The Road to Inspiring Student Engagement:
A Proven Framework for Chatbot Adoption and Maturity
Table of Contents

Foreword 1

How to Get Started With AI 3

Embracing Technology to Impact Student Success 5

The Student Engagement Maturity Model 8

A Model for Moving Fast 14

The Value of Partnership 18
Foreword

By Tim Renick
Executive Director at the National Institute for Student Success at Georgia State University

A decade ago, Georgia State University set out on an ambitious journey to remake the way it served students from admissions, to retention, to landing jobs. Over the years, metrics improved on many fronts, but by 2015 we were grappling with runaway summer melt. It had increased from 12 percent to nearly 19 percent in just a few years.

We knew that using text messaging to engage with students had the potential to be effective at reducing melt, and that a behaviorally intelligent chatbot would allow us to do it at a scale that was unimaginable just a few years ago. The results in our first year of using Pounce (GSU’s chatbot) were far better than we even expected. We saw a 24 percent reduction in melt — and especially strong engagement from populations that were traditionally the most likely to disappear over the summer: Pell-eligible, first-generation, and underrepresented minority students.

Energized by these results, we set out to validate whether our success with the chatbot could be replicated beyond summer melt. We began to deploy the bot with our students after they enrolled to see if we could make progress with a much larger issue: Retention. Increasing retention involves pulling an almost overwhelming range of seemingly disparate levers, and it wasn’t immediately clear how we should direct the chatbot. Indeed, when we first turned Pounce to that task, the initial pilot failed to produce any clear results.

However, we and our technology partner, AdmitHub, persisted. We dug into our student data, processes, and existing interventions. Then we worked hand-in-hand with our staff in financial aid, billing, advising, student affairs, and health services to understand the components that help or hinder a student’s continued enrollment and the role communications could play.

As a result, we identified several behaviors that were key to student success, such as completing the FAFSA by the priority deadline and resolving FAFSA verification, taking a math class during freshman year, meeting with an advisor to plan an academic path,
declaring a major on time, and several more. AdmitHub was integral in designing and implementing the conversational strategy that encouraged students to engage in these behaviors more frequently and at the right times.

That strategy was invaluable, but so too was gaining a better understanding of where we stood organizationally. After a decade of raising graduation rates and reducing equity gaps, many of our people and processes were organized around student success — with dozens of student support functions centralized in our Office of Student Success. There were places on campus where we were not yet consistent in our approach, however. For example, when it came to retention, we still had to work closely with colleagues in academic affairs and student affairs who didn’t fall under our Office of Student Success umbrella. Mapping the people and processes involved, along with the approach to the technology, was vital.

With a clearer plan in place, the results have been undeniable. In a recent randomized controlled trial (RCT), students who received targeted communications from the chatbot were retained at a higher rate and were significantly more likely to finish tasks critical to completion. These include: Completing the FAFSA, resolving balances and holds, and meeting with an advisor when prompted.

Having a virtual tool to communicate with students 24/7 has been particularly valuable during COVID — a time when most students cannot, or do not, visit support offices personally. We have used Pounce to determine which students living in university housing could go home and which needed to stay with us. We have conducted instantaneous surveys to ascertain how students are doing academically, financially, and personally — and we have used the feedback to shape decisions about how we deliver classes and services. With the help of Pounce guiding students through the financial aid processes, we were even able to set a new record for the number of students who were completely packaged for their aid this past fall before the start of the term.

The lesson we have learned through this process is one that I hope other institutions can take to heart. For the team at Georgia State, realizing the potential of AI for student success began by mapping our capabilities, developing a clear plan of action, and understanding where the use of the tool was helped or hindered by our own structure and capacity as an organization. Of course, every institution is different, which means that every tech implementation is different, too. Still, the practice of looking inward before jumping into a new initiative is one that should be universal.
Just about every higher education institution is looking to increase quality applications, reduce summer melt, or improve retention. A growing body of research demonstrates that AI — specifically, behaviorally intelligent chatbots — can help with all of these objectives. However, the effectiveness and apparent simplicity of the solution, in some ways, belies the careful thought that must go into implementation.

