Rio Salado College
Assessment of Student Learning
Annual Report
2013-2014

Introduction

Rio Salado College's first assessment plan was implemented in 1991. In the two decades since then, ongoing assessment initiatives aimed at increasing student learning have continued to demonstrate evidence of the College's central focus on this work. Student learning outcomes are measured in four core areas: Critical Thinking, Writing, Information Literacy, and Reading. These outcomes are assessed at the College level, the program level (as part of Program Review) and via the continuous improvement Plan-Do-Check-Act (PDCA) cycle at the course level. Collectively, these efforts provide a solid infrastructure for assessing and increasing student learning at Rio Salado.

Over the years, the College's assessment plan has progressed from a static document that was reaffirmed on a periodic basis, to a dynamic, ongoing, and evolving series of activities that are integrated across the teaching and learning spectrum.

The Learning Assessment Team includes representation from Faculty Chairs, Senior Administration, Institutional Research, and Co-Curricular Services, and has responsibility for coordinating all aspects of assessment of student learning.

The College maintains a public Assessment of Student Learning website so that the institution's assessment data and processes are transparent and available to all stakeholders. This site may be viewed at: http://www.riosalado.edu/about/teaching-learning/assessment/Pages/SLO.aspx

College-wide Assessment

The ETS (Educational Testing Service) Proficiency Profile

Background

The ETS Proficiency Profile is an assessment designed to measure academic competence in four core skill areas: critical thinking, reading, writing and mathematics. In addition, the reading and critical thinking sections are associated with three academic content areas: Humanities, Social Sciences and Natural Sciences. ETS provides comparative data of students at different types of institutions[1] and different class levels[2]. Having these comparative data facilitates determining the proficiency of Rio Salado students in each of the content areas. The 2014 administration was done using the abbreviated form, which can be completed in one 40-minute session.

Proficiency Profile Assessment Analysis

Overall, Rio Salado student performance was significantly and meaningfully higher than the ETS comparative cohorts. For each group (0-12 credits, 13-30 credits, and 31+ credits) Rio Salado Cohort mean scores were statistically significantly higher than the ETS Cohort mean scores. The standardized mean effect size was computed as Cohen's *d* to determine practical significance. For the context of this study, moderate to large effect sizes were considered noteworthy and were found in the 0-12 and 13-30 credits groups for all learning outcomes, and in the 31+ credit group for the reading learning outcome. The data are presented in Table 1.

Subject proficiency levels for critical thinking, reading, math, and writing were compared within the Rio Salado Groups and between the Rio Salado and ETS Cohorts. Figures 1 – 3 present the percentage of Rio Salado students who are proficient at each subject level for each of the credit hour groups, and contrasts those results with the ETS Cohort. Overall, Rio Salado students demonstrate higher levels of proficiency in each subject area than do students in the comparative cohorts.

Longitudinal Analysis

The 2014 Rio Salado Cohort performance trended downward from the previous years' cohorts. The total score and the mathematics scores are significantly and consistently lower in 2014 than in previous years. However, scores for the three learning outcomes that are the focus of the Rio Salado assessment plan (critical thinking, reading and writing) show no significant or

[1] Type of institution follows the Carnegie Classification. All comparative data analysis looks at the Associate's Colleges classification.

[2] For purposes of this analysis, only the following three class levels will be used: Entering Freshmen (No hours completed), Freshmen (less than 30 hours completed), Sophomores (30-60 hours completed).

consistent change over time. Based on the curricular and pedagogical emphasis given to the three focal learning outcomes at Rio Salado, the ETS Proficiency Profile results provide a source of evidence that positively supports those efforts.

Table 1. Rio Salado vs ETS Cohort Means

	Rio Mean Scores			Comparative Mean Scores		
Learning Outcome	**31+ Credits**	**13-30 Credits**	**0-12 Credits**	**Sophomores**	**Freshmen**	**Entering Freshmen**
Total Score	442.78*	445.1***	440.79***	434.6	427.9	422.1
Critical Thinking	111.61*	113.22***	111.42***	109.6	108.1	106.7
Reading	119.20*	119.00***	117.93***	115.2	113.4	111.5
Writing	113.78*	114.76***	113.51***	112.4	110.8	109.4
Mathematics	111.87*	111.96***	111.55***	110.8	109.1	107.6
Humanities	116.67*	117.66***	116.27***	113.8	112.5	111.2
Social Sciences	114.43*	114.74***	113.68***	111.9	110.4	108.9
Natural Sciences	115.74*	115.88***	114.71***	113.2	111.8	110.4

*Mean score is statistically significantly higher than the Comparative Cohort Mean
***Mean score is statistically significantly higher than the Comparative Cohort Mean with an effect size of .80 or larger, indicating high practical significance.

