

Toward Reframing the Open Door: Policy, Pedagogy, and Developmental Education in the
Urban Community College

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INTRODUCTION

The critical question is not who gains access to higher education, but rather what happens to people once they get there. (Karabel 1972, p. 530)

Community colleges are positioned at a perpetual crossroads. By mission, these two-year postsecondary education institutions are intended primarily to broaden access to higher education credentialing; that is, their curricular and advisory offerings aim to facilitate transitions either to four-year university study or to career trajectories that may require a higher-skilled workforce than a traditional high-school education would satisfy. At the same time, community college admissions are open admissions or non-selective institutions, meaning that students are not denied admission based on entry tests or academic background.

Community colleges represent one-fourth of all higher educational institutions in the U.S. and serve nearly half of all undergraduates (Bahr, Toth, Thirolf, & Massé, 2013; Dougherty, 2002, p. 295; United States Census Bureau, 2012). Furthermore, they serve “fully 58% of all African American undergraduates and 66% of all Hispanic undergraduates enrolled in community colleges” (Katsinas & Tollefson, 2009, as cited in Goldrick-Rab, 2010, p. 438). These institutions also welcome the working student—“more than half of 2-year college students are employed, compared to only 37% of 4-year college students” (ibid).

Although enrollments in two-year colleges rose briefly within the past decade—catalyzed by the most recent (U.S.) economic recession—completion rates have stagnated and have become a primary point of concern (AACC, 2015). Furthermore, for *urban* community colleges—those two-year institutions that draw the majority of their student population from their locations in or near metropolitan centers and, increasingly, from their satellite suburban communities—there is an added mission: urban community colleges have the conjoined goal of

advancing individuals' social mobility and feeding the engines of corporate industrialism and commercialism.

In this latter sense, urban community colleges represent both a social resource for urban communities and a longstanding platform for fostering urban economic development. The emergence of a more service-based economy has increased the demand for labor with specialized knowledge, training, and skills. These new industries—particularly those that are more reliant on science, technology, engineering, and mathematics (STEM) fields—have elevated the importance of a postsecondary education, and mathematics continues to act as a primary gatekeeping discipline to STEM pathways (Larnell, 2016). Developmental or remedial mathematics coursework, typically focused on the basic skills of arithmetic and algebra, has proven to be a longstanding obstacle for many students—disproportionately affecting those matriculating from inner-city public high schools or returning to college after being displaced from the labor market. Upon enrollment, however, a considerable number of these students are obligated to pass a remedial math course and often fail to progress to credit-bearing, “additive” courses (Adelman, 2004). Without these course credentials students are less likely to complete their degree, which jeopardizes their economic future. To systematically counter this growing problem, policymaking at the national and local levels has focused heavily on improving access to higher education in order to reduce economic inequalities and promote growth in the economy. Unfortunately, policymakers have failed to delve further into the complexity of "remediation," leaving many students stuck in place.

Toward shedding some light on this complexity and the distinctiveness of the community college structure, the chapter includes a broad curricular-disciplinary focus but also centers more directly on the particular context of developmental or remedial mathematics education. The

primary purpose of this chapter is to explore several central components and tensions of urban community colleges and, specifically, how some of those components—policy, curriculum, administration, teaching, and learning—have been reframed within the past four decades to address market-driven concerns. Our goal in the chapter is shed light on how this convergence is reshaping teaching and learning in the urban community college and, particularly, how this convergence is conceptualized in policy, administered, implemented, and experienced.

POLICY ISSUES AND HISTORICAL PERSPECTIVES REGARDING THE COMMUNITY COLLEGE AND THE RISE OF REMEDIATION AND REFORM

The Junior College and the Origins of Reform

Originally referred to as junior colleges, two-year postsecondary institutions emerged in the late 19th century for the purpose of preparing high school graduates for college by offering a general studies curriculum equivalent to the first two years of undergraduate study (Beach and Grubb, 2011; Cohen, Brawer, and Kisker, 1982). College and university administrators claimed that too many high school graduates were not trained for the rigor of college courses, unable to finance tuition, or not prepared to reside on campuses away from home immediately after high school. The community college would then draw students from local neighborhoods and serve as a developmental and academic steppingstone offering services on life and study skills along with the traditional general education curricular offerings. Graduates would then earn a junior certificate or in today's terms the associates' degree and, if desired, could then transfer the junior certificate toward completing a baccalaureate degree. The convergence of high-school reforms and this fundamental restructuring of the postsecondary educational system ignited a persisting

surge in high school attendance and graduation and enrollments to junior colleges (Beach and Grubb, 2011).

Although oriented toward broadening access, the development of junior colleges also functioned as a democratic-progressive tool that preserved the heightened statuses and differentiated missions of four-year universities. According to Beach and Grubb (2011), junior colleges functioned systemically to “structurally limit opportunity to students in a hierarchically organized society” (p. 9). The emergence of junior college gave rise to greater mission differentiation within the higher education system and the social mobility functioning that it mediates. Junior colleges acted as a filter for colleges and universities by diverting certain groups, particularly low-income earners and persons of color, away from 4-year higher education institutions and potentially constraining their educational development, thereby limiting their economic futures (Beach and Grubb, 2011; Cohen, et al., 1982). Reformers argued that the hierarchical system within higher education would encourage social efficiency by contributing to the creation of social classes according to race, gender, class, and religion. Under the guise of college preparation, junior college administration often emphasized vocational training for members of certain groups. The provision of *some* postsecondary education and professional training to those students facing increased discrimination would equip them to participate in the economy, but at lower levels. This would serve to support a social arrangement that could permanently relegate members of these groups to lower tiers of the socioeconomic ladder while allowing white and wealthy groups—economically stable white men, in particular—to advance.

Opening Access, the Truman Commission, and the emergence of the ‘Community’ College

Despite the broader gatekeeping function of the junior college, the open-access mission of these institutions did permit many students to take advantage of the educational opportunity. As the institutions grew and recruited generations of students throughout the twentieth century, the missions of these institutions expanded to address the changing economic and educational needs of the surrounding areas (Beach and Grubb, 2011).

