys that were distributed in almost all English classes in the final week of the semester. Survey results indicate that 75% of students who have used ARC tutoring services agree/strongly agree with this statement: "I have had an overall good experience with the ARC." 63% of students agree/strongly agree that "the ARC has helped me improve my reading and study skills" and 51% agree/strongly agree that "my grades have improved due to strategies I learned in the ARC." In addition, 100% of student satisfaction evaluations done throughout the semester in the ARC indicate that students strongly agree that the ARC has given them effective reading strategies and strongly agree that they would recommend other students attend the ARC.

Program Action Based on Assessment Results:

- **12/19/2012** While our student learning outcome has been met, we would like to see more student awareness of their improved strategies (i.e. a higher percentage of students agreeing that the ARC has helped them improve grades and reading/study skills). In Spring 2013, we will work on this area by incorporating self-reflection into the reading assistance tutoring in the Center. An attempt will be made to end each session by asking students to identify the strategy they have worked on in their tutoring session and how they can apply it to other types of assignments.

Program Reflection Based on Assessment Results and Change Implemented:

- **2/19/2014** This is not always practical, given time constraints. However, the ARC instructional associate makes an effort to do this.

Assessment Results:

- **12/14/2013** In Fall 2013, the Reading IA presented 11 across-the-curriculum student success workshops on the following topics: Test Preparation, Better Reading Strategies, Taking Good Lecture Notes, Reading Strategies for the English Final Exam, Science Textbook Strategies, Social Science Textbook Strategies, Math Textbook Reading Strategies, and Vocabulary Strategies. Of the 269 students who attended these workshops, 99% reported that they would recommend this workshop to other students;

they also agreed or strongly agreed that "This workshop gave me useful strategies to apply in the future." Student evaluations of their visits to the ARC were extremely positive. Evaluation forms were available in the ARC all semester-long and a box was provided for students to anonymously submit them. In the last month of the semester, signs were prominently posted, requesting that students fill out evaluation forms. Despite this push, only 13 students filled them out. 100% of these students reported that they "agreed or strongly agreed" with that tutoring gave them "useful strategies to apply in the future." 100% of these students also said that they would recommend ARC services to other students.

Program Action Based on Assessment Results:

- **12/14/2013** Student comments on evaluation forms were incorporated into our workshop planning. For example, in response to student suggestions, the IA slowed down the workshop pace and is putting workshop Powerpoints on the ARC blog. We are also considering the possibility of offering some longer workshops in response to several student recommendations. In response to the low number of ARC student evaluation forms collected, in Spring 2014 semester we will step up our efforts to get students to fill out these forms after they have received tutoring assistance.

Program Reflection Based on Assessment Results and Changes Implemented:

- **2/19/2014 Update:** Signs that ask students to fill out evaluation forms are now posted prominently starting from day one in the semester. We are seeing an uptick in evaluation forms submitted as a result. Student evaluations are positive about ARC services but ask for expanded hours and computer access.

Current Follow-Up Plan & Program Results in Context to WCC Data Overall

- **The ARC will be adding another assessment measure to its Critical Thinking SLO: student success and retention data. Working with our Director of Research, the ARC has been assessing this data for the past four semesters. A summary of this data is provided below:**
- **The success and retention rates for consistent ARC users are significantly higher than success/retention rates for WCC overall.**

"Heavy Users" of The ARC are defined as students who used the ARC four or more times

Spring 2012

- ARC "heavy-users" had a **10% higher retention rate** in their college classes (97% retention compared with the overall WCC retention rate of 87%)
- ARC "heavy-users" had an **18% higher success rate** in their college classes (87% success compared with the overall WCC success rate of 69%)

Fall 2012

- ARC "heavy-users" had a **15% higher retention rate** in their college classes (100% retention compared with the overall WCC retention rate of 85%)
- ARC "heavy-users" had an **11% higher success rate** in their college classes (79% success compared with the overall WCC success rate of 68%)

Spring 2013

- ARC "heavy-users" had a **15% higher retention rate** in their college classes (100% retention compared with the overall WCC retention rate of 85%)
- ARC "heavy-users" had a **25% higher success rate** in their college classes (93% success compared with the overall WCC success rate of 68%)

Fall 2013

- ARC "heavy-users" had a **nearly 4% higher retention rate** in their college classes (89.7% retention compared with the overall WCC retention rate of 85.9%)
- ARC "heavy-users" had a **10% higher success rate** in their college classes (79.3% success compared with the overall WCC success rate of 68.3%)

*Information provided by Cay Strode, WCC English Professor and supervisor for the WCC ARC.