Figure 1. Reading and Critical Thinking Proficiency by level, group, and cohort

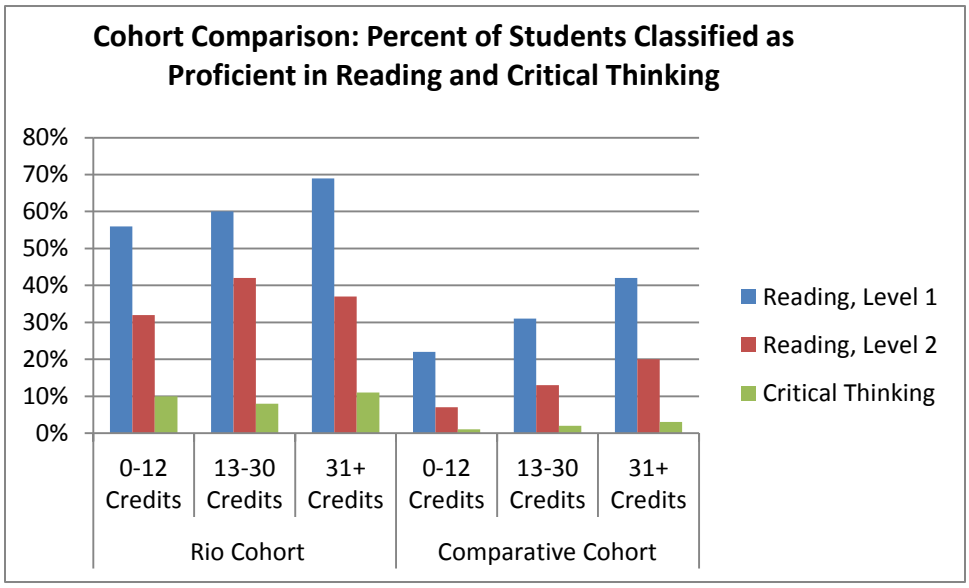


Figure 2. Writing Proficiency by level, group, and cohort

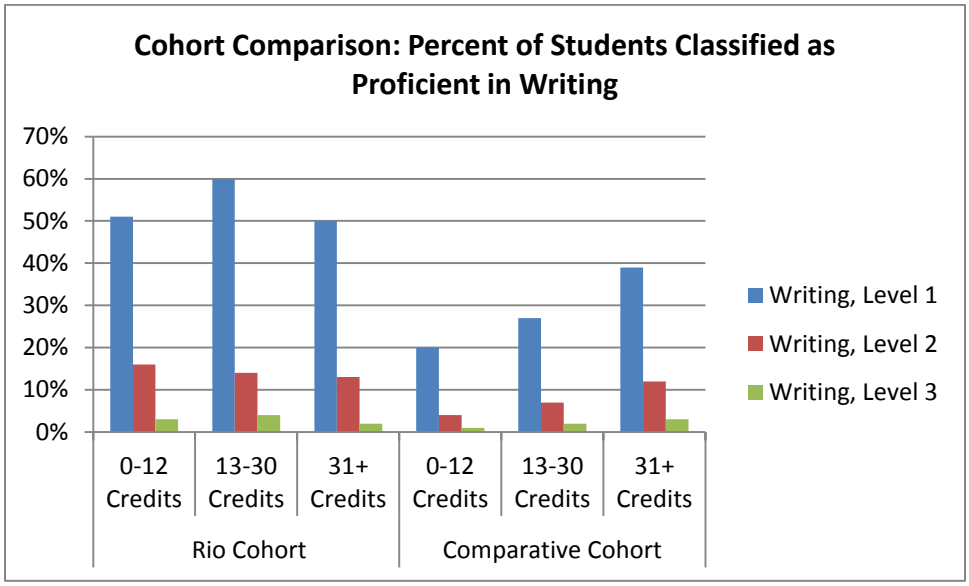
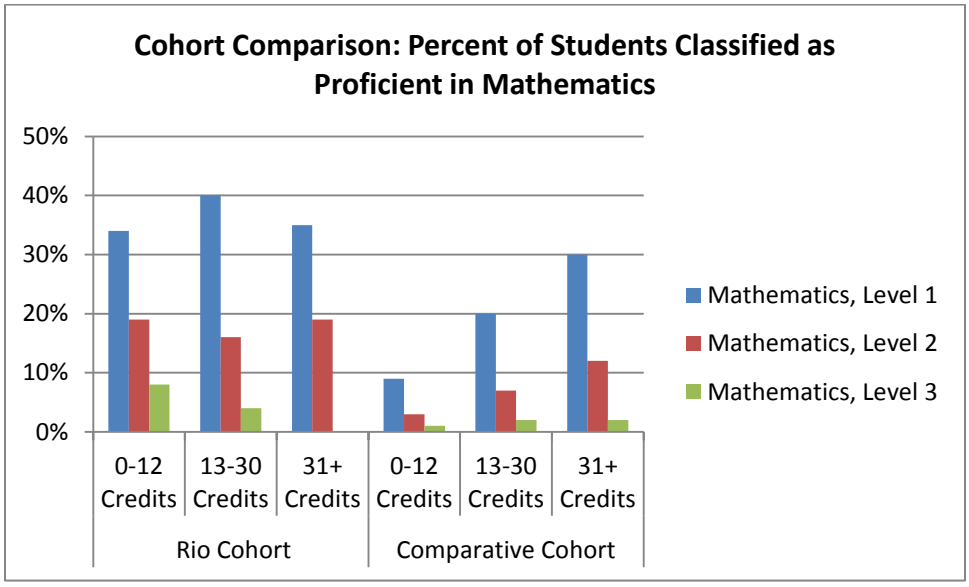


