An Institutional Partnership: Ensuring Consistency in Course Content

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The mathematics programs of Richard Stockton College and Atlantic Cape Community College have formed a partnership to better address the needs of our students as they transition from a two to a four year institution. In providing uniformity within our respective coursework, our goal is to ensure that community college courses are aptly preparing the students for courses at the next stage of study, thereby guaranteeing that students will receive transferable credit for coursework completed at the community college level. Within the structure of this partnership, discussion is facilitated through face to face meetings, and course content is evaluated and revisited through shared syllabi and sample exams.

Introduction: Motivation for the Partnership

Within the climate of the current workforce, the bachelor’s degree has become a minimum requirement for many careers. In 2012, Burning Glass, a company that analyzes job ads from over 20,000 online sources, investigated the trend in job up-credentialing from 2007 to 2012. Their analysis showed that “employers are increasingly requiring college degrees for positions that did not traditionally require higher education.” [Rampell, 2013]. While many of the occupations listed in the 2012 study require a greater depth of skills than in the past, it is also true that many careers now consider a bachelor’s degree a minimum requirement with no noticeable change in job task or responsibility. This is particularly true in careers with administrative duties. As one would expect, employers are using higher criteria for educational credentials to aid in categorizing perspective employees’ qualifications; however, the bachelor degree is also being used as a sorting aid to bear evidence of a candidate’s ambition and dedication to goal completion.

Whether the skills attained with higher educational qualifications are essential for the new career climate or whether degrees are being used chiefly as a sorting device, the statistics related to employment and earnings with regards to the bachelor’s degree are compelling. The wage disparity between employees having a college degree and those that do not is large and is growing. “Current data indicate that college degree holders enjoy an 84 percent increase in
earnings over their high-school-educated counterparts.” [James, 2012] This statistic is amplified in Mathematics as a recent report by CNN cites that the top 15 most lucrative careers require strong mathematics skills. [Pepitone, 2009] The importance of a bachelor’s degree within the job market is not just measured in financial gain. It is becoming an important indicator of successful employment. According to the United States Department of Labor, Bureau of Labor Statistics, the unemployment rate of workers holding only a high school diploma is 8.1 percent. This is more than twice the unemployment rate of 3.7 percent for those holding a bachelor’s degree. [Bureau of Labor Statistics, 2013]

Because of these compelling factors, the role of the community college as a preparatory experience for a four year college or university is now more pronounced than ever. In 2004, roughly two-thirds of high school seniors who enrolled in community college intended to continue their education in pursuit of a bachelor’s degree, and by 2006, 47% of seniors with no intention of continuing their education beyond an associate’s degree had revised their plan to include the pursuit of a bachelor’s degree. [Provasnik & Planty, 2008] This is telling data. Community college is viewed as a stepping stone by a large majority of its student audience; in addition, the experience of community college provides an impetus for continuing one’s education. Community colleges are self-fulfilling the role of a sending institution as they provide students with the interest and incentive to further pursue their education.

It is important to note that while the bachelor’s degree is a vehicle for success in this modern economy, the role of the community college is not being diminished or replaced by this new career climate. Indeed, the fundamental purpose of the community college is magnified by the challenges facing today’s students. The strained economic times make community college the only financially viable solution for many traditional college students. With the rising tuition costs and a weak economy, today’s students are now more than ever choosing to attend community college. [College Board, 2011] In addition, the lack of sufficient college-level skills is requiring more students to make use of the remedial aid that is signature to community college curriculum. Together these factors are expanding the role of community colleges, increasing their enrollment and changing the typical community college audience. The American Association of Community Colleges (AACC) reported that “full-time enrollment at U.S.
community colleges increased 24.1% in a 2-year time period from fall 2007 to fall 2009.” [Mullin & Phillippe, 2009] Indeed, nearly 44 percent of all undergraduates in the United States attend community colleges. [Goldrick-Rab, Harris, Mazzeo, & Kienzl, 2009] In addition, “New Jersey is one of many states that has seen its community college student population change, with the mean age of students dropping from about 29 in 2005 to about 25 in 2010”, according to Lawrence Nespoli, president of the New Jersey Council of County Colleges. [College Board, 2010] Community colleges meet a very specific need in the collegiate community, and the importance of this collegial experience is heightened when one considers the dynamic nature of these institutions. “Community colleges are often acclaimed for their agility, dedication to mission, and passion in supporting local needs.” [Sutin, 2012] These historical attributes of community colleges cement their place in the future.

