

Improving College Access Chatbots: A Virtual Convening for Cross-State Learning

May 3, 2023



Housekeeping

- Please drop your name, org, and state in the chat
- Add your org to your Zoom name
- Meeting is recorded
- Camera and mute
- We're hoping for active engagement
- Use chat for comments and questions
- Breaks



Agenda

- Opening Remarks
- Washington's Chatbot, Research, and Emerging Insights
- Mindset, Social Emotional, and Cultural Relevance Aspects of Messaging
- Panel: How are Different States Thinking About Improving College Access Chatbot Efficacy?
- Breakout Discussions
- Closing Remarks

Washington Student Achievement Council

- The Washington Student Achievement Council (WSAC) is the state higher education agency.
- The OTTERS project is part of WSAC's Beyond Government agenda.
- WSAC is working to navigate the space between research, policy, and practice.
- We work collaboratively with partners and aim to build our capacity and the capacity of other state agencies.



OtterBot



OTTERS Virtual Convening, May 2023

Sarah Weiss





Agenda

WSAC's Mission

Washington's Challenges and Opportunities

OtterBot

Future Plans



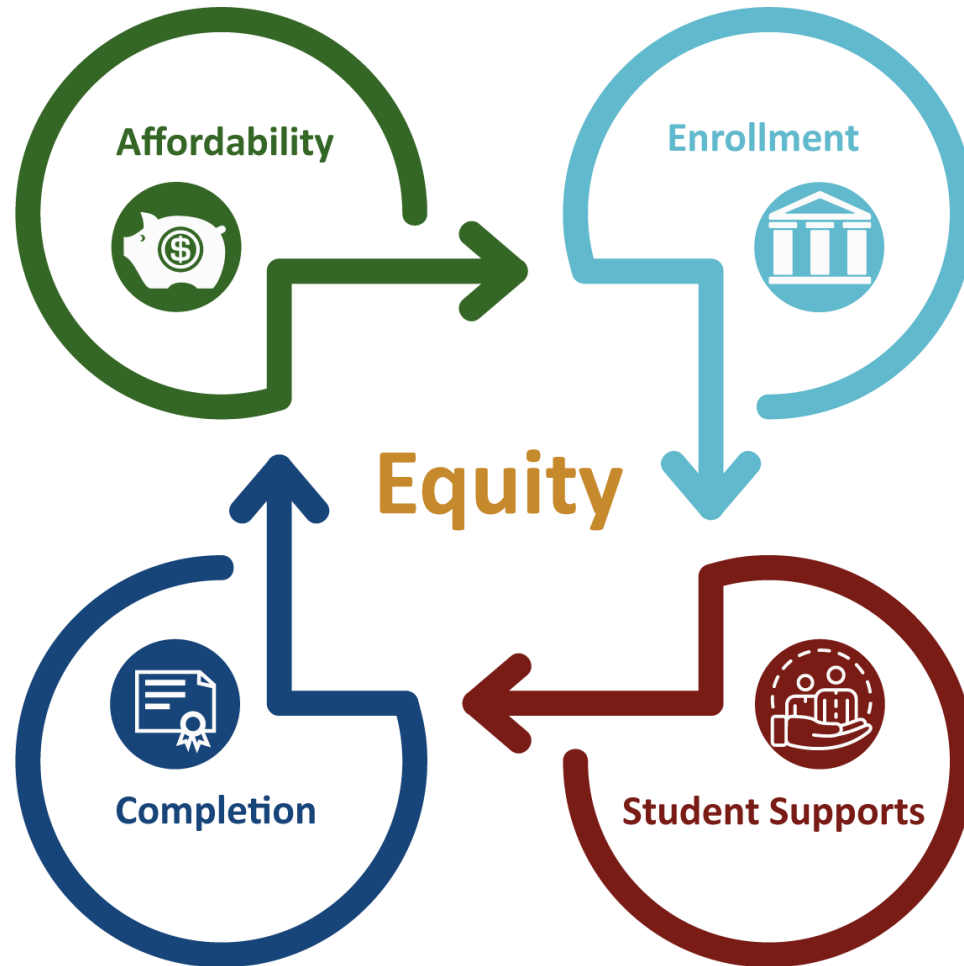
About the Council and Agency



We advance educational opportunities and attainment in Washington.



WSAC's Strategic Framework – Centered Around Equity



Washington's Challenges and Opportunities

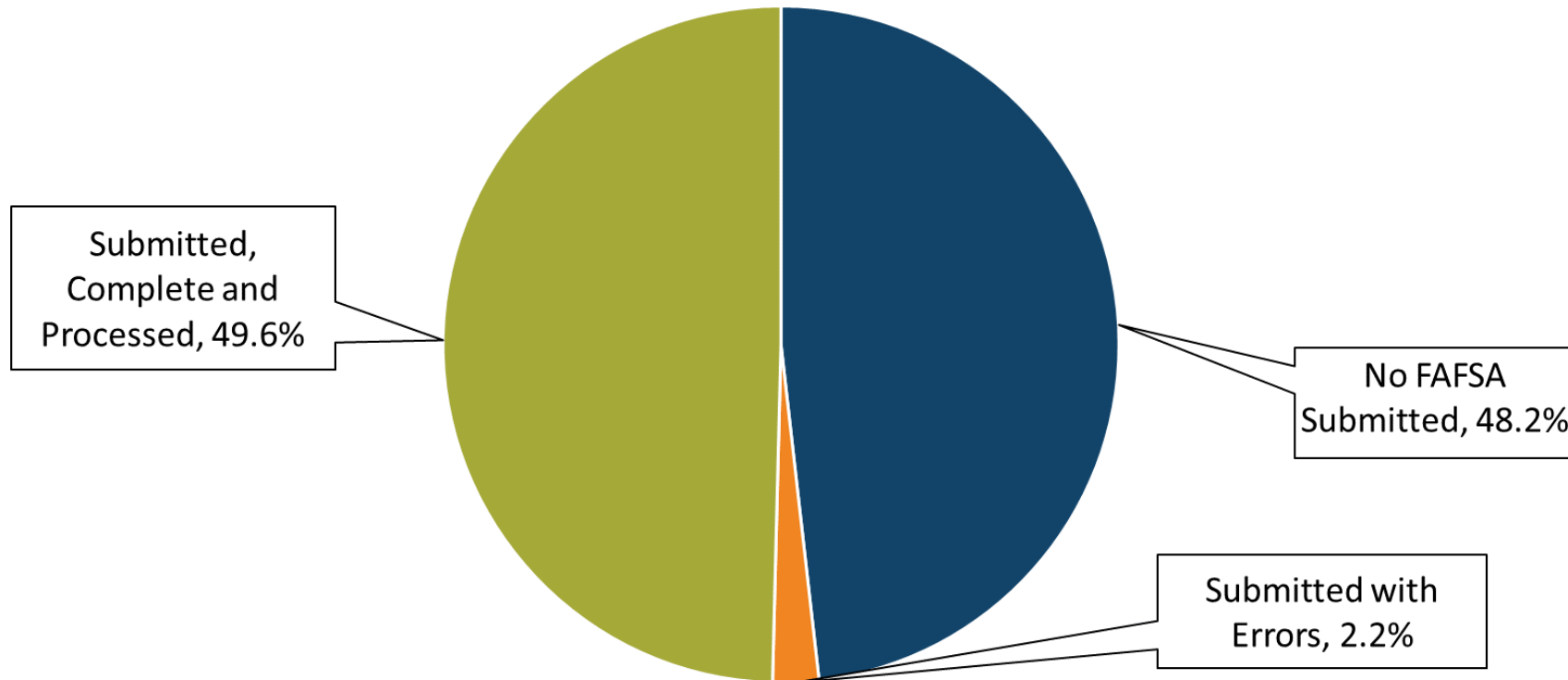
WASH STATE SENIOR HIGH SCHOOL
LEADERSHIP DAY 2011
LEADERS TOMORROW

Handwritten signatures and messages on the banner include: Michael Wagoner, Payton U of t, Natabe Kelly, Taylor Hubbard, Bridget Penney, Micaela, Braden Schmundt, Jordan Swenddal, Emma Lynn, Brenda Kellen, J-Bueno, Omar Magaña USN, Hooyah!, Nick Ford USARMY hoah!, The Vanhoff USN, Kim Palmer US Marines, USAF Air Force, Maddie Davis Go Dawgs!, Mikah, and Ashley Espinoza.



Nearly Half of WA Seniors Did Not Complete a FAFSA Last Year

WA Public HS Graduates, FAFSA Completion 2021-2022





Aim Higher Washington



The combination of the Washington College Grant and the investment to increase financial aid applications provides a unique opportunity to engage statewide.

WSAC's affordability initiative focused on increasing financial aid applications (FAFSA/WASFA).

- 12th Year Campaign
- Outreach to students, parents, and local educators
- Partnerships with education and government leaders
- Digital Tools, including texting (OtterBot) to CBS students and families



College Bound Scholarship Commitment



Combines with other state financial aid to cover the average cost of tuition (at public rates), some fees, and a small book allowance = **commitment**.



Can be used at over **65** two- and four-year public and private colleges and universities.



The Inner Workings of OtterBot





What is OtterBot ?

Texting Service - Help with Financial Aid & Postsecondary Navigation.

Mixed Bot – Imports and Open Text Line

wsac.wa.gov/otterbot





OtterBot Basics

- Launched in November 2019 with Legislative funding

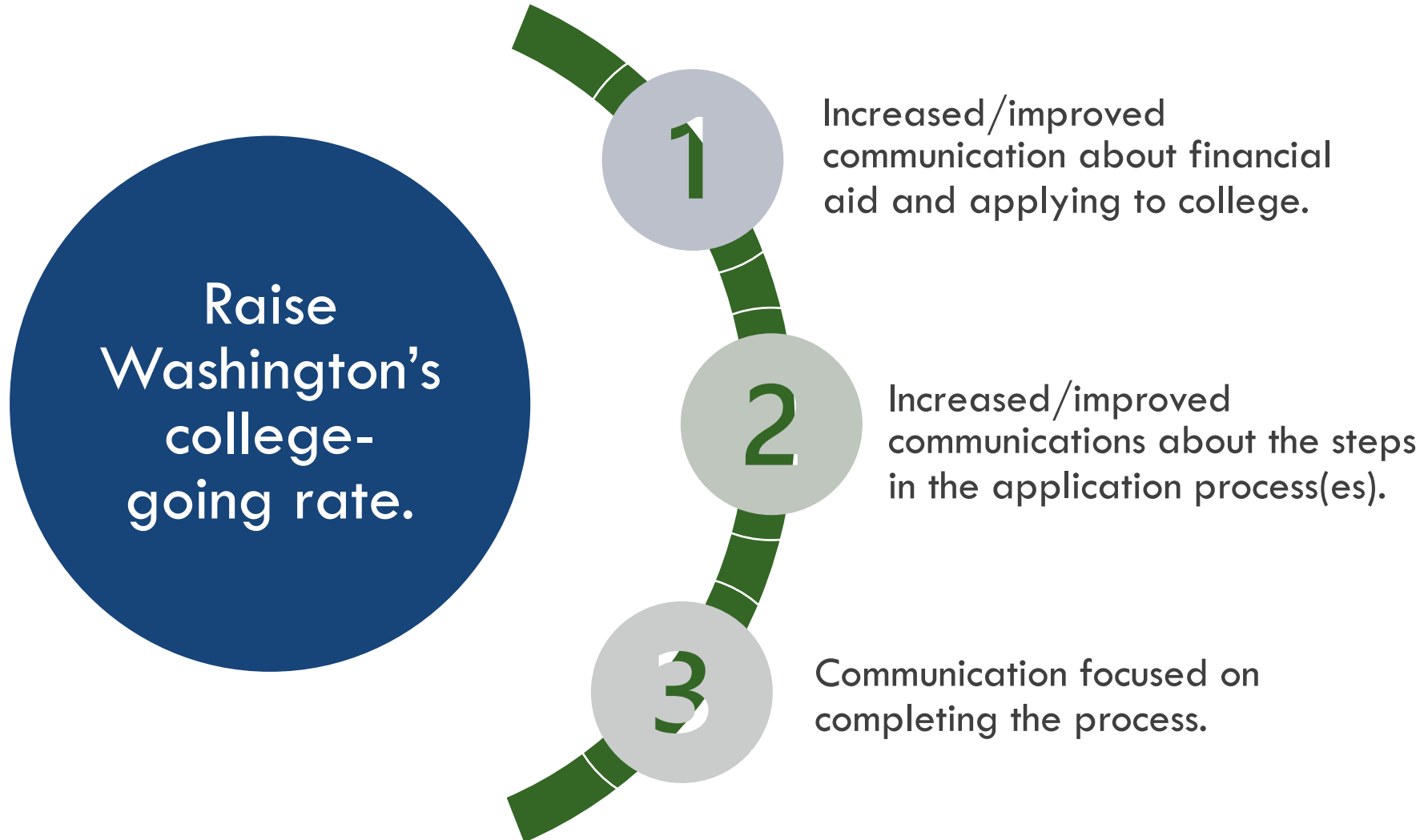
- Mainstay (AdmitHub)'s platform

- Started by supporting approximately 15,000 College Bound Scholarship seniors





What Are The High-Level Goals?





