

Colorado Mountain College

Case Study Report – Data as of May 2013

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INTRODUCTION

In 2011, Colorado received a \$17.3 million Trade Adjustment Assistance Community College and Career Training (TAACCCT) grant from the U.S. Department of Labor. The grant-funded project, the Colorado Online Energy Training Consortium (COETC)—has two principal purposes: 1) enhance the state’s energy-related programming by transforming curricula into more accessible formats using technology and mobile learning labs, and 2) develop and implement a redesign of the state’s developmental education (DE) program. Project goals include expanding access to degree and certificate programs in energy-related fields, increasing retention and completion of certificate and degree programs at the community college level, and developing a trained workforce for changing job market.

The COETC project involves the thirteen colleges in the Colorado Community College System (CCCS) and two local district colleges, Aims Community College (Aims) and Colorado Mountain College (CMC).

CCCS contracted with Rutgers School of Management and Labor Relations (Rutgers) to be the COETC third-party evaluator. In this role, the Rutgers team created and implemented a multi-faceted research assessment design that includes quantitative and qualitative data collection and analysis.

A major component of Rutgers’ COETC evaluation is a cohort study that compares the educational outcomes for students enrolled in traditional courses to those for students enrolled in COETC-developed and funded courses. In particular, this research focuses on the COETC project’s second goal as described above. The study’s objective is to assess the success of DE courses restructured under the guidelines of the Colorado State Task Force on Developmental Education Redesigns (State Task Force) and the success of the redesigned energy courses at the seven participating energy colleges. Specifically, it will evaluate the impact of factors such as demographics, Accuplacer scores, course registrations, student grades, employment status, and wages on rates of retention, program completion, and employment after graduation. The methodology consists of quantitative analyses of student and course data from Fall 2011 through Spring 2014 along with qualitative analyses of student experiences.

Toward the end of the Spring 2013 semester, Rutgers distributed four reports covering the study data collected to date from individual colleges and the consortium as a whole: “Integrated Year End Report,” “Career Coach Caseloads Analysis,” “Redesigned Course Outcomes,” and “Master Course List.” This case study provides an interim report, based on data provided in these reports, on the progress to date of CMC under the TAACCCT grant as of May 2013.

The sections that follow: 1) outline the overall study methodology and data sources, 2) provide background information on CMC and its student population, 3) summarize the goals and primary elements of CMC’s COETC program, 4) describe the redesigned energy courses, 5)

assess the success of the career coaching program instituted by CMC as part of its COETC program, and 6) conclude with recommendations for CMC specifically and for the consortium colleges in general with regard to their TAACCCT-funded programs.

METHODOLOGY/DATA SOURCES

Quantitative Analysis

During the first project year, Rutgers worked closely with CCCS to refine the quarterly reports required from each of the system's participating colleges. Rutgers has used data from these reports to track progress and to provide the foundation for other data collection. In collaboration with CCCS, the district colleges, and college career coaches, Rutgers developed and revised an Electronic Student Case File (ESCF) to capture data relating to the COETC career coach's work with grant-eligible students. (The ESCF records demographic and academic information and tracks the issues and goals coaches and students work on and any referrals made.) In addition, Rutgers designed a pre-course survey to collect information on student expectations about course work and career goals. The colleges administered this survey to students in traditional and redesigned DE courses in Fall 2012.

The Rutgers team has also been working closely with CCCS and the district colleges to access the Banner student system (and CMC's data system) to track student progress and achievement and to collect and analyze data for the cohort study.

Qualitative Analysis

Rutgers' qualitative evaluation focuses on COETC process issues and the experiences of project team members and participating students, faculty, and staff at the 15 colleges in the COETC consortium.

As part of this analysis, team members reviewed relevant documents, text answers from quarterly reports, ESCFs, pre-course survey results, and materials and websites developed by the State Task Force, CCCS, and/or individual colleges. Rutgers team members have conducted phone and in-person interviews with project leads, faculty involved in the restructuring and/or teaching of DE and energy courses, instructional designers, data coordinators, senior college administrators, and, whenever possible, students. We conducted on-site interviews at CMC on April 8, 2013. The team members have analyzed transcriptions of phone and in-person interviews to identify program achievements to date, best practices, and critical issues for follow-up. Some of the responses from these interviews are quoted in this report.

