# General Education Committee 2012-13 Report

# The committee approved and forwarded the following curricular proposals:

• a proposal to make more consistent the writing- and speaking-intensive course requirements (approved by EPC, approved by Faculty Senate):

# GRADUATION REQUIREMENTS

Longwood University awards the bachelor's degree to students who have fulfilled the following requirements:

[...]

4. All students will earn a grade of "C-" or better in at least two writing-intensive courses beyond courses required for General Education in Goals 1-11 and 13.

5. All students will take earn a grade of "C-" or better in at least two speaking-intensive courses beyond courses required for General Education in Goals 1-11 and 13.

[...]

The Writing Intensive Course Policy

All students will earn a grade of "C-" or better in at least two writing-intensive courses beyond courses required for General Education in Goals 1-11 and 13.

[...]

The Speaking Intensive Course Policy

All students will take earn a grade of "C-" or better in at least two speaking-intensive courses beyond courses required for General Education in Goals 1-11 and 13.

[...]

- a proposal to change the description of RECR 101 (approved by EPC, approved by Faculty Senate)
- a proposal to change the description of MATH 171 (approved by EPC, approved by Faculty Senate)

# The committee helped sponsor the General Education Film Series.

The committee thanks the organizers of the series and the introducers of the film for their work:

Title	Introduced by
In the Shadow of the Moon	Alix Fink
Take Shelter	David Magill
The Artist	Wade Edwards
Pariah	David Magill
5 Broken Cameras	Steven Isaac
Bully	Chris McGee

#### The committee reviewed general education assessment from 2011-12:

• the general education course assessment. These course assessments are designed and conducted by the faculty of the departments and represent much thought and work. Following is a chart showing the aggregate results of the review.

# Review rubric for assessment of general education courses#Reviewer: GEC Date: 12/04/2012

				Date: 12/04/2012
Course: ALL	No	Unclear	Yes	Comments
The <b>mission</b> is the				
catalog description of			99%	
the course.				
The <b>goal</b> for which the				
course has been			97%	
designated is properly				
identified.				
The <b>outcomes</b> for the				
corresponding goal are			96%	
all listed.				
"Associations" are				
made to the Strategic			73%	
Plan, Standards, and/or				
SCHEV competencies.				
A direct <b>measure</b>				
(assessment				
instrument) for student			91%	
learning is identified for				
each outcome. The				
measure will yield				
information that can				
lead to changes.				
Each measure includes				
a <b>target</b> for student			82%	
achievement.				
Findings that provide				
specific and meaningful			79%	
information have been				
entered for each				
measure.				
An action plan				
informed by assessment				
results and linked to			70%	
specific findings is				
present.				

For actio	on plans (	спеск ан	that apply	7 <b>):</b>			
The action	course design	instructiona l delivery	assessment methodology	achievement targets	faculty development / training	other	Comments
plan includes changes in:	BIOL 101 CHEM 101 ECON 111 FREN 201 GERM 201 MUSC 105,106,107 MUSC 221 MUSC 225 PHED/REC R 101 PHYS 103 POSC 150 POSC 255 POSC 331 POSC 332	ANTH 101 BIOL 101 CHEM 101 COMM 400 ECON 111 ENGL 315 ENGL 316 ENGL 317 ENGL 318 FREN 201 FREN 341 GERM 201 HIST 210 HLTH 210 LSEM 100 MATH 121 MATH 171 MUSC 221 MUSC 224 PHED/REC R 101 PHYS 103 POSC 150 POSC 255 POSC 331 POSC 332 SPAN 201 THEA 101	ANTH 101 CMSC 121 CMSC/MATH 350 COMM 400 ENGL 201 ENGL 202 ENGL 203 ENGL 315 ENGL 315 ENGL 316 ENGL 316 ENGL 317 ENGL 318 FREN 201 FREN 341 GERM 341 HIST 100 HIST 110 HIST 210 HIST 221 HIST 222 HLTH 210 LSEM 100 MATH 114 MUSC 225 POSC 331 POSC 332 PSYC 101 SPAN 201 THEA 101	CMSC 121 CMSC/MATH 350 ENGL 150 ENGL 315 ENGL 400 GERM 341 HIST 100 HIST 202 HIST 210 HIST 221 HIST 222 HLTH 210 MATH 114 MATH 121 MATH 121 MATH 131 POSC 331 POSC 332 PSYC 101	CMSC/MATH 350 PSYC 101	ANTH 101 PHED/RE CR 101	

#doesn't include courses not offered in 2011-12 nor courses being removed from general education **For action plans (check all that apply):** 

 a report on the 2011-12 assessment of core competencies in critical thinking, information literacy, and written communication provided by coordinator of assessment Linda Townsend and core competency assessment team leaders Eric Moore, Liz Kocevar-Weidinger and Mark Lenker, and Heather Lettner-Rust. Many faculty members are involved in providing student assignments and others are involved in assessing the competencies. The report follows.

