



**NUDGE TECHNOLOGY
AND HIGHER EDUCATION**

*Harnessing Behavioral Economics
to Improve Student Outcomes*

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Estimated time to read this guide:
20 minutes

Objective: Signal Vine designed this practitioner's guide to help higher education leaders understand and apply the principles of behavioral economics to technologies that enhance student decision making and outcomes.

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NUDGING: A DRIVER'S STORY

This is a familiar experience for many of us: you are driving in a neighborhood on an errand, and although not speeding you are not paying particular attention to the posted speed limit. Just ahead, you see a machine on the side of the road displaying a board with the posted speed limit and a screen calculating your speed in real time. Not infrequently, you find you are exceeding the speed limit. Immediately, you start slowing down and see the numbers tumble on the display. Just as you pass, the display indicates you are below the required speed limit, and a smiley face icon flashes to confirm you made the right decision.

If you have ever done this, then you have experienced the power of behavioral economics. This is one small illustration of why Richard Thaler has a parking spot reserved for Nobel Prize Winners in economics at the University of Chicago; he was the 2017 laureate. The driver in this situation has been “nudged,” to use the term popularized by Thaler and Cass Sunstein in their 2008 groundbreaking book, *Nudge: Improving Decisions about Health, Wealth, and Happiness*. Thaler **describes a nudge** as **“any small feature of the environment that attracts people’s attention and alters their behavior but does so in a way that doesn’t compel.”**

Nudging and behavioral economics have been embraced by an array of institutions and enterprises, from management consultants to governments. There is an ever-growing body of articles, research and studies on the topic. Our intention is not to add to the conceptual literature on nudging but to simplify the core ideas and demonstrate how nudging can be used to improve student outcomes.

NUDGING IN A NUTSHELL

Our neighborhood car driver example illustrates the two core principles underpinning behavioral economics:

- **Recognize that humans do not always behave rationally when making decisions.** Therefore, improving any outcome requires we use a more realistic model of human behavior. In our example, the local authority wanted to reduce speeding in residential areas and understood that while drivers rarely break the speed limits deliberately, many unconsciously ignore speed limit postings.
- **Enable people to make better decisions for themselves by changing the context in which they make choices.** The Economist nicely summarized this point: *“the way choices are framed, by firms or governments, can influence how people respond.”* ⁽¹⁾ Returning to our driver example, the machine tells the driver exactly how fast he or she is going and compares it to the mandated speed. The speeding driver can now choose to slow down and immediately see the result or to ignore it. Unsurprisingly, the vast majority of drivers decide to reduce speed. They’ve been nudged to make a better choice.

Let us explore why these principles are relevant for higher education and how they can be applied effectively.

THE NUDGING IMPERATIVE AND HIGHER ED

Any higher ed institution that faces challenges in attaining enrollment and retention objectives needs to explore the use of behavioral economics. At the center of these challenges are student behaviors and decision making that need to be accommodated in ways that enable institutions (administrators and faculty) to support student choices. To be clear about choice, we are stipulating that nudging is about empowering students to make choices that they feel are in their own best interests. In the **words of Thaler**: *“We want to devise policies that will make people better off, not worse off, as judged by them. It’s not that Cass and I think we know what’s best for you or anyone else. It’s that we think we can help people make choices that they themselves think are better.”*

We believe that it is imperative that higher education institutions employ nudging because of two ongoing changes within the sector:

- There is a generational shift occurring among the college-going population as Gen Z now predominates. This screen-addicted generation is also the most diverse, with a high proportion of first-generation students. This new generation’s needs and preferences are pushing two- and four-year institutions to evaluate their enrollment and student success strategies.
- The ability of technology to distinguish, track and predict individual behaviors grows apace. System integration, data analytics, AI (both machine and deep learning) and so on, provide unparalleled opportunities for institutions to distinguish patterns in student behaviors and to nudge accordingly—enabling prospects and students to make better choices for themselves.

- **Gen Z: The Demographic Driver**

Gen Z encompasses those born between 1995 and 2014 and will be both larger and more diverse than the millennials.