Example from WCC History Program* (Transfer Program)

WCC History Program-Level SLOs

1. Critical Thinking – Analyze information and data to achieve a better understanding of present society in reference to the past.
2. Global Awareness – Recognize and articulate how past events are interconnected throughout the world.

History-17B – United States History

- A Course-Level SLO - Through class discussion, group work, and the use of different sources including the text book, selecting time frames for significant historical events will be determined through a critical analysis based on global perspective. (This course specific SLO feeds into both program level SLOs)

Assessment Method – Time Line Assignment

This is both a whole class and group process. The instructor provided the assignment guidelines and expectations. Students were given a list of historical events and topics such as the Industrial Revolution and the Cold War. Time frames were chosen based on global locations. Each student turned in a Time Line of the historical events. The instructor assessed the Time Lines.

Result of Assessment

A total of 225 students did the assignment, and each one turned in a Time Line. Because much of the work was carried out during class time, there was a high level of success. 200 students demonstrated a full understanding that the interpretation of major historical events are subject to global location and perspective. 25 showed a good understanding.

Suggested Change prior to reassessment

More expansive and global-type historical events will be added to the assignment.

This course level SLO will be reassessed during the next semester that this course is offered, and reported in TracDat.

*Information provided by Greg Gassman, WCC History Professor

Example from WCC DSPTS Program* (Student Service Area)

WCC DSPTS Program-Level SLOs

- **SLO1 (Communication)** – Students will communicate their needs to help facilitate equal access at the post-secondary level.
- **SLO2 (Information Competency)** – Students will be aware of information to help facilitate success at the post-secondary level.
- **SLO3 (Critical Thinking)**- Evaluate information, draw reasonable conclusions, and apply these conclusions to personal, community and academic environments as needed.

Assessment Method

DSPTS is required to review student progress as part of the mandated Student Educational Contract. Information is gathered by running transcripts at the conclusion of each semester. Students failing to receive a 2.0 GPA are identified and referred to the Learning Disability Specialist for **intervention**. During the intervention, the Learning Disability Specialist meets with the student to help identify and discuss academic concerns as well as jointly develop an intervention plan to address the concerns.

Failure to progress academically may be related to several variables. Examples may revolve around poor attendance, not enough study time per week, lack of communication with instructor, too heavy an academic load or failure to utilize campus resources.

Examples of recommendations to promote academic success may include: a tour of campus student support programs (e.g., WAM, Tutoring Center, ARC, Campus Health Services, Financial Aid), a referral to counseling for an education plan, updating of the DSPTS accommodation plan or development of academic strategies (e.g., self-advocacy with instructional staff, discussion on time management skills, etc.). Some students will attend only one intervention appointment; however, several may be scheduled so the student can check in with the Learning Disability Specialist on a more consistent basis depending on student need.

An evaluation of Spring 2013 transcripts indicated 24 DSPTS students, who failed to make academic progress, re-enrolled for Fall semester. DSPTS called students (or for some, mailed letters) in an attempt to schedule intervention appointments. Not all students attended intervention appointments. For those students who attended, DSPTS was looking at two outcomes at the end of the semester:

1. Did the student re-enroll the following semester? (persistence rate)

2. Did the student make satisfactory progress (obtain a 2.0 GPA or higher)?

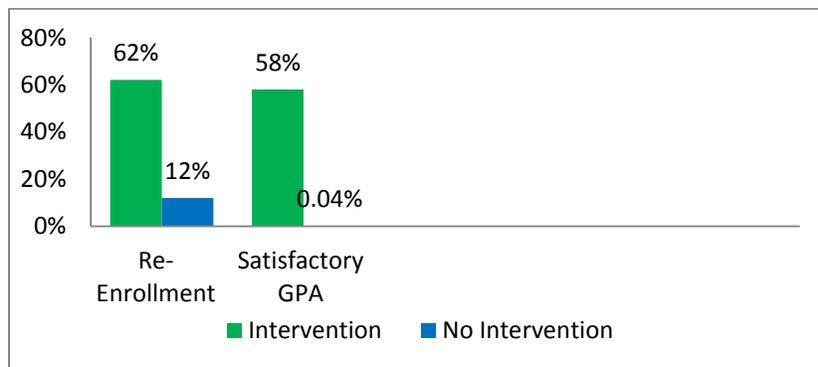
Also, measured were the differences in persistence rate and academic progress between those students who attended DSPS intervention appointments and those who did not chose to attend the intervention appointment. The following data was recorded:

Students with interventions

- 79% of students with unsatisfactory progress from the Spring 2013 semester attended the intervention appointment in Fall 2013.
- 62% of the students who attended the intervention appointment re-enrolled for the Spring 2014 semester.
- 58% of the students who attended the intervention appointment showed academic improvement by obtaining a satisfactory GPA in Fall 2013.

