

OVERVIEW

The WCC Institutional Student Learning Outcome (iSLO) Survey was administered between 11/6/2012 and 12/3/2012 to target courses at Woodland, Colusa and online courses. Students were asked share their opinions and experiences regarding **Critical Thinking** and **Scientific Awareness** as well to provide feedback via open-ended questions. A total of 284 surveys were collected (273 paper surveys and 11 online surveys) and detailed results to each question/item are displayed in the charts on the following pages.

- A. The institutional student learning outcome (iSLO) **Critical Thinking** is defined as: *Students will analyze data/information in addressing and evaluating problems and issues in making decisions.*

In order to evaluate how well WCC, as an institution, is meeting its iSLO of **Critical Thinking** students were asked to how (if at all) they used data and information to evaluate a problem and make conclusions. Students were also asked if student services (i.e. counseling, career center, tutoring, etc.) at WCC help them in mastering the use information to make educational and career decisions (*ref: iSLO fall 2012 Survey*). The highest percentage of students reported they analyze data in one of more of their courses, and apply critical thinking strategies to their everyday life (> 55%). 70% of students said that they were able to develop an educational plan after meeting with a counselor.

- B. The institutional student learning outcome (iSLO) **Scientific Awareness** is defined as: *Students will understand the purpose of scientific inquiry and the implications and applications of basic scientific principles values.*

In order to evaluate how well WCC, as an institution, is meeting its iSLO of **Scientific Awareness** students were asked to rate the frequency and scope that they apply scientific concepts. Students were also asked if courses at WCC help them in mastering the use of scientific concepts in their everyday life (*ref: iSLO fall 2012 Survey*). The highest percentage of students reported they use scientific concepts and methods often at school, sometimes at work and home, and never in other situations. 43% of students surveyed felt that courses at WCC have helped them understand and use scientific concepts in their everyday life.

- C. Next Steps: Set goals based on fall 2012 results and communicate the results/goals with the campus. Continue working on previous goals set. Assess **Global Awareness** and **Technological Awareness** in spring 2013 – which will complete the first cycle of assessing all 8 institutional SLOs. The SLO committee will not conduct an assessment during fall 2013, to allow the committee to review and address the SLO assessments collected for the first complete cycle.

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1. In what situations do you use scientific concepts and methods?

	N	Always	Often	Sometimes	Never
School	279	29%	44%	24%	3%
Work	261	19%	20%	37%	24%
Home	268	7%	22%	50%	21%
Other	67	13%	22%	22%	42%

2. Have your courses at WCC helped you understand and use scientific concepts in your everyday life?

	N	%
Yes	120	43%
Somewhat	102	37%
No	29	10%
N/A	28	10%
VALID N	279	

3. Please select **YES** or **NO** for each of the following statements:

	N	Yes		No	
I have completed a course where data was presented to me and I had to analyze the data for content or purpose.	281	187	67%	94	33%
In class, I have used data to reinforce a conclusion on a particular topic.	273	202	72%	71	26%
I understand the methodical steps of the scientific method that are used to develop a conclusion.	262	178	68%	84	32%
Using interviews and/or observations are required in one or more of my courses.	261	146	56%	115	44%

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4. Please select **YES** or **NO** for each of the following statements:

	N	Agree		Disagree		N/A	
After Meeting with a counselor, I was able to develop a Student Educational Plan (SEP) that identified the courses I need to take to achieve my educational goal.	270	189	70%	25	9%	56	21%
The Career Center helped me analyze and identify career matches for me using a variety of assessment tools.	271	82	30%	31	11%	158	58%
I understand the deadline and priority dates for applying for financial aid, and I am able to complete all necessary forms for financial aid.	271	208	77%	24	9%	39	14%
After using the tutoring and/or WAM (Writing and Math) center, I have a better understanding and effective application of specific course concepts.	272	106	39%	13	5%	153	56%
Because of the help I have received from student services (i.e. DSPS, EOPS, CalWORKS, etc.) I am able to evaluate information, make conclusions and apply these conclusions to my personal, community and academic goals.	259	102	39%	12	5%	145	56%

5. Comments: **See Appendix**

Appendix

1. Other situations students use scientific concepts and methods:

Da' Hood
Hobbies
w/ Friends
WCC

3a. Examples of "I have completed a course where data was presented to me and I had to analyze the data for content or purpose."