# Core Competencies: Critical Thinking, Information Literacy, Written Communication *Purpose for Presentation*

- To describe the status of and results from Longwood's Critical Thinking CT), Information Literacy (IL) & Written Communication (WC) competency assessments
- To discuss actions based on the CT, IL & WC results

# Who Is Involved?

- Longwood faculty and staff
  - Developed assessment plans

- Coordination of assessment activities with OAIR
- Faculty raters

*Competency-Based Assessment Spring 2011 and 2012* (details on implementation progress located on OAIR website)

- Collaboration of critical thinking, information literacy and written communication coordinators
- Writing Intensive (WI) course syllabi and course assignment review:
- Selection of course assignments appropriate for assessment of 3 competencies

--at least five pages long --must use secondary source --must advance an argument

- Course-embedded assessment
- Randomly selected (WI) course papers from selected courses 6 raters from multiple disciplines for CTC & ILC competency assessments
- WCC will also utilize raters from multiple disciplines in spring 2013

# Critical Thinking Core Competency

Longwood University's mission is to develop citizen leaders, and to support this the General Education Program at Longwood is designed to develop **disciplined**, informed, creative minds. Disciplined minds are minds that competently engage in critical thinking.

In addition, the first criterion under General Education is "Teach a disciplinary mode of inquiry...and provide students with practice in applying their disciplinary mode of inquiry, **critical thinking**, or problem solving strategies."

In order to assess critical thinking competency across disciplines, we examine writing for ability to:

- Identify an issue and take a position on it
- Present and explain an argument in support of that position
- Evaluate the assumptions, evidence, and inferences used in the argument

# CTC Pilots: WI Course-embedded Assignment and Rubric

Spring 2011

- Original rubric adapted from University of Illinois and AAC&U VALUE rubrics
- Outcome of rater discussion:
  - Criteria confusing
  - Some categories did not apply
- Deleted for the next pilot study.

- "Recognizes stakeholders and contexts" ٠
- "Presents own and other points of view" ٠

Spring 2012Use of modified rubric based on rater discussion from 2011 pilot.

# CTC Rubric

	4	3	2	1
( <b>A</b> ) Identifies the main issue and takes a position on it		Successfully identifies the main issue and takes a clear position on it.	but does not take a clear position on it.	Fails to identify, summarize, or take a position on the main problem or question. Represents the issues inaccurately or inappropriately.
	Identifies the all the major premises, provides strong evidence for their truth, provides definitions or explanations of any important technical terms, and adequately demonstrates the logical connection between the premises and the conclusion.	explanations to support	premises but provides little justification for either their truth or the logical connections between them. Generally doesn't define or explain	Fails to identify the major premises of the main arguments or fails to show how they are intended to support the conclusion.
( <b>C</b> ) Evaluates assumptions, evidence, and inferences	assumptions, evidence and inferences, and	Evaluates key assumptions, evidence, and inferences, and considers important or obvious potential objections. However, the response is too limited or implausible.	assumptions, evidence, and inferences, but	Fails to evaluate most of the assumptions, evidence, or inferences. Doesn't consider any potential objections.

**CTC Pilot Results** 

	Main Issue	Stakeholders & Context	Presents/ Explains	Evaluates	Point of View	Overall Avg.
2011	2.66	2.39	2.36	2.31	2.07	2.36

	Main Issue	Presents/Explains	Evaluates	Overall Avg.
2012	2.31	2.45	1.80	2.19

• Spring 2013 – full implementation and establishment of baseline for CTC

# CTC Challenge

- Not all WI course syllabi contain writing assignments that would require critical thinking as defined.
- Unrepresented disciplines
- Critical thinking is not a specific focus in the Writing Intensive Course Policy.

