

## **INTEGRATION OF COLORADO MESA UNIVERSITY PROGRAM REVIEW AND ASSESSMENT OF STUDENT LEARNING**

Colorado Mesa University has been involved in the program review process for several decades, and beginning in 2005, external reviewers were added to what had been a self-study process internal to the institution. While there was initial concern about the addition of an "outsider" to the process, faculty members' anxieties subsided after a couple of years, as there was a growing understanding that the reviewers were not part of a "gotcha" approach, but rather, that external reviews offered valid and valuable insights for program improvement. As the review process evolved, gains in program quality were made.

Obviously, external reviewers' observations are a single individual's perception at a given point in time. But reviewers are selected, not only because of their professional expertise and experience, but also because they have no connections to a CMU/WCCC program or its faculty members. They are expected to provide an objective review of the program, noting both program strengths and areas for improvement, and clearly, their review is only one in a series of data points that monitor a program's progress toward improvement.

Assessment of student learning and program review are two distinctly different processes, but they intersect at the point of program improvement. At CMU, program review and the assessment of student learning were running on parallel tracks rather than assessment results informing a program's review, so it became obvious that a relationship of the two processes was necessary. By forging assessment and the self-study process for evaluating a program offered faculty members and academic administrators 1) a more holistic view of program efforts, and 2) an understanding of the critical role outcome data play in planning a program's future goals and objectives for improvement. As a result of CMU's integration, self-study narrative elements (assessment and otherwise) were added and/or made more specific in the Program Review Manual, such as program currency, a curriculum map based on the program's student learning outcomes (SLOs), and program improvements resulting from assessment of SLOs. A summary form completed by all external reviewers that addressed the existing as the new elements also was implemented.

In terms of program currency, an overwhelming number of reviewers give positive responses as shown in Table 1. Two of the three who did not agree indicated their concern was with the number of faculty in Biological Sciences and Political Science available to deliver the curriculum and not the currency. As a follow-up to the review, the Technology Integration curriculum was revised.

At the time of the 2013 HLC review, CMU had begun its initial implementation of the revamped process, but an insufficient amount of time had elapsed to evaluate the effects of the blending of assessment and program review. CMU has now completed four cycles of program reviews using the integrated process. An examination of assessment-related external reviewers' observations about the 22 programs that have completed the revised process documents the following in the table below:

- Faculty support for and involvement with assessment has grown significantly over the last four years. As shown in Table 2, reviewers in the first year of the integration found that the faculty's commitment to assessment efforts was lacking, with only one of the initial six reviewers agreeing with the statement that student learning outcomes are appropriate to the discipline, clearly stated, measurable, and assessed. Over the four cycles, however, reviewers' observations document that the proportion of programs with outcomes that met the specific criteria grew to five out of six as faculty members' commitment became more serious. The outlier in the AY 2015-16 cycle is a community college program that, as a result of the external reviewer's recommendations, now has become engaged in the assessment process with measurable outcomes.

**Table 1. EXTERNAL PROGRAM REVIEWERS' OBSERVATIONS ON PROGRAM CURRENCY**

Program Review Element	Program Reviews Completed in AY 2012-13 -						Program Reviews Completed in AY 2013-14 -				
	Kinesiology	Sport Management	Physical Sciences	Mfg Technology	Process Systems	Tech Integratio	Biological Sci	Political Sci	Rad Tech (BAS)	Office Adm Tech	Elec Lineworker
	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree
The curriculum is current, follows best practices, and/or adheres to the professional standards of	X	X	X	X	X	X	X*	X*	X	X	X

Program Review Element	Program Reviews Completed in AY 2014-15 -						Program Reviews Completed in AY 2015-16 -				
	CISB	Construction	Mathematics	Psychology	Spanish	Visual Comm	Mass	Culinary Arts	EMT	Environmenta	Business
	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree
The curriculum is current, follows best practices, and/or adheres to the professional standards of the discipline	X	X	X	X	X	X	X	X	X	X	X

\*Curriculum was current but concern was with number of faculty available to deliver it.