Accounting
Accounting is full of data you use
Accounting/Business Law
Algebra, Biology
Algebra, geology, social research methods
An example in court that proved whether a person is guilty or innocent.
Analyzed essays in English classes
Analyzing data for a statistical purpose
Analyzing data in law enforcement class
Analyzing statistics for perspective
Any class to get a good grade!
at UCD
Basically most of all my classes I have had to analyze content and data
Biol Lab
Biology 5 Class
Biology class
Biology class
Biology labs
Biology labs
Biology, can't remember why
Bioscience - English - Soc.
Chemistry - conversions
Chemistry - conversions
Criminal investigation class
DGM 50 and 51 took a design concept and created a final concept.
During Geography, History 6 classes
During my biology class
Econ 1A
Economics theory
Engl

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Engl 1C Critical Thinking Essay
English
English
English
English 1A, Plant Sci 20L
English class
English class: Critical Thinking
English practice final
English prompts for essays
Epicenter of an earthquake in Geology
Every class
Every class I am in
Finals and exams at WCC
Giving a presentation
Global warming/green house gases
had been given an article and told to form an opinion by analyzing.
Had to figure out probabilities with different formulas.
History
History class
History essays I had to take the information to complete my writing assignments.
I could help other people by answering questions
I had a class that we had to do a lab
I more so understand the science behind the evidence collection and process.
In all classes taken
In all my classes I've learned to apply @school and work and home.
In Biology and chemistry classes
In Biology we are frequently given data to analyze
In English
In English 1C class about our book of Generation Zombies
In lab
In math 111 there are mathematical problems I solve
In math classes
In my English, stats and many other courses
In my Marriage and Family Soc class, we are given articles as evidence in different situations where evidence is needed if argument.
In my stats class
In my stats class with the homework
In Psychology classes
In science/math classes
In statistics
Labs in bio courses
Labs require the analyze of data before beginning the lab

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Many examples, Soil samples, rock identification, terrain and causes.
Math
Math 51
Math and research papers
Math equations
Math, counseling class
Math, problem solving
Micro bio - Sewage Experiment
Micro bio lab
Microbiology Media analysis
My bio class has changed the way I view political problems
My first semester I have not completed any courses as of yet.
My geography instructor always relates scientific facts to here and now. We analyze it on a daily basis.
Not this campus
Peer response
Psycholoanalyzing characters in a book
Psychology
Reading documents in History, then writing a response paper to them.
Reflection Papers
Research for PowerPoint and essays
Science labs always required data gathering
Science tasks
Sociology class in our Reaction paper :)
Sociology of Health Care - "Universal Healthcare"
Stat, Math, Philosophy
Statistics
Statistics
Statistics
Statistics
Statistics
Statistics 1
Statistics and English 1A and 1C
Statistics class
Statistics class/Biology
Statistics examples
Statistics in high school and Chemistry
Statistics on learning for English class.
Statistics, bio, English 1C
stats
Stats
Stats

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Stats
Stats
Stats class
Stats class
Stats class
Used data to calculate original density of virus.
Weather maps and volcano formation
When I was reading my sociology book and we read about the results of suicide.
When solving pretty much an problem in my stats class
Work force, plant life, anatomy, sociology
Yes, I've had to analyze data in each class.
Yes, math, English, science
Yes, my English and Math class

3b. Examples of “In class, I have used data to reinforce a conclusion on a particular topic.”

All classes (stats, History, English, Counseling)
analyzing data to reinforce a scientific or mathematical concept
at UCD
Bio English
Biology and Chemistry
Biology labs
Biology, English
Critical Thinking papers
Data for topical presentations
diabetes at English class
Due to convergent plates volcanoes are formed all around the pacific ocean
During essay exam questions
During my speech class
Econ 1A
Eng.
English, when writing essays
English/Bio
English
English 1A Essay
English 1C
English 1C
English 1C: Evidential Support
English and math

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English class
English Class
English class for proposition 30/38
English class, writing essays
English classes and math
English Essay
English quizzes with vocabulary.
English research essay
English Writing
English, Math
essays
essays
essays
essays
Essays
Evidence such as facts or personal statistics - data experience
experiments in science class
For this was mainly like giving speeches
Gay marriage in my Spanish class
Global warming
Graphic Design class where we took info from what we had and created a design.
Had a class with a lab
History
History class
History Class
I do that in my stats class all the time.
I used data in one of my papers that helped me with the conclusion.
I used my notes stating facts about science to conclude why different things happened.
I used this concept in my Statistics class on labs.
In any class that a research essay is due.
In biology
In biology class we did experiment to check our scientific method
In math classes
In my Biology 5 class
In my science class we must use data to reinforce our conclusions
In my statistics class I have analyzed data to know why casinos always win.
In public speaking doing a research topic I gave data to show I knew what I was speaking
In sociology for statistics on divorce
It has helped me through high school
Labs and Presentations
Law of superposition for dating rocks.