AI can meet any college or university where it is by supporting the institution’s unique needs and building on its existing capacity. To do so, though, it’s critical to follow a sound model for getting the institution from where it is currently to where it wants to go.

This starts with taking an honest look at the current state of their student communications — with a focus on people and processes, and how those layer with technological needs. To walk institutions through that process, AdmitHub has developed a maturity model for student communication based on partnerships with hundreds of colleges and universities across the nation. That model provides a framework for institutions to assess their organizational cohesion and how student-centric their current practices are.

Across the institutions that partner with AdmitHub, the key to success has been maintaining a clear focus on the ultimate goals for student engagement. This includes evaluating the mindsets and practices within the institution, as well as the technology required to reach those goals. With the right framework and a willingness to do some work, every institution can use AI to its advantage and, ultimately, to its students’ benefit.
Embracing Technology to Impact Student Success
In the 1980s, as the use of computers became widespread throughout the United States, companies and government entities began to feel the growing pains of implementing an entirely new set of tools and practices. When several U.S. military projects ended up seriously delayed and over-budget, the federal government commissioned the development of a so-called “maturity model” — a framework for understanding and optimizing new processes for the effective use of technology. That model, and the key actions it outlined for advancing an organization, vastly improved software processes across government and the private sector.

As the pace of technological change continues to accelerate today, the need for maturity models has only grown. So too has the complexity of the outcomes that need to be taken into account. Success is no longer measured simply by a quality product and successful implementation (though both are crucial), but rather depends on the ultimate impact. This is particularly relevant in higher education, where a product is only as good as its impact on student outcomes — and where a confluence of structural and historical factors can make it especially difficult to implement new technologies effectively.

If done well, the potential for AI on college and university campuses is vast, from marketing and enrollment management to student support and instruction. A well-designed chatbot can answer 65 to 85 percent of applicant and student questions instantly, and they work around the clock. However, the true potential of bots lies in more strategic matters — such as reducing summer melt, increasing access to financial aid, and improving student engagement. Institutions are increasingly turning to chatbots to help with their most critical and often intractable challenges: Improving retention and graduation rates.

AI’s potential to affect those vital student outcomes is vast, but to be successful, institutions need a clear model to build out their approach to AI. Where admissions, for example, is highly centralized with clear inputs and outputs — retention and matriculation efforts are anything but. They are enormously complex and dispersed, requiring an institution to pull a whole host of different levers that are “controlled” by several different departments spread out across the institution.
Admissions, for example, is highly centralized with clear inputs and outputs — retention and matriculation efforts are anything but.

Georgia State University — a widely-recognized leader in using chatbot technology — was incredibly successful in using the chatbots for admissions, reducing summer melt by 21.4 percent and increasing enrollment by 3.3 points. However, the university saw its initial foray into using AI for retention fall flat. While its retention efforts were well-developed, the associated systems and individuals were less centralized and didn’t map as easily to a clear communications plan. Deep conversations about their organizational structures and the various pieces of their retention plan were required to get the approach right. And when they did, GSU achieved a 2.5 percentage point increase in year-to-year persistence for a test group of more than 7,000 students.

As Georgia State’s experience shows, the introduction of behaviorally intelligent chatbot technology can act as a powerful catalyst to better understand your organization and bring retention efforts into closer alignment. Doing so requires a clear understanding of where you’re starting from and what you want to achieve — and that starts with using a maturity model for maximizing student engagement at your institution.
The Student Engagement Maturity Model
Too often, institutions get tripped up when implementing an AI solution, and don’t achieve the outcomes they were hoping for, as a result. Or they have unrealistic expectations based on their organizational development and fail to make the required adjustments. Education technology isn’t plug-and-play, but the results you desire are likely to follow if you select the right tools for your institution’s needs, and lay the organizational groundwork for success from the very start.

Based on AdmitHub’s work with our partner institutions, along with new research, and a thorough review of existing literature, we have built a model to guide colleges and universities through the journey. This is a framework for every stage higher education institutions go through as they work to become more student-centric in their adoption and use of technology. Given our unique expertise and the critical role of communication in driving outcomes, the model is specifically focused on the development of that practice and strategy.