# Information Literacy Core Competency Longwood University's Vision Statement:

graduating "lifelong learners who stay connected to what is new in the world." **Longwood's General Education Criteria:** 

"to provide opportunities for students to increase information literacy through contemporary techniques of gathering, manipulating, and analyzing information and data" and "develop the ability to acquire, organize, present, and document information and idea." Longwood University is committed to the development of well-informed, information literate citizen leaders and embraces the definition of information literacy (IL) as the ability to:

- recognize when information is needed
- effectively locate, evaluate,
- and use the needed information

# endorsed by the American Library Association's *Presidential Committee on Information Literacy*.

# ILC Pilots and Full Implementation: WI Course-embedded Assignment and Rubric

- Spring 2011
  - Outcome of rater discussion Some confusion on several categories, especially relevancy category
- Spring 2012
  - Use of modified rubric based on rater discussion from 2011 pilot.

- Pilot conducted by library staff with modified rubric and spring 2011 papers
- Full implementation in May 2012
- Establishment of ILC baseline in spring 2013

# ILC Information Use Rubric (ILC rubrics available on OAIR website)

First two citations in the text of the student's paper assessed on:

- Relevance
- Presentation of Source Content
- Student or Source?
- Endnotes/Footnotes or Parenthetical Citation
- Correspondence with Bibliography

*ILC Bibliography Rubric* - (ILC rubrics available on OAIR website)

Bibliography assessed on:

- Number of Sources
- Types of Sources
- Currency
- Correct Citation

# ILC Results – Spring 2012

Information Use					
Relevancy to bibliography	Presentation of Source Content	Student or Source	End/Footnotes, Parenthetical	Correspondence to bibliography	Overall Avg.
2.4 out of 3	2.2 out of 3	1.6 out of 2	.74 out of 1	.76 out of 1	7.7 out of 10 0r 77%
Bibliography:					

Source Types	Citation	# of Sources	Currency		Overall Avg.
6.2 out of 8	5.2 out of 8	5.2 out of 8	1.4 out of 2		14.4 out of 20 or 72%
				TOTAL overall average	22.1 out of 30 74%

# Written Communication Core Competency Longwood University's Mission Statement:

"Building upon its strong foundation in the liberal arts and sciences, the University provides an environment in which exceptional teaching fosters **student learning, scholarship, and achievement**."

**Longwood's writing-intensive course policy**: Students should be able to "explore and articulate course content," to learn the "specific forms and processes of writing used in professions related to the course discipline," and to demonstrate the "ability to communicate content knowledge effectively through writing."

In order to assess writing competency across disciplines, we examine writing for ability to :

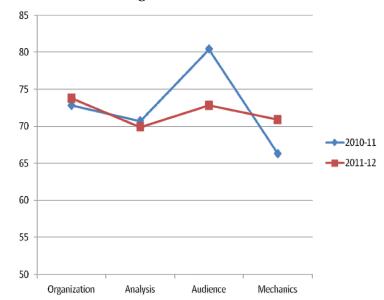
- 1. Identify and summarize the topic/problem and relevant questions and issues that inform the assignment;
- 2. Organize ideas into paragraphs that cohere and support the main argument through appropriate transitions, explanations, and engaging examples;
- 3. Develop ideas with rhetorically appropriate examples and explanations; and
- 4. Demonstrate proficiency in conventional use of grammar, spelling, and documentation.

# endorsed by the Writing Program Administration's Outcomes Statement.

# WCC Pilot and Full Implementation: WI Course-embedded Assignment and Rubric

- Spring 2011
  - Use of modified 2010 rubric
    - Change from holistic to analytic rubric
    - Criterion change
- Spring 2012
  - Raters from multiple disciplines
  - Full implementation in May 2012

- Establishment of WCC baseline from 2011 & 2012 results:
  - 70% of students will achieve above 2 on WCC criteria



WCC Scores: % scoring above 2 on each criterion

#### WCC Analysis

- Two criterion below 70%
  - Analysis at 69.9 2011-12
  - Mechanics at 66.3 2010-11
- Two criterion show greatest variation
  - Audience (style) and Mechanics
- Modifications for 2012-13
  - refinements to rubric audience->style
  - more disciplinary variation of raters
- Challenge
  - Unrepresented disciplines
    - Result of specific course assignment selection to meet requirements of 3 competency assessments

# **Reporting of Results**

- Currently
  - SCHEV template reports uploaded in WEAVEonline December 2012
  - General Education Committee February 2013
  - OAIR website (2012-13)
- Future
  - \*WEAVEonline generated Detailed Assessment Report (2012-13)

# Next Step: Action Planning

ILC:

- Use of results to offer further library support to identified discipline areas
- Conduct in-house workshops on how to improve student learning in areas of concern

# WCC:

• Use of raters from multiple disciplines for broader understanding and discussion

WCC & ILC rubrics currently accessible through OAIR website

Establishment of ILC baseline in spring 2013 and full implementation of CTC What is the advisement from Committee on General Education for the reporting of results and recommendations to relevant stakeholders?