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Looking into how this data was analyzed and the meaning of the results.
Math
Math
Math
math?
micro biology labs
Micro unknown lab
My essays
My science and stats classes
My stats class, using hypothesis testing
on labs
Percentage of Bourgeoisie's to understand Marx's theory.
Personal opinion
Persuading audience of my opinion in Speech
Plant science
PowerPoint about management
Preparing a speech
Presentations or in any essay
Reflection/Response paper in classes
Research papers for English and History
Soc 1 Paper
Soc. Research meth.
Sociology
Statistics
Statistics
Statistics
Statistics
Statistics
Statistics class giving conclusion of the answer.
Statistics, English 1C
stats
Stats
Stats
Stats class
Stats class
Strengthening a claim in English 1C
Texting and driving.
To draw a conclusion, I needed the data to prove it.
used data to figure out effectiveness of disinfectant when diluted.
Used frequently in hypothesis in any subject.
We are always given statistics/data to back up topic.

Woodland Community College: iSLO Assessment Results for Fall 2012

When I am working on unemployment statistics.
When I take notes
when writing an essay
While studying weather in Geography
Writing an essay
writing research paper
Yes in mathematics
Yes research
Yes, I had to do some research
Yes, in stats we deal with different problems and equations that end up helping on a problem or topic I may have.
Yes, labs
Yes, to figure out a problem

3c. Examples of “I understand the methodical steps of the scientific method that are used to develop a conclusion.”

1) make hypothesis, 2) form an experiment, 3) collect data, 4) analyze data to prove/disprove hypothesis
1st year/semester, I don't quite remember the scientific method, but I know in Sociology we study facts using statistics and proven theories to develop a conclusion.
Again, in Biology labs.
Biology and Chemistry
Biology class
Biology labs
Biology labs
Biology labs
Calculating serial dilutions
Chemistry
Chemistry and Microbiology Lab
Collect data, make a hypothesis, test, and draw a conclusion
Creating a thesis/hypothesis
Depends on the experiment and the result is the conclusion
Develop a hypothesis
English 1A Essay
English 1A, Geography 1
English and math
English and Math
English and Math

Woodland Community College: iSLO Assessment Results for Fall 2012

English Class
English, Math
Follow the steps of the scientific method
geology, biology
Haven't done it yet
Here in stats class.
High school biology
History
Hypothesis, controls, test subjects, etc...
Hypothesis - Conclusion learned in grade school
Hypothesis - experiment - data - conclusion
Hypothesis - test - conclusion
Hypothesis - test - conclusion as in taking a risk but you judge before doing.
Hypothesis etc.
Hypothesis, Evidence and etc. in all my classes.
Hypothesis, test it, data record/analyze, accept decline hypothesis
I can follow specific steps to draw a conclusion.
I have learned the seven steps of the scientific method
I have learned them
I somewhat know the scientific method.
I understand the methodical scientific method but I do not really use it
In Bio.
In biology
In biology during labs
In English class and also in others, we need to follow those steps.
In math I found a conclusion on a problem
In my science class we always used the scientific method.
In science/math classes
In statistics it is used a lot
Labs
Like how to do the scientific method steps
Math, English, Bio
Most of it I understand
Not to sure
Number of AG related jobs in the county vs. course offered here.
Observation - question, hypothesis, experiment, summary
Observation, experiment, conclusion
On HW, English, Math
Physio lab
Proving a hypothesis by testing etc... (using scientific method) in Bio
Reaction Papers

Woodland Community College: iSLO Assessment Results for Fall 2012

Research stuff on the topic, write a conclusion
Science is based on facts to behind conclusions are facts leading up to the answer which are use every day.
Somewhat
Statistics
Statistics
Statistics and Sociology Research
Stats
stats class
Stats class
the steps taken to accurately prove an idea or concept
Theories
Theory, hypothesis, etc.
This then that. Follow an order.
to support my conclusion
used series of tests to determine the identity of unknown sample.
Weather
well I learned that in high school
when taking notes in class
$Y = MX + B$
Yeah after doing the experiment we did come up with conclusion.
Yes in mathematics
Yes, most classes
Yes, used in stats and biology!