Maturity Model: From Unstructured to Inspiring
AdmitHub’s framework centers on two essential dimensions of communication practice: Student-centricity and organizational cohesion. Student-centricity measures the degree to which a college or university is focused on student-driven communications. For example, are your communications campaigns driven by what students tell you they need to know, or by institutional processes? Organizational cohesion tracks how organized an institution’s communication practices are. For example, does your institution use a centralized communication channel to communicate with students, or does each department communicate with students directly and independently?

There are a variety of different answers to just these two questions. Your answers to these and other questions will position your institution along a spectrum that we’ve mapped to five phases of maturity:

- **Unstructured**
- **Aware**
- **Proactive**
- **Consistent**
- **Inspiring**

Institutions in the unstructured stage, for example, tend to have communications that are siloed and carried out by each individual department and office. This approach can often be ineffective for both students and
staff. Students are bombarded by the volume of disparate communications they receive on a regular basis. Meanwhile, staff members are tied up answering the same questions repeatedly — leaving them unable to focus their efforts on students that are truly in need.

On the opposite end of the spectrum is the inspiring stage. As of today, we’ve not yet seen a university fully achieve this stage, so this is more an aspirational goal than a benchmark. In this stage, university communications will be almost entirely driven by and aligned with student needs. Furthermore, every department’s work will be cohesive and built around a single, comprehensive plan for student success. The outcome is a centralized student advocacy and communications function that enables the institution to maximize predictive analytics and interventions to help students achieve their goals.

The position where an institution lands on the maturity spectrum is driven by the three critical factors: People, processes, and technology — along with strategy as the connective tissue.

People, processes, and technology have to be aligned and pulling in the same direction for institutions to see the full impact. West Texas A&M University, for example, has had a highly centralized student communications function for years — with admissions, financial aid, the registrar, student affairs, and residential living all collaborating under one umbrella. In other words, the university is extremely high on organizational cohesion around people and processes. Those functions are all student-centric, with the university placing a priority on practices that ensure students are engaged and supported at every step of their journey.

The university’s efforts with communications technology, however, were traditionally either scattershot (in the case of social media), or simply weren’t reaching
## Framework for Personalized Student Engagement Maturity

<table>
<thead>
<tr>
<th></th>
<th>Student-Centricity</th>
<th>Communication Process</th>
<th>Technology</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unstructured</strong></td>
<td>Skills and experience mismatched</td>
<td>Exceptions are the rule, Everything is a priority</td>
<td>Basic tools, Not the right investments</td>
<td>Survival mode</td>
</tr>
<tr>
<td><strong>Aware</strong></td>
<td>Basic organization structure, Skills and experience defined</td>
<td>Identified what’s working and what’s not, Basic processes exist, Integrated activities are limited, Priorities established</td>
<td>Tools fit the project or group, Not integrated or collaborative</td>
<td>Project focused</td>
</tr>
<tr>
<td><strong>Proactive</strong></td>
<td>Process-centric focus on student experience</td>
<td>Student life cycle established, Repeatable processes, Metrics established and monitored, Feedback loop established</td>
<td>Tools/systems integrated with collaboration and social capabilities, Automation</td>
<td>Standardized student experience delivery</td>
</tr>
<tr>
<td><strong>Consistent</strong></td>
<td>Business and customer outcome focused</td>
<td>Student life cycle operationalized, Stages working collaboratively, Integrated “one-stop” for students, Innovative</td>
<td>Real-time, Collaborative, Provides student insights</td>
<td>Predictable student experience delivery</td>
</tr>
<tr>
<td><strong>Inspiring</strong></td>
<td>Realized connection between student experience and outcomes, Holistic student focus</td>
<td>Cross-functional collaboration across the entire university is normal practice, Student advocacy program in place</td>
<td>Student advocacy tracking tool in place, Student success tracking and intervention tools in place</td>
<td>Automation and personalization drive organizational change</td>
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</table>
students through the channels they preferred (in the case of email). For West Texas A&M University to move their communications from aware to consistent, a cohesive strategy around technology was what they needed. When they adjusted accordingly, the results were quickly apparent: In just one year, student engagement with university communications increased 27 percent and the institution’s freshman-to-sophomore retention rate shot up 2.5 points, after being static for years.