In times of economic crisis, the federal government has often called upon junior colleges, specifically, to aid in filling the gap in the workforce by training individuals for mid- to low-skill positions (Cohen, et al., 1982). The Great Depression and World War II left many Americans unemployed and desperate for work. In the 1930s and 1940s, governmental leaders and administrators in higher education advocated for further expansion of vocational training at junior colleges (Beach and Grubb, 2011; Cohen, et al., 1982). President Truman's Commission on Higher Education (1947) released a pivotal report that recommended national support for expanding access to "general education" by providing increased structural and budgetary support for the nation's growing number of junior colleges (Hutcheson, 2007).

Viewing the junior college experience as more of a terminal education rather than a college preparatory program, leaders pushed junior college administrators and faculty to identify the demands of the hierarchically structured labor market and train the unemployed to fill the positions according to their diminished levels of professional training. In the 1960s, junior colleges experienced remarkable increases in student enrollment as veterans and baby boomers sought out a semiprofessional training and minorities enrolled at higher rates. The Truman Commission argued that inequities in higher education, especially in access, had a negative effect on the economy by leaving many unprepared for the labor market. The Commission did not specifically recommend that minorities and immigrants have access to the same higher

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education opportunities; rather the report emphasized a postsecondary education commensurate to their capabilities (Gilbert and Heller, 2013). A lasting hallmark of the Truman Commissions report, however, was a rhetorical recommendation that junior colleges be re-termed “community colleges” in order to signal their strong institutional commitment to support members of their shared communities.

Contemporary Community College Policy Issues: Current Challenges and Possibilities

The most recent, “great” recession of the mid-2000’s ignited a historically significant shift in the American economy, provoking sweeping structural changes in an already-shifting labor market. Moreover, a prior midcentury emphasis on domestic industrial manufacturing has given way to service- and knowledge-based economic forces that require more specialized disciplinary and workforce training, especially in STEM-related areas. Policy, economic, business, and educational leaders have argued increasingly that a high school diploma is no longer sufficient for successful integration into the contemporary U.S. economy and that at least some post-secondary education is needed, preferably equivalent to a baccalaureate degree.

To adapt to this (even now) transitioning economy, a considerable proportion of unemployed, underemployed, and unemployable laborers turned and are turning to their local community colleges. Lengthy absences from formal academic learning environments, however, position many of these returning students as lacking now-fundamental academic skills (e.g., study-based skills, technological fluency) and/or curricular background to succeed immediately within a higher education environment. At the same time, current students at both four-year colleges/universities and in some dual-enrollment high school programs are opting for less expensive general education courses at community colleges in order to reduce the growing costs

of public and private university degree programs. As we explore more fully in the next sections, for all groups of students—both the so-called “traditional” and “non-traditional” student—remediation represents a significant and potentially challenging hurdle amid their transitions to college. And contrary to conventional reasoning, according to Attewell, Lavin, Domina, and Levey (2006) “many college students with limited academic skills do not take remedial coursework, while substantial numbers of students with strong high school backgrounds nevertheless take remedial courses” (p. 914).

While most states reduced funding for higher education in the years following the recent recession (Mortensen, 2012), Governor Haslam (R) of Tennessee led a bipartisan effort within Tennessee’s state legislature to be the first state to offer free tuition for community or technical college to Tennessee high school graduates. State leaders argued that the diminished levels of college graduates in the state would lead to future employment shortfalls as high-skilled jobs locate in the state (Cook, 2015; Semeuls, 2015). The central purpose of the Tennessee Promise Scholarship is to increase the number of college graduates within the state toward addressing potential shortages of skilled labor. Students are required to maintain a 2.0 grade point average, enroll full-time, and complete 8 hours of community service during each semester in which they are enrolled. In conjunction with improving access to a postsecondary education, the scholarship also involves mentoring to support completion of the degree program.

The City of Chicago was next to follow in the “free tuition” movement. Under Mayor Rahm Emanuel, Chicago became the first major city to adopt a program that defrayed the costs of attending community college. The City Colleges of Chicago, one of the largest community college systems in the nation, enrolls approximately 115,000 students enrolled annually (City Colleges of Chicago, 2016). After initiating its Rejuvenation Plan in 2010, which involved

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reviewing and revising programs to support completion, graduation rates with the City Colleges climbed drastically (City Colleges of Chicago, 2016). Anecdotally, however, these increases can be attributed partially to renewed efforts to encourage graduates who transferred to four-year institutions to officially claim the associates' degree that they earned but may not have declared upon transfer. City leaders believed that the community college system could be an even larger tool for advancing higher education in an urban area and social advancement if more students could afford higher education. To increase access to a postsecondary education amongst graduates of Chicago Public Schools, the city developed the Chicago Star Scholarship. Different from Tennessee's program, the Chicago Star Scholarship offers free tuition to attend community colleges for those students that maintained at least a 3.0 grade-point average while in high school and do not require remediation in math or English (City Colleges of Chicago, 2015).

Oregon, Minnesota, and Kentucky followed Tennessee in adopting state legislation offering financial waivers for residents to attend community college (National Conference of State Legislators, 2016). Similar legislation has been introduced in ten other state legislatures (Arizona, California, Washington, Oklahoma, Wisconsin, Illinois, Mississippi, New York, Massachusetts, and Maryland). The only other major city to provide free community college tuition is Los Angeles (Garcetti, 2016).

Recently, President Barack Obama has expressed immense favor for the free-tuition model. In 2015, he specifically acknowledged the important role of community colleges and proposed the American Graduation Initiative. The President set two national goals for higher education: (1) to outrank other countries by attaining the highest proportion of college graduates (2) and increase the number of community college graduates by 5 million before the year 2020 (The White House, 2016). This initiative in conjunction with funding provided by the Health

Care and Reconciliation Act was intended to provide community colleges with the resources they needed to prepare Americans for the workforce.