Who is OtterBot Supporting – Spring 2023?



High school juniors and seniors enrolled in the College Bound Scholarship Program



Any other Washington State student who opts in to receive support



Parents of College Bound Scholarship juniors and seniors



Future: 9th/10th graders



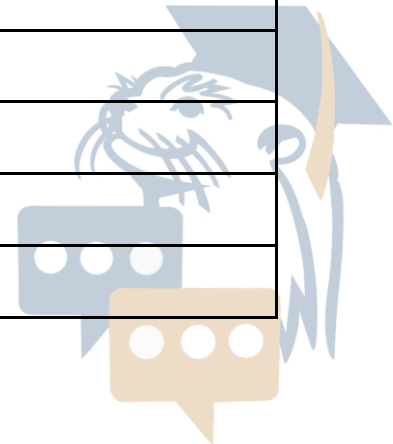
Future: Get Schooled Partnership for those who already graduated





Who is Receiving OtterBot Messages?

Race/Ethnicity	Distribution of Students who Receive Otterbot Messages	Distribution of Students at WA K-12 Schools
Hispanic/Latino	50%	25%
White	31%	51%
Black/African American	6%	5%
Asian	5%	8%
Two or More Races	5%	9%
Native Hawaiian/Other Pacific Islander	1%	1%
American Indian/Alaskan Native	1%	1%
Total	100%	100%





Plans for the Future?

Use data
and insights
from the
OTTERS
project to ...

1

Improve audience segmentation & cadence to increase engagement with OtterBot.

2

Create relevant & engaging content to increase follow-through (FAFSA and WASFA completion).

3

Expand the reach of OtterBot to parents, younger students, first-year college students.





Sarah Weiss

Director, College Access
Initiatives

sarahwe@wsac.wa.gov

360.485.1003



Optimizing Texting Technology through Engagement Research with Students (OTTERS) Project

May 3, 2023



Agenda

- Overview of OTTERS – Phase 1
- Discovery Process
- Focus Groups
- Quantitative Analysis
- Looking forward

Overview of OTTERS Project – Phase 1

➤ Goals of Phase 1

- Understand how students are engaging with OtterBot.
- Understand student needs, reactions to OtterBot, and perceived barriers to college.
- Learn how OtterBot can be more effective in helping students receive financial aid and access education and training opportunities after high school.

➤ Key Activities in Phase 1

- Discovery Process
- Quantitative Analysis
- Focus Groups
- Survey



OTTERS Discovery Process & Focus Groups

Objectives

- Learn about the OTTERS diagnosis and design process
- Learn new ways that make it easier for students to take actions that align with goals
- Develop greater understanding of:
 - Data techniques to better understand processes
 - Behavioral bottlenecks in processes
 - Using effective communication practices

OTTERS Process is User-Centered

Empathy encourages us to walk in the students' shoes to understand needs and behaviors.

Collaboration promotes commitment from staff at all levels to focus on the experiences and needs of students and co-design solutions.

Creativity encourages brainstorming and an action-oriented, hands-on approach to problem solving



Image from McKinsey

Defining the Problem

Understanding Your Problem Is Half the Design Solution!

*"A brilliant solution to the wrong problem can be worse than no solution at all: **solve the correct problem.**"*

— Donald A. Norman

A Clear Problem Statement is...



Specific – clear about which people and what parts of the process are included



Measurable – you can measure the scale of the problem and the impact of any changes you make



Neutral – does not attribute blame or cause

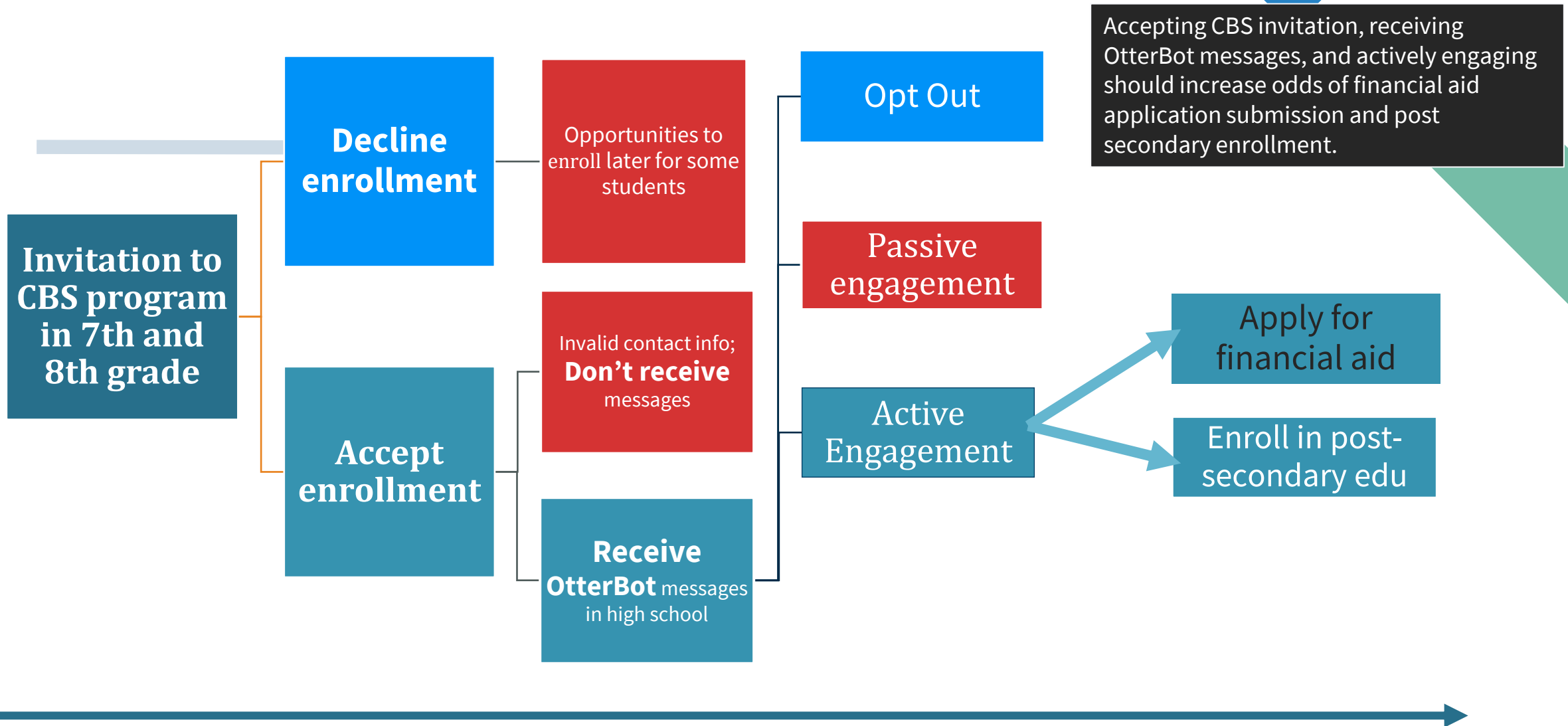
OTTERS Problem Statements

1. Only 39 percent of College Bound eligible students submitted their financial aid applications (FAFSA) without errors.
2. Only 41 percent of College Bound eligible students enroll in college.

OtterBot aims to improve these outcomes, but over half of CBS students are never reached by OtterBot (53 percent).

Clarify

College Bound Scholarship Process



Behind every measurable problem lies a lot of behaviors, decisions, and stories...

Process Step	Student Step (Behaviors and Decisions)	Related Senior Campaigns (2021-2022)
MILESTONE: APPLY TO COLLEGE		
Fee Waivers Help students access college application fee waivers Help students with the documentation needed for application fee waivers	Fee Waivers PREPARE <ul style="list-style-type: none"> Find application fee waivers ACT <ul style="list-style-type: none"> Apply for fee waivers <ul style="list-style-type: none"> Answer fee waiver form questions Provide proof of income documentation Submit fee waivers for each school Pay application fees 	1 nudge campaign Fee Waivers Available
Application Set Up Direct them to Common App website Help them set up an ID	Application Set Up <ul style="list-style-type: none"> PREPARE Identify different platforms for different applications Identify deadlines for different applications Pick how and when to apply <ul style="list-style-type: none"> Early action Early decision Rolling admissions Regular admissions Open admissions ACT <ul style="list-style-type: none"> Create a common app ID and account 	3 nudge campaigns Check Those Deadlines! Schools Still Taking Applications: 3.1% responded Not Too Late to Apply 1 interactive campaign Admissions Types
Admissions Essays Help students identify which college essays to complete Help students identify how much time college essays can take Provide tools for students to help them with their college essays	Admissions Essays <ul style="list-style-type: none"> PREPARE Identify essay requirements for different schools Complete personal statement and supplemental admission essays <ul style="list-style-type: none"> Decide what to write about Research “do’s and dont’s of college essays Outline First draft Review Final Draft Complete resumes activity sheets for admissions ACT <ul style="list-style-type: none"> Upload finalized admissions essays into web portal 	1 nudge campaign Finalize Personal Statement 2 interactive campaigns Essay Check in Resumes and Activities Brag Sheets
Application Submissions Help students identify which schools need additional documents to send Help students send transcripts, admissions letters, and other relevant documents	Submit College Applications <ul style="list-style-type: none"> PREPARE Review all questions in the application Identify questions you need help to answer Draft responses to all questions Request Recommendation Letters ACT <ul style="list-style-type: none"> Review answers and attachments saved in your application for errors Click “Submit!” college application 	1 nudge campaign November Otterbot Challenge – Get Ready for Submit 1 interactive campaign Request Recommendation Letters
	ACT <ul style="list-style-type: none"> Review answers and attachments saved in your application for errors Click “Submit!” college application 	2 nudge campaigns Final Application Checklist December Otterbot Challenge: Submit an Application
	FOLLOW UP <ul style="list-style-type: none"> Submit any additional relevant documents like transcripts Confirm with school if they have sent all relevant documents on their end (recommendation letters) 	1 nudge campaigns Sending Scores and Transcripts

Literature Findings

- National chatbot interventions have been tested but impacts have tended to be modest.
- Conversations with experts suggest promising approaches might include making messages:
 - data driven,
 - timely,
 - providing personalized information,
 - coming from trusted sources (e.g. counselor),
 - facilitating connections to people.