Other institutions have far less centralized operations around student success. For them, communications technology can act as a necessary catalyst for bringing people and processes into greater alignment. They can begin using technology to their advantage as they undertake that process by, for example, streamlining standard communications, testing campaigns to engage students more frequently, and monitoring student questions and feedback. Often, an institution can begin to see how it needs to reorient its communications simply by listening to what students are saying and the questions they are asking.

As an institution advances through the maturity model, what it can ask for and how it can expect to benefit from chatbot technology increases in step. Understanding your practices and what you strive to achieve is the first step to creating and implementing a successful communication strategy.

Choosing the Right Partner for Your Institution

Executing on a strategy may require an institution to actually change its mindsets and practices. A technology partner, rather than simply a vendor, can be invaluable in this work. A true partner will get to know your institution deeply, understanding the people that are doing the communications and the process by which they are communicating. Ideally, this partner will be able to draw on experience from working with hundreds of other institutions — many of which are similar to yours. That relationship enables a college or university to move much more quickly from implementation to seeing results than they would be able to do on their own with just a new tool.
When it comes to implementing a behaviorally intelligent chatbot, your partner’s willingness to drill into what your institution really wants is crucial. That starts with understanding whether you want to use AI to be more targeted in your communications, more personalized, or both. Understanding the difference is imperative. Executing targeted communications requires the use of group data, such as students who have been flagged by the early alert system or those who have a financial hold.

Personalized communication, on the other hand, requires full integration with student data systems. Doing so can empower a student to get an immediate and accurate answer when she asks the chatbot for her current GPA, or what courses she should register for, or how much she still owes on her tuition bill. To date, no institutions have built out this level of personalization for their students, though some are working toward it. Others prefer to stay at the targeted level, reserving personalized interactions for person-to-person communications.

Beyond understanding that important orientation, an institution will greatly benefit from being honest about not only where they are on the maturity model, but also where they actually want to go. Institutions often say, for example, that they want to achieve the inspiring end of the spectrum — but in the same breath, they talk about wanting to preserve different departments’ control over student communications. Those two things are necessarily in conflict. You can have a highly effective communications strategy and practice while remaining at the proactive level of organizational cohesion, but you can’t achieve the inspiring level of the spectrum without consolidating control of student communication under a single umbrella. And that’s okay. Institutions have to be honest about their goals, and it helps to work with a partner who understands both the limitations and the potential of each institution’s goals.

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A Model for Moving Fast
Digging into policies, processes, and organizational structure may seem like wonky work that can become a lower priority with the pressures of the day-to-day. This is especially true in times of crisis and sudden change. That’s why it’s essential to have a framework for organizational maturity. It will serve as a model for your plan for growth by not only enabling your institution to stay focused during such times, but also enabling faster and more effective crisis response.

California State University, Northridge discovered this when launching its chatbot, CSUNny, in 2018. The university intended to use the bot to assist in hitting the ambitious retention and graduation goals set by the state. Freshman-to-sophomore retention was especially pressing, and despite a range of efforts at CSUN, it had been stalled in the high 70s for years.

“When they leave, they don’t go elsewhere, which tells you what an important swath of the region and state and country we’re serving,” says Elizabeth Adams, CSUN’s Associate Vice President of Undergraduate Studies. “These are people who have access to higher education, which is great, but we’re it. If we can’t help them through, then they don’t have access to other institutions or the wherewithal or confidence to think they can succeed somewhere else.”

CSUN started by testing out chatbot technology and laying the groundwork

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— Elizabeth Adams
Associate Vice President of Undergraduate Studies
California State University, Northridge
for what would become a full randomized control trial around retention. Adams created a dedicated position, and hired a CSUN alum who had majored in English to manage the university’s new bot.

In that first year, student engagement manifested itself in some surprising ways. When the university had a suspected active shooter on campus, CSUNny was responsive to students on a level that the university’s one-way emergency alert system couldn’t be. The bot manager fed it with regular updates and detailed information to answer student questions. She was also able to see what kinds of things students were asking and, thus, take the pulse of the student body during and after the event. The university could never have anticipated that exact need, but putting the effort into building the appropriate infrastructure enabled an effective response and provided an immediate benefit for students.