President Obama has also initiated a federal campaign to support free community college tuition for all graduates of American high schools. In a speech at the Pellissippi State Community College in Knoxville, Tennessee, the President argued that free tuition would improve access to higher education and would support the development of a strong workforce without the burden of student loan debt (Obama, 2015). Historically, public policy has focused on increasing access to higher education as a tool for economic development. Following the recent economic recession, government at all levels has continued to follow the suggestions of the Truman Commission by developing programs that make it easier for students to attend community colleges. While access is directly related to economic equality, graduation rates for community colleges across the nation remain low (Beach and Grubb, 2011). Tennessee experienced increases in student enrollments since offering free tuition, however the effects on graduation rates remain insignificant (Semuels, 2015). Due to the infancy of the Chicago Star Scholarship, data regarding completion rates of students receiving free tuition are not yet available for analysis. In their pursuit of a postsecondary degree, many students are hindered by their obligation to successfully pass non-credit remediation, or development classes. Without addressing the structural factors preventing students from completing their associate's degree the benefits of increased access and free tuition remain elusive.

CURRICULAR ISSUES IN THE COMMUNITY COLLEGE

As we have now argued, community colleges have longstanding and important status within the U.S. educational landscape, but in recent years at least, much of the ongoing commentary about community colleges involves controversies centering on cost, “college

readiness,” remediation, transfer, and completion rates. The community college curriculum, however, is also a central consideration for any exploration into the evolution of the community college and intersects with any of its other features. Exploring both the general curriculum and particularities of the community college curriculum may shed some light on commonplace assumptions about community colleges as ever-changing higher educational institutions.

The General Community College Curriculum: Documenting Curricular Shifts

The community college curriculum has been a consistent point of focus for educational researchers and reformers for most of the past century, with the first documented study being conducted as early as 1918 (Schuyler, 1999). The primary focus of these early studies (e.g., Eels, 1930) was the distribution of course offerings as documented in two-year institutions’ course catalogs. Across those various studies, a central finding emerged and persisted well through the 1970s: The prominence of the “academic” curriculum—i.e., traditional liberal-arts subjects (e.g., natural sciences, humanities, modern languages)—began to and has continued to recede in favor of “non-academic offerings...[such as] commercial courses—which would presumably include trade and industrial training courses—made up the greatest percentage the nonacademic curriculum, followed by engineering and home economics” (Schuyler, 1999, p. 4). This continual reconstitution of the community college curriculum would expand even more through the midcentury, with more than 20 percent of community colleges offering nontraditional courses on health, music appreciation, social problems, world history, and art appreciation (ibid). Liberal-arts subjects are certainly a mainstay within the curriculum, as well, but the need and capacity to expand the curriculum to adapt to broader societal shifts is a hallmark of the community college curricular story.

Although the continued expansion of the community college curriculum centered on the inclusion of so-called nonacademic subjects well through the 1990s, this disciplinary focus of the curricular expansion began to shift toward courses that aligned with a renewed focus on science, technology, engineering, and mathematics (STEM). Given the broader push toward STEM preparation for an increasingly technologically oriented society and workforce and especially in relation to the development and adoption of state- and national-level reforms to (K-12) school mathematics education (e.g., National Council of Teachers of Mathematics, 2000), the heightening role of mathematics-specific courses especially should be scrutinized carefully (Larnell, 2016).

The Case of Developmental Mathematics Education

Community college mathematics curriculum has changed more within the past 10 years than it had within the preceding 100 years, but our central claim in this section is that community college curricular reform remains for now in its infancy. There are remarkably few accounts in the research literature that document the curricular makeup and objectives of community college mathematics education—or community college curricula more broadly. As Mesa and her colleagues (2014) argue, much of the existing scholarship has been “conducted by higher education scholars, and has focused on the costs of remediation or student retention and success, with success somewhat narrowly defined either as passing courses or as completing a college degree” (p. 174). Much of our discussion here is intended to broaden that traditional focus and is derived from our professional experiences, intensive study of various programs across two- and four-year universities, and to the degree that it is possible, extant documentation of historical and contemporary curricular programs.

Traditional remedial education programs at community colleges typically follow a similar sequence and content structure as K-12 mathematics curriculum, taking the major learning objectives and content from elementary mathematics education (typically as a foundational mathematics course) through the course content of middle- or high-school algebra (See Figure 1). Whether in-person, online, or in hybrid formats, the pedagogy of these courses is typically traditional or “acquisitionist,” where teaching and learning are conceptualized as a process of transmitting mathematical knowledge (Sfard, 1998). Instructor-centered, lecture-style teaching predominates, and the classroom environment centers on the demonstration of problems with the expectation that students complete versions of presented problems as homework outside of class.

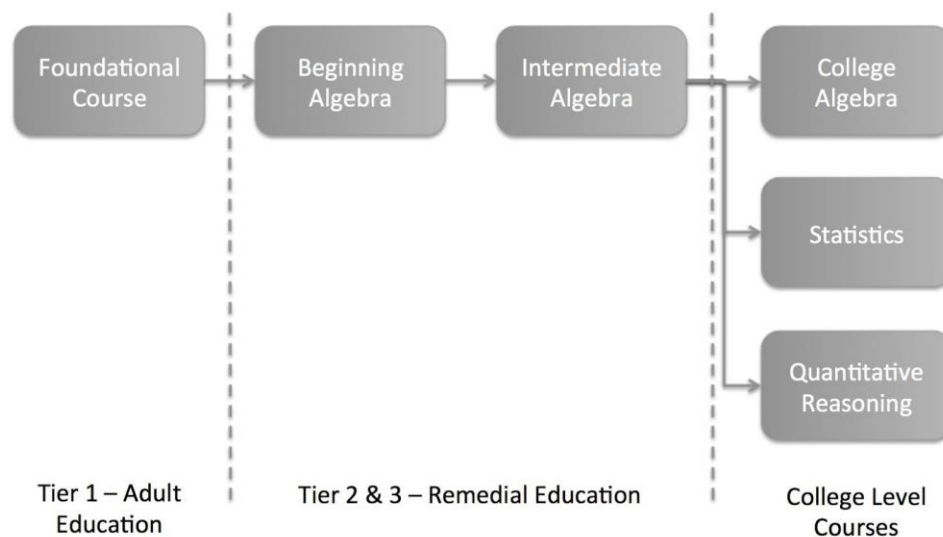


Figure 1. A traditional remedial mathematics sequence.

