

# Online Corequisite Design: Creating Equitable and Effective Support Courses

*This document summarizes a series of webinars offered in 2020 in response to the COVID-19 pandemic. The webinars provide additional support in creating equitable and effective corequisite support courses in remote learning settings.*

## Introduction

A growing number of colleges and universities across the country are implementing corequisite support courses\* in mathematics. However, many administrators and faculty have been hesitant to offer corequisite courses virtually due to evidence that online courses are less effective than face-to-face courses for students who have been underserved in the past, including (but not limited to) Black, LatinX, Native American students, and Asian American students, and those who are first-generation college students or are from low-income backgrounds.<sup>1</sup>

The COVID-19 pandemic forced institutions in spring 2020 to quickly transition face-to-face classes to distance learning, increasing concerns about delivering these courses online. With the end of the pandemic impossible to predict, mathematics departments must focus on ensuring that each student in an online corequisite course is well served. The Charles A. Dana Center collaborated with representatives from the Community College Research Center (CCRC) and Carnegie Math Pathways (CMP) to identify four target areas for online corequisite design.

1. Promoting equity
2. Fostering connectedness and belonging
3. Connecting students to wrap-around supports
4. Rethinking assessment of student learning

While these target areas are important for all students being served by any modality, they are especially amplified for students who have been underserved in the past and referred to developmental education as well as for students who are currently denied their preferred face-to-face instruction. With support from Strong Start to Finish,<sup>2</sup> CCRC, CMP, and the Dana Center produced webinars on these topics, offering both immediate and longer term goals. This brief provides summaries of each webinar. Recordings and related resources can be found at:

<https://tinyurl.com/SStF-Webinars2020>

\* *Corequisite*, as in corequisite supports or models, typically refers to the practice of placing students who have been designated as underprepared directly into college-level courses and providing necessary additional supports to help them effectively engage with the college-level coursework.



The Charles A. Dana Center created this resource as a part of a complete toolkit (to be published March 2021) to support the implementation of mathematics corequisite supports. The following organizations contributed to the development.

- Bruce Vandal Consulting
- Carnegie Math Pathways
- Community College Research Center

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## Webinar 1: Promoting Equity

In this webinar, Dr. Nikki Edgecombe from CCRC calls for faculty, staff, and administrators to be *equity-minded*, using the following definition from the Center for Urban Education at the University of Southern California:

The term “Equity-Mindedness” refers to the perspective or mode of thinking exhibited by practitioners who call attention to patterns of inequity in student outcomes. These practitioners are willing to take personal and institutional responsibility for the success of their students, and critically reassess their own practices.<sup>3</sup>

This shift to an equity-minded focus requires a willingness by administrators, faculty, and staff to locate problems in institutional and classroom practices and policies—not in students. Systems that exacerbate inequity are deeply entrenched, and disparate outcomes are in part a reflection of accumulated disadvantage. An example that is integral to the experiences of corequisite students is to recognize that dominant placement instruments are flawed, and precise determinations about who requires additional support and what supports they need are extremely difficult.

The reassessment process must include an inspection of predominant attitudes toward corequisite students and reframing that thinking to an asset-based orientation. Central to asset-based orientations is the ability to identify the assets and strengths students bring with them (e.g., our bilingual students bring a language diversity that allows them to engage in meaningful ways across communities) and to plan lessons to build on those strengths. Faculty are encouraged to:

- Build a learning culture in which each person is a contributor to the success of the group.
- Design curricula that reflect students and their worlds by inviting them into the design process. Include experiences and assessments that account for the differing attributes and experiences that students bring to class, with the goal of achieving equal outcomes across all student populations.<sup>4</sup>
- Implement instructional strategies that are culturally responsive and sustaining.<sup>5</sup>
- Be judicious with the use of technology, recognizing that many students have limited or no access to the internet and/or equipment,<sup>6</sup> while also leveraging the features of technology that foster interaction and collaboration.

