WHITE PAPER

Relational AI in Postsecondary Advising

Chatbots for student motivational and emotional support

Sarah Di Troia & Laura Schoonmaker

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PROJECT EVIDENT

About Project Evident

Project Evident harnesses the power of data, evidence, and technology to achieve greater impact. We believe that by empowering practitioners to drive their own data and evidence building while also strengthening the surrounding ecosystem, we can increase the number of effective solutions in the social and education sectors and scale them faster, ultimately producing stronger, more meaningful, and more equitable outcomes for students and communities. Project Evident's OutcomesAI practice provides capacity building, technical assistance, resources, and tools to support nonprofit practitioners, school districts, and funders. We achieve this by strengthening their ability to use AI to enhance their understanding, improve their impact, support informed decision making, advance R&D, and allocate resources toward achieving better and more equitable outcomes. We recognize the potential for misuse of data, evidence, and technology and seek to limit harmful practices. We serve on the EDSAFE AI Steering Committee and strongly recommend the S.A.F.E. Benchmarks Framework for K-12 AI efforts. Project Evident's differentiator is its use of AI to drive outcomes. We support processes to detect and avoid technology overriding our evaluative work in delivering equitable outcomes.

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Introduction

College counselors have long served as stewards for high school students seeking to matriculate into postsecondary programs that lead to a credential, degree, or apprenticeship. However, counselors' time to support individual students is stretched thin. In U.S. public schools, the ratio of counselors to high school students was 195:1 to 224:1 for the 2024–25 school year,[1] and public school counselors report spending only 18.5%[2] of their workweek engaged in college guidance. This burden is not experienced equally; counselors who guide students of color predominantly serve 34 more students annually than their counterparts,[3] while a $3.4 billion market of private education[4] counselors serves families that can afford it.

In 2015, AdmitHub[5] created Oli, a chatbot for students that sent deadline reminders and answered questions about the college admissions process, thus launching a decade of experimentation with chatbots in postsecondary advising. Chatbots could support many transactional elements of guidance, such as scheduling with an advisor, deadline reminders, collecting completion information on transactional tasks, pulse checks, and always-available question-and-answer support. These approaches met students where they were frequently online, and *when* they are, often working on postsecondary plans outside typical counselors' work or school-day hours. In parallel, AI continued to improve in natural language generation and conversational realism, opening the door to piloting another important element of postsecondary advising: emotional and motivational support.

[1] School Counselor Roles & Ratios, American School Counselors Association website.
[2] Clinedinst, M., 2019 State of College Admission, National Association for College Admission Counselors.
[3] School Counselors Matter, The Education Trust, Reach Higher, and American School Counselors Association, February 2019.
[4] Education Consultants in the US Market Size Statistics for 2026, IBIS World website.
[5] AdmitHub became Mainstay in 2021 and was purchased by Lemnis in 2026.

Given the increased use of chatbots in postsecondary advising for the transactional elements of guidance, our aim for this project was to develop technology tools to enable postsecondary advising organizations and schools to easily adapt existing chatbots to respond in ways that align with the best thinking on how to mitigate risk for student harm and harmonize with an organization's or school's values, tone, and practices for providing motivational and emotional support. Finally, we wanted to lay the groundwork for future evaluation of relational chatbots' impact on students' motivation and emotional state.

Over the course of this project, four insights emerged:



Technical quick-start tools are potentially a scalable way to help organizations adapt chatbots to provide motivational and emotional support in ways that match their values and practices. Even lower-cost chatbots can be adapted by staff with limited technical capabilities, potentially removing barriers to wider use.



Partnership between program staff/counselors and the technology team is required to decide what level of warmth is appropriate and what a good response to a student looks like when harmonizing motivational and emotional support between a chatbot and live counselors.



Implementation evaluation tools are necessary to help organizations adapt their chatbots for their distinct student populations. Adapting a chatbot to be motivationally and emotionally supportive requires evaluation tools that support human oversight and learning.



The sector needs an evidence map to spur and guide evaluation of chatbots' impacts on student outcomes. The current evidence base for chatbots in student advising is very thin, yet the adoption of chatbots for advising, and the use of frontier models by students, is moving quickly. A shared map of the evidence needed to understand the impact of advising chatbots on student outcomes would foster collaboration and accelerate shared learning across the sector.

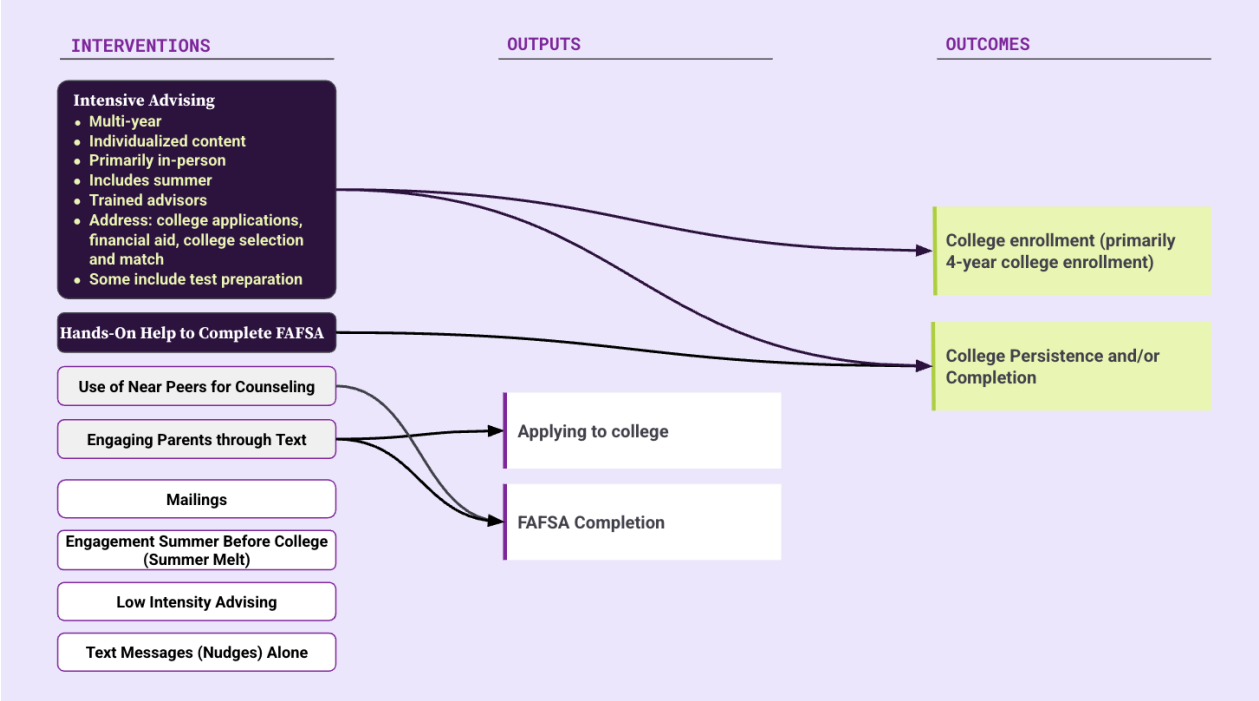
With frontier models providing immediate access to all types of information and guidance, including postsecondary navigation and college admissions, postsecondary advising practitioners and school counselors will need to contend with large language models, just as they adjusted their practices decades ago with the advent of the internet. We hope this project begins to illuminate what the future for counselors and the students they serve could look like.