This new generation was aptly described as digital natives by Marc Prensky in 2001: **“Our students today are all ‘native speakers’ of the digital language of computers, video games and the Internet.”**⁽²⁾

While there is debate on the exact commonalities among digital natives, it is evident that Gen Z is both more technology dependent and savvy than millennials. Higher education leaders face the reality that digital natives are now on campus and compose the enrollment pipeline. The pressure on universities to attract, enroll and retain these students will only intensify as the pool of high school graduates shrinks and tuition dependence grows. Accordingly, administrators and faculty must engage digital natives by meeting them where they are—adopting systems and policies to provide personalization, accessibility and interactivity across their preferred channels.

- **Nudge Technology: The Enabler**

Digital natives will interact with many information sources as they make college selection decisions or navigate the campus systems in pursuing their degrees. Accommodating Gen Z students’ information-gathering and decision-making behaviors is nonnegotiable for colleges and universities. To meet prospects and students where they are delivers a genuine win-win for them and for the institutions. Making interactions timely, customizable, social and accessible benefits students and generates behavioral data for institutions. These data yield the behavioral insights that technologies can harness and use for nudging. Today we are experiencing the rise of technologies that boost colleges’ and universities’ abilities to help students make better choices—nudge tech. In January of this year, **Gartner**, for the first time ever, identified nudge tech as one of 2018’s top 10 strategic technologies relevant to higher education.

Nudge tech is defined as:

“A collection of technologies that work together to achieve timely personalized interaction with students, staff and faculty such as a text (SMS) reminder for class just in time. Technologies used include but is not limited to chatbot, texting, algorithmic analytics, machine learning and conversational AI.” ⁽³⁾

NUDGE TECH AND SUMMER MELT: A CASE IN POINT

Mentioning nudge tech and higher education may evoke concerns over cost, complexity and usefulness. There is empirical research that answers these concerns while demonstrating the relevance of nudging to student behavior. We want to share the findings from an intervention that applied nudges to reduce “summer melt”, wherein college-intending high school graduates fail to enroll in college anywhere in the year following high school.

The program was directed by **Ben Castleman and Lindsay Page** in the summer of 2012 in collaboration with three agencies: the Dallas Independent School District; uAspire, a Boston-based nonprofit organization focused on college affordability; and Mastery Charter Schools, a network of charter schools in the Philadelphia metropolitan area. ⁽⁴⁾

Objective: Reduce summer melt among low-income high school graduates by nudging them to maintain focus and manage their time throughout the college planning process. Behavioral economic principles indicate that people are typically inattentive to future yet predictable and necessary actions. In higher ed, this phenomenon leads students to misallocate their time, miss deadlines and/or leave themselves with insufficient time to complete required tasks.

Target: College-intending recent high school graduates and their parents. The students were primarily students of color and students who qualified for free or reduced-price lunch.

Nudge Tech Intervention: Deploy an automated and personalized text messaging campaign to remind students of pre-matriculation tasks and to connect them to counselor-based support. Text messaging is the most viable approach to nudge students because it's the principal means by which teens communicate with each other. The research study used the **Signal Vine** platform to test and prove assumptions.

- Students and parents received **ten automated text message** reminders of college-related tasks they needed to complete to matriculate at their intended colleges or universities.
- When students or parents responded to a text message, they were connected to an assigned counselor to provide one-on-one assistance.
- The messages focused on key pre-matriculation tasks required by the institution at which the student intended to enroll. Texts were delivered close to the deadline for each task. These tasks included logging on to their intended colleges' web portal; registering for orientation and placement tests; completing housing forms; and completing the FAFSA. Most messages included web links that allowed students to complete tasks via their phones.

Outcomes

- Improved matriculation—text messages substantially increased college enrollment among students with less access to college-planning supports and who were not as far along with their college planning at the completion of high school. For instance, students in Lawrence and Springfield, Massachusetts were over 7 percentage points more likely to enroll in college than the control group.
- Cost-effective intervention— the cost per student for the messaging campaign was low, including hiring school counselors to support students who need additional support.
- Increased counselor capacity—the text platform’s automated delivery and personalization capabilities significantly reduced the time counselors spent on scheduling and conducting student outreach.

“Text messaging offers considerable promise as a strategy to deliver simplified information and to connect students to professional assistance—not only during the summer after high school but more generally at various stages in their educational trajectories when they and their families face complex information and complicated processes.”