Figure 3. Mathematics Proficiency by level, group, and cohort



Information Literacy

The Research Readiness Self-Assessment (RRSA), an interactive instrument developed at Central Michigan University to measure students' online information literacy skills, was first administered to Rio Salado students enrolled in courses across multiple disciplines in spring and fall, 2010 (N=308).

Scored Categories

The RRSA measures student competence in the areas of *Obtaining* and *Evaluating Information*, as well as *Understanding of Plagiarism*. In 2010, findings indicated that student performance was particularly weak in the critical area of *Evaluating Information* (55.85%, with college-level competence set at 70% for the expected performance score), and an overall average *Research Skills* score of 67.87%, also below expected college-level performance.

2010 RRSA All Rio Salado Students Scored Categories					
N = 308					
Category	**Min Score**	**Max Score**	**Average Score**	**Points Possible**	**%**
Obtaining Information	9.00	29.00	20.08	30	66.94%
Evaluating Information	1.00	12.00	6.70	12	55.85%
Understanding of Plagiarism	4.00	14.00	11.23	14	80.19%
Overall	**16.00**	**54.00**	**38.01**	**56**	**67.87%**

As a result of these findings, a comprehensive college-wide intervention plan was established. With the cooperation of the Faculty Chairs, syllabi in all online courses were modified to include information about the availability of library services at Rio Salado and the Ask a Librarian reference chat service. Library subscription resources linked in online courses (periodical articles, films, etc.) were specifically identified as being provided by the Rio library so that students would have a heightened awareness of the academic nature of these resources. Additionally, library personnel worked with individual faculty chairs to modify or design assignments in 31 online courses across multiple disciplines to require research that incorporated high-quality, validated library resources, rather than just "Googling" on the open web.

The RRSA was administered again to gauge the effectiveness of these interventions between May 2, 2013 and February 24, 2014. (N=451).

2014 RRSA All Rio Salado Students Scored Categories					
N = 451					
Category	**Min Score**	**Max Score**	**Average Score**	**Points Possible**	**%**
Obtaining Information	9.00	30.00	20.83	30	69.43%
Evaluating Information	0.00	12.00	7.58	12	63.17%
Understanding of Plagiarism	5.00	14.00	11.41	14	81.5%
Overall	**14.00**	**56.00**	**39.82**	**56**	**71.1%**

The necessary data are not available to test for statistically significant differences in average scores between 2010 and 2014; however, it is noted that average scores in each of the three categories increased from 2010 to 2014. The largest gain is in the scale *Evaluating Information*, which increased .88 points from 2010 (6.70) to 2014 (7.58). For the same scale, the percent correct increased from 55.85% in 2010 to 63.17% in 2014, a 7.32% increase. As mentioned, college-level performance has been set at 70% or higher for the student learning outcome performance score at Rio Salado. Although the percentage of students who met college-level performance remains unknown, the average overall performance improved from 67.87% in 2010 to 71.1% in 2014. Using a dichotomous perspective, overall performance went from not meeting college-level performance to meeting college-level performance between 2010 and 2014.