**Table 2. EXTERNAL PROGRAM REVIEWERS' OBSERVATIONS ON ASSESSMENT ACTIVITIES**

Program Review Element	Program Reviews Completed in AY 2012-13 -						Program Reviews Completed in AY 2013-14 -				
	Kinesiology	Sport Management	Physical Sciences	Mfg Technology	Process Systems	Tech Integratio	Biological Sci	Political Sci	Rad Tech (BAS)	Office Adm Tech	Elec Lineworker
	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree
Student learning outcomes are appropriate to the discipline, clearly stated,	X	X	X	X	X	X	X	X	X	X	X
Program faculty members are involved in on-going assessment	X	X	X	X	X	X	X	X	X	X	X
Program faculty members analyze student learning outcome data and program effectiveness to foster continuous	X	X	X	X	X	X	X	X	X		X

Program Review Element	Program Reviews Completed in AY 2014-15 -						Program Reviews Completed in AY 2015-16 -				
	CISB	Construction	Mathematics	Psychology	Spanish	Visual Comm	Mass	Culinary Arts	EMT	Environmenta	Business
	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree	Agree Not Agree
Student learning outcomes are appropriate to the discipline, clearly stated,	X	X	X	X	X	X	X	X	X	X**	X
Program faculty members are involved in on-going assessment	X	X	X	X	X	X	X	X	X	X	X
Program faculty members analyze student learning outcome data and program effectiveness to foster continuous	X	X	X	X	X	X	X	X	X	X	X

\*\*SLOs acceptable but recommended that an additional SLO be added; program subsequently made recommended change.

- Results of these processes has led to program changes: the deletion of the Technology Integration program; the deactivation of Process Systems (final action scheduled for the upcoming year); a significant restructuring of Office Administration Technology; and the division of the Physical Sciences program into specific majors in Chemistry, Geosciences, and Physics.
- Self-study narratives show that faculty members and their Academic Department Heads are involved in continuous reflection on how to improve their program, as shown in discussions based on their own observations as well as those related to the previous external reviewer's comments. Some of the observations and recommendations were implemented after due consideration, while in other cases, faculty decided against pursuing others when not appropriate (see excerpted comments below). It should be noted that even when reviewers found that a program met a criterion, the review process has led to improvements. For example, Environmental Science faculty members added a SLO to those they had already defined, based on the external reviewer's recommendation.
- While program faculty have a continuous improvement mindset, they are moving more aggressively toward a fuller analysis of assessment results as part of their ongoing efforts to strengthen student learning and, more generally, their academic or technical program.

#### **Excerpts on Continuous Improvement from Program Review Narratives**

- **Psychology:** A major goal of the Psychology faculty in addressing the recommendations of the above-mentioned resources was to produce a developmentally coherent curriculum, from the first course in Psychology to the bachelor's degree, along with the intermediate outcomes that students should attain en route. We wanted to ensure that our majors sequence courses in ways that are developmentally appropriate to foster the systematic acquisition of essential skills (e.g., critical thinking, effective learning, graduation and career planning, information competence, writing well in APA format). . . . There are several examples of positive outcome for our curriculum mapping efforts. The course mapping process has allowed us to see what courses should be taken in sequence in order for students to have basic instruction in information competence before doing more advanced work. This has improved our ability to advise students. Another example has to do with faculty adjustment of course material in order to cover basic processes before moving on to more advanced expectations. Thirdly most faculty members were able to consider the methods of assessing student outcome in their classes and how they match their learning goals. All of these processes resulted in changes to the major since the last program review to present a more logical sequence of courses for students and a clustering of Psychology electives to ensure basic exposure to coursework in the diverse areas of Psychology that all majors experience. Some of the major improvements made to the Psychology programs since the previous program review are reflected in the assessment data.
- **Business:** The reviewer recommended adding courses in International Business, E-commerce, Government and Ethics. International Business and E-Commerce were added with International Business part of the core business curriculum. A concentration in Emerging Markets was created based upon this recommendation to focus on this fast growing segment of International Business. An Ethics course was also added, BUGB 440 Business Ethics. In January 2015 the Department was awarded the Daniels Fund Ethics Initiative Grant, supporting faculty across the core functional areas in conducting a series of trial activities to begin the process of integrating ethics across the business curriculum. After review, the Department chose to not add a Government course at this time.