Reforming the Curriculum: Current Strategies and Projects

In recent decades, research scholars and practitioner-scholars have worked together to develop and build a community dedicated to reforming the community college curriculum (e.g., Bailey, 2015; Cooper, Hoover, Megginson, Sgarlotti, & Stephenson, 2015; Stephenson, 2015; Treisman, 2015)—a community which has fostered some of the curricular reform projects

discussed later in this section. Although there is yet much to learn about the development, implementation, and outcomes of these reform efforts, the existing projects center on a discernable framework or set of principles and strategies. From our examination of these programs, each targets one or more of the following characteristics: sequence, structure, content, and pedagogy.

- **Sequence-reform strategies** target the outcomes of curricular trajectories and whether to offer more remediation, less, or none at all. With this approach, reformers center the relationship between the number of remedial courses taken and the increased probability that the student may fail or drop out (see Fain, 2013, 2014). These reforms often reduce the number of remedial courses to two, sometimes one. Some have also experienced with making mathematics remediation optional (e.g., Florida) or removing it completely (e.g., Connecticut).
- **Structure-reform strategies** focus on placement of content within the existing curricular structure; specifically whether institutions should either shift the remedial course content into existing credit-bearing courses or enroll students into credit-bearing courses while supporting the areas in need of remediation with supplementary support courses.
- **Content-reform strategies** center specifically on the subject-matter content of courses—e.g., the glaring issue of algebra and that so few majors and careers utilize algebra or algebraic reasoning to any significant degree—and split mathematics remediation into different content-specific course pathways: one for those not transitioning to STEM fields without algebra and one for those transitioning to STEM fields with algebra.
- **Pedagogical-reform strategies** target the ways remedial courses are taught, integrating non-cognitive research on engagement and motivation, such as the work on productive

persistence and grit, along with curricular models that emphasize student-centered learning, questioning, and application.

Based on these varying reform strategies, numerous projects have emerged in community colleges across the United States. The following projects are among the prominent being implemented currently. For each, we present a broad overview of the reform, its category derived from the preceding list, and the effects of the reform (if available currently). It is important to note again that many of these reform programs are in early stages of implementation.

An Early Reform Project: New Life Model.

Much of the reform for mathematics remedial programs in the community colleges originated in collaboration between foundations and education research centers, one of which was the American Mathematical Association of Two Year Colleges (AMATYC). Their call for reform came through a sequence of documents describing the New Life Model (Rotman, 2013). This model is sequence, structure, content, and pedagogical reform of remedial courses. It centers on two courses: mathematics literacy and algebraic literacy, depending on the students' trajectory – a major in a Science, Technology, Engineering, or Math field (STEM) or one that is non-STEM. This structure is now common across proposed reforms.

The two-course sequence appears new compared to the traditional beginning algebra to intermediate algebra sequence. As shown in Figure 2, the mathematics literacy course prepares students for the non-STEM trajectory, with no other remedial courses required. For students in the STEM trajectory, they take algebraic literacy or both mathematics literacy and algebraic literacy, depending on the level of remediation needed. In terms of content reform, the course builds off the assessment standards set in in the widely used (in K-12 research) National

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Research Council text, *Adding it Up* (Kilpatrick, Swafford, & Findell, 2001). This reform course also incorporates non-cognitive standards that focus on the developing students' mathematics self-efficacy, motivation, and engagement. Pedagogical reform incorporates modeling, technology, and 'instructional strategies that support student learning.'

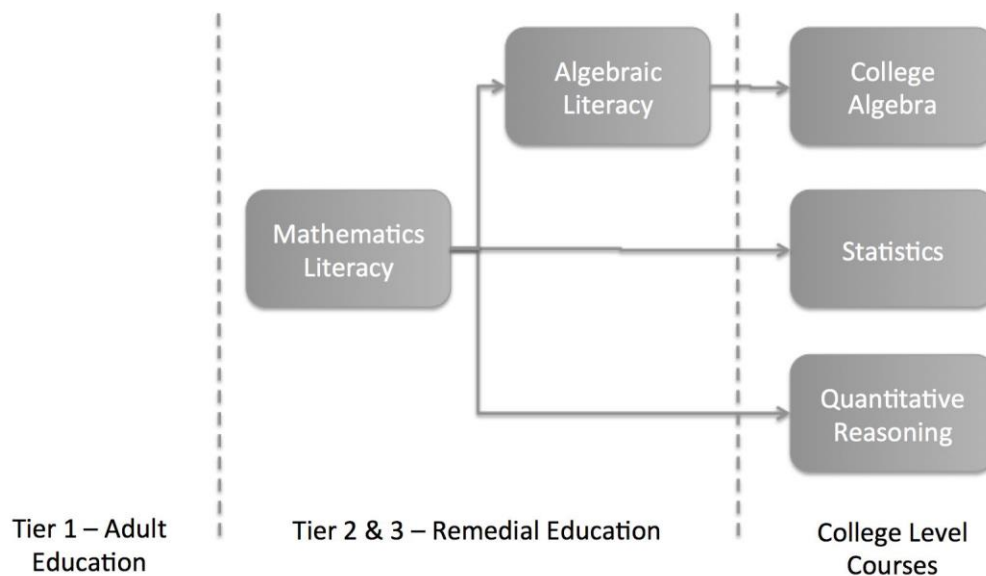


Figure 2. AMATYC's proposed remedial reform model.

Curriculum Reform beyond Algebra: Quantway® and Statway®

In response to the growing discourse in some circles that questions the importance of algebra as a course requirement for majors that do not employ algebraic reasoning (e.g., Hacker, 2016), educational researchers and foundations have created remedial reform curriculum that emphasize numeracy, quantitative reasoning, and real-world problem solving. At the forefront stands Carnegie Foundation's Math Pathways projects, Quantway and Statway (Merseth, 2011; Yamada, 2014).

