



Dana Center  
**Mathematics**  
PATHWAYS



The University of Texas at Austin  
**Charles A. Dana Center**

Notes from the Field – Number 2 / 2017

## Games-Based Advising at Northwest Vista College

This summary is part of the Charles A. Dana Center's "Notes from the Field" series, which highlights examples of innovative practices from colleges, universities, and systems.

If an institution has multiple mathematics pathways in place and the ultimate goal of reform is to better meet the needs of students, then an essential element in the implementation process is **guiding students into the path that is best suited to their educational goals**. But what is the best way to communicate to freshmen—many of whom might already be feeling overwhelmed—what their course choices are and what the consequences of those choices might be? One college found success in an elegant, innovative solution.

### Background

Northwest Vista College (NVC) in San Antonio, Texas, is one of five community colleges of the Alamo Colleges District and serves more than 17,000 students.<sup>1</sup> As part of ongoing efforts to better serve its students, the college established multiple mathematics pathways for STEM and non-STEM students.

### TAKEAWAYS

- *Nontraditional approaches to student advising can have substantial impact on increasing student understanding and on guiding them to "right-fit" enrollment choices.*
- *The process of developing high-quality communication tools for students can help surface and address misconceptions among faculty and staff.*
- *Mathematics pathways can be linked to the overall student experience to help students prepare for the future and connect to their institution's mathematics pathways initiative.*

## Challenges

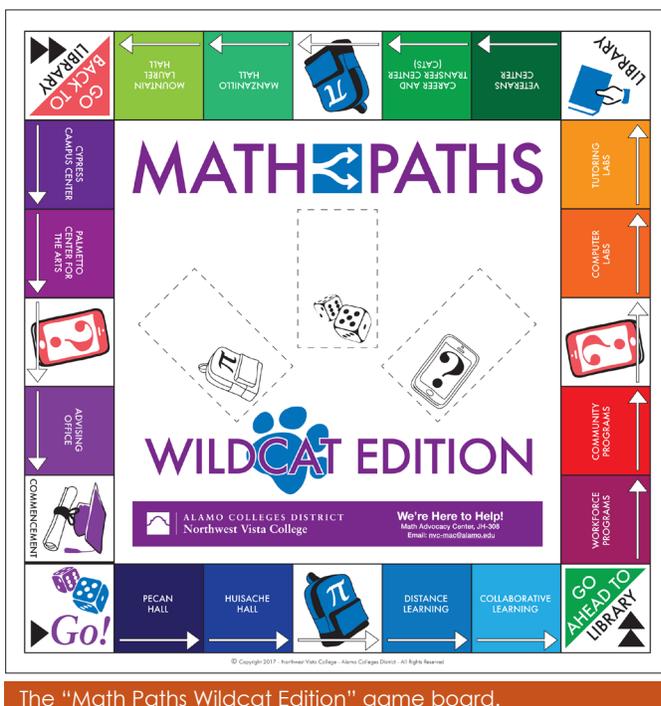
Students entering college can often feel overwhelmed with all of the enrollment options available to them. Further, new students may not fully understand the long-term impacts that their enrollment choices can have on degree completion. Even when a college or university has implemented mathematics pathways, students may still struggle with selecting the appropriate pathway. Encouraging students to enroll in the right course is often a major obstacle to scaling up mathematics pathways.

At Northwest Vista College, leaders realized that although mathematics faculty were successful in designing and teaching new courses, the college needed to help their students better understand their course choices. Heidi Hunt, a member of the mathematics faculty, was given the task of developing a lesson plan that provided information about pathways to incoming students. The presentation would be delivered in the mandatory student development class. Hunt's work accomplished far more than expected.

## Solutions

After initially considering a traditional approach using a PowerPoint presentation to complement an instructor's scripted presentation, Hunt decided that an attention-grabbing tool would be more effective in presenting the pathways. She helped to develop "Math Paths Wildcat Edition," a Monopoly-style game designed to show what the mathematics department offered and to help students understand the math sequences appropriate to their programs of study. Hunt asked the campus public relations department to help with graphic design. The department also created a video introduction to the game.

Mathematics faculty and staff from the advising department vetted the first draft of the game. The initial scope of the Math Paths game was to help students understand their choices; however, those "practice" sessions with faculty and staff proved to be very valuable, uncovering and clarifying misconceptions that faculty and advisers alike had about the pathways. The collaborative effort to refine the game raised the level of awareness between the departments about the best ways to effectively communicate the pathways to students.



The "Math Paths Wildcat Edition" game board.



NVC faculty members Claudia Verdin and Manuel Escobar play Math Paths.



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## Results

According to Hunt, there was increased awareness among multiple stakeholders that “this isn’t just the math department involved in the pathways.” People began to see how mathematics pathways connect to the entire student experience and that the whole college needed to understand these connections.

The information presented in the game grew to include other aspects of new freshmen orientation, such as names of buildings on campus and locations of a variety of student services. All incoming NVC students now play the game as part of their student development class. After an instructor completes a “mini-teach,” students play the game and complete a homework task that involves researching a transfer institution’s requirements to verify that the Northwest Vista mathematics pathway choice aligns with those requirements. This activity helps students understand how mathematics fits in with their entire college experience.

The Math Paths game produced other positive results. For example, because of the enthusiastic reception, Hunt was asked to present the game to board members and presidents of the Alamo Colleges District, showcasing how a single piece of training can reach multiple groups.

The process of developing the game prompted the development of a mini-course for advisers to learn about the mathematics pathways. Staff observe one another advising a student and participate in peer reviews of those sessions to reflect on how well the pathways were communicated to the student.

While prospective and incoming students are informed through the Math Paths game and these other methods, they also learn about mathematics pathways at orientation sessions and the school’s website, which depicts the “Math Paths Road Maps” clearly for both STEM-B<sup>2</sup> and non-STEM<sup>3</sup> students. Hunt shares that repeated exposure to the pathways through multiple formats is important to deliver the message that mathematics pathways are an integral part of effective communications.

The Math Paths Wildcat Edition is currently undergoing its first major revision after statewide changes were made to the Texas mathematics pathways. The game has proven to be a strong tool in the overall reform effort at Northwest Vista College and serves as an exemplar of a fun, creative, and yet very informative way to communicate with students and other stakeholders.

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## Contact Information

For more information about the success of games-based advising and student engagement at Northwest Vista College, please contact:

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## Endnotes

- <sup>1</sup> <https://www.alamo.edu/nvc/>  
<sup>2</sup> <https://www.alamo.edu/nvc/pmp/roadstem/>  
<sup>3</sup> <https://www.alamo.edu/nvc/pmp/roadnonstem/>

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## Photo Credits

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## About the Dana Center

The Dana Center develops and scales math and science education innovations to support educators, administrators, and policy makers in creating seamless transitions throughout the K–14 system for all students, especially those who have historically been underserved. We focus in particular on strategies for improving student engagement, motivation, persistence, and achievement.

The Center was founded in 1991 at The University of Texas at Austin. Our staff members have expertise in leadership, literacy, research, program evaluation, mathematics and science education, policy and systemic reform, and services to high-need populations.

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