Georgia State University had another experience this past year as COVID-19 swept the country. The university had a robust chatbot communications plan in place for both admissions and retention, and had dedicated a significant amount of effort to aligning their data systems and the various offices that support students. As a result, they were able to quickly provide critical information to students as their campus needed to shut down. Even more important, they were able to collect and respond to sentiments from their students at scale throughout this process.

The first big nudge was sent to students living in university housing. The university needed to know who needed to stay on campus, and for how long. The housing office was able to give Lindsey Fifield, the university’s chatbot manager, an up-to-date data file of students in housing and a concise set of questions they needed answered. “We sent it out, and within almost 12 hours had heard back from pretty much the entire housing population, and could say, ‘Here’s what we’re hearing,’” Fifield says.

This became a model for how the pandemic response would continue at GSU. When courses moved online after spring break, the university had identified the required tech resources for students, but wasn’t sure how to prioritize them. So, the office that manages courseware provided a list of students who hadn’t logged in at all — realizing they were the most likely population to be experiencing challenges — and the chatbot checked in with them. It asked, “Do you have a computer?” And, “Do you have internet access?” It also asked, “Do you know how to log into courseware and the learning management system?” If the student needed additional information, the bot provided helpful resources.
Moving into the summer, Fifield managed a whole campaign around course offerings and also delivered messages designed to find out whether students preferred to be in-person, fully online, or hybrid. “Getting that data back quickly was important,” Fifield says. “We were planning this hybrid model, and we thought they’d want to come back — and they didn’t. All these students were like, ‘Put me online.’ And we were surprised.” Surprised, and more importantly, equipped with the information required to make the appropriate adjustments quickly.

A hallmark of all the campaigns throughout the spring, summer, and fall, Fifield says, was rapid deployment and massive engagement, with response rates of 60% and 70%. “Every single one of those campaigns had a ridiculously high response rate,” she says. Some of that is the nature of this particular crisis, Fifield says, but it also speaks to having the framework and processes in place to be highly targeted in outreach and to get students actionable information at the moment they need it.

“Every single one of those campaigns had a ridiculously high response rate.

— Lindsey Fitfield
Chatbot Manager
Georgia State University
The Value of Partnership
Institutions at any point along the maturity continuum can use chatbots to improve student outcomes. However, like the NASAs and IBMs of the 1980s, they will be most effective when they work with a clear framework for understanding where they are in their development around student communication, where they want to go, and what concrete actions they need to take to get there. It’s challenging to do that work alone.

That’s why a strong technology partner is a critical component for success. You will be most likely to succeed when you select a partner who provides a world-class tool and also brings extensive expertise and a deep interest in your institution and students to the process. Ultimately, for AI to be successful, your technology partner needs to be as invested in your students’ success as you are. Without that, chatbots run the risk of becoming just another tool that feels necessary but doesn’t do much.

That doesn’t have to be your chatbot’s fate. When chosen wisely and implemented with clear intention, behaviorally intelligent chatbots can be nothing short of transformational for your institution and your students.

**Ask Yourself**

Selecting a technology solution to help mature your institution’s communications strategy can be a daunting task. Here are some questions to ask yourself during the process to ensure you make the right choice for your staff and your students:

- Are the tools I’m considering world-class student engagement platforms that are purpose-built for higher education institutions like mine?
- What level of maturity is my institution’s student engagement strategy at currently?
- What are the objectives my institution is trying to achieve?
- What level of student engagement maturity would be ideal for my institution’s organizational structure?
- Do my institution’s student engagement objectives align with its ideal state?
- Do I know what concrete actions my institution needs to take to achieve its objectives?
- Would my institution benefit from a technology partner that will help define and guide us through the steps we need to take?
- Are the solutions that I’m considering technology vendors, or will they be true partners throughout my institution’s journey?
- Will my institution need to adjust its organizational structure to achieve its objectives?
- Will the partners I’m considering help me prove to stakeholders that organizational changes may be required for my institution to achieve its objectives?
- Are the partners I’m considering philosophically aligned with my institution’s values?
- Are the partners I’m considering as invested in my students’ success as I am?
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