

K-12 ENGLISH LANGUAGE LEARNING

10 Oct, 2024



PROBLEM DOMAIN



K-12 English Language learning

- Mid-High performing students
- English Language tutors (General English Tutors / Exam prep)

Focus Areas

- Grammar
- Feedback Loop
- Authentic Tasks

AGENDA OVERVIEW

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ADDITIONAL INTERVIEWS &
INSIGHTS

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POV + HMW + SOLUTIONS +
PROTOTYPE + FINDINGS (FRANCIS)

03

POV + HMW + SOLUTIONS +
PROTOTYPE + FINDINGS
(VELMA)

04

POV + HMW + SOLUTIONS +
PROTOTYPE + FINDINGS
(NATHAN)

05

CHOSEN SOLUTION

06

IMPLICATIONS

ADDITIONAL NEEDFINDING RESULTS & KEY INSIGHTS



Tony

22 Year-old

SAT Tutor who tutors high school students on SAT English.



Velma

18 Year-old

Student who has just graduated from the K-12 system





Tony

22 Year-old
SAT Tutor who tutors high school students
on SAT English.

KEY INSIGHTS

“Every student is different and different things work for different people. You just have to figure out how each student learns the best and tailor teaching to that.”

Personalised learning is important and is effective for students’ learning

“Students understand feedback, but it takes time for them to act on it because language feedback needs a bit of time to sink in.”

Feedback takes time for students to internalise





Velma

21 Year-old

Student who has just graduated from the
K-12 system

KEY INSIGHTS

“Feedback is pretty general since the school is very large and classes are large so professors don’t have bandwidth.”

Feedback is not targeted & is often ineffective due to lack of resources

“Appreciates using technology in writing process. Most technology is for grammar and spelling checking.”

Technology has been observed in the learning process & is used to perform basic language checks



NEEDFINDING INTERVIEWS

TEACHERS



Tony

22 Year-old

SAT Tutor who tutors high school students on SAT English



Francis

29 Year-old

Teacher who has taught high school students for 4 years



Sebastian

20 Year-old

Tutor who has taught K-12 students



Jen

29 Year-old

Teacher who has taught high school students for 9 years

STUDENTS



Velma

18 Year-old

Student who has just graduated from the K-12 system



Nathan

9 Year-old

Current student in the K-12 system



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Ex - Public / Government schools

Current Public / Government schools

Private Tutors (K-12)

Private Tutors (Exam Prep)



NEEDFINDING INTERVIEWS

STUDENTS



Velma

18 Year-old

Student who has just graduated
from the K-12 system



Nathan

9 Year-old

Current student in the K-12 system

Ex-Students

Current students





Francis

29 Year-old Teacher who has taught high school students for 4 years

POV STATEMENT

We met: Francis, 29 year old teacher of high school students, who has been teaching English for four years. He's a very dedicated teacher who wants to put in a lot of effort to help his students.

We were surprised to realize: He has to be selective in his feedback due to time and resource constraints

We wonder if this means: He wants to **improve his teaching quality [NEED]**, but cannot due to these constraints

It would be game changing to: Help Francis **offer as much personalized and effective feedback [INSIGHT]** as he wants, without additional time and resources into his work.



TOP 3 HMW STATEMENTS

[Change status quo]

- **HMW integrate technology to make Francis' feedback process quick, easy and effective?**
- HMW make feedback more collaborative, allowing students to contribute and reduce demand on Francis?
- HMW prioritize key areas of feedback so Francis can focus on what's impactful

POV STATEMENT

We met: Francis, 29 year old teacher of high school students, who has been teaching English for four years. He's a very dedicated teacher who wants to put in a lot of effort to help his students.

We were surprised to realize: He has to be selective in his feedback due to time and resource constraints

We wonder if this means: He wants to **improve his teaching quality [NEED]**, but cannot due to these constraints

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PROPOSED SOLUTION

An app that creates diagnostic assessments for English Language. It scans students' work, identifies areas for improvement, and provides written feedback. It also generates personalized practice problems in grammar, spelling, and other language skills.



KEY ASSUMPTION TO TEST

Teachers trust an AI to generate feedback for their students

PROPOSED SOLUTION

An app that creates diagnostic assessments for English Language. It scans students' work, identifies areas for improvement, and provides written feedback. It also generates personalized practice problems in grammar, spelling, and other language skills.



KEY ASSUMPTION TO TEST

Teachers trust an AI to generate feedback for their students

Testing Instructions

Provide teachers the sample piece of student work to grade according to given rubrics.

Compare with AI generated feedback with rubrics & ask for feedback

Post-Activity Survey:

How would you rate the accuracy of the AI generated marking and feedback?

Any comments / improvements

Would this be something that you will consider? Why or why not?