Rutgers team members have also participated in conference calls with project leads and career coaches and joined in webinars. In addition, they have observed and participated in forums sponsored by CCCS, such as sessions on DE redesigns.

COLLEGE DESCRIPTION AND OVERVIEW OF STUDENT POPULATION

Founded in 1967, CMC's 11 campuses serve a region of 12,000 square miles that includes Eagle, Grand, Jackson, Lake, Garfield, Pitkin, Summit, Chaffee, and Routt counties. Historically a two-year public community college, CMC initiated several bachelor's degree programs in 2011. CMC is ranked first amongst Colorado's community colleges for graduation plus transfer rates. Nationally, CMC is ranked in the top 20 for student success according to CNN/Money based on the percentage of students who graduate within three years or transfer to four-year colleges.

CMC offers bachelor's degrees in Business Administration and Sustainability Studies. Its two-year and certificate programs include an Integrated Energy concentration, which features instruction in areas such as Basic Solar Photovoltaic, Photovoltaic Installer, Process/Petroleum Technology Operator, and Solar Thermal Installer.

CMC's annual enrollment exceeds 23,000. Of these, 3,500 students were full-time students in 2010. The average ages for CMC's full- and part-time students are 25 and 35, respectively. The majority of students at CMC (85 percent) come from within Colorado.

COETC GOALS AND PRIMARY PROGRAM ELEMENTS

The principal goal of CMC's COETC project was to integrate and expand its energy programs. This included filling a gap in their Process Technology program and developing an Associate of Applied Science (AAS) degree in Solar Instrumentation. CMC also planned to develop a mobile learning lab (MLL) to extend its energy program reach and provide hands-on learning opportunities to students at various CMC campuses and in more rural locations.

By transforming energy courses into hybrid formats using Blackboard and the MLL, CMC hopes to increase educational options for students with significant employment and/or personal responsibilities that would otherwise inhibit their educational progress and career success in bricks-and-mortar programs.

CMC'S REDESIGNED DE PROGRAM

CMC is independent of CCCS but falls under the jurisdiction of the Colorado Board of Higher Education. As such, CMC is included in the State Task Force mandate for DE redesign. While many colleges in and outside of CCCS were actively working on rethinking DE programs prior to the February 2013 mandated DE changes, CMC had not engaged in any redesigns at that point. Furthermore, during the summer of 2012 several faculty members left CMC, including the chair of the DE sequence. Subsequently, CMC experienced difficulties recruiting new DE faculty. Only during the Fall 2013 term has CMC been able to dedicate faculty to work on DE redesign. Thus, to date, CMC has not reported any redesigned DE courses.

CMC'S ENERGY REDESIGN

CMC had offered courses and certificates in energy for a number of years focused on the oil-and-gas industry. After the resignation of the faculty coordinator, the program was without faculty leadership for a semester and a new full-time faculty member at the time the TAACCCT grant was activated. The grant has enabled CMC to refocus and restructure its energy offerings into an Integrated Energy (IE) program that includes oil and gas but also solar and instrumentation. The instrumentation area crosses energy fields and can also be applied in other process industries such as foods.

CMC's energy redesign had two major components. The first involved creating hybrid courses for the IE program, including as noted a solar instrumentation AAS. The second focused on constructing an MLL to deliver hybrid lab components across CMC's campuses and throughout Colorado.

In addition to the faculty challenges described above, CMC also experienced program setbacks after it decided to reconfigure the MLL design and training capacity. The reconfiguration, which occurred after considerable discussion among the TAACCCT team and energy faculty, involved changing the MLL design to include modular units that could be rolled in and out of the trailer. This increased the MLL's capacity to serve multiple energy programs across CMC's integrated energy curriculum. The new design and related equipment purchase required CMC to secure Department of Labor approval before proceeding. The MLL was not completed until Summer 2013 due to hitches in the approval process and equipment delivery delays. To date, no data have been collected on its use—with the exception of its maiden voyage to Front Range Community College—or on the experience of faculty and students using the lab. These data will be secured and discussed in our end-of-grant report.