From the research of Ben Castleman and Lindsay Page

EAST:

A FRAMEWORK FOR APPLYING NUDGES

In 2010, the **Behavioural Insights Team** (BIT) was established by the British government to help it employ nudges to change behaviors instead of relying largely on legislation and taxation. It was the world's first such unit, and the government hedged its risk: **"If BIT did not save the government at least ten times its running cost (£500,000 a year) it was to be shut down in two years."**⁽⁵⁾ BIT actually saved about 20 times its annual cost, and its work has been emulated by many governments (including in the US) and international bodies like the UN and The World Bank.

We developed this document to be a practitioner's guide for nudging and believe BIT's work provides an empirically proven and pragmatic approach; one that was used in work with the UK's Department of Education. Distilling its findings and guided by Richard Thaler (an advisor on BIT's creation), BIT built a practical framework to support behavioral change—the EAST framework. This states that to help change behavior, our intervention must be Easy, Attractive, Social and Timely (EAST). We will outline each of these four principles and then share examples of how EAST can be implemented in higher education.

(E) Make it Easy: If there is a choice that requires minimal effort, then it is very likely the one that will be selected. Doing this involves:

- Harnessing the power of defaults. Make the desired action the default option or preset option, as people are heavily inclined to go with the default choice.
- Reducing the hassle of performing the desired action. Minimizing the effort required to take the action spurs greater uptake.
- Simplifying messages. Ensuring messages are clear and concise can increase response rates. If the decision being made is complex, then break it into smaller and easier steps, and message appropriately.

(A) Make it Attractive: If people find something attractive, they will be drawn to it. Doing this includes:

- Grabbing attention by employing personalization—humans respond to personalized attention. Employ bold and striking fonts, colors and images. People are more likely to do something that attracts their notice.
- Adding incentives. People are drawn to a choice that has a financial reward or other incentive attached, including the opportunity to win.

(S) Make it Social: People are hardwired to be social beings, so we care about what our peers are doing and what they think of us. Leverage these traits by:

- Showing that most people perform the desired behavior boosts participation. This derives from the **Social Proof Theory**. Social proof is a psychological concept maintaining that: *“a person who does not know what the proper behavior for a certain situation is will look to other people to imitate what they are doing and to provide guidance for his actions.”*⁽⁶⁾
- Using the power of networks by to tap into the influence of social relationships (online and in-person).
- Encouraging people to make a commitment to others about their actions. When people sign a pledge to do a task, it increases their commitment by voluntarily agreeing to do something in advance.

(T) Make it Timely: The time you choose to nudge someone toward a desired behavior is a critical consideration yet is rarely built into the intervention. To consciously do so involves:

- Prompting people when they are most likely to be receptive. People are especially likely to change behaviors during periods of transition (purchasing a house, becoming a parent, getting married, applying to university), as their habits are being disrupted.
- Underscoring the immediate costs and benefits because people are significantly more influenced by impacts that take effect immediately rather than those that occur later.
- Helping people plan their responses to events in advance. Have people write down their plans. More effective yet is having people identify the barriers to action and developing a plan to overcome them.

For more guidance and insight, review two [Behavioural Insights Team reports](#), “[EAST: Four simple ways to apply behavioural insights](#)” and “[Applying behavioural insights: Simple ways to improve health outcomes](#)”.⁽⁷⁾

FOUR STEPS TO IMPLEMENT EAST SUCCESSFULLY

Applying EAST and any behavioral economics concept requires that we have identified the true nature and context of the behaviors we aspire to address. The following four planning steps help do so.

- 1. Define the outcome:** What is the exact issue we are seeking to address and what is the desired outcome? The litmus test is pinpointing a quantifiable behavioral change goal for the intervention.
- 2. Understand the context:** Do we fully grasp the key barriers and opportunities for the behaviors of the people involved?
- 3. Develop our intervention:** Use the EAST framework to structure the actions to be taken or as a set of criteria to assess the viability of a proposed intervention.
- 4. Test, learn and adapt:** BIT underlines the importance of conducting a randomized controlled trial (RCT) to test whether the intervention is having the intended effect. An RCT: “[enables you to compare the effectiveness of a new intervention against what would have happened if you had changed nothing \(or used an alternative method\)](#).”

EAST IN ACTION: HIGHER EDUCATION CASE STUDY

COMMUNITY COLLEGE OF VERMONT

Enrollment: 6,000+

Type: Community College

Location: Montpelier,
Vermont

Partner Since: 2017

Marrying nudging principles with nudge tech enables institutions to help students and to achieve desired outcomes. Signal Vine's work with both two- and four-year institutions demonstrates how such mutually beneficial outcomes are obtained. The following case study shares some key insights from this work through the prism of the EAST framework.