What are the connections between WCC, CTC, ILC and the WI policy, course syllabi/assignment?

What is the potential for integration of competency and QEP assessment?

• a report on the fall 2012 results of core competency assessments for quantitative reasoning and scientific reasoning provided by coordinator of assessment Linda Townsend and core competency team leaders David Shoenthal, Phillip Poplin, Ed Kinman, and Sarah Porter.

# **Core Competencies: Quantitative Reasoning and Scientific Reasoning** *Purpose for Presentation*

- To describe the status of and results from Longwood's Quantitative Reasoning (QR), & Scientific Reasoning (SR) competency assessments
- To discuss actions for improvement based on the QRC & SRC results

# Who Is Involved?

- Longwood faculty and staff
  - Developed assessment plans

- Coordination of assessment activities with OAIR
- Coordination of testing during New Lancer Days (First Year Experience staff and peer mentors)
- Proctored students taking Madison Assessments

#### Value-Added Assessment

(Note: Value-added assessment method was required initially. Beginning 2010-11, SCHEV allowed for either value-added or competency-based assessment. QR & SR chose to continue value-added.)

- Value-Added: Longitudinal
  - Identifying & describing change over time
  - Single sample of individual performances at 2 different points in time
  - Typically pre- and post-test
- Value-Added: Cross-Sectional
  - Samples from different populations at a single point in time
  - Ex: group of freshmen and group of seniors within same semester
  - Differences attributable to experiences between freshman and senior years

	Quantitative Reasoning	Scientific Reasoning
2007-08	Value-added (Longitudinal) Pilot with Maple TA system and incoming freshmen (2010-11 - randomly selected Senior students who took the QR test in 2007 as freshman to be tested.)	
2008-09	(2010-11 - randomly selected Senior students who took the QR test in 2007 as freshman to be tested.)	

2009-10	(2010-11 - randomly selected Senior students who took the QR test in 2007 as freshman to be tested.)	Value-added (Cross-sectional & Longitudinal) Pilot - randomly selected Freshmen & Senior LS and non-LS majors (CARS-SR test)
2010-11	Value-added (Cross-sectional) Pilot - randomly selected Freshmen & Senior students (CARS-QR test)	Full implementation (Cross-sectional)
2011-12	Full implementation	Assessment and comparison of 3 years of data SRC results analyzed by objective
2012-13	Assessment and comparison of 3 years of data Additional investigation of possible impact of a given discipline's curriculum requirements on students' QRC	Assessment and comparison of results by objective

# Quantitative Reasoning Competency (QRC)

QR is defined as:

Capacity to reason mathematically in everyday life. A citizen leader can apply the methods of mathematics to the acquisition of knowledge and appreciate the major contributions of mathematics to the sciences, our cultural heritage, and the solution of contemporary problems. To successfully demonstrate QRC:

1) Interpret mathematical models such as formulas, graphs, tables, and schematics and draw inferences from them;

2) Represent mathematical information symbolically, visually, numerically, and/or verbally;

3) Use arithmetic, geometric, and/or statistical methods to solve problems;

4) Estimate and check answers in order to determine reasonableness, identify alternatives, and select optimal results; and

5) Recognize the limitations of mathematical and/or statistical methods.