Self-Reported Categories

The RRSA also collects self-reported data from students regarding their *Internet Browsing* habits, their *Research and Library Experience*, and their *Perceived Research Skill* level. The necessary data are not available to test for statistically significant differences in average scores between 2010 and 2014. Students' self-reported *Research and Library Experience* average score declined 1.49 points from 2010 to 2014, with average scores of 13.89 and 12.43, respectively. Thus, although students in 2014 demonstrated a higher level of research skill, their perception of their research abilities declined. Additionally, the self-reported propensity to browse the internet for academic research declined 3.76 points from 2010 to 2014. This decline may indicate that students were less likely to rely on the general internet (i.e., "Googling") for academic research, which is interpreted as a positive change.

2010 RRSA All Rio Salado Students Self-Reported Categories					
N = 308					
Category	**Min Score**	**Max Score**	**Average Score**	**Points Possible**	**%**
Browsing the Internet (self-reported)	0.00	48.15	25.99	0 - 50	51.98%
Research and Library Experience (self-reported)	1.00	28.00	13.89	33	42.09%
Perceived Research Skills (self-reported)	0.45	40.00	29.61	40	75.49%

2014 RRSA All Rio Salado Students Self-Reported Categories					
N = 451					
Category	**Min Score**	**Max Score**	**Average Score**	**Points Possible**	**%**
Browsing the Internet (self-reported)	0.00	50.00	22.23	0 - 50	44.46%
Research and Library Experience (self-reported)	0.00	30.00	12.43	33	37.67%
Perceived Research Skills (self-reported)	2.00	40.00	29.39	40	73.47%

Comparative Data

Comparative RRSA data at five institutions of higher education are available for review and provide a reasonable method of benchmarking. Across institutions and administrations, 40.74% of students tested as performing at college level. In 2014, Rio Salado Students performed 15.80% points above this benchmark.

College Level Status by School and Year RRSA Administered						
School	**Above College Level**		**Below College Level**		**Total**	
	N	**%**	**N**	**%**	**N**	**%**
Embry-Riddle Aeronautical University (2011)	44	43.56%	57	56.44%	**101**	**100.0%**
Milligan College (2009-2010)	234	41.34%	332	58.66%	**566**	**100.0%**
Mississippi College (2011-2012)	100	30.40%	229	69.60%	**329**	**100.0%**
Mississippi College (2013)	233	61.97%	143	38.03%	**376**	**100.0%**
North Carolina Wesleyan College (2012)	16	9.09%	160	90.91%	**176**	**100.0%**
North Carolina Wesleyan College (2013)	7	4.76%	140	95.24%	**147**	**100.0%**
Rio Salado College (2010)	203	42.92%	270	57.08%	**473**	**100.0%**
Rio Salado College (2014)	255	56.54%	196	43.46%	**451**	**100.0%**
West Virginia University (2009-2010)	173	35.60%	313	64.40%	**486**	**100.0%**
Total	**1265**	**40.74%**	**1840**	**59.26%**	**3105**	**100.0%**

College level is defined as 70% or better.

Also, it was noted that between 2010 and 2014, Rio Salado experienced a 13.62% gain in the percentage of students performing at college level.

Summary

The positive gains experienced between the 2010 and 2014 RRSA administrations support the deliberate attention to, and curricular interventions for, information literacy that have been implemented at Rio Salado over the past four years via a systematic and intentional Plan-Do-Check-Act improvement cycle. All assessed categories resulted in improvements over time, with the overall performance crossing the college-level threshold in 2014. When benchmarked against other undergraduate students nationally, 2014 Rio Salado students performed almost 16% points above the average overall performance across sampled colleges.