Partner

The Community College of Vermont (CCV) is the state's second-largest college, serving roughly 7,000 students across 12 campuses and online each semester.

Adam Warrington, Director of Admissions, CCV



“Helping community college students to enroll and then persist requires us to support them as a group and individuals. How do we as administrators and faculty do this successfully given the array of personal and work responsibilities juggled by our students and our finite resources? Now having the capability to communicate with students through automated reminders and one-on-one texts enables us to help out those who need more assistance and guide others more easily through each semester.”

Challenges

Campus: Drive campus alignment on adopting a CCV-wide, personalized communication approach to student engagement.

Students: How to nudge prospects and students to make decisions that progress them through the enrollment pipeline and stay on track to graduate.

APPLYING EAST PRINCIPLES

Make it Easy

- Use texting as core messaging channel as it is the most hassle-free way for students to notice and respond to outreach. Mobile phones are the default device for Gen Z. More than 90 percent of CCV applicants provided mobile numbers, so CCV had the texting option.

- Spur campus staff (admissions, financial aid, academic advisors, and front desk) adoption of the Signal Vine platform by freeing up their time. Staff members were no longer tied to manually calling and emailing students, which was time intensive yet generated little response. Additionally, staff was able to reallocate capacity to students who needed extra support.

Make it Attractive

- Get the student's attention by personalizing the text. Personalization is driven by information contained in the CRM and SIS—first name, major, status of application, etc.
- Provide campus staff the capability to customize messages. Signal Vine's Blended Messaging® platform enables campus staff to create and send automated messages and one-on-one messages. Signal Vine empowered CCV to deliver personalization at scale—messages triggered by a specific event or behavior.

Make it Social

- Segment students based on shared characteristics (tasks to complete, registration deadlines, etc.) and use the Blended Messaging® platform to deliver tailored messages to each segment. This leverages “social proof” by targeting nudges to students with similar decisions to make. Accordingly, recipients had peers in their networks facing similar situations and looked to them to provide guidance.
- Foster peer collaboration among the participating campus staff units by developing dedicated inbound message boxes and message groups on the enterprise platform for each unit.

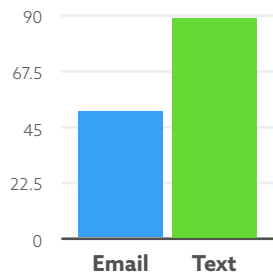
Make it Timely

- Send the right message at the right time to the right student is a guiding principal for Signal Vine. The Blended Messaging® platform provides the functionality to do this on a mass, segment, or one-on-one basis.
- Link the SIS and CRM with the messaging platform to empower staff to create and deploy texts that are event driven (e.g., refiling the FAFSA) or triggered by specific student behaviors.

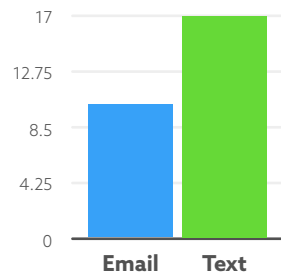
OUTCOMES

In the fall of 2017, 1,116 applicants did not enroll in any classes. Fifty percent of these students were given the option to defer to another semester via email, and the other 50 percent were given the option via text. Check out the results here:

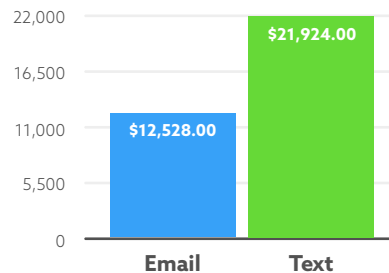
Number of Positive Deferrals



Number Enrolled in Spring 2018



Tuition Revenue of Spring 2018 Deferrals



[View Full CCV Case Study](#)

Congrats on your admission to **[home_location]**! Don't wait to sign up for classes. Call/text to set up an apt. Course schedule: **[CCV registration link]**

Thanks! Where do I find information about my student loan?

You can learn more by contacting your financial aid advisor **[financial aid advisor]** at **[FA email]**.

Thank you.