3d. Examples of “Using interviews and/or observations are required in one or more of my courses.”

Admin of Justice class
Ag Business
Bio
Bio, Geo, English!
Bio/Stats
Biology, English
Biosphere, movie about oceans
Chem 1A
Comparing current occurrences to better understand concepts in Geography.
Counseling 10 and 25
Counseling 25
Counseling 25

Woodland Community College: iSLO Assessment Results for Fall 2012

Counseling 25
Counseling and Psychology
Counseling class looked on interviews
Counseling Classes
Counseling, English
Critical Thinking English essays
During lab in my biology class
ECE
ECE courses
English
English 1A, English 1C, Geography 1
English- 1C - not required but am able to use them in critical thinking papers
English class
English class, observing a class
English classes
English essays
English research essay
English, Psychology
English/AJ-10/Speech
Geo Systems
Had to write critical analysis on a subculture
Human services, social services.
I observe written material everyday
I will be interviewed in a class
In all courses.
In English class, we do that.
In my Biology class and HCD
In my English 1A course and in some other English course and speech...Nursing 36.
In statistics and English class.
In stats and work experience
Lab procedures require observation.
Many observations used in Microbiology
Math/Statistics
Microbiology Lab
My counseling/career class
Not this semester
Observation required in all science labs
Observations in ECE
Observations, Plant Sci, English 1A and Sociology 1
Observe Halloween for Sociology class.
Observed for Halloween

Woodland Community College: iSLO Assessment Results for Fall 2012

Observed growth of bacteria/virus
Philosophy and English: Critical Thinking
Plant Science
Psych 1A, English 1C
Social Stratification - Childhood Life Story - Educational and Occupational Attainment
Sociology
Sociology
Sociology
Sociology, Psychology
Sometimes in my music or earth science we have to present.
Spanish
Speech
Speech and Geography
Speech class
Statistics
Statistics and English.
Stats
Stats
The lab in my bio class use observations
To support my own point of view.
Using observations to under sociologist's theories in present times.
We are asked to observe weather and other concepts in relation to topic.
We observe the different ways sociology affects people's lives.
When I don't understand I ask for help
Yes in counseling 25
Yes in some of my sociology classes
Yes, almost in every class I've had to.
Yes, ETHN & ECE
Yes, in all my classes because we give examples and ideas on people, society, economy and natural resources.
You first have to experiment before you come to a conclusion.

Woodland Community College: iSLO Assessment Results for Fall 2012

5. General Comments:

APA should be mandatory for science essays
Did not need to make SEP b/c I have an undergraduate degree already and just need to take a few classes to apply to grad school.
Get more classes on art and world history!
Go Eagles!
haven't taken a science class
Honestly, WCC needs to get more organized in their Biology and Chemistry Departments as for as having more professors to teach and they should make the environment more organized in teaching, safety equipment and the curriculum. Also, WCC needs to have real food, how are students supposed to succeed if there isn't any nutritional resources?
I am now more aware of the world and why things happen. I like the scientific facts.
I don't like Q1 because its too vague.
I had more help with the brochures, than with the counselors, with finding classes I need.
I have not received many services at this facility, but when I do the various resources have been easily accessible or received.
I know this isn't about critical thinking but I think we need a gym to have a healthier campus and performing arts center.
I love this school! It's great! Rock on!
I really enjoy being able to see where things I learned are happening.
I was a little worried that Professor XXXX might not have a job here next semester when her Eng 1C class is the best course I've taken. I think more critically in that class than any of my math or science classes.
Most of the programs offered in school are amazing and really helpful. There needs to be some changes made in the counseling office. They're too slow and help, only when its convenient.
Scientific awareness is not needed every day in life situations.
The counselors don't even help me.
The office needs to HELP more!
WCC is a great school
We need to keep the programs to help the students such as tutoring, WAM
World Music: Interview/take part with an artist/musician.
Yay WCC!