

Needfinding

CS 147: Assignment #1

Alison Rogers, Justin Blumencranz,
Monica Hicks, Matthew Mattei





Roadmap



Introduction

Team; Problem Domain



Methodology

Participants; Questions



Results

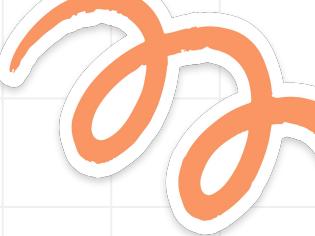
Quotes; Surprises



Analysis

Empathy Maps; Insights





Meet the Team!



Matthew Mattei

Junior; Computer Science



Monica Hicks

Coterm; Computer Science



Alison Rogers

Coterm; Computer Science



Justin

Blumencranz

Senior; Symbolic Systems

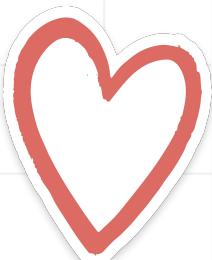


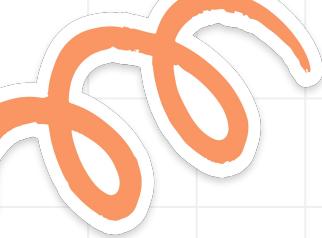
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Our chosen problem domain is...

Reason 1

Large and relatable
problem space



Reason 3
Significant
opportunity for impact



Reason 2

Garnered team interest





Methodology

4 Interviews

1 Online and 3 In Person

Compensation: ~\$20 in various forms (gift card, Venmo, food, etc.)

Recruitment: parent reach outs, cold approaches



June



Where: Stanford Shopping Mall

Apparatus: iPhone Audio

Interviewers: Alison, Monica

Notetaker: Justin

Why we chose them?

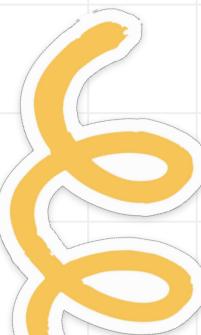
High school student we had easy access to
(we were able to cold-approach them)

Why were they appropriate?

Currently in high school
Only student we interviewed from a private high school

What did we ask/talk about?

Balancing school and sports, study methods, school culture,
school-provided support services, post-HS plans, what
motivates them to do well in school



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Extreme User

Anwar

Where: Zoom

Apparatus: Zoom Recording

Interviewer(s): Monica, Matthew

Notetaker: Matthew

Extreme Axis: Online High School

Why we chose them?

We were seeking a student who doesn't go to a traditional high school.

Why were they appropriate?

Non-traditional high school

They don't plan on attending college

What did we ask/talk about?

Self-managing their schedule

Learning strategies in and out of the classroom

Who they turn to for support in a remote environment

Post-HS plans other than college

Introduction

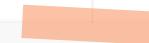
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Sasha



Where: Stanford Shopping Mall

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Why we chose them?

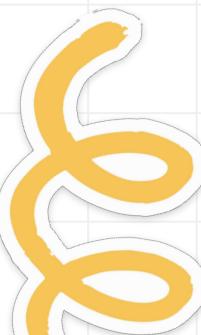
High school student we had easy access to
(we were able to cold-approach them)

Why were they appropriate?

Attends public high school
Juggles being a student and working

What did we ask/talk about?

Studying and note taking techniques
Applying to high schools and pre-college programs
Feeling unsafe in school (fighting, drugs, guns)
Seeking outside help (finding/scheduling tutors)



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Jerry



Where: Town and Country

Apparatus: iPhone Audio

Interviewer(s): Alison

Notetaker: Matthew

Why we chose them?

High school student who goes to Paly. We were able to get in touch with his parent by reaching out to community members.

Why were they appropriate?

Has ADHD and dysgraphia.

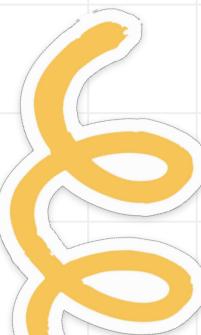
Involved in the college recruitment process.

What did we ask/talk about?

Adapting to high school with ADHD

Schoolwork management techniques

Being a student athlete



Introduction

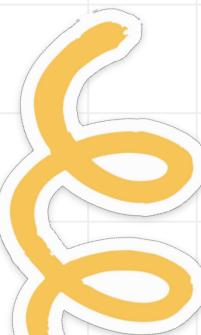
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Some of our questions...