EAST IN ACTION: GETTING STUDENTS TO COLLEGE

COLLEGEBOUND FOUNDATION

Student Served: 2500+

Location: Baltimore, MD

Partner Since: 2016

Partner

The CollegeBound Foundation provides college access services to students at select public high schools in Baltimore, Maryland. The foundation serves around 57 percent of the 4,400 annual high school graduates from Baltimore City Public Schools. The majority of the participating students are first-generation and/or underrepresented minorities.



Jimmy Tadlock, Program Director, CollegeBound

“Signal Vine’s texting platform has been a key element in CollegeBound’s efforts ... to increase the rates that students matriculate to college.”

Challenges

Students: How to reduce summer melt among populations traditionally underrepresented in higher education. Nearly 30 percent of the Baltimore students predicted to attend a two- or four-year institution did not enroll.

College Access Program Specialist (CAPS): Empower the specialist to enhance his or her impact on summer melt. The Foundation assigns a CAPS to create a college access center at each participating high school to deliver services such as ACT/SAT support, one-on-one college access advising and college tours.

APPLYING EAST PRINCIPLES

Make it Easy

- Employ texting, as it is the most user-friendly platform to engage teenagers. Research has shown that texting is by far the preferred communication medium (email, phone calls, texts) for teens.
- Minimize the text messaging program enrollment effort for students and CAPS by using ACT/SAT registration processes to collect students' mobile phone numbers. Additionally, the Foundation sends a letter to parents and guardians explaining the text program and providing an opportunity to opt out. Historically, less than 1% opt outs.

Make it Attractive

- Personalize the message. Personalization options with Signal Vine's Blended Messaging® platform are more than simply using the recipient's first name. Every student received messages on specific pre-matriculation tasks required by the college or university at which he or she intended to enroll.
- Add a clear call to action within the message to harness recipients' attention and to spur action. Emphasizing the essential next steps in clear cut language nudged students to comply.

Make it Social

- Reinforce commitments to others. The messages remind recipients of the commitments they made with the CAPS, high school peers and families to attend college since most students are already familiar with the specialist and CollegeBound program.
- Leverage social proof by prompting students to complete tasks similar to those tasks being made by peers from their CollegeBound program.

Make it Timely

- Focus each message on completing a required task at the appropriate time. CollegeBound and Signal Vine determined

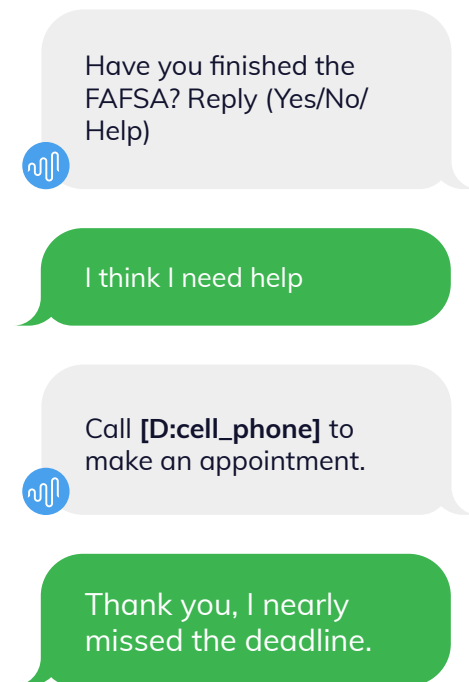
the summer deadlines and action steps required by the institutions most popular among students. Based on this knowledge, a series of automated institution-specific texts were delivered, aligned to key deadlines and directing students to relevant resources.

- Create mechanisms to boost CAPS ability to respond to students' texts requesting support. The Blended Messaging® platform ensured that student responses to the reminders were routed to the appropriate CollegeBound personnel. This enabled CollegeBound staff to reply to text messages within four hours.

OUTCOMES

- Matriculation increased by an average of 6.3 percent among the three cohorts (2014-2016) participating compared to the control groups.
- Student engagement with the college-going process spiked, as 85 percent of students replied to text messages within 24 hours
- Text messaging during the summer is significantly more effective in nudging student behavior than during the high school year—70 percent replied to texts during the summer versus 30 percent in the school year.

[Read the Full Case Study](#)



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NUDGE TECHNOLOGY TAKEAWAYS

- Coordinate cross-department communications.
- Inject the human element, personalize, and guide.
- Keep it short, with dedicated call to action.
- Timing matters- send it when it counts.
- Feed your CRM- complete the circle of data.



Schedule a demonstration of
Signal Vine's Blended Messaging® Platform