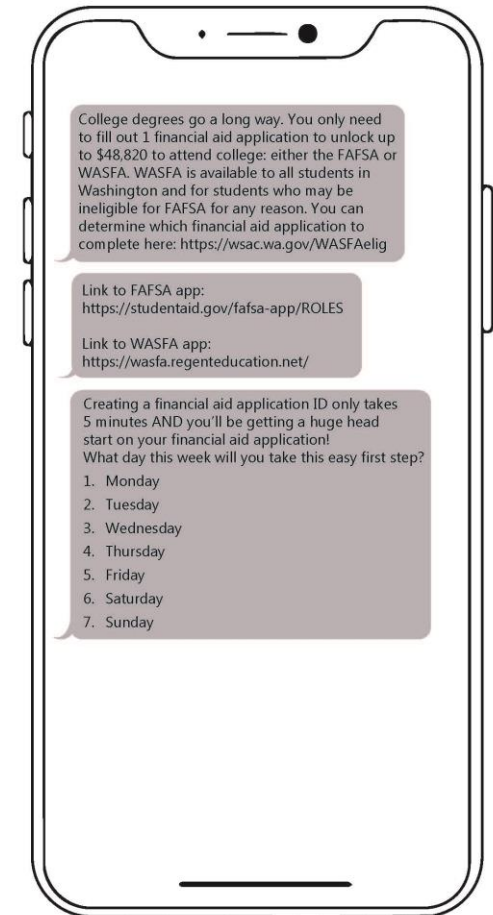
Diagnosis

What are some hypothesized reasons that students are not using OtterBot and/or not enrolling in college?

Focus Groups

- Goals
 - Gauge student familiarity and perceptions and expectations of bots more generally
 - Co-creation and improvement of messaging design and outreach strategy
- The research team of WSAC and MDRC ultimately visited 7 high schools across the state of Washington
 - 12 focus groups with a mixture of junior and senior students (approximately 120 students)
 - 1 focus group with a group of parents (22 parents)

Wireframe #1: FAFSA or WASFA form



Focus Group Findings

General OtterBot Engagement

- Information overload
- Lack of trust in bots and automated messages
- Translation and literacy



Related Recommendations:

- High demand for texts with deadlines and reminders
- Banner notification saliency
- Short intro messages
- 5-digit phone numbers
- Trust worthiness of links
- Introduced by a trusted person
- Intros in English and Spanish
- Parental campaigns require different language choices

Focus Group Findings

College application and enrollment

- Academic preparedness and self-efficacy likely mediates engagement and demand for different message content
- Uncertainty avoidance
 - Especially salient for first generation students
- Parental support



Related Recommendations:

- Comfortable asking “dumb questions”
- Using commands
- Personalized information
- Localized lists of colleges and career information
- Desire to indicate preferences and interests
- Help students talk to parents
- Reminders and deadlines
- Different language choices

Focus Group Findings

Financial Aid

- Hassle factors →
 - Financial anxiety and awareness →
 - Trust in institutions
 - Distrust in institutions is mediated by public service delivery →
 - “Too good to be true” →
 - Parental support →
- Related Recommendations:**
- Link to begin FAFSA and associated reminder
 - Information about scholarships and individualized eligibility for college aid
 - Use trusted messenger to introduce chatbot
 - Use information to personify WSAC
 - Guidance on how to talk to parents
 - Bulleted list of what parents need to complete

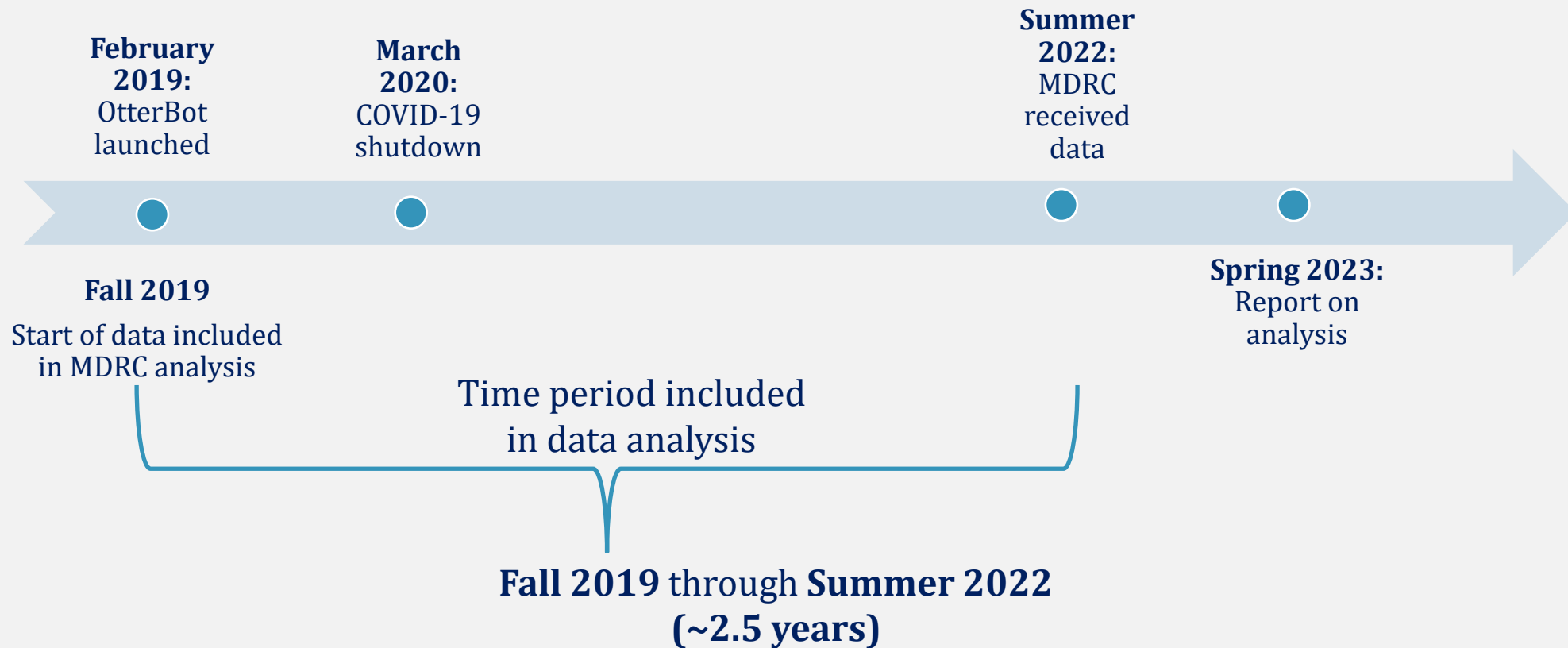
OTTERS Quantitative Analysis

What are some ways you have used data analysis to inform your chatbot performance?

Research Questions

1. What are the characteristics of students in CBS and of students who receive OtterBot messages?
2. Of those students who are enrolled in OtterBot, how many ever actively engage? How many opt out? Which student characteristics are associated with engagement and/or opting out?
3. How many OtterBot users are attaining key outcomes (e.g., financial aid application completion, college matriculation)? To what extent are key outcomes associated with engagement patterns and/or student characteristics?

OtterBot Key Time Points



Data Sources

OtterBot Usage

Financial Aid Applications

National Student Clearinghouse

*College Bound Students are assigned to a cohort based on their expected graduation year. Since the timeframe is different for each distinct dataset, we can only analyze cohorts for which we have **complete** data (i.e., OtterBot Usage, Financial Aid, & College Enrollment). Currently, the cohorts in our analyses are associated with graduation years 2020 and 2021.*

Methods

Sankey flows and funnels

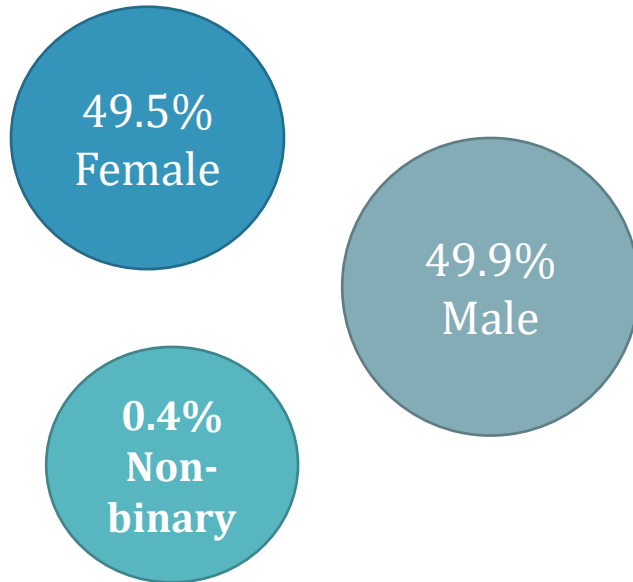
OLS and Logistic Regressions

Random forests and variable importance analyses

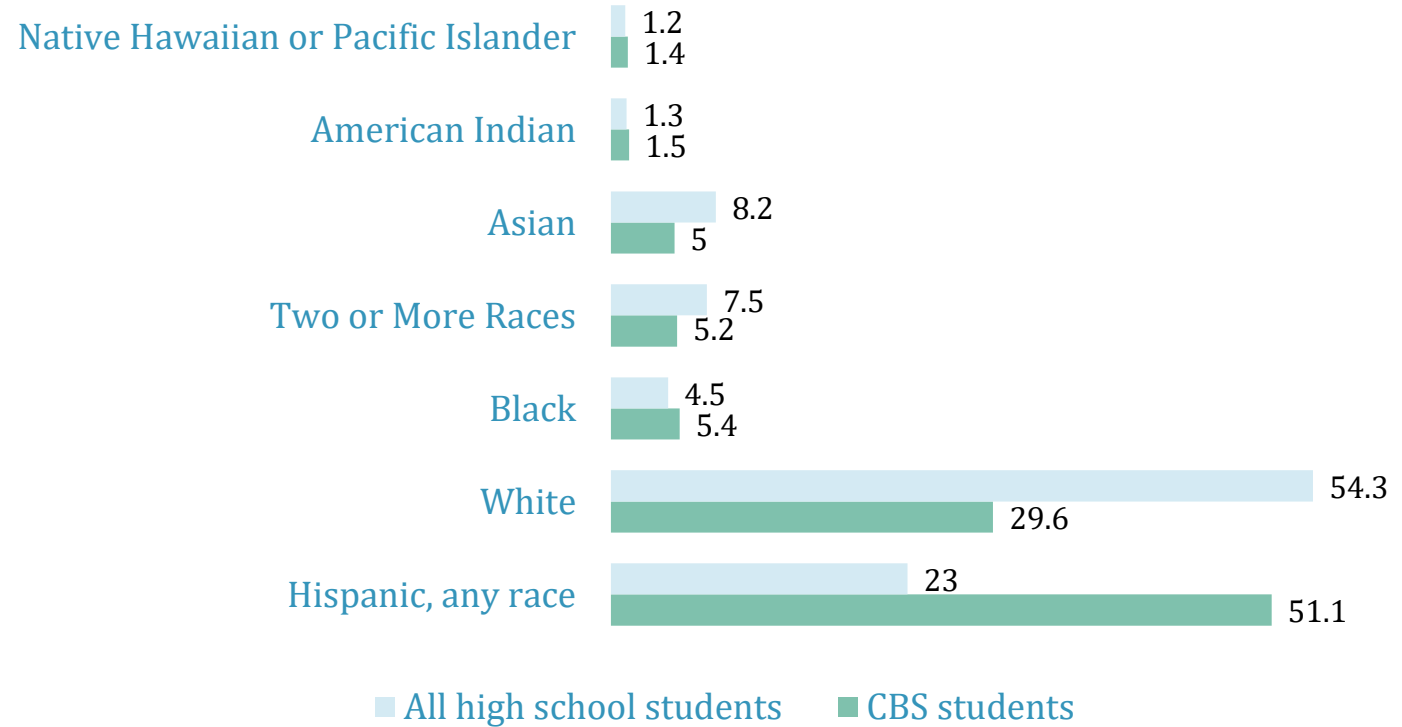
The quantitative analysis of administrative records is part of a mixed methods approach commonly used in market research to triangulate across data sources to get a more comprehensive understanding and richer context and insights. Any one of these data sources is limited.