Both serve as learning pathways that run alongside the traditional beginning algebra and intermediate algebra, serving as two-semester paths that accelerate students through their college-level math class. As opposed to AMATYC’s model that emphasizes mathematics literacy, Quantway and Statway emphasize quantitative literacy. Quantway emphasizes quantitative reasoning for those in liberal arts majors, and Statway emphasizes statistical data analysis and reasoning for those with majors that require statistics. Both include non-cognitive reforms focusing on engagement and motivation building out of productive persistence research (Dweck, Walton, & Cohen, 2011). Both include professional development for faculty to modify pedagogy and instruction, and both include language reform, focusing on teaching and texts that are more understandable for students. As seen in Figure 3, the courses do not replace the algebraic, remedial sequence necessary for college algebra and STEM pathways.

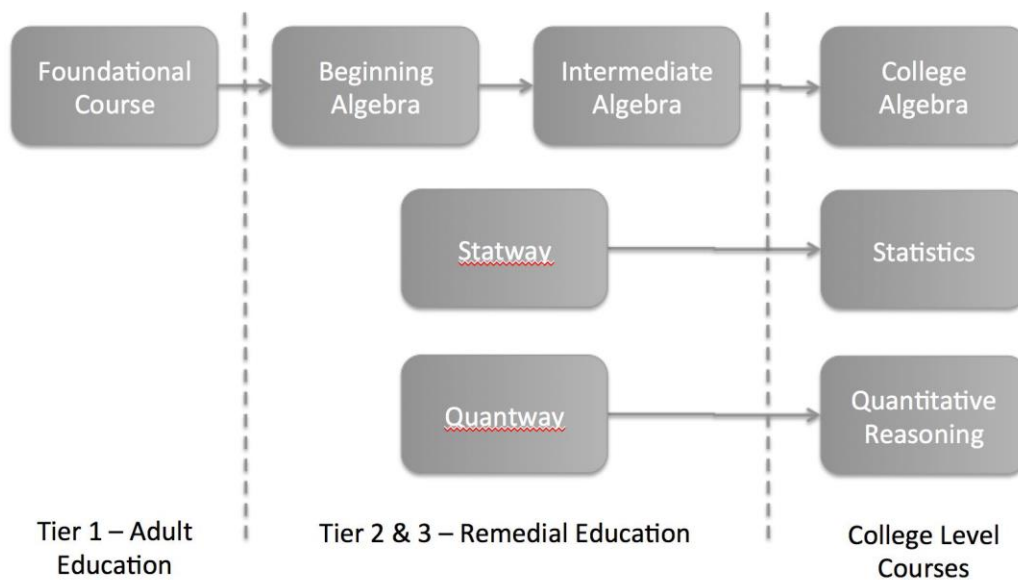


Figure 3. Carnegie Foundation’s Quantway and Statway model.

After collaboration with the Carnegie Foundation and AMATYC on reforms, the Dana Center launched The New Mathways Project (NMP) in collaboration with the Texas Association of Community Colleges (Rutschow, et al, 2015). As opposed to redesigning only structure or sequence, this project also focuses on curriculum. This curricular project moves away from the heavy algebraic focus of the traditional remedial sequences. It emphasizes classroom level change, institutional change, and cross-institutional reform.

The new course, a 4 credit hour course, similar in size and scope to individual remedial courses, focuses on mathematics literacy, quantitative reasoning, and problem solving. The only algebraic content students' experience in their new course, Foundations of Mathematical Reasoning, includes linear equations and modeling. The redesign shifts the algebraic content necessary for STEM pathways to college-level courses, restructuring the traditional college algebra course into a 2-course sequence, as shown in Figure 4. This retains the algebraic reasoning and content necessary for student success in STEM while removing the barrier algebra represents for many remedial students.

Implemented now across most of the community colleges in Texas, the reform is still in its infancy. However, initial results published are optimistic. Following a cohort of 233 students who began in Foundations of Mathematical Reasoning through their statistics course, 65% passed the remedial reform course, 46% continued the sequence into statistics, and 30% of the original cohort passed the statistics course.

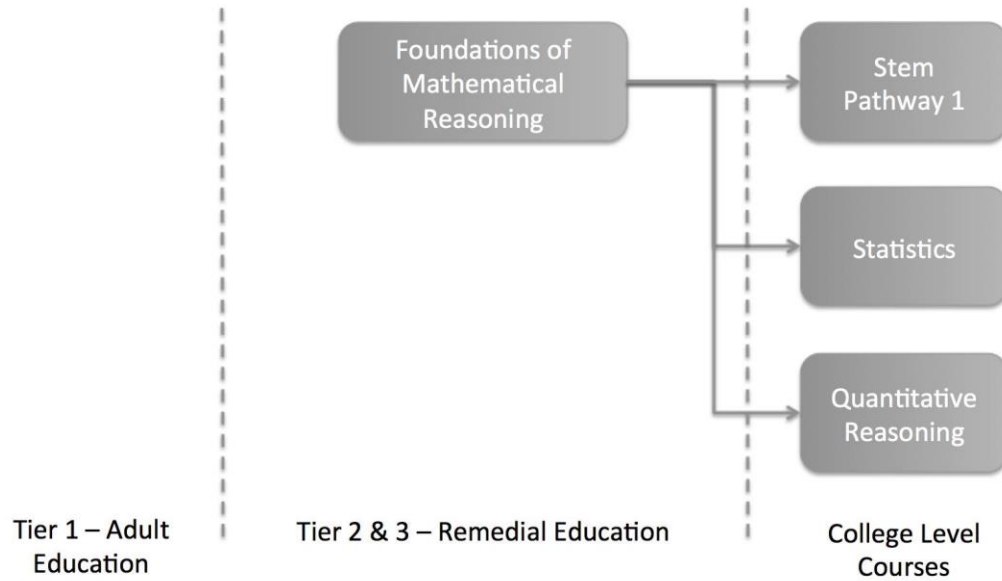


Figure 4. *The New Mathways model.*

Modularized Curriculum Projects

Two states have radically redesigned the structure and sequence of mathematics remediation. In collaboration with the Community College Research Center (CCRC) out of Teachers College at Columbia University, the Analysis of Statewide Developmental Education Reform project (Kalamkaria, Raufman, & Edgecomb, 2015) adapted remedial math to become “a sequence of full-semester courses that covered a wide range of topics to shorter sequential modules, each of which covers a limited number of concepts” (p. 1). In traditional remedial courses or other reforms, students can place into remedial courses even if they require remediation of one or two mathematical concepts. Modularizing the curriculum provides a more elegant solution to this issue, allowing students to remediate only the concepts necessary.