Why focus on motivational and emotionally supportive chatbots?

The maturity of the postsecondary advising field means there is no shortage of evaluations aimed at determining which program model elements yield the highest student outcomes. In analyzing 40 academic articles on randomized controlled trials (RCTs) of college advising programs (bibliography available in the appendix), we identified many shared college access program elements, including high- and low-intensity advising, text messaging/nudges, and hands-on FAFSA completion assistance. Multi-year intensive advising programs and direct assistance with FAFSA completion have the greatest impact on college enrollment and persistence outcomes, whereas other program elements have little or no impact.

Importantly, 26 of the articles we reviewed focus on technology and advising; most of those focused on texting nudges, which ultimately were not shown to affect student outcomes. Only three articles addressed chatbots, two of which focused on using chatbots to help with FAFSA completion. The evidence base on advising chatbots' impact on student outcomes is very thin; the field would benefit from a shared evidence map to guide effective investment and foster collaboration and shared learning across the field.

Common college access program elements with strong evidence on student outputs and outcomes



Discussions about these findings with the project's design committee and postsecondary advising nonprofit practitioners also identified student motivational and emotional support as a key driver of positive outcomes, especially for first-generation high school students seeking college. Dr. Tiffany Green, Founder & Executive Director, Uprooted Academy — a tech nonprofit

that provides AI-powered advising for students and counselors — shared, "[When faced with a daunting challenge] our nervous system will either fight, flee, or freeze. And no population experiences fear over the college application process like low-income, first-generation students." And while there was no existing evidence supporting the importance of the student-counselor relationship in the college access research, there is substantial evidence about the importance of adult-student relationships across education more broadly:

- Strong teacher-student relationships have a positive impact on academic, behavioral, and socio-emotional outcomes.[6,7]
- Emotionally supportive teachers have been shown to improve student outcomes across domains from engagement and motivation,[8] to GPA and behavior,[9] to emotions around academics.[10]
- Strong relationships are particularly important for students experiencing poverty[11] and for Black and Latino[12,13] students.
- Emotionally supportive teachers can have strong protective effects on at-risk students.[14]

Based on our design committee's and postsecondary advising practitioners' expertise, along with evidence from related fields on the importance of relationships, we hypothesize that emotional and motivational support can improve postsecondary outcomes. We then looked to the AI-augmented mental health field for evidence that chatbots could be adapted to provide effective motivational and emotional support.

The global market for AI-enabled mental health services has grown at a compound annual growth rate of just under 25% from 2021 to 2025 to $1.7billion.[15] In parallel with AI mental health product innovation, emerging RCT evidence showed that AI tools were increasingly capable of providing emotional and motivational support. *Therabot*, an AI-powered therapy tool used over four weeks, showed that depression symptoms improved more than double for those using Therabot compared to the control group,[16] and users rated the therapeutic alliance as

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[6] Quin, D. (2017). Longitudinal and Contextual Associations Between Teacher–Student Relationships and Student Engagement: A Systematic Review. *Review of Educational Research*, *87*(2), 345–387.
[7] Emslander, V., Holzberger, D., Ofstad, S. B., Fischbach, A., & Scherer, R. (2025). Teacher–student relationships and student outcomes: A systematic second-order meta-analytic review. *Psychological Bulletin*, *151*(3), 365–397.
[8] Ruzek, E. A., Hafen, C. A., Allen, J. P., Gregory, A., Mikami, A. Y., & Pianta, R. C. (2016). How teacher emotional support motivates students: The mediating roles of perceived peer relatedness, autonomy support, and competence. *Learning and instruction*, *42*, 95-103.
[9] Tennant, J. E., Demaray, M. K., Malecki, C. K., Terry, M. N., Clary, M., & Elzinga, N. (2015). Students' ratings of teacher support and academic and social–emotional well-being. *School Psychology Quarterly*, *30*(4), 494.
[10] Lei, H., Cui, Y., & Chiu, M. M. (2018). The relationship between teacher support and students' academic emotions: A meta-analysis. *Frontiers in Psychology*, *8*, 2288.
[11] Murray, C., & Zvoch, K. (2011). Teacher—Student Relationships Among Behaviorally At-Risk African American Youth From Low-Income Backgrounds: Student Perceptions, Teacher Perceptions, and Socioemotional Adjustment Correlates. *Journal of Emotional and Behavioral Disorders*, *19*(1), 41–54.
[12] Decker, D. M., Dona, D. P., & Christenson, S. L. (2007). Behaviorally at-risk African American students: The importance of student–teacher relationships for student outcomes. *Journal of School Psychology*, *45*(1), 83–109.
[13] Mireles-Rios, R., Simon, O., & Nylund-Gibson, K. (2020). The Critical Role of Teacher Emotional Support for Latinx Students. *Teachers College Record*, *122*(12), 1–32.
[14] Hamre, B. K., & Pianta, R. C. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure?. *Child Development*, *76*(5), 949-967.
[15] AI In Mental Health Market Size & Share Report, 2026-2033, Grand View Research, June 2026.
[16] Heinz, M. et al. Randomized Trial of a Generative AI Chatbot for Mental Health Treatment. NEJM AI 2025;2(4).

comparable to that with a human therapist. Relational AI was also achieving strong outcomes for young people. *Alongside*, an AI-powered mental health tool for 6th-12th graders found that 25% of students with anxiety reported a clinically significant reduction in symptoms.[17] This project brought together AI and mental health experts, technical developers, and postsecondary advising practitioners to develop principles and practices for using relational AI to support student motivation and emotional well-being.