Course-level Student Learning Outcomes
Plan-Do-Check-Act Cycles

NGLC Wave IIIb Grant-Funded Assessment

Rio Salado was awarded an NGLC (Next Generation Learning Challenges) Wave IIIb grant in fall, 2012. As one of the initiatives funded by this grant, student learning outcomes in Critical Thinking and Writing are being measured in selected high-enrollment, General Education courses through implementation of GEAR (**G**uided **E**valuation for **A**ssessment **R**eview) methodology.

GEAR is a technology-based, faculty-developed solution that contains an integrated set of teaching tools intended to increase feedback quality and consistency, as a fundamental component for providing guidance that promotes learning as part of assessment. The system provides students with enhanced feedback, consistent grading, and an improved learning experience. The revolutionary design enables instructors to focus efforts on providing targeted and personalized feedback within the RioLearn system. Instructors are able to integrate additional content and examples that make conceptual linkages and illustrate real-world applications in the online feedback provided to students. The system resources include options for providing the student with the following types of feedback:

- **Mini-teach**: Links concept knowledge to ***examples*** in the real-world. Also, suggests additional web-based resources for students who wish to investigate the topic further.
- **General, performance-based comments:** Includes a few sentences that provide a general statement about a student's performance on a given component of the assignment (categories include *Excellent, Very Good, Good*, or *Needs Improvement*). The general, performance-based comments lead into the specific, concept-based comments/examples.
- **Specific, concept-based comments:** Each concept included within the assignment includes a definition and brief example to illustrate *Knowledge and Application*.

A number of courses were chosen for assessment of Critical Thinking and Writing Student Learning Outcomes using the GEAR tool as part of the NGLC grant work, with a focal assignment for each course being selected by the Faculty Chair. Baseline data were collected from the fall, 2013 term for the focal assignment in each course. These were compared with data from the spring, 2014 term, after implementation of GEAR.

Critical Thinking: Course Level Data

Improvement cycles were initiated in eight courses during spring, 2014. Adjunct Faculty teaching these General Education courses were provided with instructions and training on how to implement and apply GEAR for feedback on course essays.

The number of courses and the number of students impacted are shown in Table III.

Table III	
Critical Thinking Cycle Progress for FY 13-14	
Cycle Progress Update	**N**
PDCA cycles completed	8
Courses involved	8
Students impacted during PDCA cycles	1,355

The data below (Table IV) represent the *Check* phase of the PDCA cycle. Data were pulled during fall, 2013 from the focal assignment in each course; this represents the pre-intervention phase before utilization of the GEAR tool. Post-intervention data were then pulled for the same focal assignment after GEAR feedback had been provided for assignments throughout the spring, 2014 semester. (The number of assignments implementing GEAR feedback varies from course to course.)

Table IV				
Completed PDCA Cycles and Pre-Post Results				
Course	**% at or above college level pre-intervention Fall 2013**	**N**	**% at or above college level post-intervention Spring 2014**	**N**
BIO100	64.7%	51	67.4%	129
CRE101	94.1%	185	89.6%	163
ECN212	82.5%	80	83.1%	124
ENG102	70.6%	401	71.8%	479
PSY101	89.1%	293	82.5%	275
HIS103	86.1%	162	87.8%	63
HIS104	81.3%	104	86.7%	39
MAT151	42.0%	88	50.6%	83

Though data show a slight decline in performance post-intervention, results from CRE101 and PSY101 still met the target since more than 80% of the students performed at college level. Data from ECN212, HIS103, and HIS104 show modest increases, and the target was met both pre- and post-intervention. Results from BIO100, ENG102, and MAT151 did not meet the target, though data from both courses do show an increase in performance from pre- to post-intervention.

Writing: Course-Level Data

Improvement cycles were initiated in nine courses during spring, 2014. Adjunct Faculty teaching these General Education courses were provided with instructions and training on how to implement and apply GEAR for feedback on course essays.

The number of courses and the number of students impacted are shown in Table V.

Table V	
Writing Cycle Progress for FY13-14	
Cycle Progress Update	**N**
Courses involved	9
Students impacted during PDCA cycle**	1,678

The data below (Table VI) represent the *Check* phase of the PDCA cycle. Data were pulled during fall, 2013 from the focal assignment in each course; this represents the pre-intervention phase before utilization of the GEAR tool. Post-intervention data were then pulled for the same focal assignment after GEAR feedback had been provided for assignments throughout the spring, 2014 semester. (The number of assignments implementing GEAR feedback varies from course to course.)