CBS Student Characteristics

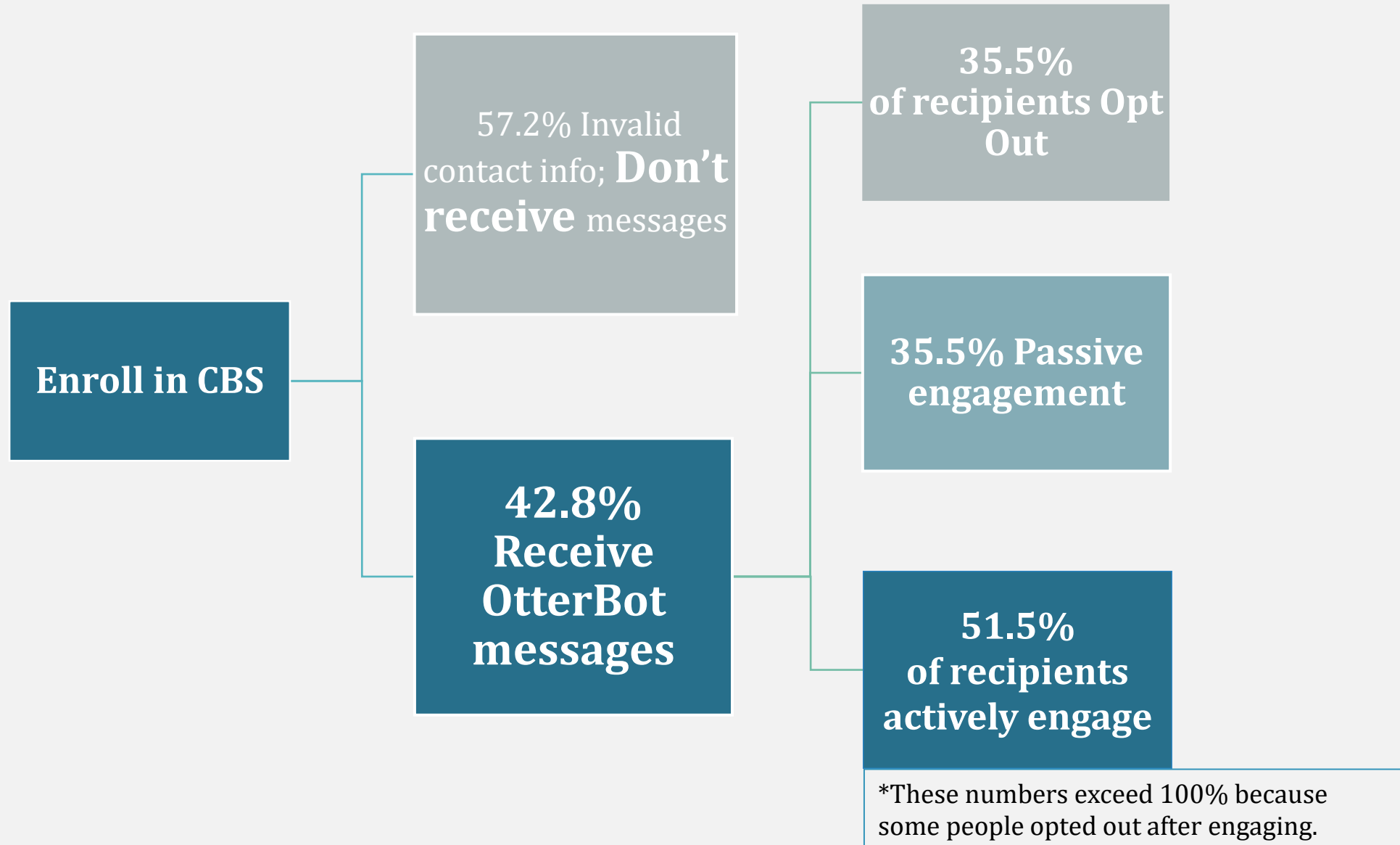
Gender/ Sex



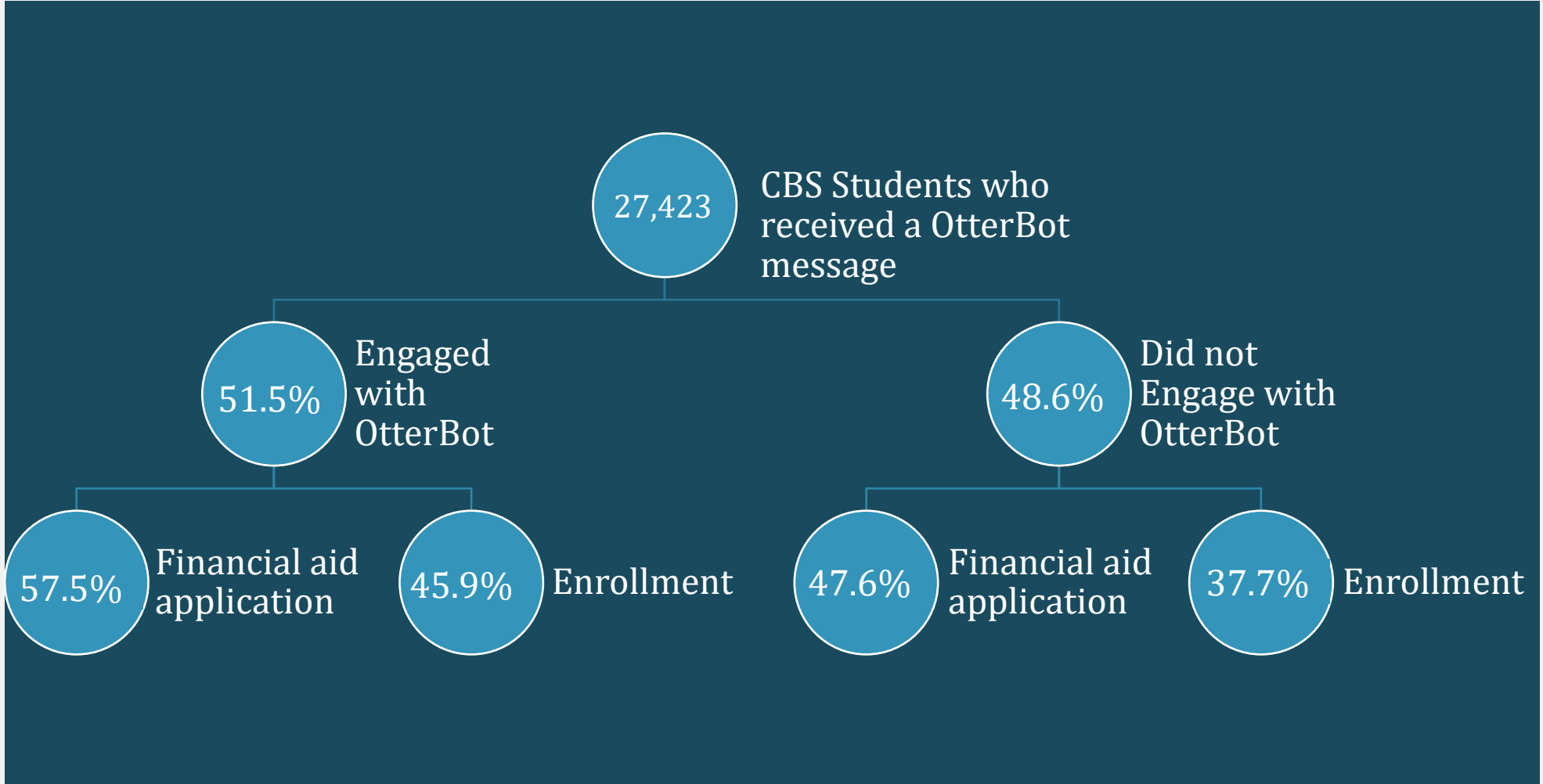
Race/Ethnicity (%)



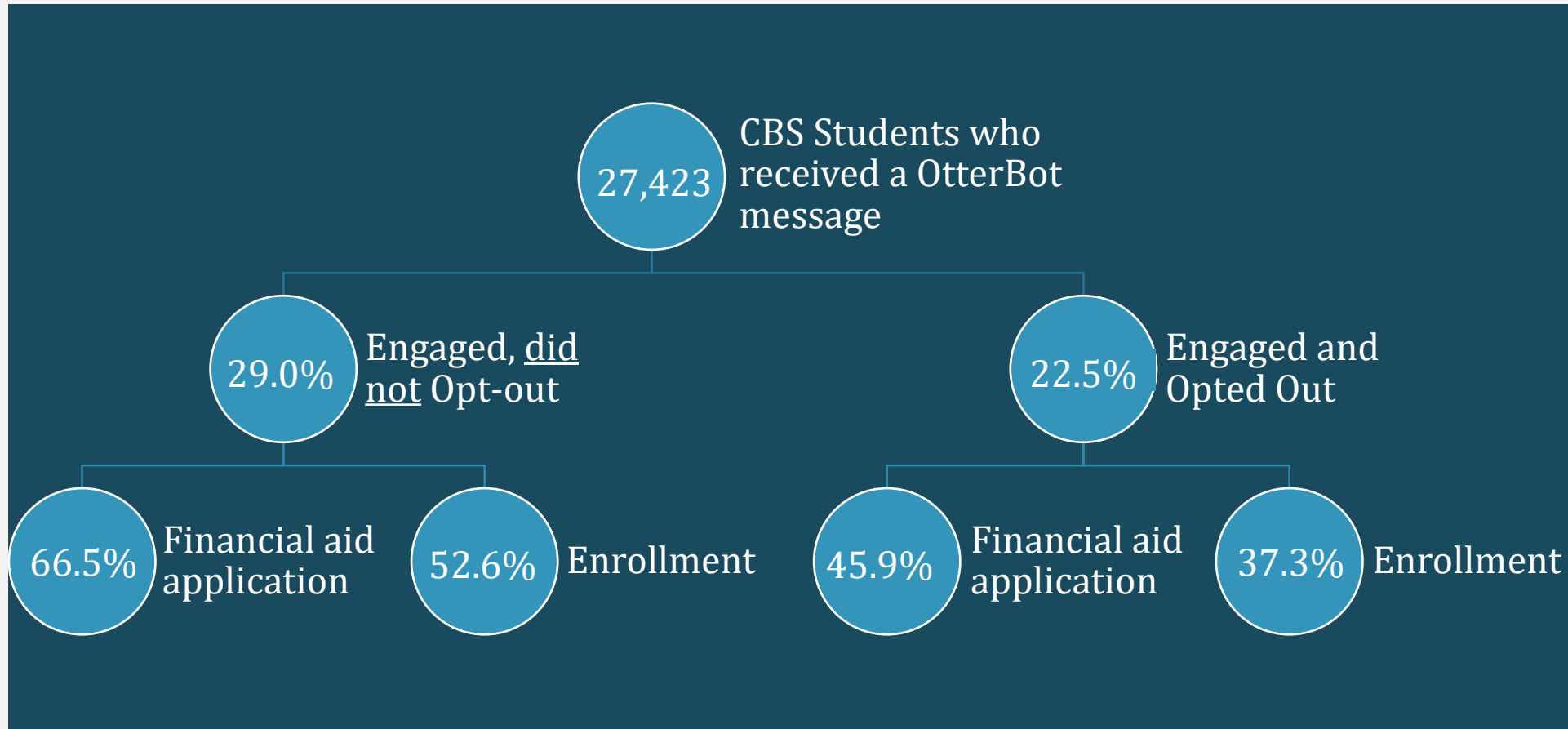
Finding 1: Reach is an issue: : <half of all CBS students received a message from OtterBot, and about half of those students actively engaged with OtterBot (responded to at least one message)