# QRC Implementation

- QRC assessment
  - Computerized, multiple-choice test developed by the JMU Center for Assessment and Research Studies (CARS) and faculty from science and mathematics domains

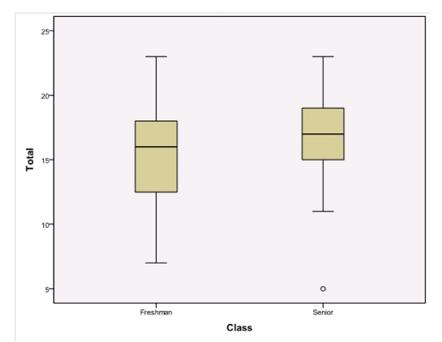
- Valid, reliable, and widely available assessment instrument
- Constant assessment level makes it a reasonable choice for the valueadded component of Longwood's QRC & SRC assessment
- Random samples generated by OAIR
- Incoming freshmen assessment
  - New Lancer Days (2011-12 and 2012-13)
- Senior assessment
  - Two days in October
  - Proctored by faculty members

2012-13 QRC Data Summary

	n	min	Qı	med	Q3	max	mean	st.dev.
Freshmen	51	7	12	16	18	23	15.20	4.29
Seniors	35	5	15	17	19	23	16.46	3.68

No low outliers were present based on time spent per question, so all data was used in the analysis.

# QRC Summary Data Display



# Significance Test #1

- 2-sample *t*-test with independent samples
  - Mean score for seniors was higher than the mean score for freshmen.
  - NOT a statistically significant increase at the 5% significance level in the mean scores of Seniors in comparison to Freshmen. (t=1.457, df=79.822, p=0.075).
  - 2012-13 first year could not conclude an increase in the mean senior score from the mean freshmen score.

# What about that Outlier?

- Significance test run without Senior outlier.
- Statistically significant increase in the mean scores of Seniors in comparison to Freshmen (*t*=1.979, df=82.222, *p*=0.026).
- <u>Not</u> a statistically valid reason to remove data point.
  - Student's total time spent on the test is in line with other students.
  - Time spent on each question doesn't indicate student gave up early in the test.
- No discernible reason for outlier but has a strong effect on the conclusion we can make about the scores.

# For LU-r Eyes Only

• Question for investigation:

- Is there a significant difference in the scores of seniors in certain majors?
- Based on whether or not the major requires Inferential Statistics as part of its requirements.
- Why? The QRC instrument currently used heavily favors questions based on knowledge of inferential tests.

Majors classified as Inferential: ATTR, BADM, CMSC, CRIM, CSDS, ECON, KINS EXSC, MATH, NURS, PSYC, SOCL, SOWK, and TREC. Majors classified as Non-Inferential: ANTH, BIOL, CHEM, CMST, ENGL, FAAR, FAMU, FATH, HIST, KINS ELSC, LST, MOLA, PHYS, and POSC. *Significance Test #2* 

- 2-sample *t*-test
  - Outlier dropped to avoid a skew of results
  - Significant evidence (t=2.357, df=30.580, p=0.013) that the Inferential majors scored higher on average than the Non-Inferential majors.
- Non-parametric test for outlier
  - Outlier in Non-Inferential group
  - Outlier score amplifies difference between 2 groups

On the one hand, this isn't surprising, although it's gratifying to see that this material is being incorporated into the Inferential majors.

On the other hand, is this difference something that we should try to address? To be clear, we are <u>in no way</u> recommending that any majors in the Non-Inferential category change their curriculum. That's both not our job and bad form as faculty outside of those disciplines. We would be interested in discussing, however, whether it is important to address this issue further.

# Scientific Reasoning Competency (SRC)

SR is defined as:

Scientific reasoning denotes systematic, logical thought patterns employed during the process of scientific inquiry. A citizen leader can apply the methods of science to the acquisition of knowledge and appreciate the major contributions of science to our cultural heritage and the solution of contemporary problems.

- Outcome1: Longwood students will understand the major methods of natural science inquiry.
  - Describe the methods of inquiry that lead to mathematical truth and scientific knowledge and be able to distinguish science from pseudoscience.

- Use theories and models as unifying principles that help us understand natural phenomena and make predictions.
- Formulate hypotheses, identify relevant variables, and design experiments to test hypotheses.
- Outcome 2: Longwood students will recognize and explain major contributions of science to our cultural heritage.
  - Recognize the interdependence of applied research, basic research, and technology, and how they affect society.
- Outcome 3: Longwood students will understand how natural science has been used to address significant contemporary issues.
  - Illustrate the interdependence between developments in science and social and ethical issues.
  - Evaluate the credibility, use, and misuse of scientific and mathematical information in scientific developments and public policy issues.