Design principles for using motivational and emotionally supportive chatbots in postsecondary advising

Before we developed the technical quick-start guide, we co-created design principles with postsecondary advising practitioners to guide this project's technical development and, hopefully, the broader advising field in mitigating risks when adapting chatbots to be motivationally and emotionally supportive for high school students. Representatives from postsecondary advising nonprofit organizations Beyond 12, College Guidance Network, College Possible, Get Schooled, and Uprooted Academy joined several working sessions to share how they deploy AI inside their program models and how their values and AI policies inform their decisions. In addition to these practitioner experts, the group discussed AI and youth with Marisol Jimenez, facilitator, The Rithm Project; Julia Freeland Fisher, Director, Education Research, Christensen Institute; and Dr. Rachel Wood, who holds a Ph.D. in Cyberpsychology. Finally, the group reviewed AI policies for youth from UNICEF, the American Psychological Association, and The Jed Foundation. Together, the group co-created an aligned set of design principles to guide the project and provide a foundation for other practitioners interested in using motivationally and emotionally supportive chatbots in postsecondary advising.

The practitioners were clear that relational chatbots should not supplant human relationships; they are steadfast in the importance of student connections with postsecondary counselors and other adults. Dr. Rachel Wood advised "design chatbots to be a bridge to [human] connection and not a replacement for connection," and Julia Freeland Fisher emphasized the importance of prosocial AI that builds students' connections with adults. Practitioners recognized that their missions sharpened their focus on "designing for outcomes versus designing for clicks or engagement for engagement's sake" and on designing "culturally responsible, culturally relevant tools with intentional nuance around voice," as Eve Shapiro, Chief Knowledge Officer, Beyond12, said. In developing the design principles, practitioners noted the tension between the business models of frontier models, which ultimately need to prolong human engagement to be financially successful, and postsecondary advising practitioners who define success by student outcomes. Still, some practitioners worried that funders missed this distinction and, in their excitement to fund AI, focused more on usage data than outcomes data.

[17] Cohen, K., Rapoport, A., Friis, E., Hill, S., Feldman, S., Schleider, J., The Alongside Digital Wellness Program for Youth: Longitudinal Pre-Post Outcomes Study. JMIR Form Res 2025;9:e73180.

The group paid close attention to students' mental health, discussing the overall rise in people using large language models to seek support and care. Green, Jimenez, and Wood touched on adolescents' psychology, which can make them more vulnerable than adults to AI-related harm. Green noted that there is "a very thin line for when students believe it's a chatbot and when it's actually a human that they can grow closer to." Concerns about how youth were already interacting with AI companions, which are designed to build a personal, long-term emotional bond with a user vs. task-oriented chatbots, were raised and discussed thoroughly, as well as the training and limits that organizations already put in place with their postsecondary counselors on addressing students' mental health issues.

When planning or developing chatbots for postsecondary advising, we encourage organizations to review these design principles thoroughly before piloting relational chatbots in order to mitigate student harm or dependencies.

Relational Chatbots for Postsecondary Advising Design Principles

01 Involve Youth and Their Community

- Involve youth in the design and evaluation of relational chatbots.

02 Support Physical and Emotional Safety

- Have a protocol to identify and escalate mental health crises to a human or appropriate external resources (for example, 988 Suicide and Crisis Lifeline).
- Encourage meaningful use that drives positive outcomes while avoiding dependency — creating "stickiness" through value rather than attention-seeking.

03 Maintain Boundaries

- AI should be forthright about not being human, offer regular reminders that the user is interacting with a non-human, and should not claim to engage in anthropomorphic behaviors or have feelings.
- Establish relational and conversational scope boundaries that mirror the limitations of professional human coaches – if your advisor shouldn't handle it, neither should a chatbot.

04 Don't Undermine Students' Connections to Humans

- Enable students to immediately access a human (an advisor or another staff member).
- Strengthen collaboration among parents, counselors, community members, and students by recognizing when human connection is most beneficial and facilitating meaningful engagement with supportive adults.
- Implement additional adult oversight (including communication with parents/caregivers/advisors) that respects student privacy and trust.
- Support social capital development and the development of relational skills.

05 Design for the Vulnerability Adolescents Have to Manipulation by and Dependence on Technology

- Set interaction time limits with chatbots.
- Create age-appropriate defaults in privacy settings
- Allow users to leave.
- Build tools to specifically support the development of students' skills and independence.
- Avoid manipulative chatbot behaviors, recognizing that adolescents have heightened social sensitivity, are developing impulse control, and are less likely to question the accuracy and intent of information chatbots offer.

06 Design for Culturally Diverse Relationships Norms

- If using training data, ensure that it includes students from diverse cultural backgrounds.
- Involve youth from diverse cultural backgrounds in the process of designing and/or testing relational chatbots.
- Responses should be personalized so they are as relevant as possible.

07 Ground Approaches to Relational Support in Evidence

- Use evidence from psychology and youth development fields to design evidence-based emotional and motivational support.
- Best practices will change quickly as relational AI becomes more widespread and AI technology advances; regularly update tools to employ the latest best practices.