Finding 2: CBS Students that engaged with OtterBot have a higher rate of financial aid completion and post-secondary enrollment



Finding 3: Opting out is associated with outcomes as well

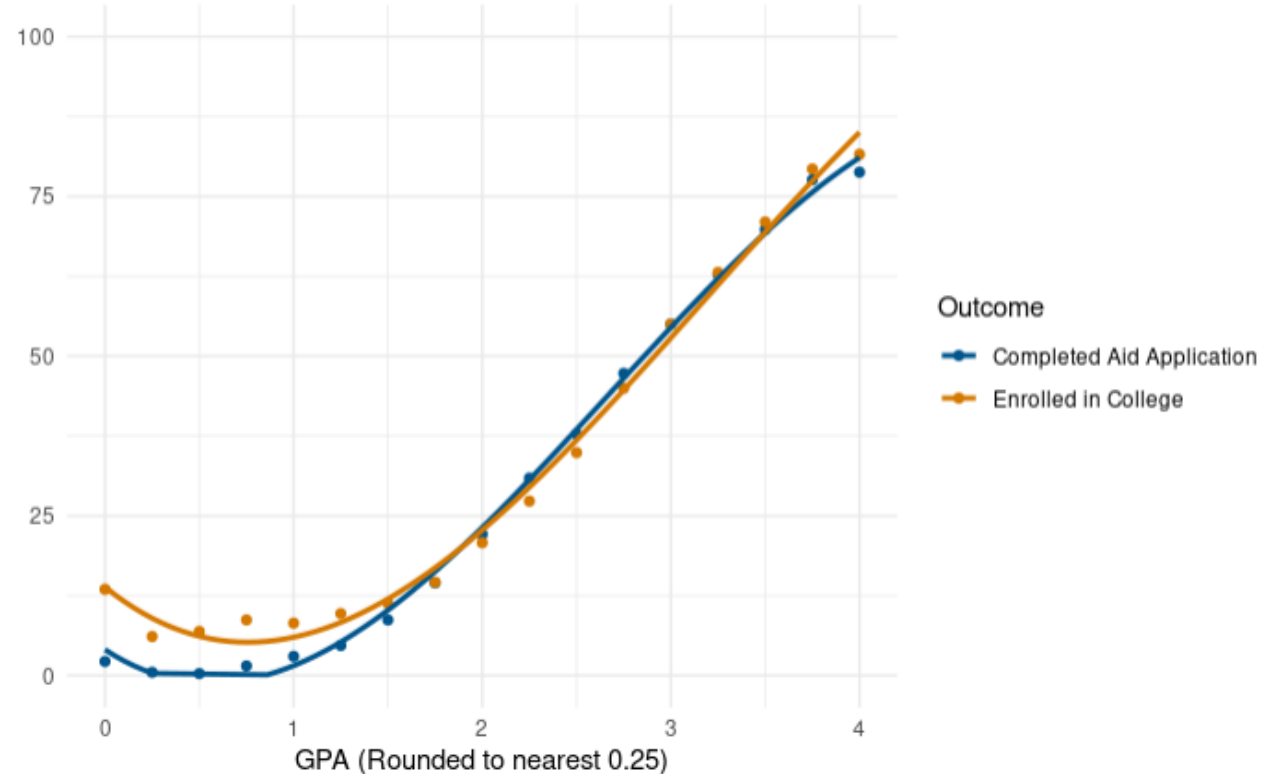
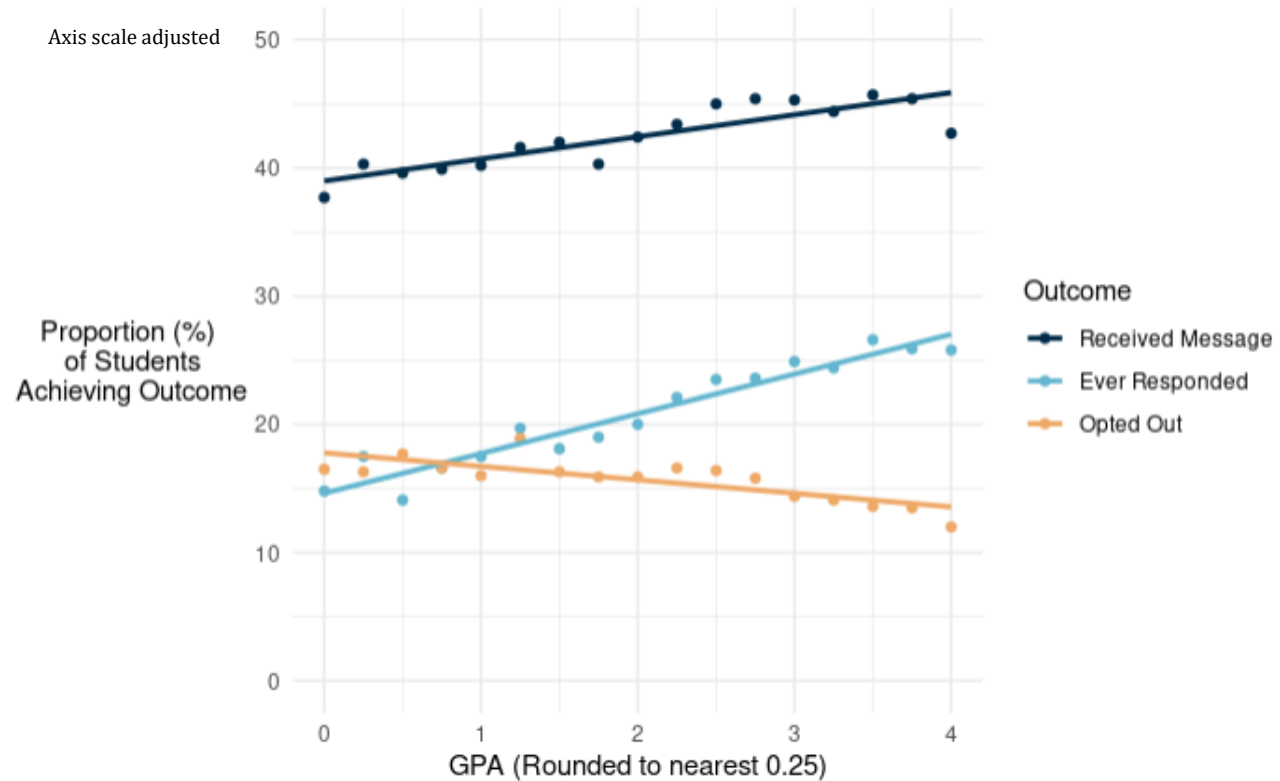


Interesting twist: Students that engaged with OtterBot and later opted out of receiving messages had a lower rate of aid application completion and college enrollment than students who opted out and did not engage with OtterBot (not shown)

Finding 4: GPA positively associated with message receipt, engagement, retention in the platform and enrollment

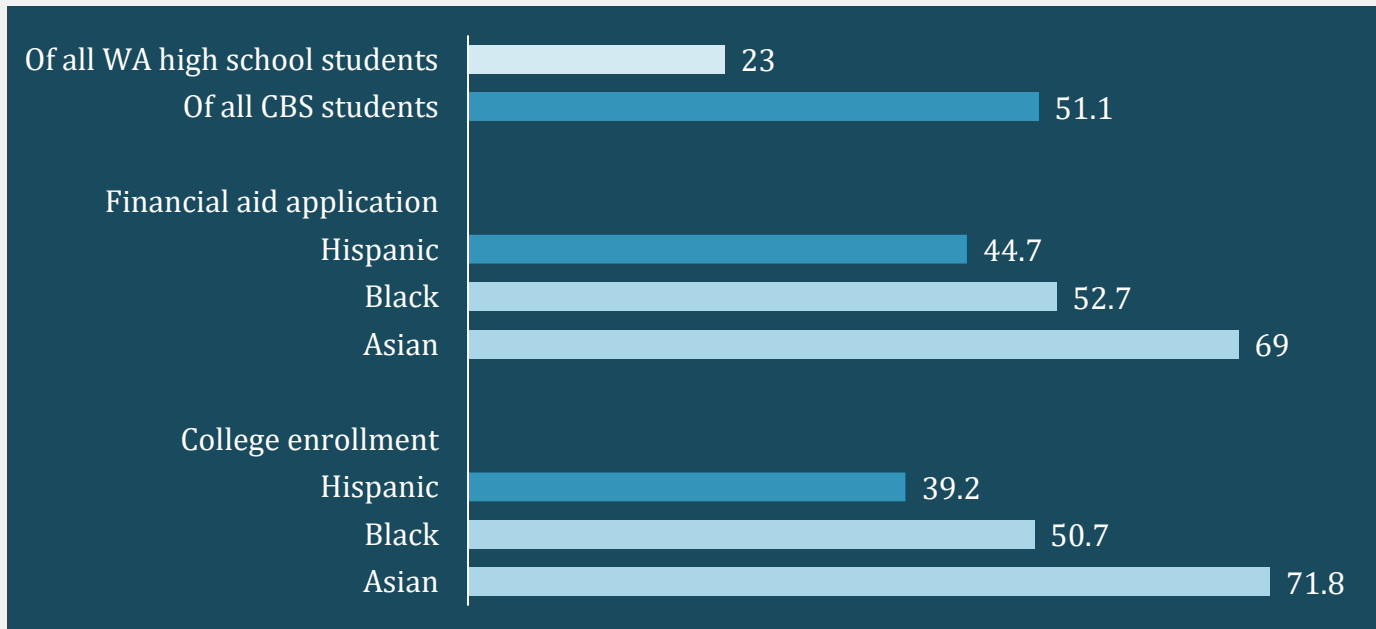
OtterBot Outcomes

Postsecondary Outcomes



- Parental education was also predictive
- Targeting opportunity: students with mid-range GPAs

Finding 5: Hispanic students represent an important opportunity for OtterBot to address disparities in college going



Hispanic students

- Make up half of CBS students
- Lower rates of financial aid completion
- Lower rates of college in enrollment

Finding 6: There are large differences in outcomes based on gender



- Larger percentage of female students receive OtterBot messages
- Female students and male students engage with and opt out of OtterBot at similar rates
- Female students **17pp** more likely than male students to complete financial aid applications and **15pp** more likely to enroll in post-secondary education (**5,000 p/year gap**)
- More research needed to understand experiences of students with a non-binary gender identity

Finding 7: Future cohorts should be monitored for disruptions caused by COVID-19

- OtterBot reach increased substantially after the first year.
- Compared to the initial year (2019-2020), engagement rates in subsequent years have been slightly lower. However, opt out rates are also a bit lower.
- Rates of financial aid completion have dropped from the 2020 Cohort.