Longer term systemic work calls for department members to intentionally collaborate to ensure that students have equitable opportunity in corequisite courses. One way is to disaggregate data to see whether students are enrolling and succeeding in corequisites at proportional rates to the institution’s population. Data should be disaggregated by race, ethnicity, and income level as well as by course and faculty member. Institutional-level administrators should analyze whether enrollment is equitable in programs that lead to family sustaining wages.<sup>7</sup>

For specific details on this equity-minded approach, access the webinar directly at:

**<https://tinyurl.com/SStF-EquityWebinar>**

## Webinar 2: Fostering Connectedness and Belonging

Fostering connectedness and belonging requires that faculty reframe their thinking about students. Reframing thinking includes reassessing assumptions about students’ behaviors and motivations, such as attributing underpreparedness to a lack of effort rather than recognizing that students (especially Black,

LatinX, and Native American students) may have been underserved or marginalized through negative messages about their abilities and potential.

In this webinar, Dr. Rachel Beattie from Carnegie Math Pathways discusses five high-leverage areas upon which faculty should focus to shape students' beliefs about themselves as learners and shift their behaviors.

- *Social belonging*: building connections to the instructor, to peers, to the content, and to the institution
- *Growth mindset*: understanding how the brain learns and that intelligence and abilities are not fixed
- *Course value*: seeing the course content as valuable in the short term for their current interests (relevant) and long term to their programs of study, their future careers, and their lives and communities (purpose).
- *Skills and know-how*: receiving explicit instruction in learning strategies, including metacognition, and emotional regulation
- *Faculty support*: creating an environment that supports students by implementing proactive, daily routines such as noticing absences and disengagement, reaching out via email and texting, and providing substantive feedback on work.

While all of these areas are important, online learning can be isolating so overt attention to fostering connectedness and belonging and incorporating routines are crucial. Students must engage with the course early and often; otherwise, they may devolve into a cycle of disengagement, especially if they feel inadequate in mathematics. To prevent this cycle of disengagement, faculty should provide early (and welcoming) instruction in course expectations, invite students into the community, structure opportunities for individual and group interactions, and provide regular boosters throughout the semester.

Additionally, faculty should be race-conscious, relational, and intrusive.<sup>8</sup> They should make extra efforts to reach out individually to historically minoritized students to reaffirm their rightful presence in class.

Longer term, faculty should work together to ensure coherence in implementation of these strategies across the department's courses. Additionally, continued refinement of math pathways to ensure that all students are in a math course that is relevant to their programs and their lives will result in strengthening student engagement.

For specific details on fostering connectedness and belonging, access this webinar directly at:

**<https://tinyurl.com/SStF-Connectedness>**

### Webinar 3: Connecting Students to Wrap-Around Supports

In this webinar, Dr. Connie Richardson from the Charles A. Dana Center discusses the ways in which the sudden shutdown revealed a lack of coordination among campus supports at many institutions. Additionally, the transition to remote learning spotlighted that a reduced level of service had been the norm for distance students (i.e., services that had required in-person meetings). This disconnect can be especially harmful for students referred to developmental education, who have been underserved in the past, and may be hesitant to ask for their rightful services. The pandemic has further exacerbated existing inequities, as students have reported their support systems were shaken and their responsibilities increased.

Faculty tend to focus on their perceived area of control: the classroom. But research indicates that most students who leave college do so for non-academic reasons.<sup>9</sup> For example, rates of food insecurity are extremely high for students (i.e., approximately 32% of Blacks, 29% of LatinX, and 13% of Whites)<sup>10</sup>—this is just one of the stressors that affect academic focus and performance. Faculty can have a meaningful impact by serving as the connector between students and supports.

[H]owever strong our . . . systems are, [students] depend upon faculty and staff to realize their full potential. We faculty and staff are the connectors between our students and our institutions. We cannot educate our students unless we know them, and we cannot support their success unless we know our student support systems. It's that connection that leads to student success.<sup>11</sup>

Dr. Uri Treisman's observation is even more true in this era of remote learning. To connect students with services, faculty must be proactive, observant, and collaborative.