Students without Interventions

- 21% of the students with unsatisfactory progress from the Spring 2013 semester did not attend the intervention appointment in Fall 2013.
- 12% of the students who did not attend the intervention appointment re-enrolled in Spring 2014.
- Less than 1% of the students who did not attend the intervention appointment showed academic improvement by obtaining a satisfactory GPA in Fall 2013.



DSPS again ran transcripts at the end of Fall semester 2013, to evaluate academic progress and identify students requiring an intervention appointment. Interventions are being held during this semester. Persistence rates and academic progress will be evaluated for these new groups of students following the completion of the Spring 2014 semester. This will be an on-going SLO for DSPS as students will be identified and evaluated during every semester moving forward.

WOODLAND COMMUNITY COLLEGE • DISABLED STUDENTS SERVICES & PROGRAMS
Student Progress Review

Name: _____ Last	ID#: _____ First	Date: _____ MI
Major: _____ Units: _____ Follow Up Date: _____		

Academic Concerns	Recommendations		
<input type="checkbox"/> Did not use accommodations provided by DSPS <input type="checkbox"/> Did not use campus tutoring <input type="checkbox"/> Has not meet with academic counselor <input type="checkbox"/> Not enrolled with other campus programs <input type="checkbox"/> Had more than two absences <input type="checkbox"/> Study time per week _____ <input type="checkbox"/> Course load <input type="checkbox"/> Health concerns <input type="checkbox"/> Family/Personal concerns <input type="checkbox"/> Employed _____ hours per week <input type="checkbox"/> Withdrawal from classes <input type="checkbox"/> Missed assignments <input type="checkbox"/> Missed exams <input type="checkbox"/> Lack of communication with instructor <input type="checkbox"/> Transportation issues <input type="checkbox"/> Change of major <input type="checkbox"/> Late enrollment <input type="checkbox"/> _____ Notes: 	DSPS <input type="checkbox"/> Update accommodations <input type="checkbox"/> Student use current accommodations <input type="checkbox"/> Use DSPS Lab <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> Campus Programs <input type="checkbox"/> TRIO <input type="checkbox"/> EOP&S <input type="checkbox"/> Cal Works <input type="checkbox"/> MESA <input type="checkbox"/> Campus Health Center <input type="checkbox"/> Financial Aid <input type="checkbox"/> Career Center </td> <td style="width: 50%; vertical-align: top;"> Academic Support <input type="checkbox"/> Tutoring Center <input type="checkbox"/> WAM Center <input type="checkbox"/> ARC Academic Counselor <input type="checkbox"/> Meet w/counselor <input type="checkbox"/> Develop/update educational plan </td> </tr> </table> Other <input type="checkbox"/> Decrease employment hours <input type="checkbox"/> Self advocate <input type="checkbox"/> Time management <input type="checkbox"/> Support handouts <input type="checkbox"/> Communicate with instructor <input type="checkbox"/> Decrease units <input type="checkbox"/> _____ Notes: 	Campus Programs <input type="checkbox"/> TRIO <input type="checkbox"/> EOP&S <input type="checkbox"/> Cal Works <input type="checkbox"/> MESA <input type="checkbox"/> Campus Health Center <input type="checkbox"/> Financial Aid <input type="checkbox"/> Career Center	Academic Support <input type="checkbox"/> Tutoring Center <input type="checkbox"/> WAM Center <input type="checkbox"/> ARC Academic Counselor <input type="checkbox"/> Meet w/counselor <input type="checkbox"/> Develop/update educational plan
Campus Programs <input type="checkbox"/> TRIO <input type="checkbox"/> EOP&S <input type="checkbox"/> Cal Works <input type="checkbox"/> MESA <input type="checkbox"/> Campus Health Center <input type="checkbox"/> Financial Aid <input type="checkbox"/> Career Center	Academic Support <input type="checkbox"/> Tutoring Center <input type="checkbox"/> WAM Center <input type="checkbox"/> ARC Academic Counselor <input type="checkbox"/> Meet w/counselor <input type="checkbox"/> Develop/update educational plan		
Comments:			
Student's Signature:	Date:	DSPS Signature:	