Whether students begin their academic careers at community colleges based on academic or economic concerns, the joint mission of two and four year institutions must be the seamless transition between our two educational environs. The transfer experience has long been fraught with frustration and confusion, and it is our responsibility as educators to address the difficulties of transition that are affecting our students. The discussion of transition can take several forms. Indeed, acclimation of students can be discussed in terms of emotional, social, or academic transition. Within the Math Program of Richard Stockton College, we have chosen to focus on the academics. Specifically, we are intent on addressing the equivalency of our respective curricula. “Academic credits are often at the top of the list of concerns for transferring students,” according to Scott Stimpfel, cofounder of Resources for Educational and Employment Opportunities (REEO). [College Board, 2010] Our role as educators propels us to focus on the academic welfare of our students, but with the work that we are doing, we have also seen an unintended impact on students’ emotional transition as well.

Focus of Partnership

The Stockton Math Program has formed a partnership with our closest community college sending institution, Atlantic Cape Community College (ACCC), to address these issues of transition. Within the context of this partnership, we are seeking to create and maintain
consistency in course content and core requirements between our two institutions. This consistency is fundamentally important to our students as they seek to continue their academic career at Stockton. Our primary goal is to ensure better prepared students. Mathematics is highly sequential. “Learning mathematics does not take place in a vacuum. Topics are cumulative and interrelated. Subjects build significantly on each other, and a strong foundation of knowledge is necessary for achieving success at the next level of study.” (Forrest, Kosick, Vogel & Wu, 2012) Understanding the connection between student preparedness and consistency in course content has been an important insight for the participants in this partnership.

While student preparation is our primary goal, addressing the need for course consistency can have an important effect on students economically and emotionally. By reducing course duplication, we are supporting a seamless integration of a student’s coursework with little credit waste. This translates into a financial savings for the student. Eliminating course duplication also has aided in the emotional transition of transfer students. The frustration students feel when credits do not transfer between institutions is heightened when courses have the same title and, seemingly, the same syllabus. In Mathematics, a simple listing of topics does not accurately describe the true base of knowledge that a course presents. By creating consistent course content, we are ensuring that students receive appropriate transfer credits, thus minimizing transfer frustration. Community college as a preparatory experience is only valuable if students are earning transferable credits towards their future educational aspirations. Consistency in course content helps to ensures credit transferability. Consistency in course content also provides students with the skills for success at the collegiate level. The collegial approach to mathematical topics is significantly different than the approach in secondary education. Community colleges need to be a place where students experience this shift in the elevation of approach.
Description of Partnership

The partnership that we have created has several components:

- Review of course content based on syllabi and various assessment tools, e.g. quizzes, exams and project descriptions.
- Regular face-to-face meetings with faculty from both institutions to discuss uniformity of content, including breadth and depth of material covered.
- Addressing prerequisite nature of coursework based on content and approach.
- Investigating consistency within curriculum choices as framed in the respective college bulletins.

Our partnership with ACCC began 5 years ago when we first met with members of their faculty concerning content in Calculus I. The partnership began small with minimal exchange between participants. There was concern from both parties that sufficient material was not being covered to ensure a successful transition into the Stockton calculus sequence. Our discussion focused on textbook use and in-class credit hours. Because of this meeting, ACCC enacted significant change. They not only elevated their Calculus I content to Stockton’s standards; they also used the changes as an impetus for reviewing the course content of their entire calculus sequence.