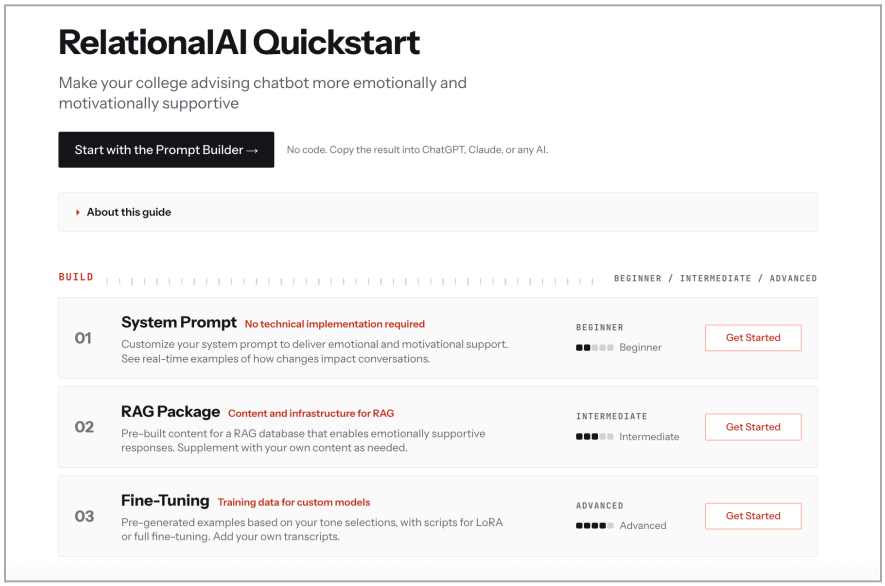
08 Use Relational Chatbots to Drive Outcomes

- Develop a clear program logic model outlining how relational chatbots will support students to achieve program outcomes.
- Develop an explicit monitoring, evaluation, and learning plan to guide assessment of whether relational AI improves outcomes.
- Avoid using engagement alone as the metric for success.

The technical quick-start guide: making chatbots emotionally and motivationally supportive

The core of the project was developing and testing a technical quick-start guide that enables easier piloting and implementation evaluation of relational chatbots by providing clear instructions, prompts, and code to help postsecondary advising organizations adapt their chatbots to be more emotionally and motivationally supportive. This technical guide, which works independently of an organization's chosen frontier model, could open the door to scalable technical assistance for organizations that want to adapt their advising chatbot to be more motivationally and emotionally supportive. Practitioners from five postsecondary advising organizations, Matriculate, The Scholarship Academy, OneGoal, The Urban Assembly, and College Possible piloted the technical quick-start guide. These five practitioners used conversational agents representing different engineering environments, allowing us to test all aspects of the quick-start guide and learn with and from them. At the time of this project, we were not aware of any public school using its own advising chatbot models to support postsecondary counseling.

A chatbot's style and behavior can be adjusted by using prompting for simple instructions, RAG (Retrieval-Augmented Generation) to add searchable documents, or fine-tuning to change weights within the underlying model. To work across organizations with different tech stacks and approaches, the quick-start guide addressed all three ways to make chatbots more emotionally and motivationally supportive and three ways to evaluate the emotional and motivational support they provide.



The technical quick-start guide was developed in accordance with the design principles outlined on page 8, particularly principles 02 and 03, which address student safety. To support students' physical and emotional safety by identifying and escalating mental health crises to a human or

appropriate external resources (Design Principle 02), each quick-start guide approach scans transcripts for crisis language as step one. If crisis language appears, the tool immediately flags it for human review. To ensure chatbots maintain established relational and conversational scope boundaries that mirror the limitations of professional human coaches (Design Principle 03), all three approaches let the organization upload and use its specific protocols for bringing in a human and other escalation policies.

- **Customized System Prompt:** *This option requires no complex technical implementation, just the ability to edit a chatbot's system prompt.* A customized system prompt means writing text rules directly in the system setup. This approach lets users customize elements of a pre-existing system prompt to deliver emotional and motivational support in the ways an organization selects. The quick-start guide includes a library of system prompts a team can draw from, plus a tool to customize them to the organization's tone and approach.
- **Emotionally Supportive Retrieval-Augmented Generation (RAG) system:** *This option requires the ability to edit the source files the chatbot draws from, or to set them up, and it involves intermediate technical complexity.* RAG means connecting your chatbot to an outside library of files, like an advisor training handbook. This lets the user enhance the content and infrastructure of a RAG database to facilitate more motivational and emotionally supportive responses. The quick-start guide provides content that can be supplemented with custom content.
- **Fine-tuning:** *This option is the most technically complex as it requires a fairly advanced technical setup and skill set.* Fine-tuning means changing the AI model's inner brain and settings using a large set of specific examples. The quick-start guide's fine-tuning option is loaded with pre-generated examples based on the selected tone/approach and scripts to support either LoRA (Low Rank Adaptation) or full fine-tuning. Can be supplemented with the organization's chat transcripts or examples.

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In addition to updating the chatbot's tone and behavior to better match an organization's specific context, the quick-start guide includes three approaches to evaluate the chatbot's motivational and emotional support implementation. The evaluation tools automatically strip personally identifiable information (PII) from the transcript, such as participant and staff names, dates of birth, or location (among others). A human approves all redactions to ensure PII is removed and the transcript is redacted in line with the organization's standards of practice. The approaches to evaluating/assessing implementation of emotional support are:

- **Support for Human Review:** *Simple and low-lift to implement; it can be used with any of the engineering techniques.* This system extracts and classifies parts of conversations relevant to emotional and motivational support, enabling human review and analysis.
- **Rubric-Based Evaluation:** *Simple and low-lift to implement; it can be used with any of the engineering techniques.* This system helps evaluate chat transcripts against a customizable rubric to assess the emotional and motivational support provided.

- **Training Data Curation:** *A more technically advanced implementation; it is used only to evaluate fine-tuning*. This system curates datasets for fine-tuning, exporting pre-analyzed conversations in OpenAI, ShareGPT, or Alpaca formats with ready-to-use train/validation/test splits.

We encourage interested practitioners to explore the web application and see how different selections affect simulated conversations, or to download packages into a safe, isolated environment where you can test these approaches with your chatbot without risking your live systems or data. The technical quick-start guide is free and open to everyone.