Key Takeaways:

- There is significant room for increasing the percentage of CBS students who receive OtterBot messages
- Important subgroups to consider include:
 - Males
 - Hispanic students
 - Students with low to moderate GPAs
 - Students in younger cohorts
- There is a positive association between engagement with OtterBot and key academic outcomes, but likely in part due to selection



Looking forward

Survey

- Sending to College Bound Scholarship seniors
- Key Research Questions:
 - What are student aspirations related to post-secondary education or training?
 - How knowledgeable are students about the CBS scholarship and the process for obtaining financial aid to attend post-secondary education programs?
 - What are some of the most common barriers to post-secondary education and financial aid application?
 - How can a platform like OtterBot reduce these barriers and improve access to post-secondary education?

Designs for Improving OtterBot

- Three categories of designs:
 - Category 1: Simple improvements to implement based on best practices and behavioral science
 - Category 2: Candidates for A/B testing
 - Category 3: Candidates for Pilot

Toolkit

- Data Science tools
- Behavioral Science tools
- Will be available in 2024!

Future Convenings

- 2024 OTTERS Convening
- Poll



Questions?

Thank you!

MDRC:
erika.lundquist@mdrc.org

WSAC:
emmal@wsac.wa.gov



Improving College Access Chatbots

Mainstay's Proven Approach



Online



Julie Delich, EdD

VP, Content
Architecture &
Solutions



The Research on Students

Today's Generation Expects Personalized Communication PUSHED to them:

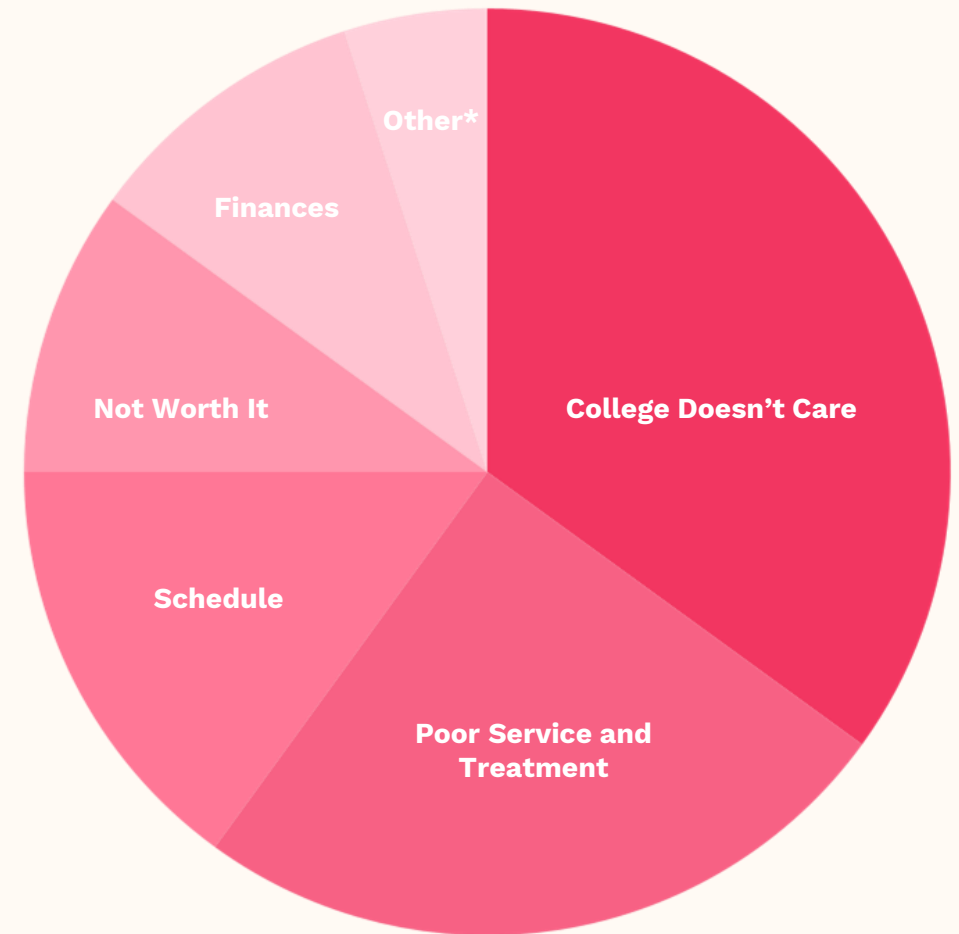
- **Right on their phone**
- **With No App to download**
- **Immediate Answers to Qs 24/7**
- **Personalized, contextualized and relevant**

Today's students don't go to websites and don't generally read email! They expect information to be pushed to them and they expect to have answers at 2am when they engage.

TEXT messaging is the PROVEN medium.

Source: **Neal Raisman, *Customer Service Factors and the Power of Attritio***The Administrator's Bookshelf.

Common reasons student disengage



Personalized Student Engagement

through scaled AI-backed text messaging, webchat, and content design services.

Our research-backed content allows Mainstay to help partners drive success, enhance the student experience, and save time.



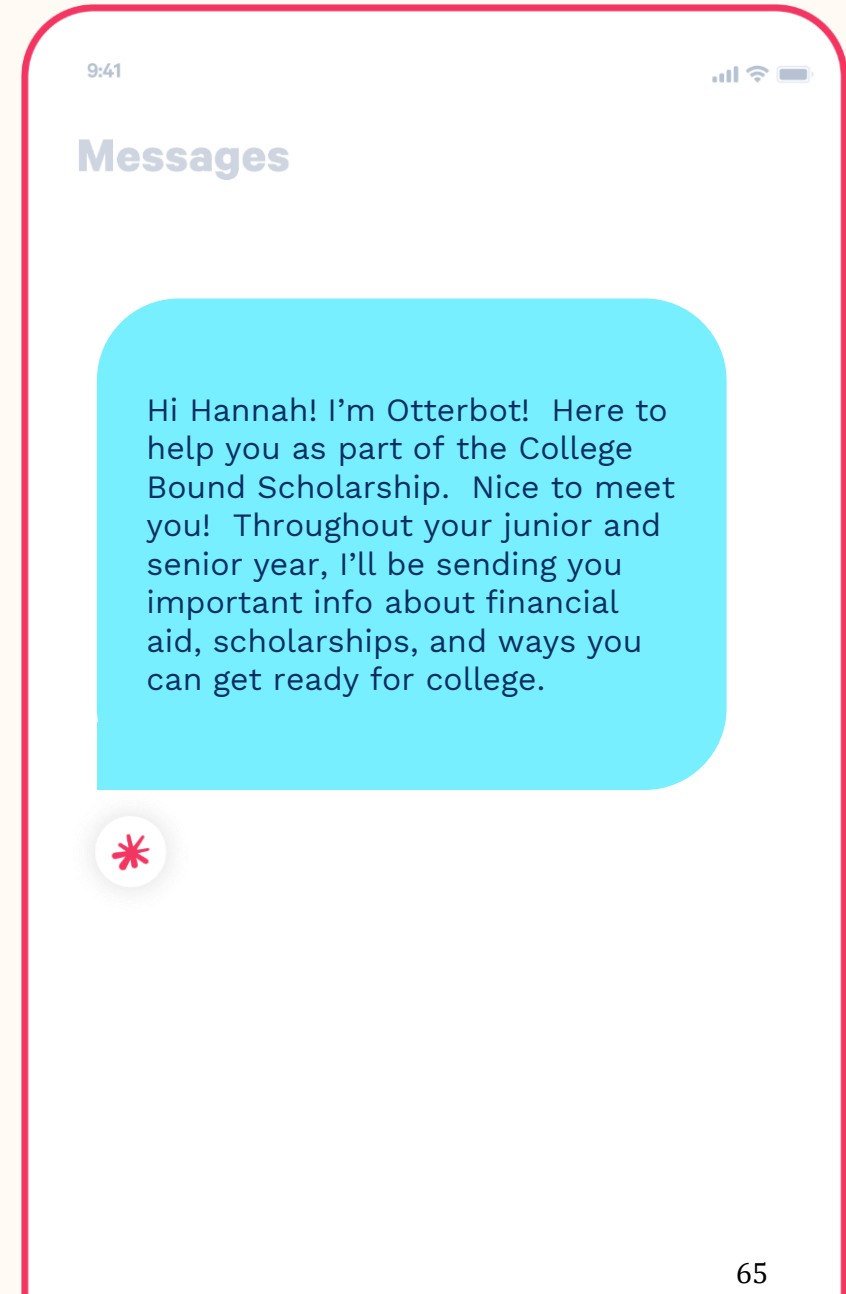
Interact with students via text message



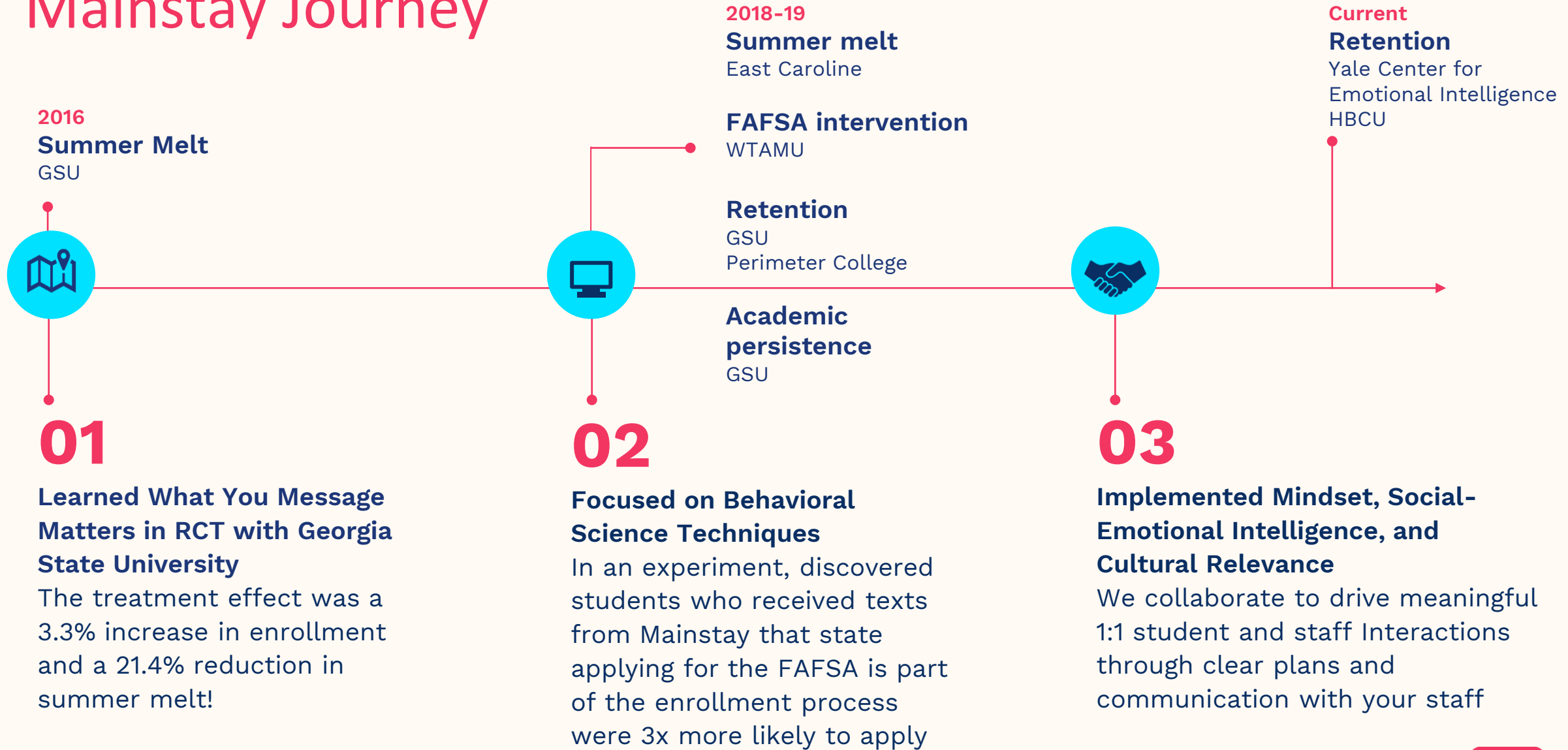
Messaging focused on *critical* steps and activities (FAFSA, bill pay, tutoring)