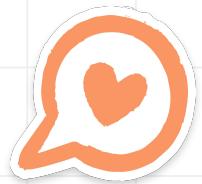
How does your school day unfold?

How do you identify when you are “stuck”?

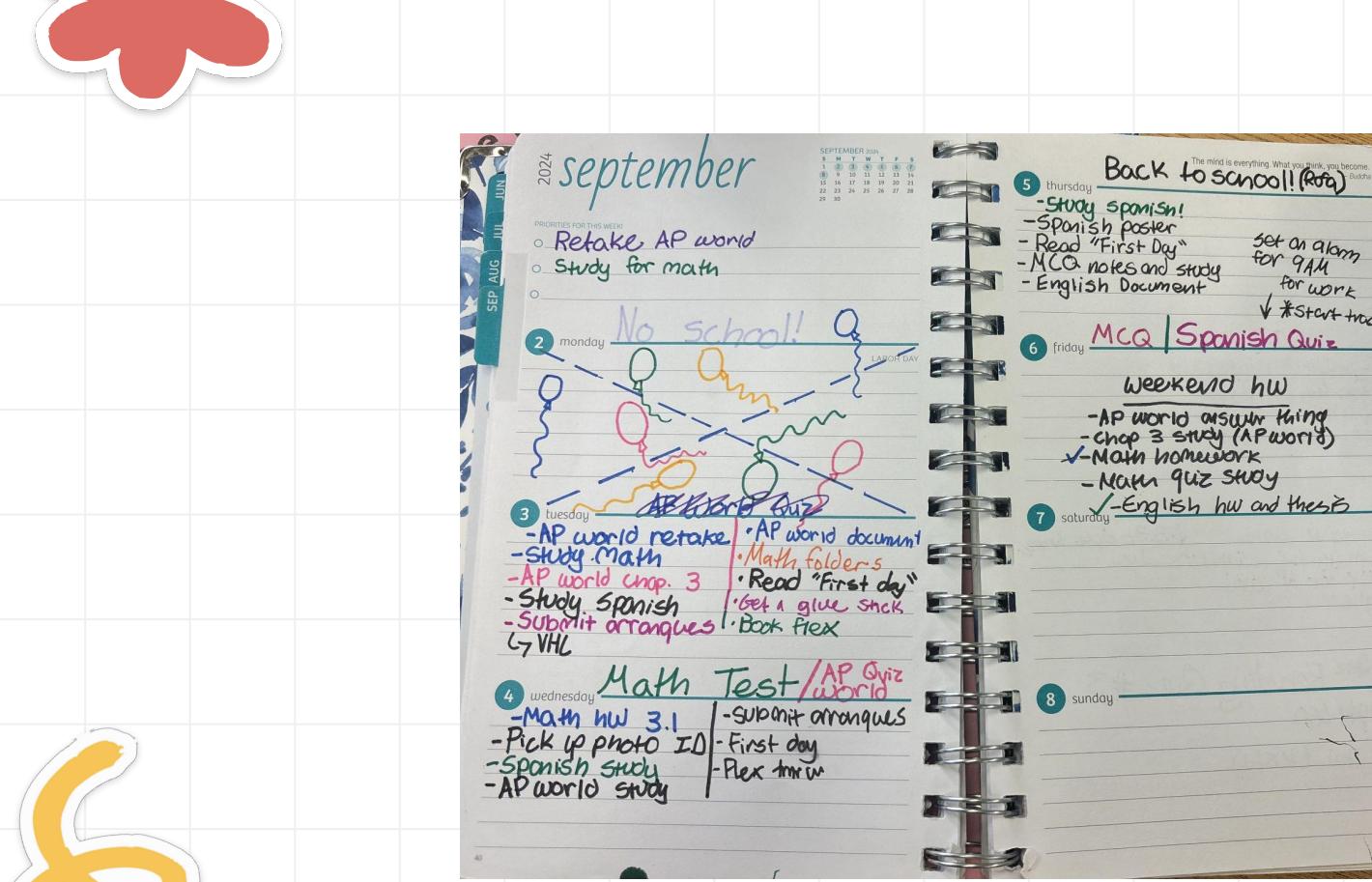
What resources does your school have for students?

How do you keep track of assignments?

What motivates you to do well in school?



Have you thought about what your life will look like after high school?