*Information provided by Todd Sasano, WCC DSPS Coordinator/Learning Disability Specialist

Examples from WCC Accounting Program* (Career Technical Education)

Woodland Community College Accounting Program established four program level Student Learning Outcomes (SLOs). Each outcome is assessed during the four year program review cycle using a survey. The survey is administered to students in all accounting courses. Students are asked to rank the SLOs based on their level of competency related to the four program level SLOs using the scale - strongly agree, agree, disagree, strongly disagree. Based on the latest results, the accounting program has consistently demonstrated strong student learning. As a result, the accounting program strives to continue to maintain and promote student success throughout the program.

WCC Accounting Program-Level SLOs

SLO 1: *Communication* - Create accurate, professional, and appropriate accounting documents and reports for the business entity served.

Survey Question: I feel I am able to create accurate, professional, and appropriate accounting documents and reports for business entities.

Survey results indicated the accounting program is exceeding communication needs with **98.3%** of the students agreeing they were able to create accurate, professional, and appropriate accounting documents for business entities.

SLO 2: *Computation* - Compute financial data using accounting concepts and methods to understand, analyze, and communicate issues in quantitative terms.

Survey Question: I am able to use accounting concepts and methods to understand, analyze, and communicate issues in quantitative terms.

Of the students surveyed, **96.6%** “agreed” or “strongly agreed” the accounting program has enabled them to compute financial data using accounting concepts and methods, and communicate issues in quantitative terms.

SLO3: *Critical Thinking* - Analyze accounting data/information in addressing and evaluating problems and issues in making informed business decisions.

Survey Question: I can analyze accounting data/information in addressing and evaluating problems and issues in making informed business decisions.

In response to the survey question, **96.6%** of the students surveyed "agreed" or "strongly agreed" they are able to analyze accounting data/information and make informed business decisions.

SLO4: *Technological Awareness* - Demonstrate effective use of technology applicable to the accounting field.

Survey Question: I am able to effectively use technology applicable to the accounting field.

94.9% of the students surveyed, "agreed" or "strongly agreed" they were able to demonstrate effective use of technology applicable to the accounting field.

Course Level SLO – ACCT 3-Computerized Accounting (CTE/DE)

- **SLO1: *Technological Awareness*** - Demonstrate proficiency in computerized accounting in the setup of a new company. (Links to Program SLO4)
- **Assessment Method:** Chapter 8 and Exercises 8.1-8.3 Setup of new companies in computerized accounting application. Scores above 70% to indicate successful skill attainment.
- **Assessment Results:**
 - **2011/12** 24 out of 25 students submitted assignment ~ 84% scored above 70% (20 scored 90% and above); (1 scored 70%); (3 scored below 69%); (1 did not submit).
 - ➔ **Planned Action:** *Continue to improve proficiency through tutoring and professor support. Goal to achieve greater than 90% success.*
 - ➔ **Follow up:** During Fall 2013 assessment, 95.5% of students assessed earned scores greater than 70%.
 - **2012/13** 22 students were assessed on their proficiency at setting up a new company in a computerized accounting application. 95.5% (21) students passed/showed proficiency by earning greater than 70% in setting up a new company using the application. (17 students scored 100%) (1 student scored above 90%) (1 student scored above 80%) (2 students scored 70%) (1 student failed at 50%)
 - ➔ **Planned Action:** *Plan to continue mode of delivery and instruction due to success. Maintain successful skill attainment through tutoring and professor support.*

*Information provided by Sherry Spina, CPA., WCC Accounting Professor

Example from WCC Mathematics Program* (Transfer)

WCC Mathematics Program SLOs

1. SLO 1 (Computation): Apply appropriate mathematical and statistical concepts, models, and methods to understand, analyze, and communicate results when dealing with issues involving quantitative information
2. SLO 2 (Critical Thinking): Analyze data and numerical information to evaluate, interpret, and draw objective conclusions when facing quantitative problems.