Table VI				
Completed PDCA Cycles and Pre-Post Results				
Course	**% at or above college level pre-intervention Fall 2013**	**N**	**% at or above college level post-intervention Spring 2014**	**N**
CHM130	89.9%	89	84.4%	109
CRE101	96.2%	185	95.7%	163
ECN212	83.8%	80	82.3%	124
ENG101	77.2%	377	81.3%	316
ENG102	77.6%	348	77.6%	433
FON241	87.7%	146	86.6%	164
HIS103	88.9%	72	95.9%	49
HIS104	90.6%	32	95.6%	45
PSY101	90.4%	293	87.3%	275

Though data show a slight decline in performance post-intervention, results from CHM130, CRE101, ECN212, FON241, and PSY101 still met the target since more than 80% of the students performed at college level. Data from HIS103 and HIS104 show notable increases, and the target was met both pre- and post-intervention. Results from ENG102 did not meet the target, and the data show no change in performance from pre- to post-intervention. The increase in performance in ENG101 resulted in the target being met post-intervention.

Reading: Course-Level Data

The process of Course-level Reading assessment began in FY2013-14. An improvement cycle was initiated in one course (CRE101) during spring, 2014. Adjunct Faculty were provided with instructions and training on how to implement and apply GEAR for feedback on course essays.

The course and number of students impacted are shown in Table VII.

Table VII	
Reading Cycle Progress for FY2013-14	
Cycle Progress Update	**N**
Courses involved	1
Students impacted during PDCA cycle	165

The data below (Table VIII) represent the *Check* phase of the PDCA cycle. Data were pulled during fall, 2013 from the focal assignment in each course; this represents the pre-intervention phase before utilization of the GEAR tool. Post-intervention data were then pulled for the same focal assignment after GEAR feedback had been provided for assignments throughout the spring, 2014 semester. All students performed well above college level, both pre- and post-intervention.

Table VIII				
Reading Completed PDCA Cycles and Results				
Course	**% at or above college level pre-intervention Fall 2013**	**N**	**% at or above college level post-intervention Spring 2014**	**N**
CRE101	99.50%	189	98.20%	165

GEAR Next Steps

It is important to acknowledge that there may be variables affecting the results of pre- and post-GEAR intervention. Since this was the first semester for implementation of the feedback tool, instructors across the board might not yet be completely familiar and comfortable with its use. Other possible factors include whether or not students are reading their detailed feedback, and also the variable number of assignments in each course that use GEAR to provide feedback, resulting in differing levels of exposure. Further analysis and use of the tool will be conducted during FY2014-15, and a student survey is planned to gauge students' perception of the GEAR feedback as it relates to relevancy, usefulness in improving specific learning outcomes, and overall student motivation.

Program Review

Rio Salado College has adopted and implemented a Program Review model and process that is both systematic and comprehensive, as well as sustainable and formal. It contains a multi-level view of the program, which includes a comprehensive assessment of the college-level, program-level and course-level student learning outcomes. Data on the outcomes of both curricular and student support services, such as the Library, Advising, Financial Aid, the Helpdesks, etc., are included in each program review. In addition, every review contains the same foundational components, i.e. program goals, learning outcomes, and program resources, which are addressed by utilizing a template of foundational questions and data sets. The College's Learning Assessment Team members examine the completed review and provide feedback on best practices, quality assurance, and relentless improvement, which are captured and published in the program's Executive Summary Report, available on the Rio Salado website.

The Executive Summary for the Computer Technology Program Review was finalized during FY2013-14 and is available on the College's Assessment website, located at http://www.riosalado.edu/about/teaching-learning/assessment/Pages/SLO.aspx.

During FY2013-14, the program review process was placed on hold owing to the work required on an MCCCD District-wide initiative, *Maricopa Priorities*. *Maricopa Priorities* is "a process of self-assessment, assessment, and prioritization of all programs and services. This process…will aid us in collectively realigning resources (funds, people, and space) to help us thrive as an institution." (http://district.maricopa.edu/initiatives/maricopa-priorities, July 2014).

Formal program reviews will recommence in FY2014-15, and will include Clinical Dental Assisting, eLearning Design Specialist, Law Enforcement Technology, Sustainable Foods Systems and others.