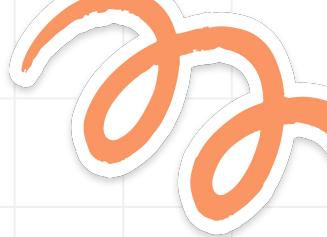


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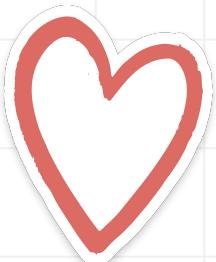
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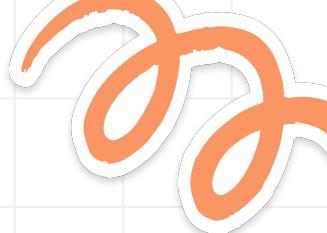


Key Quotes and Surprises

“[How long I want to continue diving for] a big question in my life right now, I've recently not found the joy I've had in the past, so it's big a real mental dilemma for me if I want to continue because a lot of people think quite highly on me and depend on me for points and the sport so it's hard for me to decide if it's best for me and I would only do recruitment if it was for a school I was super passionate and it was the only way to get in.”

-Jerry





Key Quotes and Surprises

Tension

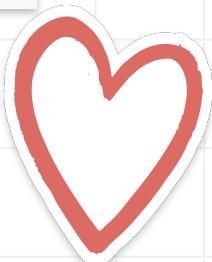
Despite high school taking up most of their time, most interviewees prefer their extracurriculars

Surprise

A student overdosed at school last year. Fights and fire alarm pulling happen weekly.

Contradiction

Applied to Menlo High School, but promised parents they wouldn't go if they were admitted.



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Say



"Not all teachers post their assignments on Canvas."

"Math is really hard for me."

On her school's "Life Skills" curriculum: "it's a solid curriculum...in the perfect world...but, like, the guy behind me in ethnic studies was vaping on me."

Coaching volleyball is less work than playing. "I'm making bank and I have something to put on a resume."

She has lots of tutors, "I'm not academically challenged, I'm just devoted."

Wants to study English

"I don't eat lunch", does homework instead and drinks coffee

She has an immigrant parent

Her school has fights, and the fire alarm gets pulled 2+ times/week

Motivation: "Getting into college."

"As soon as I hear an assignment, I write it down; it might be the only time I hear it."

It is more important to build a resume than to have fun

It's all on her to manage her assignments

College is a high priority

Athletics are motivating

School-provided support is not effective

She can't get into an elite high school

Peer tutors are not helpful



Do

Chose to interview with us instead of coaching volleyball practice (used a freebee)

Takes pretty notes in her planner

Does extra schoolwork

Goes home whenever she can instead of staying on campus

Applied to summer college programs

Always uses flashcards

Applied to Menlo to get application practice

Emphasized "Stanford" when calling her dad

Uses a writing tutor as a second teacher



Wakes up at 7am

Observation -> Inference

Stressed about missing an announcement in class

Unnoticed in larger classrooms

Proud of her school/life system

Worried about reliability of physical notes

Underprepared for the transition to high school

Doubtful of her school's equity efforts (misguided)

Strong desire to get into a good college

More comfortable sending kids to private school



Feel



Say

"Not all teachers post their assignments on Canvas."

"Math is really hard for me."

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Applied to summer college programs

Emphasized "Stanford" when calling her dad

Uses a writing tutor as a second teacher

Stressed about missing an announcement in class

Unnoticed in larger classrooms

Proud of her school/life system

Worried about reliability of physical notes

Not confident in her ability to be a college athlete

Doubtful of her school's equity efforts (misguided)

Underprepared for the transition to high school

Scared and unsafe at her high school

More comfortable sending kids to private school



Observation -> Inference



Say

Goal: a job

"I don't really want to go to college, but my mom and dad said that if whatever I want to do takes me to college, I have to go to college."

"I don't talk to anyone about [learning material]"

"I was having trouble with a lot of people in the school and a lot of people out of school, and it got brought into school."

"I have uncles/aunts that went or didn't, and if they did go to college, they went late."

Family in trade jobs

"I can't fully get into tattoo school yet."

"[My mom] didn't tell me [about online school] until a couple days before school."

"I need to keep my grades up...so that they can accept my transfer back"

"I don't remember things pretty often...I still try to do it."