- Being proactive:
  - Provide a simple, prominent, and permanent space on the course homepage of the learning management system that provides links to clearly described academic and non-academic supports. Include a video tour to orient students to your expectations and the available supports.
  - Provide regular messaging to students that focuses on different services to normalize their use. For example, sending text notifications about tutoring services that are available and starting discussion threads about the power of struggle and help-seeking can reduce stigma. Consider an assignment that requires a virtual visit to the supports. In synchronous classes, invite advisors, tutors, and other student support staff to attend a class and explain their services. For asynchronous classes, ask them to create a short video to post on your support page.
- Being observant:
  - Notice changes in behavior and quickly apply multiple avenues of outreach to students to connect them to services. Encourage students to also be observant and to reach out to one another. Students will be more likely to respond to this outreach if you have set up the culture of communication from the beginning days of class.
- Being collaborative:
  - Work within the math department to ensure that the corequisite course itself is serving its role as a wrap-around support. For example, ensure that the corequisite content is aligned to the gateway course content, that faculty are incorporating culturally sustaining pedagogies, and that sufficient time is allotted to the corequisite so that the high-impact psychosocial factors can be embedded. Ask your colleagues to observe your class and provide feedback and offer to do the same in return.
  - Work across departments to ensure coherent experiences for students. For example, tutors may need new training in order to facilitate students' conceptual understanding of mathematics in the virtual space or in aligning with pedagogical shifts that are happening in courses. Advisors may have insufficient knowledge about the purpose of each mathematics course and need training for advising aligned to students' career goals rather than an advisor's own implicit biases regarding students' abilities to be successful in certain courses.

Longer term, faculty should advocate on campus for a true electronic campus where all services are easily navigable and can be provided via distance. They can also look for opportunities to simplify

processes and collaborate across departments so that students are not passed around and forced to tell their stories multiple times. When a handoff to another department is required, it should be a warm handoff to a warm person. That is, when a handoff to another department is required, faculty and staff should make a direct connection between the student and a specific staff member in the receiving department, rather than just providing direction.

For specific details on how to connect students to their supports, access this webinar directly at:

<https://tinyurl.com/SStF-WrapAroundSupports>

## Webinar 4: Rethinking Assessment of Student Learning

In this webinar, Chelle Younker from Owens Community College and Lauren Fern from the University of Montana note that student assessment in higher education is often summative, revolving around a few high-stakes exams. A more productive strategy for attainment of learning outcomes is to engage in formative assessment that captures student thinking in the moment and allows for immediate action. Additionally, structuring experiences that call for self assessment will develop students' metacognitive skills and lead to more independent learning.

**Formative assessment** is especially crucial for corequisite courses, since the goal is to ensure that students are ready for the college-level content they will encounter. Some examples of formative assessment are response systems, rating systems, entry/exit tickets, group quizzes, think-pair-share, and discussion boards. Response systems ("clickers") can be conducted in online courses using free web-based applications that students access from their smartphones or other devices. Exit tickets can be one or two questions that follow a micro-lecture video. Think-pair-share and discussion boards can be combined with response systems—pair up students to discuss their answers and rationale to see if one can convince the other that their strategy is correct. These collaborative strategies encourage students to begin to view their peers as resources.

Faculty should rotate a few formative assessment strategies so they remain fresh and engaging but are a consistent expectation. By limiting the number of strategies, faculty can help students' cognitive load remain on the content rather than on figuring out a new application.

**Self assessment and metacognition** strategies require students to pause and reflect on their learning. Explicitly building in such pauses into assignments routinizes the process for students to focus on their own work, monitor their own strengths and weaknesses, target areas that need attention, and identify how they learn. Examples include:

- Learning logs with prompts such as: Explain how you organized your notes and how your organizational strategy helps you learn. What did we do today and why did we do it? What is clear to you about today's lesson and what questions do you still have?
- Reflecting on preparation for the college-level course: Provide students with a list of the corequisite topics for the day and ask them to reflect on their level of understanding:  
(1) I understand and can explain it to others; (2) I understand and can work on it alone;  
(3) I understand but I need a little help; or (4) I don't understand—yet.

**Summative assessment** such as high-stakes exams bring unique challenges when online. Many faculty are concerned with academic integrity and many departments and institutions require online proctoring of exams. These practices raise questions about privacy, cost and equitable access, and the message that is communicated to students.

Lang (2013) proposes four conditions that foster cheating: emphasis on performance at a specific point in time, high-stakes exams, students' low expectations of their own success, and students' extrinsic motivations for success.<sup>12</sup> He recommends a change in focus to mastery of content, more frequent and lower stakes assessments, and incorporating strategies that build students' self-efficacy and foster intrinsic motivations.