Under the TAACCCT grant, CMC hired an instructional designer to help faculty modify energy courses. This included their transformation into hybrid formats. CMC is hybridizing each course individually, that is, it is not employing a universal template that includes common elements such as the pattern or ratio of online and in-class time. In addition, the MLL construction delays affected the timetable for integrating MLL lab courses. CMC changed the curriculum as a result. Nonetheless, the faculty has now moved forward with the redesign, as noted below:

The solar energy class, for example...there is a site install. So they are going to actually do something, those students. But that will be toward the end of the semester. The instructor wants to meet with them once a month. So whatever is going on online will be related to whatever they are going to do in the classroom.

CMC redesigned four unique energy courses and offered four unique sections through Spring 2013.¹ All redesigned courses were first offered in Spring 2013 with a total enrollment of 100 students. There is no data on student retention for these courses

Energy Redesign Innovative Models and Practices

Efficient Communication

Initially, many CMC faculty members resisted the change to hybrid courses. However, after discussions with the instructional designer, their perceptions and expectations changed. The instructional designer has walked faculty through the process and made them more comfortable with the options possible with hybridization. She met with faculty twice a week during the course design process and has played a critical role in CMC's energy redesign work. (Energy faculty also report having good bidirectional communication with the career coach.)

Modularization of MLL Components

Creating an MLL that can facilitate technical training for numerous IE courses increases its financial sustainability over time. The ability to move lab equipment into and out of the trailer also makes it possible to conduct modules inside and outside, which can expand MLL and equipment use to other classes.

Energy Redesign Challenges

Lack of Cost Model for Hybrid Classes

Before the redesign, CMC only offered face-to-face classes. The lab fees now necessary to support the MLL, which the hybrid courses rely on, are a concern. The MLL is expensive to move. CMC needs to work out a cost-effective model for the program. This might include setting a minimum number of students. In any case, the school should focus on creating a lab fee that is not overly prohibitive. Furthermore, while the lab can carry equipment suitable for several energy courses, not every faculty member is qualified to teach all of them. The cost-effectiveness of having to send the lab out and then bring it back to swap faculty and equipment is an issue.

Service Area Boundaries

The MLL can only operate within CMC's recognized service area, although students can register for online courses from outside this area. To operate in the service areas of other colleges, CMC has to negotiate president-to-president cooperation agreements with each one.

¹ These data are valid as of July 21, 2013. However, we did not receive the data during our validation efforts. While it does not appear that the data will change, we cannot declare these to be validated numbers.

Equipment for Hybridization

CMC has no existing equipment available for creating high-quality video conveniently, which is a necessity for transforming curricula to online formats. Consequently, CMC has brainstormed creative solutions. For example, instead of requesting expensive lecture-capture software and equipment, CMC's instructional designer "asked for iPads because iPads do everything. He [the instructor] can write the problems out and make a little video. The iPad also has a camera in it. He can therefore videotape lectures or labs."

CAREER COACH

Under the TAACCCT grant, the career coach position is meant to facilitate student access to careers in the energy sector and to assist students with any academic and non-academic issues that inhibit their progress or ability to complete a course of study. The coaching functions were envisioned to include career counseling and referrals, academic advising related to career choices, and counseling and referrals for a wide range of social and financial support services. To conform to the COETC project's intent, eligibility for career coach services requires students to be participating in a redesigned DE course or a TAACCCT-supported energy course/program, to have Trade Adjustment Assistance (TAA) eligibility (or be TAA-like), to be unemployed, and/or to be eligible for other U.S. Department of Labor programs.