Answer Qs 24/7 through AI and route any follow up to staff



Mainstay Journey



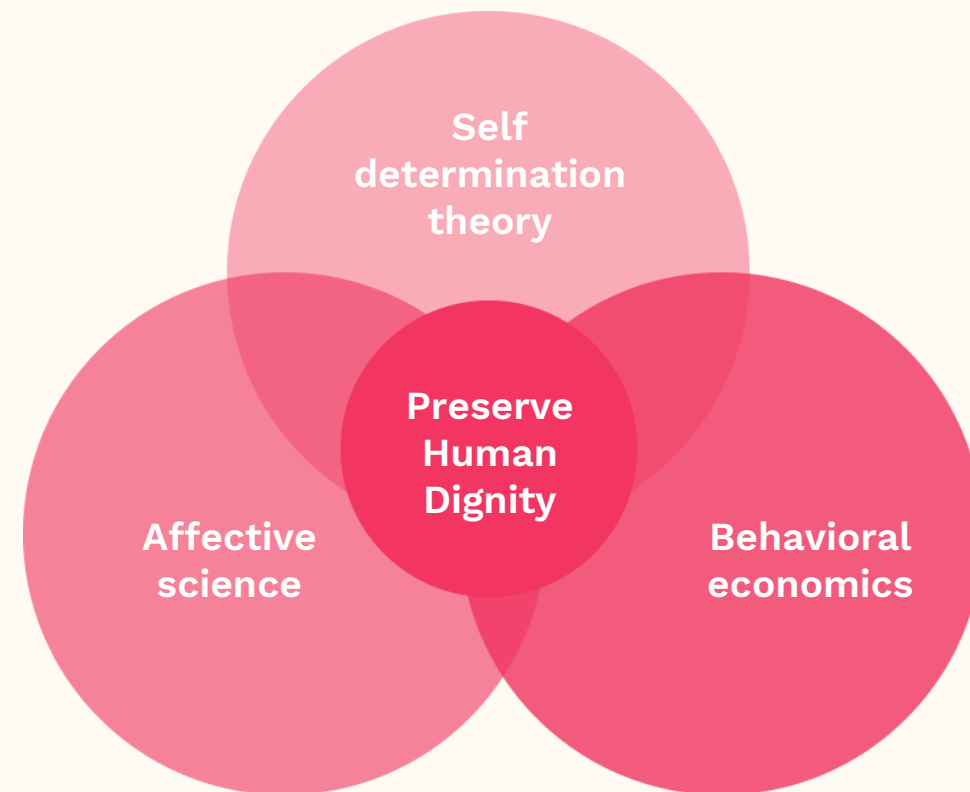
STUDENT ENGAGEMENT PLATFORM

Strategies backed by research

Partnered with Expert Practitioners & Leading Researchers to design our engagement model and 30+ techniques to guide positive behavior change.

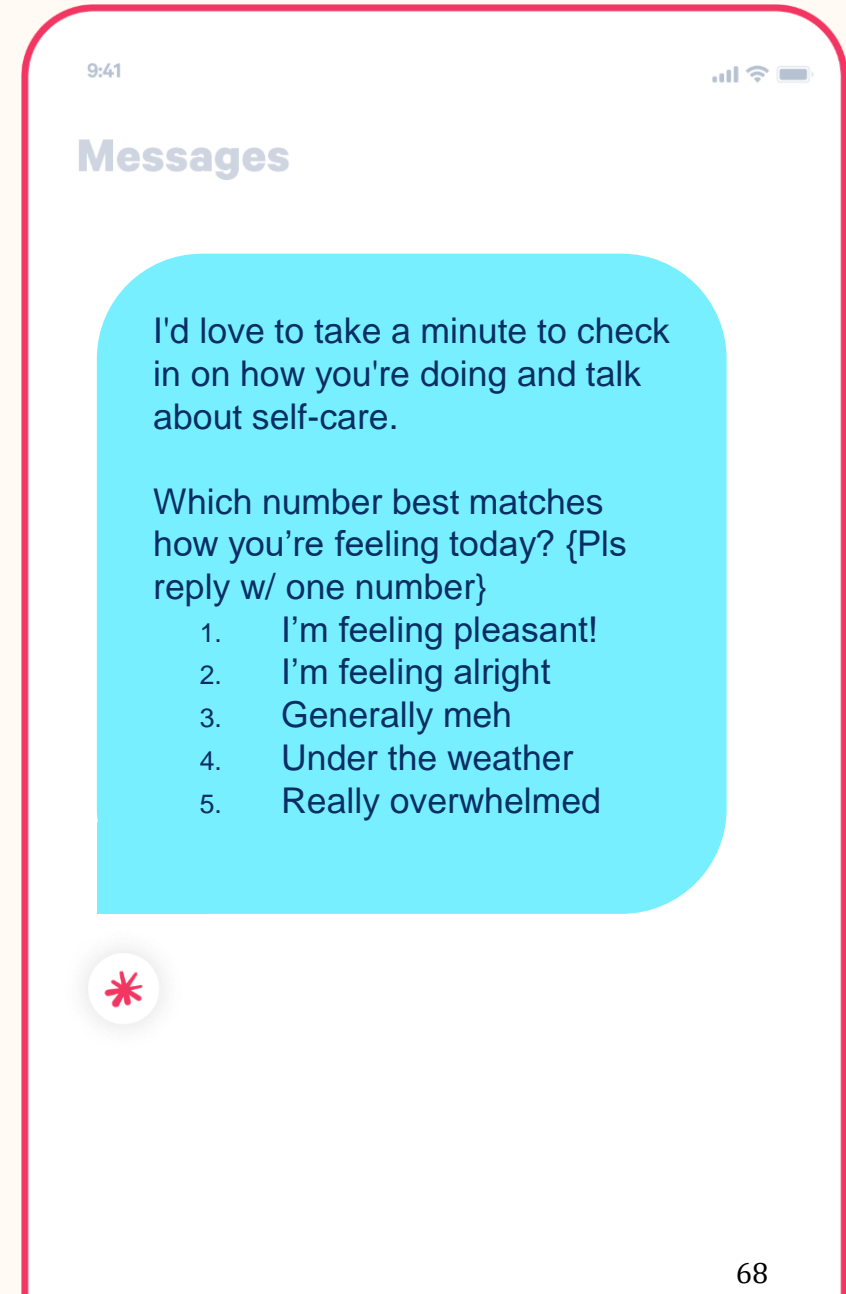
- **National Institute for Student Success**
- **Irrational Labs**
- **Yale Center for Emotional Intelligence**
- **Dr David Yeager - Synergistic Mindset**
- **SU Institute of Health and Education**
- **And more...**

Bodies of Literature Informing Our Work



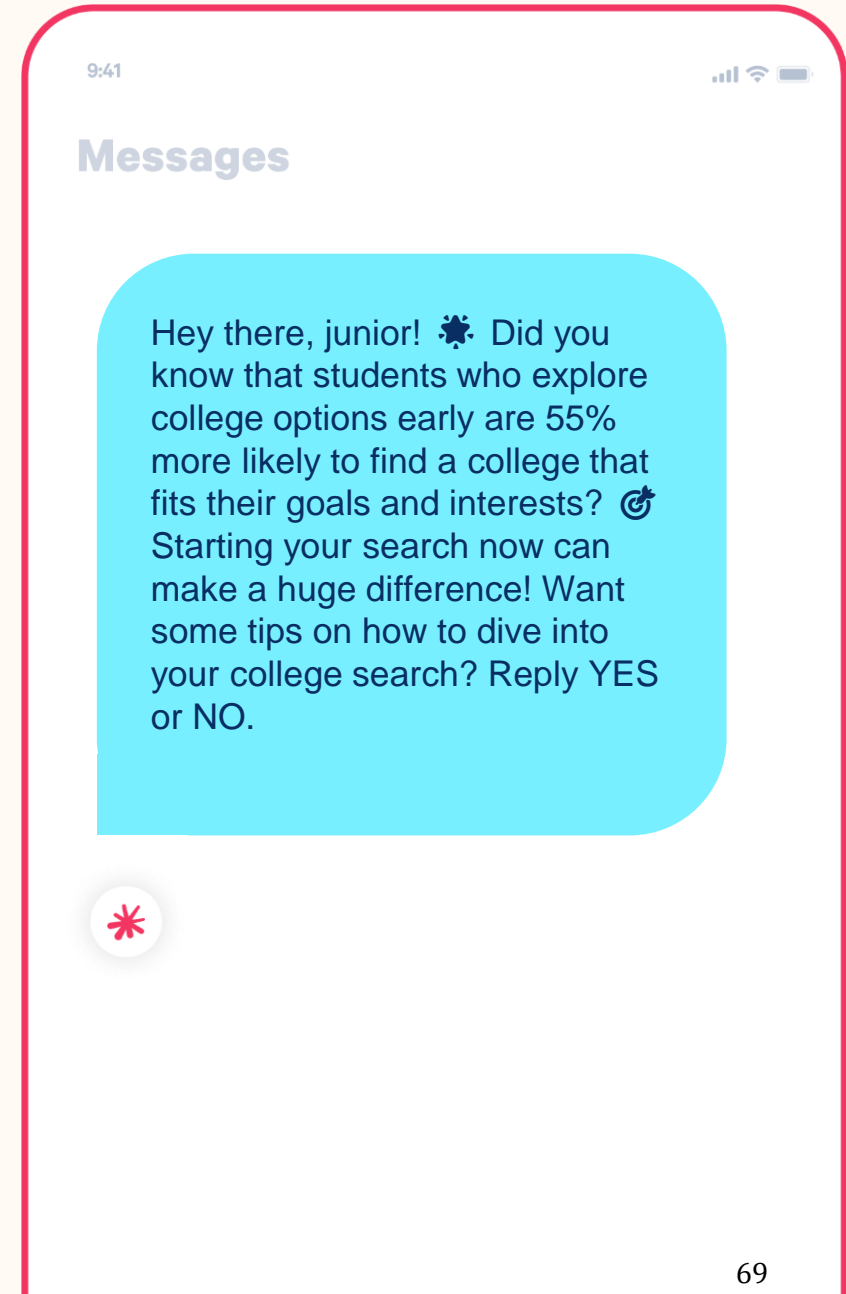
Mindset messaging

- Use an “Emotions Matter Mindset”
 - Emotions are inherently useful sources of information.
 - When describing or talking about emotions, uses “pleasant” and “unpleasant” rather than good/bad, positive/negative, etc.
 - Emotions are framed as useful sources of information and signals about the situation
 - Allows for range of emotions
 - Yale Center for Emotional Intelligence



