



# Advancing Equity Through Guided Pathways Series Discussion Guide #8:

## *Reducing Student Equity Gaps in Transfer-Level Math and English Attainment*



Robert Vela, San Antonio College &  
Kathy Booth, WestEd

### SERIES OVERVIEW



*The Advancing Equity through Guided Pathways series aims to foster critical campus conversations about how to close persistent gaps for historically marginalized students. Developed by the National Center for Inquiry & Improvement for the California Guided Pathways Project, the series was generously supported by the Bill & Melinda Gates Foundation, the California Community Colleges Chancellor's Office, and the Foundation for California Community Colleges.*



**California**  
**Guided Pathways**



**NATIONAL**  
**CENTER FOR**  
**INQUIRY &**  
**IMPROVEMENT**

# Reducing Student Equity Gaps in Transfer-Level Math and English Attainment

Advancing Equity through Guided Pathways | Discussion Guide 8

By Robert Vela, San Antonio College & Kathy Booth, WestEd

## Introduction

Developmental education continues to be a barrier for student persistence and timely graduation from college. Students who are assigned to pre-collegiate math and English courses are less likely to complete, especially when they are placed in a lengthy sequence of courses.<sup>i</sup> They are also less likely to take courses that clearly align with their educational and career goals, which could help them solidify their choice of major.<sup>ii</sup> While students need to master or remember discrete concepts to succeed in college-level coursework, traditional developmental education courses are not generally effective in strengthening students' academic outcomes.<sup>iii</sup> Furthermore, standardized tests commonly used to determine math and English placements have not proven to be predictive of success in college-level courses.<sup>iv</sup>

For students of color, particularly African American and Hispanic students, the impact of placement into developmental coursework is more detrimental. Not only are they more likely to be placed into remedial courses, these student groups tend to be put into longer remedial sequences, such as taking basic arithmetic as opposed to intermediate algebra.<sup>v</sup> The placement of students into lower levels is not simply a function of disparities in K-12 education experiences; it also reflects an underlying bias in standardized tests.<sup>vi</sup>

When the first experience that students have at community college is a negative one—taking a high stakes test and being informed that they are not prepared for college—it conveys a powerful message about whether the college believes students have what it takes to succeed. When this message reinforces traditional biases, such as the belief that women are not good at math or that students with an accent are not fluent English speakers, it can further undermine and alienate students. Not only does this strengthen structural racism and sexism, it undermines the Guided Pathways principle of designing with the student in mind.

## How to Use This Guide...

The *Advancing Equity through Guided Pathways* series aims to foster critical campus conversations about increasing student equity under a Guided Pathways umbrella. Institutional redesign teams can...

- Read the introductory framing on capitalizing student strengths and experiences throughout their college onboarding
- Use the discussion questions to facilitate conversations related to planning and action
- Conduct the research tasks to help better understand their students' experience of this topic

Some guides, including this resource, address issues in the student experience aligned to the stages of the [Completion by Design Loss/Momentum Framework](#), while others address issues of culture and leadership. Across all guides, authors bring their own unique perspectives on and approach to the issue. No guide is intended as the definitive word on its topic.

For all guides and additional information on the series, visit [www.ncii-improve.com](http://www.ncii-improve.com).

## Emerging Approaches for Reducing Equity Gaps in Developmental Education

Many states and colleges are changing their approach to development education as a strategy to address equity gaps and accelerate Guided Pathways implementation, including reducing the use of standardized tests to assess college readiness, implementing curricular innovations to help students learn or refresh specific skills, and contextualizing math and English courses to students' program of study.<sup>vii</sup>

**Assessing College Readiness.** Several states do not require students to take placement tests or enroll in pre-collegiate coursework. Instead, colleges examine other factors that better gauge students' level of preparation such as high school course-taking patterns and grade point averages. Students can also self-select the course that best fits their needs or major. In California, the number of students who successfully completed transfer-level math and English doubled in one year when colleges stopped using placement tests. Under a state law passed in 2018, students can only be advised to enroll in remedial coursework if data show the developmental course will improve their likelihood of completing a transfer-level course in one year. In its first year of implementation, the number of African American and Hispanic students who passed transfer-level math and English courses increased significantly; yet, equity gaps remain, pointing to the need to implement multiple strategies to strengthen success for all students.<sup>viii</sup>

**Innovative Curricular Approaches.** Guided Pathways Pillar 4, Ensure Learning, emphasizes the importance of attending to how courses are taught. Colleges are experimenting with numerous approaches to help students learn or refresh the specific skills they need to be successful in credit-bearing coursework. For example, they may offer free courses during the term or over the summer that ensure students can confidently apply concepts like multiplying fractions or citing evidence in a term paper. Courses may be offered in multiple formats such as self-paced tutorials, online, or face-to-face and include flexible start and end dates to fit into students' academic and work schedules. For example, when San Antonio College in Texas implemented open-entry, open-exit refresher courses, the number of Hispanic students completing gateway math courses doubled.<sup>ix</sup>

For students who need more intensive support, colleges may offer corequisite courses. Corequisites are entry-level courses that are paired with a developmental course. The developmental component provides support aligned directly with the college-level course and makes adjustments to advance students' success in the paired course. Corequisites make it easier for students to complete math and English graduation requirements in their first year, so they can progress more swiftly along their chosen pathway or spend time exploring the right major for them. When Tennessee replaced its developmental sequence with corequisite courses, colleges doubled the number of students completing college-level English and quadrupled the number of students completing college-level math, while reducing the time it took for students to complete gateway courses by half. Furthermore, students of color and low-income students had the strongest gains.<sup>x</sup>