CMC's career coach started May 1, 2012. CMC's coach arrived in his position with a breadth of career advisement credentials. He is a Certified Global Career Development Facilitator (GCDF) and possesses a master's degree in Education with an emphasis in collegiate career development. He also has a master's degree in Public Administration, which he put to use in economic development/business relations and local government management. The career coach is certified to administer and interpret the Highlands Ability Battery Aptitude Assessment as well as the MBTI Personality Assessment and the Strong Interest Inventory.

Using college funds, CMC built and furnished an office suite for energy faculty and staff. The suite includes an office for the career coach. The office is "strategically and purposefully" located next door to the principal energy program classroom, which increases the coach's visibility and the ease of student access and interaction. The coach also is in his office frequently in the evenings "because that's when the students are [t]here."

The career coach describes the career counseling piece of the TAACCCT grant as "huge." A large component of the program centers on matching students' aptitude and interest to their potential career paths. The coach focuses his assessments on identifying how students' "strengths will help them be successful at CMC...[and] how those strengths will help them be successful in the world of work." The career coach is also increasingly involved in energy program recruitment activities. He has started to visit some of CMC's other campuses to meet

with students pursuing the school's fairly new sustainability bachelor's degree to inform students about the Rifle campus IE program.

The coach has succeeded in connecting CMC energy students to regional employers. He reports setting up one employer-student interview session per month on average. He communicates regularly with the Workforce Center in Rifle, including the specialist overseeing veteran's affairs and training and the specialist overseeing the youth program. Most of the referrals between the two come from the Workforce Center to the career coach.

CMC's Electronic Student Case Files

As mentioned above, ESCFs help career coaches track student progress with goals. Rutgers hopes that CMC's ESCF data will help it better understand student challenges and best intervention practices, as well as the impact of coaching services on student retention and completion rates. The following sections discuss information available in May 2013 for active ESCFs and September 2013 for the total cumulative career coaching caseload and eligibility status.

The career coach creates an ESCF for each student when they first meet and then inputs additional information from subsequent visits and interactions. Of the students registered by CMC's career coach, 31 (55.4 percent) had an active ESCF file and 25 (44.6 percent) did not as of May 23, 2013.²

CMC Career Coaching Eligibility Targets

CMC's career coaching target is 206 students. As of September 30, 2013, the coach had registered 60 students, 53 of whom met at least one eligibility criteria, or 26 percent of the target number under the grant.³ In part, this number reflects the absence of DE course redesigns at CMC and the career coach's primary focus on energy students.

Career Coaching Eligibility Distribution

As stated above, eligibility for coaching services includes enrollment in a restructured DE and/or energy program supported by the TAACCCT grant, eligibility for TAA assistance, or

² Rutgers defines an active ESCF file as a "response in progress" in which student information has been entered into the ESCF but not submitted to the record. Career coaches can return to and update information in active ESCFs. An ESCF that has been closed or submitted to the system by the career coach is considered inactive.

³ We note here that students registered by the career coach may not have an active ESCF file. In order for the student to be considered registered, the career coach has to fill in basic information such as ID number and name but does not have to initiate an ESCF file. Alternatively, a student in this count may have been served by the career coach and the student's ESCF submitted. Such ESCFs are considered inactive.

unemployment or underemployment. Below, Table 1 displays the eligibilities of the students using the career coach along with the breakdown of how many students fall into each eligibility category.

Table 1. Eligibility of Students in CMC's Career Coaching Caseload				
	May 2013		September 2013	
Eligibility Criteria	Percentage of Students in Caseload	Number of Students	Percentage of Students in Caseload	Number of Students
TAA-Like	10.7	6	10.0	6
Energy Redesigned Course	33.9	19	30.0	18
TAA + Energy Redesigned Program of Study			46.7	28
TAA + Energy Redesigned Course			1.7	1
Unknown	55.4	31	11.7	7
Total	100.0	56	100.0	60

After reviewing active ESCF files and cross-referencing these with students enrolled in all redesigned courses, as certified by the project lead, Rutgers has identified the student eligibility for career coaching for 88.3 percent of all registered students. Of this total, 10 percent have been recorded as TAA-like. An additional 48.4 percent were TAA-like and enrolled in a redesigned energy course. Of registered students, the eligibility status of 7 (11.7 percent) was unknown. This marks a major decrease from the Spring 2013 number of 55.4 percent. In the months ahead, it will be important to compare these percentages with CMC's entire student population to be sure the career coach meets with as many TAA-eligible students as possible.