The project was designed with three goals: to decrease the number of students placing into remedial math courses; to reduce the time spent in the remedial sequence; and to align remedial curriculum to the college-level trajectories. Depending on the pathway, students are required to only take certain modules, with the most being required for the STEM pathway. In

terms of curriculum, the system is based on mastery of the content, meaning students must achieve a certain percentage on assessments before moving onto the next concept. Also a pedagogical reform, this reform model requires computer-based classrooms, requiring students to be more self-directed in their learning and to be more responsible for their learning.

Also in its infancy, preliminary results are positive. In terms of placement rates, before the reform model was implemented at one community college in Virginia, 81 percent of students placed into remedial math in a Fall 2010 cohort; whereas after implementation, only 57 percent of students placed into remedial courses in fall 2012 (Rodriguez, 2014).

CUNY Start. City University of New York's (CUNY) Start reform model is the only reform discussed here that is not community college specific. It is mentioned here because it is gaining traction among administrations at community colleges as a potential reform model. This program grew out of a board decision in 1998 to remove remedial from CUNY (Trombley, 1998). Instead, students who place into remedial courses were directed to the city's several community colleges. CUNY Start grew out of this increased burden. It is an intensive, eight week, 12 credit hour program that is designed to prepare students to retake the placement for CUNY houses on several community colleges across the city. It specifically targets students who do not pass the pre-algebra and algebra sections of CUNY's placement test. As it is 12 credit hours, it represents a full-time course load for students, meaning it is designed to be the only course students take.

In terms of structure and curriculum, it replaces tier two and tier three remedial courses. It covers algebraic content similar to the traditional remedial pathway, and it incorporates non-cognitive and student-centered components, such as preparing students for college by incorporating advising and student services into the course. As shown in Figure 5, like the

traditional remedial sequence it leads to any college-level math course. It also includes pedagogical reform, as can be seen in CUNY Start's core values and teaching practices (<http://www2.cuny.edu/wp-content/uploads/sites/4/media-assets/CSCoreValuesandPracticesMath12092013.pdf>). Pedagogical reform components include an emphasis on discovery learning, student centered instruction, and questioning. In terms of access, it is unique in that the fee for the course is \$35, and it includes free transportation for the duration.

- <https://tcf.org/content/report/college-students-start-behind/>
- <https://www.cuny.edu/academics/evaluation/reports/CUNYStartStudyFall13.pdf>

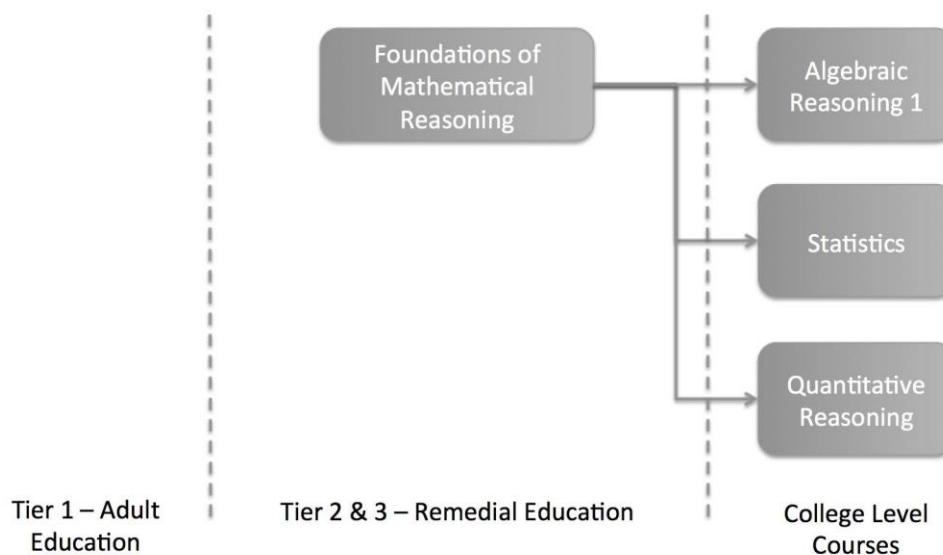


Figure 5. CUNY's Start model.

PERSPECTIVES ON ADMINISTRATIVE ISSUES: A VIGNETTE FROM A FORMER DEVELOPMENTAL MATHEMATICS ADMINISTRATOR

Within the institutional structure of community colleges, administrators are often positioned between top-level policymaking and the front lines of reforming curriculum,

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negotiating and implementing broad policies, managing instructional and human resources, and supporting students in various other ways. Furthermore, community college administrators must juggle declining enrollments, changes in state funding, and in some cases, hiring or pay freezes. In contrast to the breadth of their work, there are remarkably few empirical studies or few first-person perspectives on how their responsibilities intersect with the many broader institutional concerns (for exceptions, see Bragelman, 2015; Stevenson, 2015). This section pivots from the tone and structure of the others in order to share the first-person perspective of one of its authors, a former administrator of development education within one of the nation's largest urban community college systems. Beginning with some personal background information (cf. Bragelman, 2015), the following vignette emphasizes the interplay between institutional policy development and local administration, the centrality and importance of the community college's urban context, and the ways in which curricular and pedagogical reforms were implemented.