He would explore things outside high school if he could

He was left out of the decision to do online school

He has to earn his way back into in-person school

School is a means to an end but not enjoyable

Virtual school times are weird, but not having to commute is great

Support is for moments of struggle



Observation ->
Inference

Writes down class times and sets alarms

Is emailing to get back to in-person school

Gets extra practice problems from his teacher (not a typical offering)

Practices tattooing

Asks his mom's advice for most things

Going out with friends

Kicked out of his school for fighting

Repeatedly rereads notes to study

Completes homeworks in the form of "TODO's"

Car washed to raise money to get more into tattooing

Eager to be back in person

Supported by his parents in whatever he decides to do after high school

Caught off guard by being enrolled in online school

Distant from friends

Motivated by failure to seek extra help

Confused by written instructions

Socially isolated



Do



Say

Goal: a job

"I don't really want to go to college, but my mom and dad said that if whatever I want to do takes me to college, I have to go to college."

"I don't talk to anyone about [learning material]"

"I was having trouble with a lot of people in the school and a lot of people out of school, and it got brought into school."

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Family in trade jobs

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"[My mom] didn't tell me [about online school] until a couple days before school."

"I need to keep my grades up...so that they can accept my transfer back"

"I don't remember things pretty often...I still try to do it."

He would explore things outside high school if he could

He was left out of the decision to do online school

He has to earn his way back into in-person school

Sometimes studying works and sometimes it doesn't

Virtual school times are weird, but not having to commute is great

Support is for moments of struggle



Observation -> Inference

Writes down class times and sets alarms

Is emailing to get back to in-person school

Gets extra practice problems from his teacher (not a typical offering)

Practices tattooing

Asks his mom's advice for most things

Going out with friends

Kicked out of his school for fighting

Completes homeworks in the form of "TODO's"

Car washed to raise money to get more into tattooing

Eager to be back in person

Supported by his parents in whatever he decides to do after high school

Motivated by failure to seek extra help

Socially isolated

Confused by written instructions

Calm when doing breathing exercises or listening to music

Guided by his mom

In-person school is tiring but more fun



Do



Insight and Need #1

"As soon as I hear an assignment, I write it down...it might be the only time I hear it."

His school's peer tutoring "isn't profound"

Gets to class early but is still marked late by the new attendance system

Uses a writing tutor as a second teacher

Uses his own Macbook instead of the school chromebooks

Insight

Students tend to avoid the school-provided systems because they don't trust them.

Need

Students need **reliable** and **trustworthy** support.

It's all on her to manage her assignments

Peer tutors are not helpful

School-provided support is not effective

Frustrations with school admin

Stressed about missing an announcement in class

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On her school's "Life Skills" curriculum: "it's a solid curriculum...in the perfect world...but, like, the guy behind me in ethnic studies was vaping on me."

Insight and Need #2

School has two populations: "honors" and "riff raff"

Insight

Goes home whenever she can instead of staying on campus

Studies in groups to stay on task

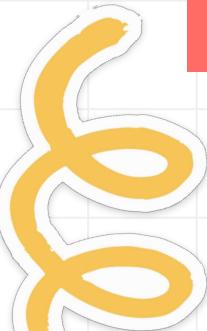
Students in **chaotic** learning environments find it **hard to focus** and hard to learn. They tend to **leave** that environment in favor of a calmer one.

Need

Students need **familiar** and **predictable** spaces to learn in.

Eager to be back in person

Scared and unsafe at her high school

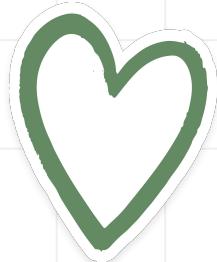


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"I think of [high school] in the long run rather than the day to day...like, going to college. It's more of where will this build me to."

"I started thinking about college really early."

Insight and Need #3

Insight

Abandoned his diving Instagram account

Applied to summer college programs

Applied to Menlo to get application practice

Students are constantly thinking about what their futures will look like. Support can put students at ease, but without that and without an answer, they feel lost and stressed.

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Need

Students need a way to **explore** their futures in an **unpressured** environment.