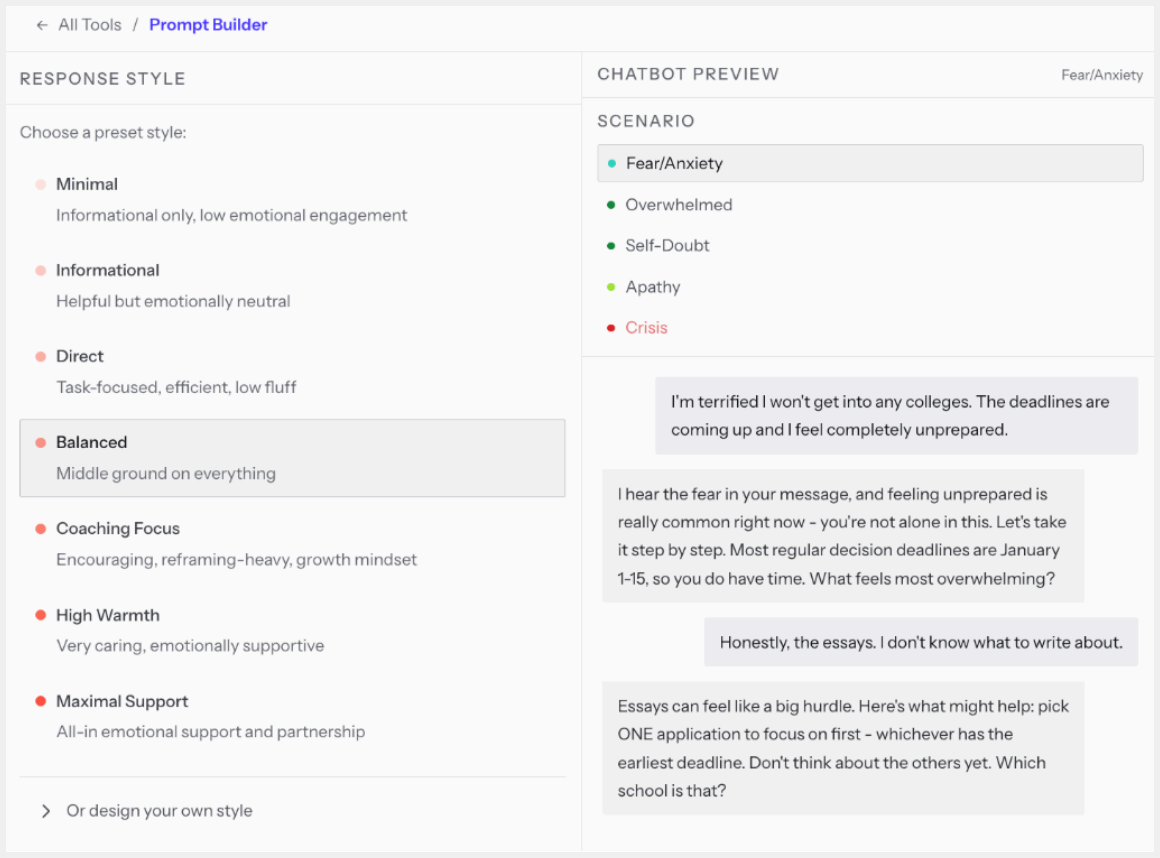
What did we learn from this project?

All three approaches to adjusting chatbots' motivation and emotional responses worked, whether by using prompting for simple instructions, RAG (Retrieval-Augmented Generation) to add searchable documents, or fine-tuning the underlying model. This means that even organizations with limited technology capabilities can use system prompting to adapt lower-cost chatbots to be more relational when interacting with students. RAG-based chatbots and chatbots with adjustable model weights give organizations more control over responses, but they are also more expensive and require greater technical capabilities. Organizations and schools do not have to delay exploring chatbots because of concerns about the costs and technical capabilities required for these more sophisticated models.

Replicating, through a chatbot's responses, an organization's distinct approach to providing motivational and emotional support to its specific student population goes to the heart of the value proposition for the student and the organization's brand. As more organizations and schools use chatbots and large language models become more adept at postsecondary advising, this specificity of tone and approach will set organizations apart from each other and from frontier models. Not surprisingly, adapting a chatbot to an organization's relational tone and practice requires program staff to partner with the technology team. The technology itself is straightforward; deciding what level of warmth is appropriate and what a good answer looks like for any individual organization takes time and team reflection. For organizations and schools considering using chatbots for post-secondary advising, allocating team time across disciplines is necessary.

- **An organization needs to agree on warmth/emotional depth and when to escalate to a human.** The chatbot's emotional and motivational tone must align with the organization's values, norms, and the training of human counselors. This generally involves multiple stakeholders, and our practitioners met numerous times to ensure the tool's tone fit their unique organization and to agree on rules for escalating to a human. Haisu Qu, Senior Director of Program Innovation at OneGoal, shared that: "We needed the right tone so our

advisors can seamlessly jump in and respond to students at any point. It's not just a standalone chatbot; it works hand-in-hand with our advisors' support." Derick Hutchinson, Senior Director, Salesforce at College Possible, said their team experimented with preset tone options in the builder tool, such as Balance and Coaching Focus, to determine what fit them best. Practitioners could test different relational AI response styles such as Direct, Balanced, High Warmth, and Maximal Support. Hutchinson reflected, "We were kind of leaning between Balance and Coaching Focus... (and decided on) Coaching Focus, because it is a little more empathetic."



- **No single definition of a good response exists.** While there may be a one-size-fits-all response to a FAFSA deadline, what qualifies as a good motivationally and emotionally supportive answer was unique to each organization. For example, The Urban Assembly ultimately decided not to allow emotional support at all and wanted to focus exclusively on motivational support. The Urban Assembly wanted their chatbot to provide motivational support while recognizing when a student's needs call for human support. "In those situations, we want the AI to acknowledge what the student is expressing and appropriately transition them to a trusted adult rather than attempt to serve as a substitute for that relationship. Part of our rubric is assessing how well the system recognizes those boundaries and connects students to people," said Habib Bangura, Managing Director of Programs, The Urban Assembly. However, Christopher Mance, Chief Technology Officer at The Scholarship Academy, wanted something different. "I

would expect high warmth to be the exact right choice for your particular circumstance. Because you're dealing with something that makes people feel very anxious . . . I feel like the warmth is exactly the tone that I would try first."

Evaluation is key to helping organizations get it "right" for their student population. Adapting a chatbot to be motivationally and emotionally supportive requires strong evaluation plans and tools that support human oversight and learning. While outside the purview of this project, these tools are also vital for monitoring and assessing how a chatbot works over time. Evaluation should be part of any organization or school's plans to adapt and monitor a chatbot. Use the tools in the quick-start guide or plan to invest in other evaluation tools or methods to ensure their chatbot is following your policies, tone, and approach.