Over the last two years, the partnership has evolved substantially. Within this timeframe, the Stockton Math Program made a concerted effort to review the content of transfer courses. We investigated specific problem courses of all New Jersey community colleges. Specifically, we were investigating the equivalency of Differential Equations. As a result of this task, we denied the equivalency of Differential Equations from all community colleges in New Jersey. This decision was based on various factors. Course content as communicated by course syllabi was not equivalent to the content presented in a Stockton Differential Equations course, and for most community colleges, the lack of appropriate prerequisites for this course bore evidence of a watered down approach to the topics. (The concern over appropriate prerequisites was also seen in our investigation of Linear Algebra.) The decision to withdraw equivalence of Differential Equations was communicated to the various institutions and updated on the NJ transfer database: NJ transfer.com, a tool for academic advising to determine the equivalency of transfer credit. In
response to this decision, ACCC contacted us with an interest in reviewing the equivalence of many of their math courses including *Calculus I, II, III; Linear Algebra; Discrete Math;* and *Differential Equations.* In particular, they wanted to address the content for *Differential Equations* in order to reinstate its equivalency. This request has led to an open and recurring dialogue between our respective faculty. In Spring 2012, Stockton hosted a meeting with four ACCC faculty members and 10 Stockton Math faculty. Syllabi were compared, discussion related to content and approach took place, and recommendations were given. Follow up communication took place as Stockton Math faculty rigorously examined course content based on classroom assessment tools. As a result of this interaction, ACCC modified their course content to be more in line with Stockton’s Math curriculum. They have addressed changes in content, approach, and assessment. They have adopted for use many of our same textbooks, thereby aiding in the ease of student transition between our institutions, and they have revisited prerequisite requirements for many of their courses. In particular, because of the concerted efforts of our two institutions, the equivalency of *Differential Equations* has been reinstated.

**Results of the Partnership**

The relationship that we have built with ACCC has had many positive effects on both of our institutions and on our students. This open dialogue toward a shared purpose has contributed to better relationships between our two institutions and has benefited the student by providing preparation for success. We are, indeed, learning from each other. ACCC faculty have a greater appreciation for their role as a sending institution, and they have made a substantial effort to address every concern that has been raised regarding their curriculum and course content. This willingness to seek solutions has built trust and respect between our respective faculty.

Stockton faculty have also learned a great deal within the context of this partnership. We have gained a deeper appreciation for the natural constraints that are facing our community college colleagues. We are all facing a lack of funding for program initiatives, but lack of funding is a historically sensitive issue for faculty at community colleges. In this current economic crisis, this hardship is intensified. Community college faculty are also overextended with regards to teaching. At ACCC, every full time Math faculty member is teaching the
maximum number of overload credits per year. This work fatigue has a significant effect on both the quality and quantity of material covered. Finally, the high adjunct use at ACCC makes uniformity of approach difficult. Because of our communication within this partnership, we now have a better understanding of these factors that are affecting community colleges. In Fall 2012, the Stockton Math Program Coordinator served as an external consultant for ACCC’s Math program. This provided us deeper insight into their struggles and allowed us to help effect change. Stockton Math faculty have also learned from ACCC relative to content of coursework. Reviewing examples of exams and quizzes is always a valuable experience. In particular, the two faculty members who reviewed ACCC’s *Discrete Math* class gleaned ideas for making their own assessment tools stronger.

**Future of the Partnership**

There are many directions that we are interested in taking this partnership, the first one being a deeper investigation of the core curriculum. Stockton has recently created a Math concentration in secondary education that can be completed within four years. We are currently looking for ways to streamline the ACCC coursework for those students who are interested in pursuing a career in Math Education. Our goal is to set guidelines in place that will allow transfer students the same opportunity in this concentration as our freshman students. This task will require an extensive look at our two curricula to find appropriate core coursework which will transfer seamlessly into this concentration.

With the success of this partnership, we are hoping to expand our working relationship with other New Jersey community colleges. In particular, we would like to begin a conversation of similar intent with Ocean County Community College, which is one of our largest sending institutions. With the lessons learned from our ACCC partnership and a workable framework in place, we believe that broadening the scope of the partnership to other colleges will be a straightforward process.

Finally, as this partnership has matured and born fruit in effecting change, we would like to conduct assessment on the audience of transfer students. We are investigating assessment
based on tracking academic success in sequential courses. We have data related to this from years past, and we could compare it to current and future transfers.

**Conclusion**

As the partnership between Richard Stockton College and Atlantic Cape Community College has evolved and matured, we are becoming more invested in our respective roles related to student transition. We now recognize and appreciate our influence and responsibility in the preparation of the transfer student population. The value of the partnership is evidenced in the thoughtful recommendations of the Stockton Math Program and the willing response of the community college faculty. This team of mathematics teaching professionals is helping to address questions of student transition between our two institutions and is creating a climate of mutual trust and respect. We have learned, and continue to learn, many important lessons from each other. Most important of these is the recognition that discourse is valuable, and maintaining the open and recurring dialogue between the stakeholders of this partnership is our primary purpose as we look towards the future.
References


