

# Assessing the Potential of Ed Tech to Impact College Success: Five Lessons Learned

## Introduction

Educational technology (ed tech) is a growing industry that uses technology to improve learning and support educational goals. Since the inception of ECMC Foundation in 2015, we have made grants and investments to organizations implementing ed tech programs that support students towards the completion of their postsecondary degrees. This evaluation included six completed grants that implemented student-facing educational technologies. The goals of the evaluation are to:

1. Describe the programs including similarities and differences across their technologies;
2. Assess the impacts of these programs; and
3. Understand the successes, challenges and lessons learned across these programs and how these can inform future grantmaking and investments.

Three data sources informed this evaluation: (1) grantee proposal, annual reports, and data submitted to ECMC Foundation; (2) interviews with grantees<sup>1</sup>; and (3) interviews with ECMC Foundation staff. Exhibit 1 provides a summary of this evaluation.

Key findings and the five lessons learned through this evaluation are summarized below and further described in this report.

### Key Findings

- Funded programs served more than 175,000 students.
- Grantees utilized a variety of technologies and tools to strengthen opportunities within college access and success.
- Three of the six grantees have conducted outcome evaluations examining the effectiveness of their services.

### Lessons Learned

- Human Touch: Technology needs to be paired with human engagement and intervention.
- Demand for Customization: Students are digital natives that are looking for technological tools that are integrated and personalized.

#### Exhibit 1. Technology Cluster Evaluation

**Purpose:** Assess impacts of six completed grants that support student-facing technologies and identify lessons learned to inform future grantmaking and investments in ed tech.

**Methods:**

- Review of documents (e.g., proposal, annual reports, and data submitted)
- Interviews with grantees
- Interviews with ECMC Foundation staff

<sup>1</sup> Interviews were conducted with five of the six grantees included in this evaluation.

- Challenges to Scaling: The need to develop personalized, meaningful content for students created challenges for some to efficiently scale their programs.
- Data Incomplete: While these programs regularly mine the data embedded within their technologies, they often had incomplete information about who they were serving and the impacts they were making.
- Leaps of Faith: Willingness to adapt even when outcomes are not clear.

## About the Programs Included in this Evaluation

All six programs were funded through ECMC Foundation's College Success focus area.<sup>2</sup> The six grants totaled \$1,175,000 and ranged from \$50,000 to \$400,000. Grant length ranged from 12 to 35 months.

The funded programs embraced innovation and sought to develop and pilot new technologies or to expand upon existing technologies by creating additional features. Grantees and their funded programs included:

- Grantee A: A non-profit organization that sought to develop new features of their app for students in community colleges and evaluate the effectiveness of their services.
- Grantee B: A foundation that organized a consortium of funders and technology experts to develop and pilot a college advising chatbot.
- Grantee C: A non-profit that aimed to support college access and persistence through nudges delivered via text messages.
- Grantee D: A four-year university that implemented an academic planning tool that integrates with their automated degree audit tool.
- Grantee E: A four-year university that sought to assess the effectiveness of a time management app paired with and without coaching.
- Grant F: A four-year university that provided an interactive digital platform to increase knowledge of and access to on-campus resources with the goal of increase first-year persistence rates.

The technologies and strategies that grantees utilized included chatbots, nudging and gamification that were primarily designed to be accessed on computers, laptops and mobile devices. In addition to the technological tools, all programs offered connections to virtual and in-person services. Exhibit 2 summarizes the technological tools and approaches by grantee. Definitions of these technologies are provided in the Appendix.

All funded projects supported students as they were transitioning into and completing college; however, some projects focused a particular aspect of the process: four focused on persistence, three focused on financial aid, two focused on college access and one focused on completion.

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<sup>2</sup> The grants date back to 2015 and some include elements that are no longer part of the College Success strategy.

## Exhibit 2. Technologies and Approaches Utilized by Grantee

Grantee A Non-profit	 Mobile	 Texting	 Chatbot*	 Nudging	 Gamification	 Connections*
Grantee B Foundation	 Computer	 Mobile	 Chatbot	 Connections*		
Grantee C Non-Profit	 Texting	 Nudging	 Connections			
Grantee D Four-Year University	 Computer	 Connections*				
Grantee E Four-Year University	 Computer	 Mobile	 Connections			
Grantee F Four-Year University	 Computer	 Mobile*	 Texting	 Nudging	 Gamification	 Connections <sup>1</sup>

Note: See Appendix for full description of each technology and approach.