MATH 52 – Intermediate Algebra

1. Identify, manipulate algebraically, translate applications involving, and solve equations containing: rational expressions, radical expressions, exponential and logarithmic equations **(Computation & Critical Thinking)**
2. Identify, translate applications involving, and solve quadratic equations. **(Computation & Critical Thinking)**
3. Solve systems of linear and nonlinear equations. **(Computation)**

Assessment Method

All sections of MATH 52 were provided the assessment items and were instructed to conduct the assessment prior to the end of the semester (with the assessment being returned to a FT-faculty member for analysis.) The students were asked to solve the following equations.

(Assessment of SLO “Solve systems of linear and nonlinear equations”)

1. Solve. $x - 2y = 3$
 $x^2 + 2y^2 = 9$
2. Solve. $x^2 + y^2 = 15$
 $x^2 - y^2 = 3$

Using the following assessment rubric the submitted assessments were scored accordingly.

Score	Designation	Criteria - Concepts	Criteria - Mechanics
5	Mastery	Displays complete understanding of all assessed concepts	Error free
4	Solid Grasp	Displays strong understanding of nearly all assessed concepts	Few minor errors
3	Competence	Displays basic understanding of most assessed concepts	Some minor errors
2	Marginal Grasp	Displays deficiencies in more than one assessed concept	Many minor errors or some major errors
1	Weakness	Displays incomplete understanding of most assessed concepts	Frequent errors
0	Inadequate	Displays no understanding of assessed concepts	Frequent errors

Result of Assessment

Last semester (Fall 2013) only 42.1% of the 195 students assessed (WCC & CCOF) scored a “3 or higher” based on the matrix.

Change based on Assessment

Based on these results the WCC Math program made the following three suggestions to the adjunct and full-time faculty members who teach this course. These recommendations were shared at the pre-Spring 2014 meeting of WCC math instructors.

1. Reduce time spent with Hyperbolas and Ellipses (optional material).
2. When covering systems of non-linear equations, emphasize example where the Square Root Property is used and connect with previous learning.
3. When covering systems of non-linear equations, emphasize properties of squaring and taking the square root of expressions involving two terms and connect with previous learning.

This SLO will be reassessed to see if the percentage of students who earn a “3 or higher” has increased based on these suggested explicit changes in course delivery.

*Information provided by: Matt Clark, WCC Mathematics Professor; Talwinder Chetra, WCC Mathematics Professor; and Shawn Lanier, WCC Mathematics Assistant Professor.

Example from WCC Agriculture Program* (Career Technical Education)

WCC Agriculture Program-Level SLOs

1. **Critical Thinking** - Evaluate agricultural data, draw reasonable conclusions, recognize the environmental implications of these conclusions, and apply these conclusions to examples used in industry.
2. **Scientific Awareness** - Understand, critically evaluate, and apply scientific knowledge into working skills applied in the Agriculture field.

AG 46 – Animal Feeds and Nutrition

- **Course-Level SLOs**
 - **SLO 1:** Students will demonstrate knowledge of nutrient classifications and specific feedstuffs by identifying the correct composition of at least 20 different feedstuffs.
 - **SLO 2:** Students will demonstrate the importance of nutrients in major livestock species by identifying nutritional deficiencies and making recommendations for correcting the problem.
- **Assessment Methods**
 - **SLO 1:** Students will complete an assignment on feedstuff identification, which will include feedstuff characteristics, nutrient analysis, and common species that consume it
 - **SLO 2:** Students will complete written exam questions and assignments that will include scenario-based problems that include symptoms of nutritional deficiencies
- **SLO Assessment Results**
 - **SLO 1:**
 - (2010):13 / 17 complete with 70% or better; 76% of the class completed this assignment with a grade of C or better.
 - ***ACTION: Adjust assignment to reach the 24% of the class that may not have followed instructions correctly. Make assignment more concise.***
 - (2012): 14/15 complete with 70% or better
 - ➔ ***ACTION: No change needed***

(continued on next page)

- **SLO 2:**
 - (2010): Exam 1: **50%** of the class received a score of 70% or higher on scenario based questions
 - ➔ ***ACTION: Work in class on scenario-based questions before administering the question in an exam.***
 - (2012): Exam 1: **80%** of the class received a score of 70% or higher on scenario based questions AFTER working in class on similar questions.

This class is offered every two years and will conduct a 3rd round of assessment in Fall 2014.

*Information provided by Brandi Asmus, WCC Agriculture Professor