It is more important to build a resume than to have fun

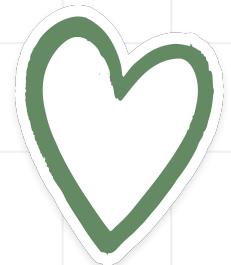
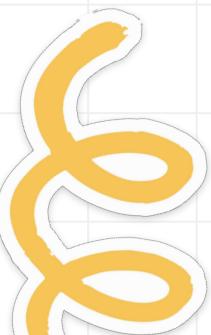
High school is a means to an end (college)

Afraid of losing opportunities

Unsure about college aspirations

Afraid to let go of habit

Supported by his parents in whatever he decides to do after high school





Summary

Key Learnings

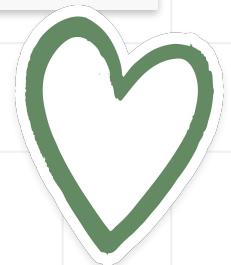
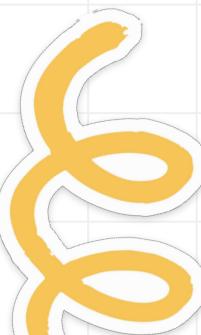


- Whether it's advanced topics or life skills, **some of the knowledge students want just isn't taught** in the classroom.
- **Structure** was a major concept, both as support or as a tool.
- The **focus** is not on high school, it's on *after* higher school.

Next Steps



- Refine problem scope
- More interviews on **academic structure** , life **after high school** , and **classroom content** .
- Build out POVs and HMWs



Thank you!

We hope you enjoyed :)

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APPENDIX: Jerry and June's Empathy Maps



Empathy Map for Jerry

Say



"I started thinking about college really early."

"The school actually gives out chromebooks that are assigned to you."

His school' peer tutoring "isn't profound"

"Middle school was really hard on me...friends, classes...[high school] is a step up in freedom."

"If you put in the effort, you'll succeed."

"I don't see myself ever going into that subject...so I don't try to give 100% into it."

His ADHD meds wear off in the afternoon

"I think of [high school] in the long run rather than the day to day...like, going to college. It's more of where will this build me to."

Knowing his sister had a hard time with a teacher he then had made him focus more

Dysgraphia affects his writing

Middle school grades don't matter

He has too much on his plate

Personal autonomy is important

Physical work is easier to do and focus on than mental work

School is important

In-person tutoring is inconvenient

School requires work

College is necessary for success

Friendships are very important

High school is a means to an end (college)

Observation ->
Inference

Dives for 2.5 hours every day except weekends

Uses his own Macbook instead of the school chromebooks

Gets to class early but is still marked late by the new attendance system

Avoids caffeinated ADHD medicine in the afternoons

Scooters to his friend's house first even though he lives a 2 blocks away from school

Unsure about college aspirations

Less passionate about diving than before

Afraid of losing opportunities

Frustrations with school admin

Lifts

Works with a math tutor

Studies in groups to stay on task

Reviews for tests with teacher provided materials

On top of things at school

Afraid to let go of habit

Pressured because of team members

Proud of his work in classes he likes



Zones out in classes and when doing homework

Abandoned his diving Instagram account



Feel

Do



"I go to Menlo which is a college prep school"

Say

Empathy Map for June



Grades aren't made explicitly clear until the end of the term

"It's always helpful to talk through problems with other people"

"They have a high bar for their students, but they have high levels of support"

Many different styles of learning (quiz, project, DBA, lesson)

Tutoring is event motivated

School is a valuable source of support

Smaller class sizes are better

Has a lot of freedom over her curriculum

Extra-curriculars are support for college apps

She isn't college-level at volleyball

"[peer tutors] not as reliable as a professional tutoring service"

Encouraged to talk to college counselors as a freshman

"Upperclassmen can sign up for service hours by tutoring underclassmen"

"I'm not sure how much [college prep] is just a name"

Volleyball is worthwhile even if she doesn't plan to plan in college

AP courses teach to the test

Not having clear grades causes inconsistent stress

Your first year of high school sets the trajectory

Students at different levels should be in different classes

Observation ->
Inference

Wakes up at 6:40am

Does all her homework on Sundays

Uses Cornell notes for long documents

Goes to peer tutoring

Uses physical planner (doesn't like school-provided planner)

Challenged by memorization tasks

Supported by her three older siblings who went to Menlo

More confident after working with peer tutors

Motivated to get into college

Stress – can't get ahead



Carefully read the consent form

Tracks assignments with a checklist (physical checkboxes)

Goes back over slideshows after class to fill in notes

Prepares for essays by using annotations, highlights, tabs

Safe at school

Teachers are willing and excited to help

Pride when she does well in class

Encouraged to take classes based on interest

Fortunate to have well-educated teachers



Feel

Do

END OF PRESENTATION