Live Faculty Webinar:
Making a Thoughtful Transition to Distance Learning

June 30, 2020

Below are responses to questions posed during our recent webinar.

What are the new Pathways Virtual courses?
Recognizing a demand in the field for expanded access to high quality online entry-level mathematics offerings, the Carnegie Math Pathways has partnered with faculty in our network to reimagine our in-person Quantway and Statway course models for the online space. Utilizing the adaptive learning and online communication platforms, Realizeit and Zoom for Education, we've designed an online course experience that offers students active, collaborative learning experiences, curriculum contexts that are relatable and relevant to students, just-in-time mathematics supports for students who need them, and social-emotional support routines that promote a positive growth mindset, sense of belonging, and encourage persistence in the course.

Is the virtual course curriculum different from the in-person courses?
The virtual course curriculum is based on our original in-person courses and key design principles but was adapted for the virtual space. The curriculum (topics and scope) and learning outcomes are consistent between the two, however, when looking at the virtual content and the in-person textbook simultaneously, you will notice similarities in structure, but differences in question task, type, and flow.

How would you describe the faculty and student experience?
Faculty benefit from an enhanced online instructional experience through which they are able to meaningfully engage students in an active and collaborative learning process, monitor student progress and engagement, and receive quality data and course feedback they can act upon to support students' mindsets, sense of belonging, and study habits.

Students benefit from group collaboration sessions to work through problems collaboratively as well as independent practice opportunities that are adapted to support individual student needs. Along with the content feedback provided to students by the instructors and the online platform throughout the course, the online experience also embeds social-emotional support surveys and messaging to encourage productive student engagement and persistence.

<u>Supporting Student Collaboration</u>

As the instructor, do I need to watch the entire recording of each student group collaboration?
The entire student collaboration session is recorded and available to be viewed by the instructor, however, only the last 5-6 minute group summarization of their answer and how they derived them is used for grading.

The recording does offer valuable and sometimes needed insight into the student groups and their thinking which can help inform faculty as they create their weekly feedback for each group. In fact, many faculty have found it beneficial to watch the entire collaboration session for the first week or two of classes to make sure that their student groups are working well together and progressing through the problems.

How do faculty engage with groups and check on group progress?
While the teacher does not need to be present in the student collaboration sessions, over the first few weeks of the course it is highly recommended that instructors pop into group collaboration sessions to provide guidance and make sure everything is going okay.

Working in a group and scheduling collaboration sessions requires a high degree of student agency, and we see that initially many students can be hesitant to take control. For this reason, it is useful for the instructor to engage with groups in the first few weeks of the course to ensure groups are functioning and any non-participation is a one-off rather than an effort to disengage from the course. Joining for just the first 5-10 minutes may be all that is necessary to ensure the group members are comfortable with the technology and working through the content.

Faculty who piloted these courses found this to be a critical way to observe the group work and to support students over the early parts of the course. As student groups bond and become more comfortable with the expectations of the collaboration sessions, it is less necessary for the instructor to be prepared to join student group collaborations, unless upon request.

How many groups are there per class and what is the size of the groups?
Faculty are free to decide the number and size of the student groups. To date, we've typically seen that groups of 3-5 students seem to be most effective in the online classes.

How do instructors handle cases when students are not contributing their fair share to their group?
Some students may be more reticent to participate in and lead in a group. With the use of embedded community building supports, including a class norm-setting contract activity asking students to commit to supporting one another's success throughout the course, and through instructor engagement in the early collaboration sessions, faculty have seen students bond and become more comfortable participating in the collaboration sessions. Additionally, rotating team leads on a weekly basis has been an important means of ensuring participation and leadership responsibilities from each member.

Are student groups fixed or do they change throughout the term?
We often find that once initial groups are established and begin to work through collaborations together, bonds can form quickly and members are hesitant to want to switch group. That said, any decision about the grouping or ungrouping of students is left to the discretion of the faculty.

Online Coursework

What are some best practices for presenting handwritten, step-by-step solutions in the online environment?
An important element of the Carnegie Math Pathways pedagogy and curriculum is having students work through real-life, open-ended math problems. These open-ended problems connect to more procedural problems so teachers can see how their conceptual knowledge and critical thinking connect to their numeric responses. Students are asked to also respond to prompts that require a more reflective written response on the reasoning for their answers.

In Quantway and Statway Virtual, App attachments such as the Desmos graphic calculator app allow for work to be shown. Faculty who have piloted these courses have also requested that students submit their work through their LMS to see step-by-step solutions.

Online Completion Rates

What percentage of students have passed the course with a B or better?
All of our institutions consider a passing grade to be a C or better, so based on that the percentage of students that have successfully passed one of the Carnegie Math Pathways Virtual courses is just under 80% for the roughly 250 students who took the online course this past school year.

For Kelly Kohlmetz, Professor at University of Wisconsin-Milwaukee, her first semester success rate for students receiving a B or higher rate was 65%. In the second semester, the rate increased to 82%.

Additional Questions?

If you are interested in connecting with the faculty on our live panel, please contact us at info@carnegiemathpathways.org and we will be happy to connect you.