

Community College of Philadelphia

The Path to Possibilities

Proposal for a Developmental Mathematics Department
November 7, 2012

“Developmental mathematics has become a burial ground for the aspirations of myriad students trying to improve their lives through education (Uri Treisman, 2011).”

According to a 2011 report issued by Jobs for the Future, “lack of readiness for college math is as damaging as it is widespread. Students are more likely to fail developmental mathematics than any other course in higher education...” Some colleges and universities have focused their attention on efforts to improve these outcomes to ensure that students acquire the skills needed for successful lives and employment. The report *Innovations in developmental math: Community colleges enhance support for nontraditional students*, details successful efforts by three community colleges, including Delaware County Community College. Two other regional community colleges, Montgomery County Community College and Bucks County Community College are also reporting improvements based on their efforts. These institutions are using different strategies, but a concerted, focused attention on improving developmental math outcomes is a common feature of these institutions’ efforts.

One way to focus attention on developmental math is to ensure that it is a clearly defined mission of a department, the primary purpose for the existence of the department and the department faculty. Colleges and universities have opted for different organizational structures for developmental courses. A decentralized approach (sometimes termed mainstreamed) describes a structure in which developmental courses and non-developmental courses are part of the offerings of the same department and taught by the department faculty. A 2000 U.S. Department of Education report identified the decentralized model as the most common in colleges and universities, with 72% reporting that structure for developmental math. A centralized approach, on the other hand, means instruction in developmental courses is provided by a separate developmental education department. Some institutions have a mixed model – decentralized for one discipline and centralized for another.

Researchers have investigated whether the organizational structure for developmental education is related to student outcomes. Hunter Boylan, who has written frequently on the subject and who was a presenter at Community College of Philadelphia in the past, is an advocate for a centralized approach. Perin, on the other hand, in 2002 argued that the evidence for a relationship between student success and organizational structure is mixed. She suggested that

both structures can be effective. One of the advantages of the centralized approach is the focus it brings to working on developmental education. A disadvantage is that the transition to the first credit bearing course may be difficult for students of faculty if both departments do not communicate effectively so that developmental courses prepare students for further study. The advantages and disadvantages can be overcome through awareness of potential problems and working to circumvent them.

Community College of Philadelphia Community College of Philadelphia has a decentralized approach for instruction of developmental mathematics. Nineteen math courses are listed in the 2012-2013 College catalog. Included in the 19 are two developmental mathematics courses, Math 016 (Arithmetic) and Math 017 (Elementary Algebra). An additional course, Math 118 (Intermediate Algebra), is a required course that meets the College's general education requirement for math, but is not considered college level by several entities. For example, the Transfer Articulation Oversight Committee standards state that intermediate algebra does not meet the mathematics requirement for transfer as part of the general education framework for articulation. Several transfer institutions do not accept the Math 118 as meeting their college mathematics requirement. And, in the past, faculty in CCP's Mathematics Department have stated that Math 118 is not college level mathematics. Thus there are three courses that could reasonably be considered fundamental and preparatory for more advanced study.

This proposal recommends the creation of a separate department for developmental mathematics instruction, to include responsibility for Math 016, 017 and 118. Putting these three courses in the same department is not only consistent with the descriptions of the courses but also means faculty in the department would be responsible for courses through the College general education requirement. The department would be housed in the Division of Mathematics, Science and Health Careers, promoting communication across departments for mathematics.

Why Change?

Our current approach to developmental mathematics instruction is not working. Math 017 and Math 118 are gatekeeper courses in the College's Achieving the Dream initiative. Fact Sheet 23 provides data on student outcomes: http://www.ccp.edu/vpfin-l/ir/ir_reports/fact_sheet_23.pdf

It is clear that there is no improvement in student performance over time. Likewise performance in Math 016 is not showing improvement:

	P	W
Fall 2008	61.3	7.2
Spring 2009	52.5	10.4
Fall 2009	59.5	7.0
Spring 2010	42.6	14.4
Fall 2010	54.0	9.0
Spring 2011	44.0	12.0
Fall 2011	43.0	11.0
Spring 2012	45.0	12.0

The October 2012 *National Community College Benchmark Report* (IR #230) states,

“Developmental Math students at CCP were much less successful than students at most other PA community colleges.”

We need a concerted effort to improve developmental math. Creating a second department to focus our attention is a reasonable approach to organizing our efforts.

Submitted by

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