# SRC Implementation

- 2009 CARS-SR Madison Assessment
- OAIR selects a list of randomly generated students that meet criteria (freshman, senior, LST major, or NOT LST major)
- Email communications to students on selection
- Faculty proctors with help from the LU ambassadors
- Target sample:
  - 60 freshman, liberal studies majors
  - 60 freshman, non liberal studies majors
  - 40 seniors, liberal studies majors
  - 40 seniors, non liberal studies majors

# SRC Results

	Comparison of Overall SRC Scores 2009-2011								
Cohort	200	<b>)9-10</b>	20.	10-11	20	11-12			
	Sample Size	Mean % Correct	Samplə Size	Mean % Correct	Sample Size	Mean % Correct			
Freshmen	135	62	100	60	116	63			
Seniors	83	66	73	66	60	70			
Liberal Studies Majors	97	62	82	61	101	64			
Non- Liberal Studies Majors	125	65	91	64	102	68			

Measure	Liberal Studies Major		Other Majors	
	FreshmenN = 53	Seniors N = 28	FreshmenN = 49	Seniors N = 44
<b>Objective A:</b> Describe the methods of inquiry that lead to mathematical truth & scientific knowledge & be able to distinguish science from pseudo-science	64%	77%	70%	74%
<b>Objective B</b> : Use theories & models as unifying principles that help us understand natural phenomena & make predictions	55%	57%	55%	61%
<b>Objective C</b> : Recognize the interdependence of applied research, basic research, & technology, & how they affect society	55%	59%	61%	61%
<b>Objective D:</b> Illustrate the interdependence between developments in science & social & ethical issues	60%	67%	61%	68%
<b>Objective E:</b> Formulate hypotheses, identify relevant variables, & design experiments to test hypotheses	60%	63%	63%	69%
<b>Objective F:</b> Evaluate the credibility, use, & misuse of scientific & mathematical information in scientific developments & public-policy issues	51%	60%	52%	63%
Scientific Reasoning (all objectives combined)	58%	64%	61%	67%

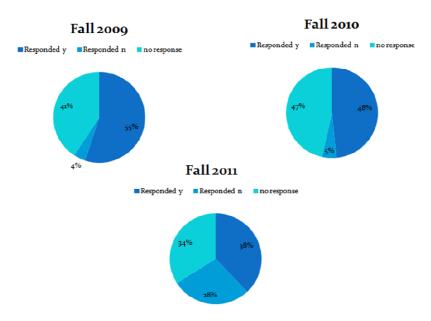
SRC Results Broken Apart by Objective (2011)

Measure	Liberal Studies Major		Other Majors	
	Freshmen N = 53	Seniors N = 48	Freshmen N = 58	Seniors N = 44
<b>Objective A:</b> Describe the methods of inquiry that lead to mathematical truth & scientific knowledge & be able to distinguish science from pseudo-science	68%	77%	68%	75%
<b>Objective B</b> : Use theories & models as unifying principles that help us understand natural phenomena & make predictions	54%	64%	59%	73%
<b>Objective C</b> : Recognize the interdependence of applied research, basic research, & technology, & how they affect society	48%	59%	54%	66%
<b>Objective D:</b> Illustrate the interdependence between developments in science & social & ethical issues	64%	69%	68%	75%
<b>Objective E:</b> Formulate hypotheses, identify relevant variables, & design experiments to test hypotheses	65%	71%	70%	75%
<b>Objective F:</b> Evaluate the credibility, use, & misuse of scientific & mathematical information in scientific developments & public-policy issues	55%	65%	57%	63%
Scientific Reasoning (all objectives combined)	60%	68%	65%	73%

# **Implementation Challenges**

- Faculty and staff time consumption for lab testing coordination and student communications
- Student responses to communications
  - Continue to be negative and/or confused
  - Penalty for non-participation is a transcript hold
    - Penalty has not been imposed.
  - Continuation of current methods could ultimately result in no participation.

# **Student Email Responses**



# **Reporting of Results**

- Currently
  - SCHEV template reports uploaded in WEAVEonline December 2012
  - General Education Committee April 2013
  - OAIR website (2012-13)
- Future
  - \*WEAVEonline generated Detailed Assessment Report (2012-13)

#### **Next Step: Action Planning**

QRC:

• Gather 2013-14data to confirm if difference between majors groups continues. If so, perhaps then report the difference more broadly across campus?

SRC:

- How to use the data other than to show added-value?
- Utilization of data by outcome for improvement?
- SRC and QEP?

An official, university sanctioned "Assessment Day"?

What is the advisement from Committee on General Education for the reporting of results and recommendations to relevant stakeholders?

What is the potential for integration of competency and QEP assessment?