- **Implementation evaluation of tools is critical.** Each organization customized the rubric-based evaluation tool to meet its needs in assessing the tone and quality of their chatbots' motivational and emotionally supportive responses. For prompts, RAG, or fine-tuning to work well, this type of tool is necessary to evaluate implementation effectively at scale. For example, Leonel Olmedo, Senior Technology Director at Matriculate, noted that their "non-fine-tuned model's responses were comprehensive and read well on the surface, but failed to meet appropriate standards for minors when run through our [customized rubric-based evaluation tool]. In comparison, Matriculate's fine-tuned model, trained on human and artificial data, was able to score a 4+ out of 5 on the evaluation rubric on the same set of questions."

- **The rubric-to-implementation evaluation-to-improvement loop drives success.** This reflects a broader trend in how AI is used in cutting-edge applications, where defining what good looks like (a rubric) is an increasingly important part of getting value from AI. Specifically, this was a very important component of The Scholarship Academy's ability to drive relational fidelity in their chatbots' responses. Like Matriculate, The Scholarship Academy also used the customized rubric-based evaluation tool to assess RAG relational supports, and shared in their report that "the clearest positive finding is the improvement in relational fidelity, which reflects how consistently the chatbot delivers supportive, validating, collaborative responses that help students move toward a clear next step. [The evaluator tool] shows a material shift from primarily transactional answers to responses with greater warmth, validation, collaboration, and next-step support; the fidelity rubric moved from a baseline score of 2 to 4 out of 5 after implementation."

Matriculate was the only organization that piloted the fine-tuning tool; it is the most expensive of the three options for adjusting a chatbot's relational responses. Fine-tuning works by giving a chatbot hundreds or thousands of ideal question-and-answer pairs so it learns a special voice, giving practitioners more control over its voice and tone. Olmedo explained that "Matriculate's working hypothesis is that with enough high-quality training data, a fine-tuned model will learn to

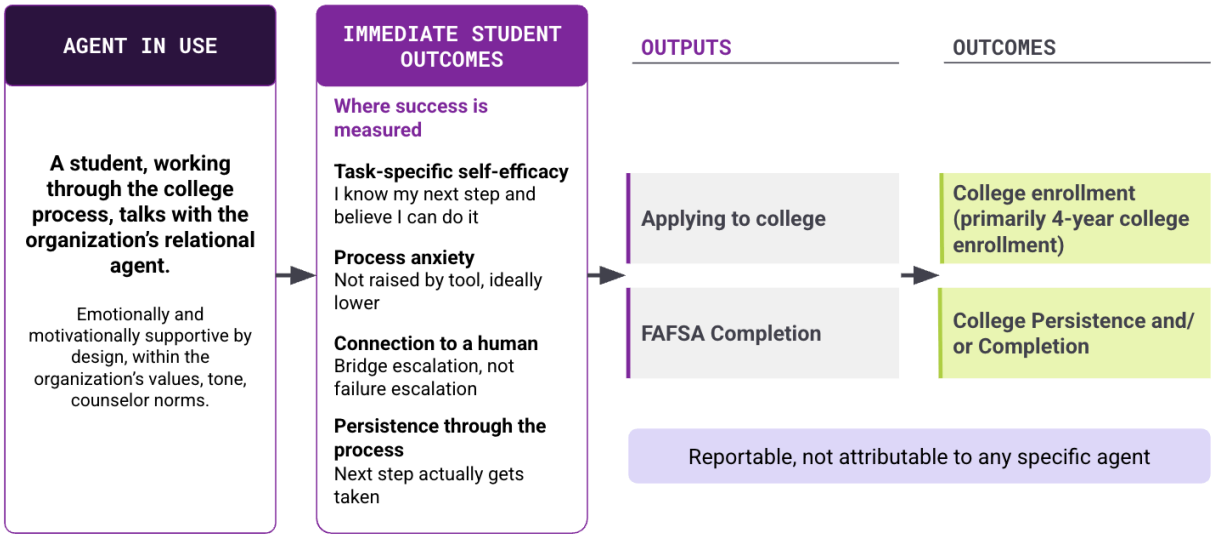
engage our students in a way that's better calibrated to advising minors than a general-purpose model can achieve on its own." Writing thousands of ideal matched question-and-answer pairs could be a joint project across postsecondary advising organizations, reducing the cost of fine-tuning. While this could dilute individual organizational voice, it could also be a shared resource for organizations or schools that choose a chatbot, allowing them to fine-tune and maintain their distinction from current postsecondary responses from large language models.

How to measure success

Our core hypothesis, that chatbots could be adjusted to provide motivational and emotional support in a style and behavior that is customized to a practitioner's own norms, values, and desired tone, had a positive demonstration through implementation evaluation. The three evaluation approaches in the quick-start guide (support for human review, rubric-based evaluation, and training data curation) helped five organizations confirm that their chatbots could carry the emotional and motivational tone they expect of their own counselors. These results show that the chatbots behaved relationally; they do not yet show that students experienced them that way. However, the underlying hypothesis that motivational and relationship support is an impactful part of advising remains ripe for further investigation and investment to build causal evidence that can inform postsecondary advising program design and relational chatbot investment.

The next step for this work is to assess the success of the relational aspect of chatbot-supported advising by measuring students' motivation and emotional state immediately after the interaction and whether they then take the next step.

Relationship and motivation matter for postsecondary advising



Design Principle 08 (Use Relational AI to Drive Outcomes) asks organizations to avoid using engagement alone as the metric for success, and Design Principle 02 (Support Physical and

Emotional Safety) asks them to build "stickiness" through value rather than attention. Both rule out the metrics that are the easiest to collect and most likely to be requested. Session counts, message counts, and time spent in conversation indicate whether students used the agent. In a tool built for adolescents, rising engagement is as consistent with dependency as with benefit. Usage data and student satisfaction still belong in the framework, but as guardrails, they are monitored for signs of dependency or harm (for example, frequent late-night use or lengthening sessions) and are not evidence that outcomes have improved.

The promise of relationally supportive chatbots in postsecondary advising is specific. A student will leave a conversation with a chatbot knowing what to do next and believing they can do it; they will feel less alone in the process, not more anxious about it; if they need a person, they will reach one; and they will take the next step. Each of those is measurable, some as observable behavior and others as students' own reports; each is a hypothesized link between the interaction and the outputs the field tracks; and each can be measured without waiting a year for postsecondary or college matriculation data. The outcomes draw on established theory: self-efficacy (Bandura), the control-value theory of achievement emotions, and developmental relationship research. Persistence through the process is the primary outcome. The other three help explain whether, why, and for whom students take the step.