Colleges are also implementing accelerated or stretch courses that combine developmental and college-level content. For example, the Statway curriculum allows students placed in developmental math to complete their developmental math requirements and a college-level statistics course in only two terms. Colleges implementing Statway tripled college-level coursework completion rates while cutting the time to complete the gateway course in half.<sup>xi</sup>

**Contextualizing Coursework.** While math and English provide foundational college skills, the types of quantitative reasoning and writing that students need varies based on their program of study. Students majoring in sociology are better served by a statistics course than calculus, whereas physics majors must have a thorough understanding of intermediate algebra. Similarly, the way a student writes a textual analysis for an literature course is different from the way a biology major constructs a lab report. Having undifferentiated math and English requirements can impose unnecessary hurdles, such as having a student who is majoring in advanced manufacturing repeatedly retake intermediate algebra—which teaches skills that are largely used for calculus—in order to meet graduation requirements, particularly given that geometry might be a better fit.

In recognition of the need to build mathematics skills that align with students’ majors, the Charles A. Dana Center at the University of Texas at Austin developed three distinct pathways: statistics, algebra-to-calculus, and quantitative reasoning. Colleges that redesigned developmental courses to align to these three types of math saw an eight percentage point increase in the number of students completing gateway math compared to the regular developmental sequence. However, white students were more likely to enroll in alternative pathways than Hispanic students, which underscores the importance of clear communication regarding the benefits of taking courses that align with a program of study and integration of this recommendation into Guided Pathways program maps.<sup>xii</sup>

By removing institutional barriers to entry, expanding access to supports, and articulating the benefits of gateway courses that align with students’ pathways, colleges can design with the equitable end in mind—graduation or transfer with minimal loss of credits, time, and money for all students.

## How to Get Started...

Campuses can use the following Discussion Questions and Research Tasks to advance planning and action to reduce equity gaps in developmental education through Guided Pathways implementation.

### Discussion Questions

1. Examining factors such as cost, requirements, timing, and format, how easy is it for students to refresh their skills in math and English at your college? Do some populations have greater access to these resources? How could equity gaps get reinforced by high-stakes testing without an easy opportunity to refresh skills?
2. How well do the types of math and English courses that students of color typically take in their first year at your college align with their educational and career goals? What opportunities exist for better alignment? How might your college improve communication to students about the types of courses that best suit their educational path?
3. Are all populations benefitting equally from the developmental education innovations that you have implemented? Have you been able to narrow equity gaps in completion of college-level math and English courses?
4. How have you integrated your developmental education redesign work with your Guided Pathways program mapping and/or your first semester metamajor experience? How can you ensure that students equitably enroll in alternate math pathways that match their programs of study?

## Research Tasks

1. Identify how many of your students are assigned to developmental education. What is your college's equity gap when you compare the proportion of students of color assigned to developmental education to the proportion of white students?
2. Determine how many of your students complete a college-level math course in their first year. How many complete college-level English? How do these figures vary across student populations?
3. Map out the process by which students get assigned to math and English classes at your college. Do different student populations have different experiences? For example, are some students more likely to use challenge processes or access tutoring to increase their likelihood of enrolling in and completing a college-level course?
4. Gather student perspectives on their experience with your college's assessment and placement process and developmental education sequence. What do different student populations say about this experience?

## Endnotes

---

<sup>i</sup> Xu, D., & Dadgar, M. (2017). How effective are community college remedial math courses for students with the lowest math skills? *Community College Review*. 46(1), 62–81.

<sup>ii</sup> Burdman, P., Booth, K., Thorn, C., Bahr, P., McNaughtan, J., & Jackson, G. (2018). *Multiple paths forward: Diversifying mathematics as a strategy for college success*. San Francisco, CA: WestEd and Just Equations.

<sup>iii</sup> Bailey, T., Jaggars, S., & Jenkins, D. (2015). *Redesigning America's community colleges: A clearer path to student success*. Boston, MA: Harvard University Press.

<sup>iv</sup> Scott-Clayton, J., Crosta, P. M., & Belfield, C. R. (2012). *Improving the targeting of treatment: Evidence from college remediation* (NBER Working Paper No. 18457). Cambridge, MA: National Bureau of Economic Research.

<sup>v</sup> Ganga, E., Mazzariello, A., & Edgecombe, N. (2018). *Developmental education: An introduction for policymakers*. Denver, CO: Education Commission of the States.

<sup>vi</sup> Geiser, S. (2015). *The growing correlation between race and SAT scores: New findings from California*. Berkeley, CA: University of California.

<sup>vii</sup> Barnett, E., & Reddy, V. (2017). *College placement strategies: Evolving considerations and practices*. New York, NY: Community College Research Center.

<sup>viii</sup> Mejia, M. C., Rodriguez, O. & Johnson, H. (2019). *What happens when colleges broaden access to transfer-level courses? Evidence from California's community colleges*. San Francisco, CA: Public Policy Institute of California.

<sup>ix</sup> San Antonio College. (2018). *Internal institutional research data*

<sup>x</sup> Tennessee Board of Regents. (2016). *Co-requisite remediation pilot study: Fall 2014 and spring 2015 and full implementation fall 2015*. Nashville, TN: The College System of Tennessee.

<sup>xi</sup> Huang, M. (2018). *2016-2017 impact report: Six years of results from the Carnegie Math Pathways*. Stanford, CA: Carnegie Foundation for the Advancement of Teaching.

<sup>xii</sup> Schudde, L. & Meiselman, A. Y. (2019). *Early outcomes of Texas community college students enrolled in Dana Center Mathematics Pathways prerequisite developmental courses*. New York, NY: Community College Research Center.