\* Indicates that this program component is currently in development

<sup>1</sup> Program did not provide services directly but connected students to in-person services and activities on campus.

## Impacts and Measures of Success

**The grantees served a total of 179,269 students.** All six grantees served the target populations that ECMC Foundation supports including students from low-income, first generation backgrounds and students of color. In addition to serving students, one program served approximately 30 advisors through their project.

In terms of geographies served:

- Two programs were not institution specific and served students nationally;
- Three program focused on students at one institution of higher learning including two in California and one in New Mexico; and
- One program served multiple community colleges in California and Texas.

### Exhibit 3. Impacts of Services

**175,000+ students received services**

- All 6 projects targeted students that are low-income, first-generation students and students of color
- 2 worked with students in high schools
- 2 worked with students in community colleges
- 4 worked with students attending four-year institutions

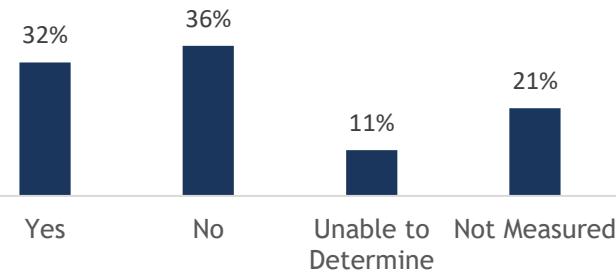
**\$2,495,000 raised from other philanthropic sources**

**Grantees raised a total of \$2,495,000 from other philanthropic sources.** The majority of the programs included in this evaluation were pilots that sought funding from ECMC Foundation to develop and/or test new technological tools. As such, they looked to various sources for continued financial support of their programs. At the time of this evaluation, some had already secured additional funding either from philanthropic or institutional sources, while others were actively looking for financial support. In addition, two organizations have been acquired since the grant was made. The acquisition will provide the programs with access to additional resources, expertise and capital within their new organizational structure.

**About one-third of the measures of success that grantees identified in their proposals were achieved.** As part of the grant request, potential grantees were asked to identify their measures of success or the milestones, outputs and outcomes to serve as benchmarks toward their program's ultimate goals. The six grantees proposed a total of 28 measures of success in their proposals. Thirty-two percent of the measures of success were met; 36% were not; and 11% could not be determined based on the information provided in the final report. In addition, 21% of the measures of success were not assessed because a grantee did not have access to the needed data or because the focus of the program shifted, making their initially identified measure no longer relevant.

**All six funded projects conducted an evaluation and three conducted evaluations examining the effectiveness of their programs.** Given that these projects were in early stages of development, it is not surprising that many chose to focus on implementation or process evaluation efforts. Of the three grantees that conducted outcomes evaluation efforts, one found that their pilot did not result in the types of outcomes they hoped to achieve and have since redesigned their program. Another program found mixed results showing significant impact on semester retention, but no impact on GPA. The third grantee demonstrated some promising outcomes. More specifically the evaluation found that students who participated in the program, compared to those who did not participate: (1) completed more first year units; (2) had higher first year GPAs; and (3) had a higher percentage of students persist into their second year. However, because participation in the program was voluntary, these results cannot be attributed to the program. This program is currently seeking funding to support a slightly revised and scaled program model and is hoping to conduct a more rigorous

**Exhibit 4. Did Grantees Meet Measures of Success Identified in their Proposals? (n=28)**



**Exhibit 5. Have these programs conducted evaluations examining their outcomes? If so, what are the results?**

Grantee A	Not yet assessed
Grantee B	Not yet assessed
Grantee C	No Implementing and evaluating a redesigned program model
Grantee D	Not yet assessed
Grantee E	Mixed results
Grantee F	Promising preliminary results

evaluation of the revised model. Exhibit 5 summarizes whether the grantees have conducted evaluations examining the effectiveness of these program.

## Lessons Learned

This evaluation identified five lessons learned that have the potential to inform organizations and funders working in this space.