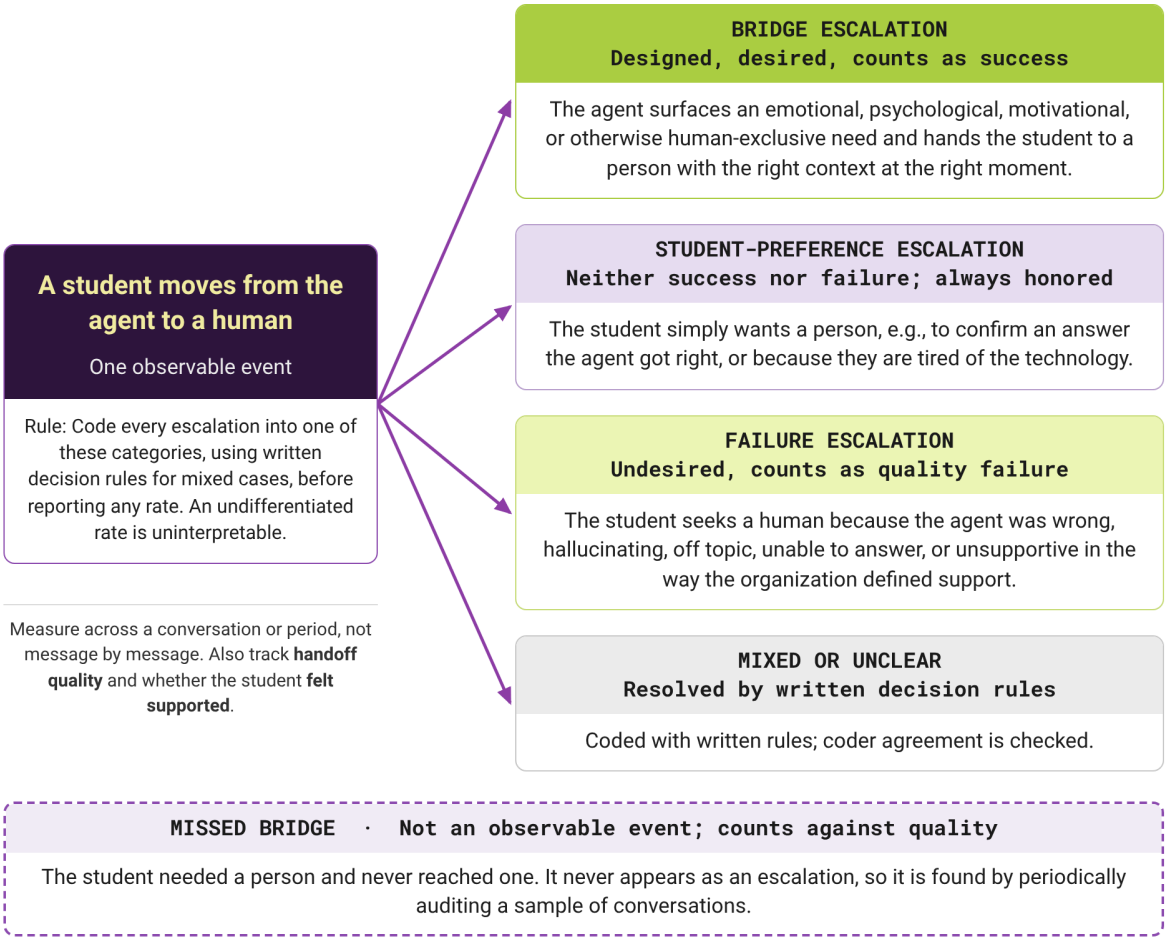
- **Task-specific self-efficacy.** After the interaction, the student knows the specific next step and believes they can do it: submit the FAFSA, request the transcript, and draft the essay. This is not global confidence. It is confidence about a specific task, immediately following the interaction. It has two indicators: whether the student can state a plan (what, when, and where), and how confident they are. Because encouragement can build confidence that fades, measure it again just before the student attempts the step. If a conversational agent cannot influence this, it is not providing meaningful motivational support.

- **Process feels manageable.** The student finds the application and financial aid process more manageable after the interaction than before. Lowering anxiety alone is not the goal. A chatbot that eases anxiety by downplaying the stakes removes the reason to act. As a guardrail, the tool itself should not raise the student's anxiety. Because this is the outcome most tied to the relational design and the hardest to measure, it should be triangulated from brief items drawn from validated scales, response options built into the conversation, and what students write.

- **Connection to a human.** This outcome is protected by Design Principle 04 (Don’t Undermine Students’ Connections to Humans), which requires a distinction the rest of the framework depends on. A student moving from the chatbot to a human is a single observable event that can mean opposite things. When the conversational agent recognizes an emotional, psychological, or otherwise human-exclusive need and hands the student to a person with the right context at the right moment, that is a bridge

escalation. The tool is working, and it counts as success. When the student seeks a human because the chatbot was wrong, off-topic, or unsupportive, that is a failure escalation. It counts against quality. Two other cases matter. A student may simply prefer a person to confirm an answer the bot got right, or because they are tired of the technology. That is neither success nor failure, and the request should always be honored. A student may need a person but never reach one. These missed bridges never appear as escalations and can only be found by periodically auditing a sample of conversations. An undifferentiated human-contact rate is uninterpretable; every escalation must be coded into one of the categories, in accordance with the organization's escalation rules (with written decision rules for mixed cases), before reporting any rate. Because not escalating is often the right call, this outcome should be measured across a conversation or period rather than message by message, and should include the quality of the handoff (did the student connect with a person who had the right context?) and whether the student felt supported.

Human contact is several metrics, not one



- **Persistence through the process.** The student completes the intermediate step that was the focus of interaction with the conversational agent. This is the behavioral trace closest to the interaction, and it is the point where the four immediate outcomes hand off to the outputs the organizations already track. Where possible, completion should be verified through records such as FAFSA status or a transcript request rather than self-report.This approach assumes a mechanism: A student knows the next step, feels able to take it, has someone to turn to if needed, and then takes it. The analysis should test each link in that chain and for which students and contexts it holds.