- Environmental Sciences: ENVS 492 Capstone plays a central role in our plan. Because the course is cumulative in nature and is taken by all of our senior Environmental Science majors, it is a logical setting in which to assess how well our students meet the SLOs at an advanced level. Students work in groups of three to four to plan, implement, and report (both orally and in writing) on projects that they do for an off-campus client. Thus, we are able to use the capstone projects to evaluate their communication skills, quantitative skills, critical thinking skills, technology skills, and applied learning skills. For the evaluation of students' specialized knowledge, we instead rely on tests. Students take a test on their knowledge of environmental processes as freshmen at the beginning of ENVS 104 and again as seniors in ENVS 492. We then compare their senior scores to their freshman scores. We also examine their performance on four exit exams that we administer as part of ENVS 492.
- Electric Lineworker: The advisory committee sets two assessment dates at the beginning of the semester. On the assigned day, the committee shows and announces to the classes what they are going to be assessed on that day. The students do not know what their tasks for the days are until the committee announces them at class. The members use a rubric that reflects industry standards, and rates each student from 1-3, with one being needs improvement and 3 as above average. They evaluate four to five competencies with each assessment and observe the students in a crew environment, used by industry to assess their ability to work as a team. These "real world" assessments are exceptional, and keeps our program on track and viable. The feed-back after the assessments point out concerns with each student, and any changes the instructors need to make in either curriculum or process.
- Physical Sciences: Evaluation of student technical papers—Each student completes advanced laboratory, a six contact hour per week lab, as a graduation requirement. Students are graded on several reports of their work. No formal assessment instrument was devised. However, faculty report that students have poor writing skills when entering the class. . . . In response to our finding that chemistry majors need to improve their communications skills, we added a new course (to be offered for the first time in AY13), CHEM 344 Communication in Chemistry [taken concurrently with advanced lab]. The course will address laboratory notebooks, publishing research, formal oral presentations, resumés, and cover letters. [Note: The Chemistry faculty implemented this course following the division of the former Physical Sciences program into majors in Chemistry, Geosciences, and Physics.]
- Biological Sciences: The department is also currently working on fairly radical changes to our Biology concentration curriculum to address the concerns of the external reviewer as well as concerns expressed by students completing our exit survey as graduating seniors (discussed in a later section). We will be proposing that our current generic Biology degree be divided into several specific concentration: 1) General Biology (essentially the same as our current program); 2) Cell, Developmental, and Molecular Biology; 3) Ecology, Evolutionary, and Organismal Biology; and 4) Pre-Health and Biomedical Biology. [Note: This concentration structure was implemented in 2016.]
- Manufacturing Technology - Welding: The Welding program had some changes made to some courses a few years ago. We finished this process with cleaning up the catalog descriptions, adding some core Welding classes into the catalog and deleting unused and unneeded classes. The changes are designed to simplify and streamline the welding program. As an American Welding Society S.E.N.S.E. ((Schools Exceling through National Skills Education) certified school, the Welding program uses the competency-based AWS national standards. Our manufacturing technology advisory committee has read and approved the program changes.