Developmental education administration: An author's account

After several years teaching high school and college classes, I served as director of developmental education at one of the seven City Colleges of Chicago (CCC). As the only person to ever serve in that position, I worked with the CCC's central district office, the administration, and the faculty to manage my college's remedial reform programs. The CCC district office governs the seven colleges collectively and administers centrally each college's separate, local administration. As a program director, I also reported to an associate dean and dean of academic affairs within my college. I worked primarily, however, to support my college's faculty. My primary responsibilities included developing and supporting a variety of programs, including supplemental tutoring, summer bridge programs (for high school graduates),

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and community-building programs intended to assist returning adult students who were transitioning to college from the workforce or from other adult-life experiences. Although my academic-content background is squarely in the fields of mathematics and mathematics education, as director of developmental education I worked with the English as a Second Language, (traditional) English, and mathematics departments.

In line with differentiation generally among community colleges' missions, each college within the CCC system is associated with a specific career pathway or primary curricular focus. Similarly, the CCC system is varied also in terms of geographical focus, with colleges situated both within the central city and the downtown areas but also across the greater urban area as satellite neighborhood-based institutions. The primary curricular foci for the CCC campuses represent a broad curricular array: the various institutions specialize in areas such as human and natural sciences, advanced manufacturing, culinary arts and hospitality, health sciences, or as was the case at the campus at which I worked as an administrator, college-to-career and business-industry emphases with a overarching focus on transfer to 4-year universities. It is important to note that the sociopolitical realities of Chicago as a specific, urban context for the CCC and as one of the most segregated cities in the United States, especially with regard to race and socioeconomic class, play out across the CCC populations and varied campus cultures. Moreover, some of the CCC institutions serve predominantly Black or African American communities, others are predominantly Hispanic-serving institutions, while others within the same system—by virtue of their geographic positionality—are among the most diverse educational institutions within both the city and state.

Local policymaking occurs at the college-system or “district”-level and is distributed and implemented from the downward to the various colleges. In practice, these policies are intended

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to be enacted across the sites uniformly, despite the particular variations in campus culture and student body. When remedial reform is pushed at the college-level, it results in a variety of implementations. Both have benefits and drawbacks. District-wide institutional reforms are translated locally as a 'standardized' experience for students, even if many students attend multiple institutions within the city-college system simultaneously. Because standardized reform across institutional context is largely impossible, relative compliance becomes a institutional goal for local sites, and administrators are rewarded for the speed with which their offices respond to district-level policy pressures. Above all, speed of implementation is paramount.

At the time of my tenure as director, the CCC had one of the highest national rates of remediation and maintained consistently poor attrition rates, and the pressure from the mayoral administration for reform was immense as is likely to grow as new initiatives are proposed and take hold. A remarkably small percentage of students make it through developmental mathematics sequence toward credit-bearing courses and graduation. Similar to institutions across the U.S., the CCC administration focused on moving students through the development mathematics course sequence and into the gatekeeping sequence as quickly as possible. In regular administrative meetings, several questions were consistently raised: How fast can we get students to credit-level mathematics courses? How soon can said programmatic approach be implemented? How quick can the new programmatic approach be launched? How quickly can the results be returned to the administration?

Along with internal institutional pressures faced by many community college systems and their various local administrative structures, the broader higher education policy terrain is also shifting in ways that may run counter to the concerns of two-year institutions and the communities they serve. This is, for instance, often the case for policies concerning remediation

and transfer to four-year universities. As community colleges expand their enrollments and resources toward promoting transfer, four-year universities may (and sometimes do) enact policies that shift curricular requirements and tighten the transfer pipeline. Even as more institutions adopt requirements and courses that expand the disciplinary scope of entry-level courses—for instance, college-level quantitative reasoning courses in place of traditional, algebra-centered mathematics remediation courses—receiving, four-year colleges and universities are not required to accept these newer courses for transfer credit.

COMMUNITY COLLEGE INSTRUCTION: ON CONTINGENT FACULTY LABOR AND THE NEED TO SHIFT PEDAGOGICAL PRACTICES

In recent years, there has been growing recognition that community college faculty are themselves also at a crossroads--pulled in multiple directions by quickly shifting institutional directives and economic forces. Moreover, as Mesa et al (2014) argue, “the faculty at community colleges differ in key ways from K-12 teachers and from other higher education faculty” (p. 176), including greater likelihood of being from underrepresented groups, balancing their community college teaching responsibilities with other professional obligations outside of their institution, or teaching courses across multiple campuses or institutions (CCCSE, 2014). Yet, a growing commonality among community college faculty is that they increasingly part-time, contingent members of their institutions’ workforces, with almost no job security and relatively little institutional support. Especially in the case of developmental education (again, mathematics being primary among these subjects), this often means that the instructional faculty are more likely to have the least experience teaching their subject matter and fewer institutionalized opportunities for professional development and mentoring.

Reported recently by the Center for Community College Student Engagement (CCCSE), part-time instructors teach 58% of all U.S. community college classes and are generally regarded and operate as a separate grouping apart from their full-time colleagues (cf. Rouche, Rouche, & Milliron, 1995, p. 156). As “contingent” faculty, their collective marginalization has become “a fundamental feature of the economic model that sustains community college education” and consequently the “least expensive way to deliver instruction” (CCCSE, 2014, p. 2). Moreover, this growing group of faculty are paired routinely with the lowest-level, highest-need courses within the community college curriculum; for instance, development education faculty are much more likely to be part-time instructors with fewer than 10 years of teaching experience (CCCSE, 2014; Mesa et al., 2014).

Although there has been growing (and much needed) attention to the looming crisis associated with the disproportionate emergence of part-time instructional faculty at both community colleges and four-year institutions, the extent of the de-professionalization and lack of developmental support has and will continue to have a detrimental impact on the quality of classroom interactions. One very practical element of this—particularly regarding developmental mathematics courses—is the need to support community college instructors toward adopting contemporary pedagogical approaches. Specifically, community college instruction in mathematics should shift from instructors being classically trained “content experts” who deliver content to students who are expected to consume it to “domain guides” who are tasked with guiding students’ participation in mathematical exploration, problem solving, and ultimately, toward problem posing pedagogy (see Larnell, Bullock, and Jett, 2016). This kind of shift, however, requires considerable institutional investment in the professional development of

faculty and a continued commitment to exploring and exposing faculty to new pedagogical approaches.