Social emotional messaging

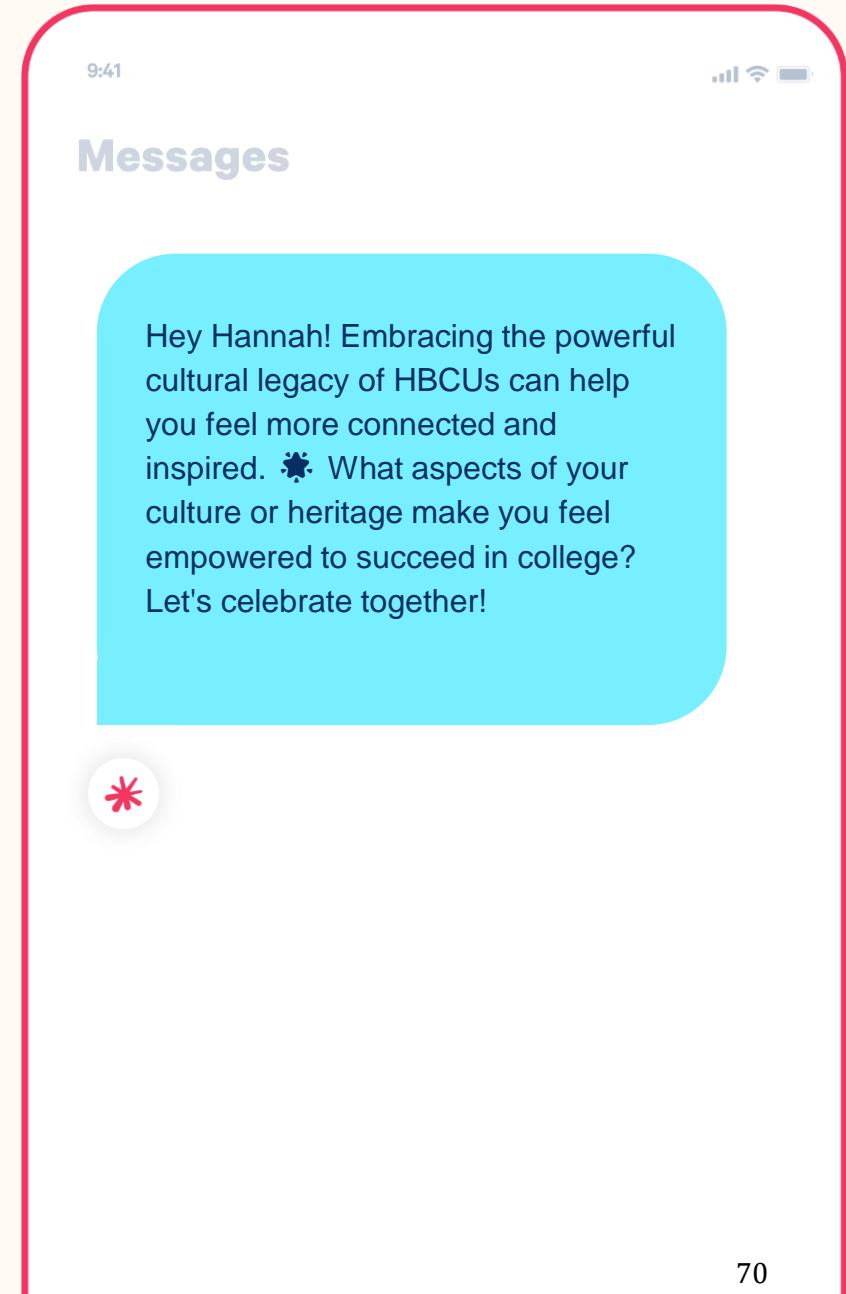
- Address Efficacy
 - Belief asking for help will not make a difference for them
 - Guide them towards the benefits of asking for help for themselves
 - Highlight how asking for assistance has helped others (Karabenick & Dembo, 2011)



Cultural relevance messaging

- Use the “Cultural Checklist” (Hood, Hopson, and Kirkhart, 2015).
- Collect and listen to student feedback

Mainstay is currently partnering with the Yale Center for Emotional Intelligence, EdAdvance, and Norfolk State University on a research project around enhancing engagement with HBCU students.





Questions?

Break Time!

WE'LL RECONVENE IN 10 MINUTES

State Panel: What have states tried or thought about trying to increase the efficacy of their chatbots?

Presenters:

- **Samantha Kimmel** and **Nicole Davis**, Texas Higher Education Coordinating Board
- **Graciela Nobles**, Education Forward Arizona
- **Jennifer LoPiccolo**, Rhode Island Department of Elementary & Secondary Education

Moderator:

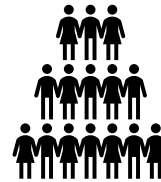
- **Emma Lacalli**, Washington Student Achievement Council

Texas

About ADVi

- ADVi began as an initiative with the University of Texas at Austin in 2019 and fully transitioned to the Texas Higher Education Coordinating Board in 2020
- Currently, ADVi primarily serves high school seniors and adult learners with some college but no credential across Texas
- High school students opt in by providing consent through ApplyTexas (the “Common App” for Texas colleges & universities)

ADVi by the Numbers



ADVi has reached over **550k+ students** since 2019



Our virtual advising team has responded to over **41,000** escalated messages



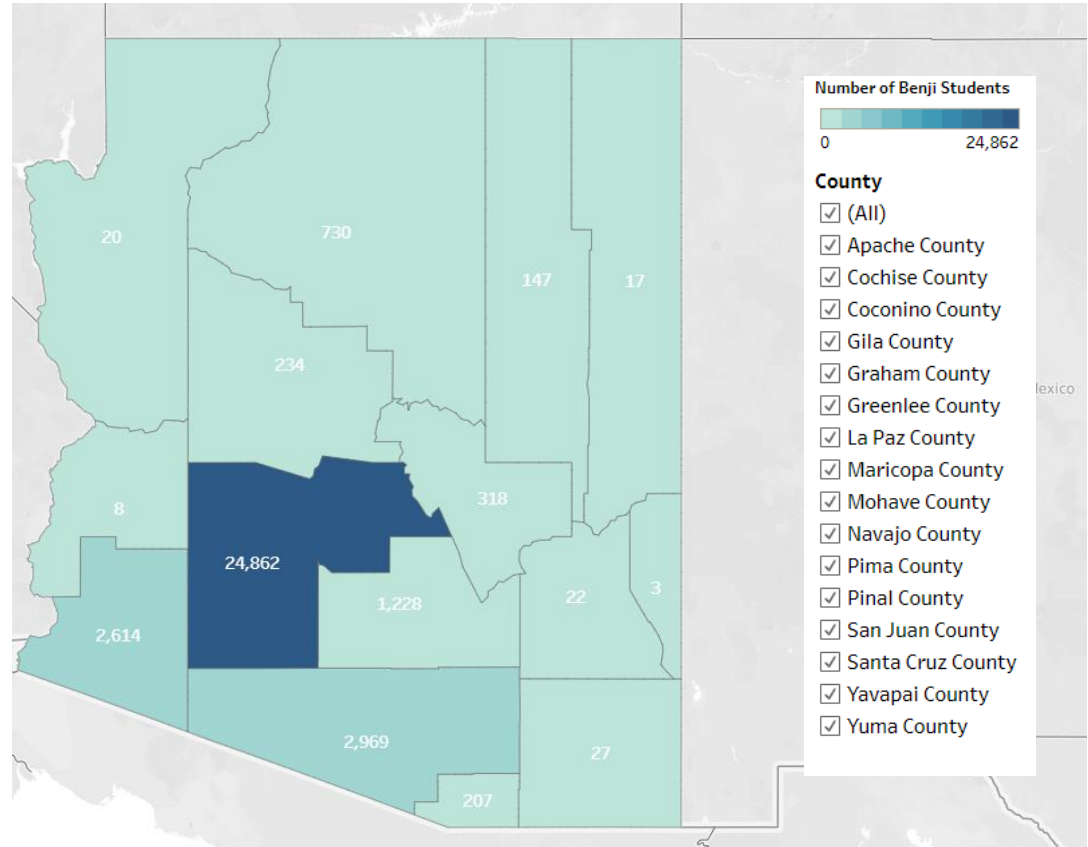
Active engagement rates trend around **60% for high school seniors** and **11% for adult learners**

Mission: Deliver critical college and career access information to all Texas students

Arizona



- Created in 2019 by Education Forward Arizona
- Original Users: Senior high school students in a couple of school districts
- Mission: To assist AZ students in their post-secondary planning and to assist them in completing the FAFSA application.
- 2022-23: Our team launched with a cumulative 33K users from school (MOU) partnerships
- We are in 27 Districts, 125 high schools, and two unique partnerships



Arizona

We create interactive text messages for users throughout the school year

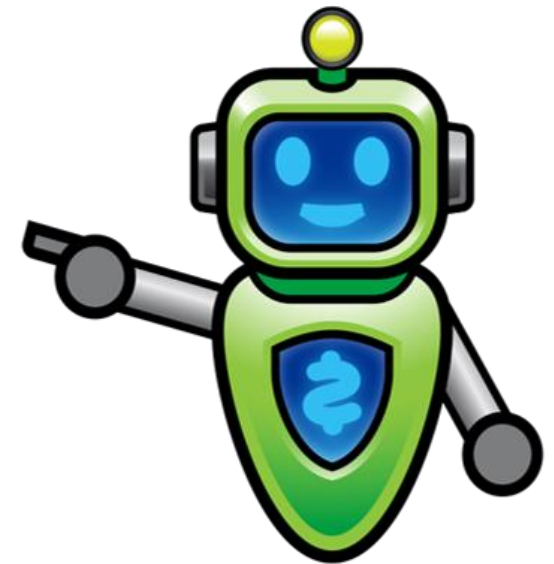
- Main topic: FAFSA
- Secondary: College and Career
- Partners can submit custom “nudges”

Up Next:

Future Fall 2023 Benji expansion: Junior Cohort, pilot messaging with Junior students who are part of our Benji schools.

Network:

We have partnered with the AZ FAFSA Coalition to promote FAFSA completion in our state.



Rhode Island

- Year 1 of an opt in statewide college and career chatbot that includes web-based content and texting campaigns to ensure equal and effective communication of OCCR support programs to HS juniors and seniors
- Offer 24/7 support to answer questions regarding these programs and postsecondary pathways
- Work with in-school counselors to solicit students to opt into the tool; ~1,400 juniors and seniors contacted to date.
- Using a phased-in approach, campaigns will ensure that families know how to get support from Office of College & Career Readiness programs and beyond, including:

All Course Network (ACN)	FAFSA
Dual Enrollment	12 th to post-secondary transitions
Career & Technical Education	Individualized Learning Platform (ILP)
Adult Education	RI Higher Education Specific Content



RI'S COLLEGE & CAREER CHATBOT



Questions?

Break Time!

WE'LL RECONVENE IN 10 MINUTES

Breakout Rooms

Room 1:

- Developing engaging content (e.g., what has gone really well/really poorly?)

Room 2:

- Promotion, outreach, and chatbot credibility (e.g., opting in vs. opting out)

Room 3:

- Engaging with parents, counselors, or other supports (e.g., other than students)

Breakout Rooms – report back!



Thank you!

MDRC:
erika.lundquist@mdrc.org

WSAC:
emmal@wsac.wa.gov