When a high-stake assessment is used, faculty must be clear with students about acceptable levels and sources of help, if any. They should elicit student input in the creation of exams, and create assessments that promote engagement and are more difficult for students to copy, such as projects that are customized by the students' interests or future career field.

If proctoring services are required, they should not result in additional costs to students. Student schedules are in flux due to the pandemic so it would be helpful and more inclusive to provide testing windows rather than a set time. Faculty should ensure that students have an opportunity to practice with and become accustomed to the proctoring service. The first time they log in to the service should not be during a major exam.

Longer term, faculty should collaborate within the department to set consistent and coherent standards for equitable, mastery-based assessments that depend less on high-stakes exams and proctoring services. They should consider whether exams are even needed in the corequisite course since mastery of that content will be demonstrated within the college-level course.

For more specific detail, access this webinar directly at:

**<https://tinyurl.com/SStF-AssessingLearning>**

## Endnotes

- <sup>1</sup> Johnson, H., & Mejia, M. C. (2014, May). *Online learning and student outcomes in California's community colleges*. San Francisco, CA: Public Policy Institute of California. [https://www.ppic.org/content/pubs/report/R\\_514HJR.pdf](https://www.ppic.org/content/pubs/report/R_514HJR.pdf).
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- <sup>2</sup> <https://www.utdanacenter.org/blog/dana-center-develop-corequisite-toolkit>
- <sup>3</sup> <https://cue.usc.edu/about/equity/equity-mindedness/>
- <sup>4</sup> Bensimon, E. M., Dowd, A. C., & Witham, K. (2016). Five principles for enacting equity by design. *Diversity & Democracy*, 19(1). <https://www.aacu.org/diversitydemocracy/2016/winter/bensimon>
- <sup>5</sup> For example, see Hammond, Z. (2013). *Ready for rigor: A framework for culturally responsive teaching*. [https://crtandthebrain.com/wp-content/uploads/READY-FOR-RIGOR\\_Final1.pdf](https://crtandthebrain.com/wp-content/uploads/READY-FOR-RIGOR_Final1.pdf)
- <sup>6</sup> Hayoung, K., Krishnan, C., Law, J., & Rounsaville, T. (2020, May 21). *COVID-19 and US higher education enrollment: Preparing leaders for fall*. <https://www.mckinsey.com/industries/public-and-social-sector/our-insights/covid-19-and-us-higher-education-enrollment-preparing-leaders-for-fall#>
- <sup>7</sup> Fink, J., & Jenkins, D. (2020, June). Unpacking program enrollments and completions with equity in mind. *CCRC Analytics*. <https://ccrc.tc.columbia.edu/publications/unpacking-program-enrollments-completion-equity.html>
- <sup>8</sup> Harris, F., & Wood, L. (2020, March 27). *Employing equity-minded and culturally-affirming teaching and learning practices in virtual learning communities* [webinar]. CORA Learning. [https://www.youtube.com/watch?v=aMrf\\_MC5COK](https://www.youtube.com/watch?v=aMrf_MC5COK)
- <sup>9</sup> Bryant, G. (2015, August 28). *Driving toward a degree: The evolution of planning and advising in higher education*. Tyton Partners. <https://tytonpartners.com/library/driving-toward-a-degree-the-evolution-of-planning-and-advising-in-higher-education/>
- <sup>10</sup> In the United States, food insecurity is approximately 9% overall; the rates are more than three times that amount for Black and Latinx college students.  
Sources: Coleman-Jensen, A., Rabbitt, M., Gregory, C., & Singh, A. (2019). *Household food security in the United States in 2018*, ERR-270, U.S. Department of Agriculture, Economic Research Service. <https://www.ers.usda.gov/webdocs/publications/94849/err-270.pdf?v=963.1>  
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- <sup>11</sup> Treisman, U. (2018, February 15). *Why I teach* [blog]. <https://www.utdanacenter.org/blog/why-i-teach>
- <sup>12</sup> Lang, J. (2013). *Cheating Lessons: Learning from Academic Dishonesty*. Cambridge, MA: Harvard University Press.