- Political Science: Some changes have already been identified as priorities, and we welcome feedback from all readers so that we might develop a richer understanding of the program improvements that are needed as a result of the assessment of SLOs and other things. . . . (2) Begin a pre-law concentration (but not a concentration in public administration) Response: We agree. While a pre-law concentration would help attract more pre-law students to the major, and slow the trend of pre-law students selecting criminal justice as their major, a combination of factors has made it difficult to fulfill this recommendation.
- Early Childhood Education: Licensing has made changes to the requirements for teachers and directors. Faculty have quickly responded by making the needed changes to their curriculum. Additionally another certificate has been added that requires only 9 credits worth of specific courses to meet the different guidelines outlined by both the state licensing and the National HeadStart program. The Associate Degree and both Certificates have been updated to align with State Regulations. The Associate Degree and the Teacher Certificate have been updated to reflect the suggestion of the Advisory Council regarding teachers needing a clearly understanding of NAEYC Code of Ethical Conduct. A new course was created, EDEC 122 Ethics in Early Childhood Education.
- Culinary Arts:

Create a clear and comprehensive Culinary and Hospitality curriculum with effective marketing, recruitment, and retention planning and implementation	The Culinary faculty regularly review current trends to ensure the curriculum meets the needs of a changing industry. We have partnered with the high school marketing program on campus to <del>do some limited social media marketing</del>
Rewrite the curriculum for the AAS degree in Culinary Arts	No full rewrite, but the curriculum has been reviewed regularly and changes have been

- Computer Information Systems: In 2012, after carefully studying the new model curriculum for two years, the CIS faculty decided to make the signification change to align the BS in CIS, BAS in CIS, and BBA in IS with the IS2010 model curriculum. Three undergraduate courses were added: CISB 310 Enterprise Architecture, CISB 315 IT Infrastructure, and CISB 410 Project Management. (CISB 505 Advanced Project Management was also added as an elective for MBA students.) Three courses were removed from those three degrees: CISB 260 Information Systems Architecture, CISB 400 Data Communications and Network Management, and CISB 460 Electronic Commerce Systems. CISB 260 and CISB 400 will be deleted or deactivated after their service to current students has lapsed. CISB 460 (and the more advanced CISB 560) will be kept as they serve as electives to other programs. Movement to the IS2010 Model Curriculum also necessitated revisions to other CISB courses and some prerequisite changes.
- Administrative Office Technology: In an effort to keep up-do-date with current industry demands and based on recommendations made by the program's business advisory committee, significant changes were made to the curriculum. Word Processing I (3 credits) and Word Processing II (3 credits) were condensed into one 3-credit class (Word Processing). Most students currently entering the program have a basic knowledge of computers and no longer require a great deal of time learning the basic concepts that were taught in Word Processing I. . . . Suggestions made by the business advisory committee were to condense word processing into one class instead of two classes to allow inclusion of more advanced skill training for Administrative Professionals.

- Construction Management: Students are encouraged to take the American Institute of Constructors (AIC) Level 1 Exam, to earn the Associate Constructor (AC) credential. Of the students that have taken this exam, 100% have passed. The Construction Management Industry Advisory Board (CMIAB) conducts a survey of all graduating students in Construction Management program. This survey shows students, while making suggestions for improvement, are overall satisfied with the education received by this program. The Construction Management program works closely with the CMIAB asking for input and advice on the knowledge and skills needed by the industry from a college graduate in construction management. This information in turn is calibrated into the student learning outcomes.
  
- Mathematics: As we have worked our way through this program review process, we have taken the opportunity to consider our current population of students as well as current trends in mathematics, including statistics and mathematics education. While much of our program is working very well, we find that there are a few changes that we believe would strengthen our program and better position our students for success in the current career climate. Those changes include:
  - investigating the possibility of a concentration in applied mathematics
  - investigating the possibility of a freshman/sophomore seminar in mathematics
  - investigate the possibility of creating a pedagogical content knowledge course for students concentrating in (secondary) mathematics education
  
- Sport Management: SLOs have been implemented for the program and for the courses with the aim of tying these together to help the student identify the common thread approach to the overall program. Prerequisites have been put in place for specific courses, KINE 345 and KINE 402, to facilitate student comprehension in these program courses.