**Human Touch:** Grantees acknowledge that technology needs to be paired with human engagement and intervention. Recognizing that technology alone cannot address complicated issues related to college persistence and completion efforts, all grantees currently offer or plan to offer connections to coaches and/or in-person services as part of their program. Programs incorporate services delivered by people in several different ways including: escalating questions to mentors that automated processes cannot address, offering in-person and virtual coaching, and connecting students to existing resources such as those offered on campus.

*"Students are very skeptical of things that are automated and robotic. They will ask you three or four questions to see if you are a robot. Once they trust you, it quickly turns to how they can pay for college."*



**Demand for Customization:** Students are digital natives who are looking for technological tools that are integrated and personalized. Many college students were either born or brought up during the age of digital technology and have used computers and the internet from an early age. As digital natives, they expect that technology will be personalized to meet their needs and integrated into websites, apps or tools that students are already accessing. It is important to get feedback from the students who are the end users of these technologies about their need for such a tool and features and design elements that are important to them. As part of their evaluation efforts, several grantees solicited this input and found that students wanted more personalization, such as, features to import or display their specific course schedules, deadlines, assignments, as well as other social and work commitments.

*"There is a higher expectation among this generation to have technology customized to them."*



**Challenges to Scaling:** The need to develop personalized, meaningful content for students created challenges to efficiently scale some programs. Grantees acknowledged that providing students with the right information at the right time is critical for these technologies to succeed, but that information related to college persistence and success is often localized to a state, region or an institution. This led to challenges for programs to scale in a cost efficient manner, while still maintaining information that is relevant and meaningful for students. For example, one grantee discussed the challenges they experienced collecting information about events and efforts targeting first year students at one campus as they were considering how they might be able to scale their program to multiple institutions. Another grantee conjectured that interventions may need to be scaled in a localized way to be effective.



**Data Incomplete:** While these technologies regularly mine their data, they often had incomplete information about who they were serving and the impacts they were making. These technologies are often designed in a manner so that information about how the tool is being used is readily available. However, some grantees faced challenges in securing data about who they were serving and the effects of their services. For example, some grantees wanted to have low thresholds to participation that meant compromising some information about who they serve. Additionally, other grantees struggled to establish data sharing agreements with their partner institutions to access data about college persistence and success.



**Leaps of Faith:** Willingness to adapt even when outcomes are not clear. Even when technologies are not able to evaluate their effectiveness or do not produce the desired results, there is a willingness to adjust and try again. In part, the cost of making programmatic adjustments to these technologies may not be as high as other programs that may have more staffing and infrastructure costs associated with program redesign. Four of the six grantees have made adjustments from the program design that was supported by ECMC Foundation and are in the process of either implementing a redesigned program model or seeking funding to do so. There is faith that the technology will work if properly calibrated. For example, based on the promising results of earlier, smaller scale nudging efforts to support students to complete the FASFA, there is a belief that nudging efforts, if properly calibrated, can effectively support persistence and college success.

## Conclusion

As potential tools and program continue to emerge from ed tech, it is critical to assess both the strengths and limitations of these tools. This evaluation assessed the impacts and lessons learned of six completed grants that focused on developing, piloting, or expanding student-facing educational technologies.

We found that most of these programs are still in existence, though a few had made significant changes to their program's design. All programs have conducted some level of evaluation, but only a few had been able to examine the effectiveness of their services and types of changes seems among the students using their programs. In addition, we identified five lessons from the experiences of these six ed tech programs that have potential to inform organizations and funders working in this space.

It is our hope that this is just the beginning to a conversation about ed tech solutions and look forward to continuously learning from future grants in this space. By having an active learner mindset, we can ensure that the investments that we make in ed tech are grounded in evidence and will help lead to improved education outcomes among all students, especially those from vulnerable and underserved populations.

## Appendix. Definitions of Technological Tools



**Web-Based:** Tools that are accessed via a website.



**Mobile-Based (apps):** Tools that are accessed via apps on mobile phone and tablets.



**Texting:** Information and support sent via texts.



**Chatbot:** A computer program that simulates and processes human conversation, allowing people to interact with digital devices as if they were communicating with a real person.



**Nudging:** Low-cost interventions that work to influence behavior by changing how or when choices are offered.



**Gamification:** Incorporating video game elements and design to motivate and support learning.



**Connections to Coaches and In-Person Services:** Connections ranged from escalating questions that automated processes cannot address to mentors and coaches to connecting students to campus resources.