RioLogs

Rio Learning Outcomes Grants (RioLogs) provide a mechanism and the resources to support Faculty Chairs in developing student learning outcomes-based initiatives, directly linked to assessment results data. The instructional initiatives or projects proposed for RioLog funding require the involvement of adjunct faculty members.

Three RioLogs were completed during FY2013-14:

Languages Department

Visual GEAR: Using video to provide Guided Evaluation for Assessment Review in Sign Language Courses, Part 2

This RioLOG was a follow-up to the Visual GEAR RioLOG that was completed in FY2012-13. Whereas the previous initiative focused on beginning-level structures, this RioLOG secured funding to pay five adjunct faculty members to create video clips that demonstrate common intermediate-level grammar structures in American Sign Language. Eighty clips were produced that can be used across class sections and levels to standardize feedback for assessments in the College's online Sign Language courses. The video clips are posted on the Rio Salado Open Educational Resources site, RioCommons, at http://www.riocommons.org/.

The GEAR videos were produced during fall, 2013, and were uploaded to RioCommons prior to the start of the spring, 2014 semester. Approximately 350 Rio Sign Language students have been impacted by the deployment of this intervention to date. Additionally, GEAR videos are available as open source content to external audiences such as teachers, students, and others interested in American Sign Language.

Languages Department

CHI and JPN Assessment and Content Alignment

The competencies and course outlines for Mandarin Chinese and Japanese courses were recently updated at the District level. The new competencies reflect the state-wide common learning outcomes established by the Languages Articulation Task Force. This RioLOG secured funding to pay two adjunct faculty members to evaluate the alignment of Rio's existing lesson content and assessments with the District competencies. The result of this assessment work is driving ongoing course modifications that are necessary to ensure that the College's curriculum meets the District competencies, as well as the state-wide learning outcomes. The revised versions of CHI101, 102, 201, and 202 are rolling out in fall, 2014, along with JPN101. New versions of JPN102, 201, and 202 will roll out during spring and summer, 2015.

Languages Department

ARB101 Student Success Initiative

Historically, Arabic 101 has had the lowest success rate of all language courses. However, once students move on to ARB102, 201, and 202, the success rate jumps to approximately 80%. Funding for this initiative paid two Arabic instructors to work collaboratively on strategies to increase the number of successful completers in Arabic 101. The hope is that, by increasing the

number of successful completers in ARB101, the department will also increase the number of students that move on to the higher levels.

In the *Plan* stage of the PDCA cycle, the instructors examined baseline assessment data, designed instructional modules, modified assessments, and created new mandatory review assignments. The interventions deployed in spring, 2014 to complete the *Do* phase, and assessment data will be gathered in fall, 2014 to *Check* the effectiveness of the interventions. Results of the data analysis will determine the next steps in the *Act* phase.

Significant Accomplishments in Learning Assessment Work, 2013-14

- The 15th Annual Fall Assessment and Learning Experience meetings were held on September 7 and 9, 2013, with a total of 609 adjunct faculty members attending.
- Six Outstanding Adjunct Faculty were recognized for *Contributions to Assessment of Student Learning* for FY2012-13. The Outstanding Adjunct Faculty Reception was held on September 11, 2013.
- The Research Readiness Self-Assessment was administered from fall, 2013 through spring, 2014, and closed the loop on a multi-year information literacy PDCA assessment cycle.
- The ETS Proficiency Profile was administered in spring, 2014.
- A Rio team attended the Higher Learning Commission Annual Conference in Chicago in April, 2014.
- Course-level PDCA cycles were conducted for Critical Thinking, Writing, and Reading.
- Self-assessments and evaluations were completed on all Rio Salado's instructional programs and support programs and services, as a component of the District-wide Maricopa Priorities initiative.
- The Program Review model process was reviewed and revised.
- The HLC Steering Team was formed and Criterion Tri-Chairs named to begin preparation of the College's fourth year Assurance Argument accreditation review, due in December, 2015.
- A total of 145 adjunct faculty members successfully completed Adjunct Faculty Development workshops during AY2013-14.
- The Learning Assessment Report was compiled and posted to the Learning Assessment SharePoint and Adjunct Faculty SharePoint sites for access by residential faculty, adjunct faculty, and College employees.
- The Learning Assessment Report will be distributed to all adjunct faculty during the September, 2014 Fall All Faculty Assessment and Learning Experience, and posted to the College's Public Website.

Learning Assessment Team Members

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