These outcomes should be measured before and after use, through brief items embedded in the conversation itself, rather than through lengthy surveys. Chat transcripts are also data. They can be scored with classification or language models, validated against a sample coded by people, with a person kept in the loop, provided conversations are redacted or scored within the organization's own systems. Of course, user testing on the above measures should be with students who had no part in building or tuning the conversational agent. Any organization adopting the quick-start guide can begin with these four outcomes now. Doing this will require developing and validating the measures and coding rules, work that should not fall on each nonprofit. In the next phase, this will be done with the organizations that piloted the quick-start guide and shared in a forthcoming companion toolkit. What it takes most is the discipline to measure what the agent promises rather than what is easiest to count.

Building evidence in stages. This framework is a first step, not the last word on impact. Organizations can begin by measuring the four outcomes before and after use, coding escalations, and capturing student and context factors up front. Where platforms allow, they can then compare versions of the chatbot (for example, a warmer versus a more direct tone) to see whether the relational design adds value beyond a transactional tool. Matched comparisons across sites or over time can then show which students and settings benefit most, and at what cost. A randomized trial, if warranted, belongs later, once the tool is stable enough to test.

Protecting students. The students with the most to gain from relational chatbots also have the least power to decline participation. Organizations using this framework should obtain appropriate consent (including parental consent where required); have a protocol for following up when a response signals distress; obtain separate consent before any conversation is used to fine-tune a model; ensure students who opt out keep full access to human advising; report results by student subgroup specified in advance; and present chatbots as a supplement to counselor time, not a substitute.

What funders can decide. Funders can expand support when persistence gains hold up in comparisons and no student group is worse off, adjust when failure escalations or missed bridges rise, and pause on safety signals.

Conclusion: the future of relational chatbots in postsecondary advising

In the coming years, AI will certainly reshape postsecondary counselors' roles as well as change the college and career navigation guidance they provide students given the rapidly evolving job landscape. School counselors already have heavy workloads, and we hope postsecondary advising approaches that deploy chatbots for transactional and relationship support will boost counselor productivity, allowing them to spend more time with students in meaningful discussions about their futures. Enhanced counselor productivity could be a powerful tool for equity, creating more counseling time for students who cannot afford private schools or private college advisors. However, increased productivity for counselors does not necessarily mean enhanced outputs and outcomes for students. More research and development of a chain of causal evidence are needed to test and learn how transactional and relational chatbots impact students and ultimately support their postsecondary goals, including matriculation and persistence in college.

Frontier models will continue to improve, and they are an attractive single door students can walk through to answer all of their questions, not just those about postsecondary paths, including college access. At the same time, the financial costs and technical capabilities required to deploy chatbots will fall, putting these tools within reach of many more schools and postsecondary providers. The opportunity for everyone is to design hybrid postsecondary advising models that identify and incorporate the best of what humans and technology can do to support students in ways that meaningfully improve their postsecondary pathways.

The insight from this project that chatbots used by advising practitioners can be adapted to match the emotional and motivational behavior and tone desired illuminates what future hybrid advising could look like. While we focused on implementation evaluation in this pilot, the outcome framework points the way for future evidence building to determine whether relational hybrid advising enhances students' motivation and supports their emotional well-being in the postsecondary process and fits into a larger chain of potential causal evidence to support postsecondary navigation program design and relational AI investment.

Of course, AI's functionality will continue to rapidly evolve. For postsecondary advising practitioners and counselors who are not currently using chatbots, continue to learn and monitor developments that could influence your decision to use chatbots to support transactional and relational aspects of advising. For those who are ready to use chatbots to support students, we offer this advice from Hutchinson of College Possible as you plan for sustainability of your AI tools: "While (relational support) is so young and infantile in the AI space, changes will happen . . . People should be prepared, not just assume that once you build something, it's done and will just run — because that could change pretty quickly. And it's outside of your control."

Appendix

Quick-Start Guide Pilot Tests

	MATRICULATE	THE SCHOLARSHIP ACADEMY	OneGoal.	The Urban Assembly	COLLEGE POSSIBLE
Building Relational Supports					
Custom Prompting	■	■	■	■	■
RAG		■			
Fine-tuning	■				
Assessing implementation					
Human Review			■		■
Rubric-Based Evaluation	■	■		■	
Training Data Curation	■				

Pilot Organizations Overview & Pilots

- College Possible is making college admission and success possible for students from low-income backgrounds through an intensive curriculum of coaching and support.
- Matriculate is a national nonprofit organization that connects high-achieving, low-income juniors and seniors to highly trained undergraduate advisors – completely virtually – empowering students to attend colleges where they will thrive.
- One Goal partners with schools and districts to make college and career planning integral to the high school experience. They empower entire school systems to provide high-quality advising to every high school student, helping them discover their unique purpose, explore their aspirations, and find college and career success. Their mission is to lead the movement to transform postsecondary advising and support.
- The Scholarship Academy helps organizations create healthier financial aid cultures, where financial aid doesn't happen randomly for low-income families. Instead, it supports them in developing proactive financial aid plans that minimize debt. Their mission is to help low-income students secure resources to pursue higher education opportunities with minimal debt and, thus, create a healthier financial aid culture.
- The Urban Assembly works with schools and districts to build capacity to better serve students through innovative, data-driven learning tools and programs proven to boost student growth and school performance. Over the past 25 years, the UA has developed academic, social-emotional learning, and postsecondary readiness and success tools and programs to ensure that students graduate from high school ready for success in college,

careers, and the community. Urban Assembly's mission is to advance students' economic and social mobility by improving public education.

Design Principles Collaborators Overview

- **Beyond 12** is a national technology-based nonprofit that aims to increase the number of students from under-resourced communities who graduate from U.S. colleges and universities, and translate their degrees into meaningful employment and choice-filled lives.
- **College Guidance Network** is a team of parents, recent college graduates, counselors, and technologists on a mission to democratize expertise for college and career decision-making.
- **College Possible** is making college admission and success possible for students from low-income backgrounds through an intensive curriculum of coaching and support.
- **Get Schooled (powered by Bottom Line)** gives high school and college students free tools, content, and support for the parts of life that don't come with instructions: applying to college, paying for it, graduating, and landing that first job. We meet you where you're at, with clear next steps, timely nudges, and resources you can actually trust.
- **Uprooted Academy** seeks to remove barriers in high school advising for under-resourced students through AI-powered tools- so they can pursue their dreams with clarity and confidence.

Additional Reading

- Case Study: Sustaining Scaled Impact, AI & Technology at Crisis Text Line

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