STUDENT-LEVEL CONSIDERATIONS: TOWARD (RE-) SHIFTING FROM THE STUDENT-AS-CONSUMER TO STUDENT-AS-LEARNER

Traditionally, community colleges have served students by offering opportunities to learn transferable content knowledge or to learn career-oriented skills—and have been a “primary point of postsecondary entry for underrepresented and disadvantaged students” (Bahr, Toth, Thirolf, & Massé, 2013, p. 460). As we have discussed throughout this chapter in broad terms, there has been a considerable shift in how community college policy, curriculum, instruction, and those responsible for each are viewed systemically. Curriculum has shifted from representing the content trajectory that teachers draw from in their instruction and that students are expected to know and be able to do toward platforms that deliver content to passive recipients. In the traditional sense, instructors are increasingly contingent faculty laborers and managers of these evolving curricular platforms. In much the same way, the role of student has shifted contemporarily from the student as a returning learner to the student as a consumer of institutional course offerings and support services.

In the student-as-consumer paradigm, “student success” has become the primary institutional goal and is largely “to be understood as composed of two possibly interrelated aspects: students learning the material that teachers and department intend them to learn and students making steady progress toward accomplishing their academic goals” (Mesa, et al., 2014, p. 181). Progression through the institutional curriculum, however, is not the same as learning, yet the former is often emphasized above the latter.

One of the looming issues with the students-as-consumer paradigm is that it largely obscures the psychosocial elements of learning—issues of motivation, persistence, identity, and the contingencies of social group membership. But from emerging studies of adult learning in remedial mathematics contexts (e.g., Larnell, 2016; Larnell, Boston, & Bragelman, 2014), there is evidence that students are negotiating themselves as racialized and gendered learners inasmuch as they are negotiating the course content. Furthermore, there is growing research that suggests that learners in these context are reconstructing their identities as classroom learners—especially for students who return to the classroom after years in the workforce—and that this process may involve navigating identity threats and other so-called “non-cognitive” aspects of learning (although they are surely linked to cognition).

Specifically regarding development education courses, recent studies suggest that development mathematics courses particularly may bring about unintended and threatening effects on student learning and, more broadly, students’ mathematical proficiency. Although many of these and other related policy documents (e.g., Kilpatrick, et al., 2001) decry the growth of remediation in mathematics amid the transition to postsecondary coursework, the recommendations of these documents have had modest discernable influence on the broader debate. The tension regarding developmental mathematics courses is typically centered on completion rates, costs, and institutional missions, whereas the question of whether these courses influence students’ learning of mathematics—and students’ much-needed proficiency in the subject—is largely absent.

As the NRC *Adding It Up* (Kilpatrick, et al., 2001) report asserts, however, it is crucially important for *all* students to successfully learn mathematics—and that it is much more than just the accumulation or rehashing of mathematical skills and concepts. The report’s framework

specifies five interwoven strands that contribute to proficiency in mathematics: conceptual understanding, procedural fluency, adaptive reasoning, strategic competence, and productive disposition. Along with conceptual understanding and procedural fluency, adaptive reasoning and strategic competence describe aspects of mathematical processes in which students should engage. Productive disposition, however, describes the affective aspect of mathematics learning, emphasizing that learners should develop a “habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with the belief in diligence and one’s own efficacy” (ibid, p. 5).

Typically, developmental mathematics courses tend to place unusually burdensome emphasis on procedural fluency, or the capacity to carry out computational methods flexibly, accurately, and efficiently. The underlying assumption is that students who exhibit underperformance on placement exams and are subsequently placed in NCBR mathematics courses necessarily lack the requisite procedure-driven skills that are foundational to algebra. To a lesser extent, these courses may incorporate the other conceptual or process-oriented aspects of proficiency, but there has been no attentiveness in research or practice to the influence of NCBR mathematics courses on students’ dispositions or their identities as mathematics learners. Specifically, we know little about the potential psychosocial threats or damage that NCBR mathematics courses may pose for students who either succeed or struggle. In short, many ask if the courses are effective or “successful”—if they *work*. But we have generally not asked whether the very *experiences* of these kinds of courses are damaging for students in other ways.

CONCLUSIONS AND IMPLICATIONS

The purpose of this chapter was to offer a multi-level perspective on the contemporary community college—from its originating mission, to federal and local attempts to bolster that

mission, to the central actors that implement these policy and curricular aims toward serving students and their communities. Along with this primary focus, we explored the specific contexts of urban community colleges and the content-specific domain of developmental mathematics education. As an undercurrent of the chapter's main text, we argued throughout that the contemporary community college follows a tradition of shaping its curricular and pedagogical aims with regard to two primary missions: differentiation and access. With regard to differentiation, community colleges serve the broader higher education enterprise by preserving the high-status missions of four-year colleges and universities. With regard to access, community colleges have also explicitly served local communities by providing a steppingstone to the social-mobility mechanism that higher education more broadly supports.

Contemporarily, community colleges have re-emerged within federal policy, most notably through recent White House initiatives and state-based efforts to promote access and tuition support for prospective community college students. Similar to recent waves of curricular reform, these recent policy efforts are too new, too early to assess effectively or even reach. However, the spirit of these policies suggest that federal and local attention to the need to expand access to community colleges for today's returning student population and traditional undergraduate population is growing at great speed.

In lieu of explicit recommendations, there are some implications across these levels that would support the open-door access mission of the community college and the broader need for community colleges to promote economic development in urban communities. First, we recognize that in the contemporary community college, transfer to four-year colleges and universities remains a major institutional objective but may not be as primary as it once was. This is not to suggest that students should not strive to transfer to baccalaureate-granting

institutions, but that community colleges are recalibrating their offerings with less attention to students' intentions to transfer. Furthermore, we recognize that curricular and policy reforms are still in early stages of implementation, and the promise of community college access will only grow.

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