SUMMARY OF LESSONS LEARNED AND INNOVATIVE STRATEGIES

Connections with Other Career Coaches

The career coach has connected with coaches at other colleges through webinars and, as of our last receipt of data, three group meetings. He has also engaged in one-on-one communication with coaches at three other colleges. These interactions have helped with program activity development. For example, career coaches have discussed MLL field placement strategies. Among other topics, these talks have focused on identifying geographic targets and marketing strategies for MLL courses. The career coach plans to further develop the cooperative coach network, especially in terms of informing each other of job openings in their respective service areas.

Emphasis on Experiential Learning

Although CMC is hybridizing many of its courses, it has kept its focus on providing students with hands-on experiential learning opportunities. To that end, its development of MLL-related hybrid courses that can be conducted inside and outside of the lab provides students with a variety of learning opportunities. In addition, the career coach has scheduled field trips to connect students with employers so they can observe how their learning is applied in a real working environment.

In addition, CMC's solar instructor has created opportunities for students to install solar panels in the community. For example, solar students helped convert regional public libraries such as those in Rifle and West Garfield to solar systems.

SUMMARY OF CHALLENGES

Time Investment for Hybridization

While CMC has hired a full-time instructional designer, it still has considerable difficulty budgeting sufficient faculty time to move its highly technical courses further online. Still, the TAACCCT grant has paid for adjunct instructors to assist the instructional designer and, in general, faculty enthusiasm around the program has been high.

MLL Feasibility

As discussed above, the fiscal sustainability of the MLL is an ongoing concern. Views on how the lab will work in practice vary. A second MLL concern involves the need to move training equipment into and out of physical facilities. As the project lead pointed out,

...getting it in and out of the building – physical facility, right now, is going to be hard, because of the fact that we don't have a door that goes directly to an open area in that classroom. When we went out those double back doors, we went right into a yard that had a fence and gate, and all that.

Another MLL concern is that the faculty member qualified to teach the MLL lab components may not be trained or licensed to drive the MLL's large trailer rig.

DE Redesigns

CMC has yet to launch any redesigned DE courses. While independent of CCCS, CMC falls under the authority of the legislated mandates on DE redesigns. Staffing has been a significant problem. CMC actions and its capacity to meet the Fall 2014 schedule for the implementation of the mandated redesigns need to be tracked.

Career Coach

The Career coach's caseload is far below the college's targets, and the variance is the lowest of the whole COETC consortium. This is a serious concern. Alternative ways to build his caseload should be identified and implemented (see below).

RECOMMENDATIONS FOR CMC

- Given the dramatic personnel changes at CMC, including the COETC project lead who now only works part-time on the project, there has been a concern about program continuity and institutional memory. The development of mechanisms to preserve institutional memory could benefit CMC. Compiling handbooks of best practices, for example, surrounding the courses being implemented will help smooth their function over the long term and preserve their sustainability.
- The career coach has focused on energy students, especially given the absence of redesigned DE courses. However, it will be important for the coach to reach out to other students who fit one of the other eligibility categories, e.g. TAA-eligible during the final year of the grant.

RECOMMENDATIONS FOR CONSORTIUM COLLEGES

- Employing a full-time instructional designer, as CMC does, would help other colleges as they move courses into hybrid and online formats. The designer can help instructors overcome their reservations about transitioning curriculum online by ensuring that the new course offerings will provide the same learning opportunities.
- The career coach's strategy of being available to students at nontraditional times (e.g., in the evenings) is something other colleges should consider. Many students eligible for career coaching have erratic schedules due to work and family responsibilities. Providing greater flexibility in career coach availability may increase their use of the service.
- The CMC career coach's educational background and career experience have been real assets. In this regard, it might be useful for CCCS to explore opportunities for career coaches to further their vocational testing and guidance knowledge.