EXPERIENTIAL PROTOTYPE (TESTERS)



Jen

29 Year-old
Language tutor who has taught
high school students for 9 years



Imama

22 Year-old
Language Tutor for K-12
students



Avery

22 Year-old
Language Tutor for K-12
students



Nick

22 Year-old
Language Tutor for SATs &
TOEFL

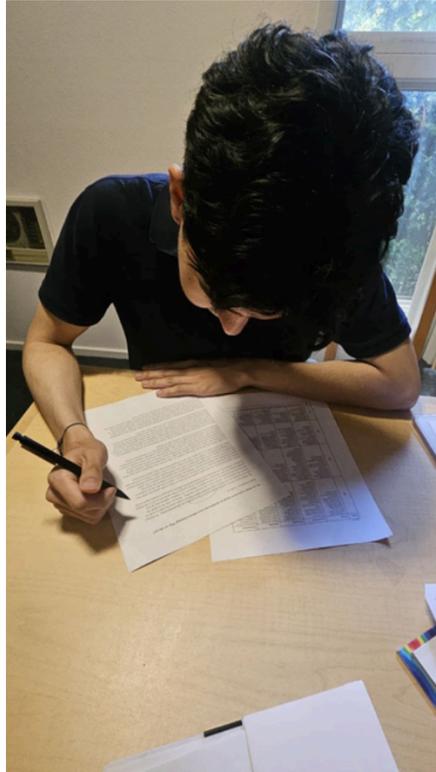
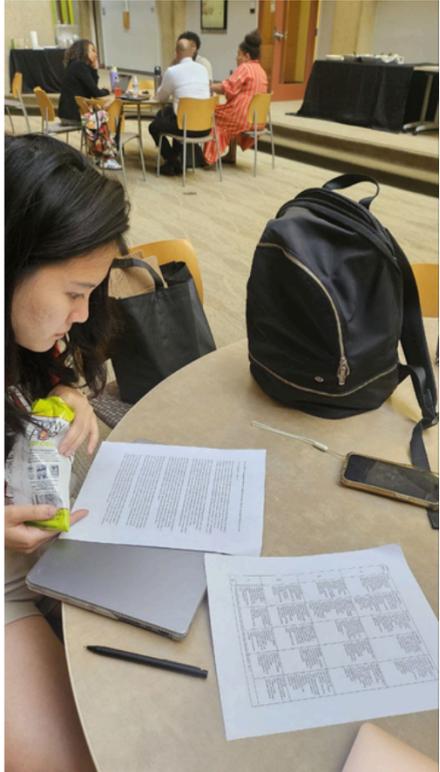
Public / Government schools

Private Tutors (K-12)

Private Tutors (Exam Prep)



PROCESS & ARTEFACTS



Rubrics

Score	Focus	Organization	Evidence	Language	Conventions
4	A consistent and purposeful focus and a strong controlling idea make the writing very informative. • is focused, clear, and well supported • places the controlling idea in a solid context	An effective beginning, middle, and ending create completeness and unity. • strongly connects ideas using transitions • presents ideas in a logical progression throughout • connects to the reader in the beginning and achieves the purpose by the ending	Thorough support for the controlling idea includes a variety of details from various sources. • has complete, relevant, and well integrated support giving credit to sources • elaborates ideas effectively	Precise language makes the writing clear and effective. • has appropriate vocabulary for the subject, audience, and purpose	A strong command of conventions makes the writing polished and clear. • uses words well and forms sentences correctly • has correct punctuation, capitalization, spelling, and grammar
3	An adequate, general focus controlling idea makes the writing informative. • is not as focused, but with some closely related material • provides adequate context for the controlling idea	A beginning, a middle, and an ending exist, making the writing complete, though some material may be loosely related. • connects ideas with some transitions • progresses unevenly through ideas • introduces ideas in the beginning, and adequately sums them up in the ending	Support for the controlling idea includes details from different sources. • uses some support from sources, with general or imprecise credit • elaborates on some ideas	Some precise and some general language adequately communicates. • has generally appropriate vocabulary for the subject, audience, and purpose	Adequate command of conventions makes the writing solid. • has occasional usage or sentence errors, but they do not disrupt meaning • has adequate punctuation, capitalization, spelling, and grammar
2	A somewhat focused controlling idea is supported, with minor divergence from the topic. • receives some support, but not enough • may be somewhat unclear or unfocused	An inconsistent structure and obvious flaws make the writing uneven. • has inconsistent transitions • progresses unevenly through ideas from beginning to ending • has a weak beginning or ending	Support for the controlling idea is uneven, needing more details from different sources. • has little support from sources, with unclear or imprecise credit • elaborates on few ideas	Stylistic vocabulary unevenly expresses ideas. • has vocabulary that is sometimes inappropriate for the subject, audience, and purpose	Uneven use of conventions makes the writing somewhat difficult to read. • has frequent usage and sentence errors, which can obscure meaning • does not consistently use punctuation, capitalization, spelling, and grammar
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In addition to GPT - no clear stance

A GPT is right but I gave benefit of doubt due to lack of context. Who is the student? where they're from

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don't get the simple struc

① lacks cohesive structure

② Able to construct sentences but some transitions happens

③ lack concrete e.g.

ChatGPT Generated Scoring

Focus: 3

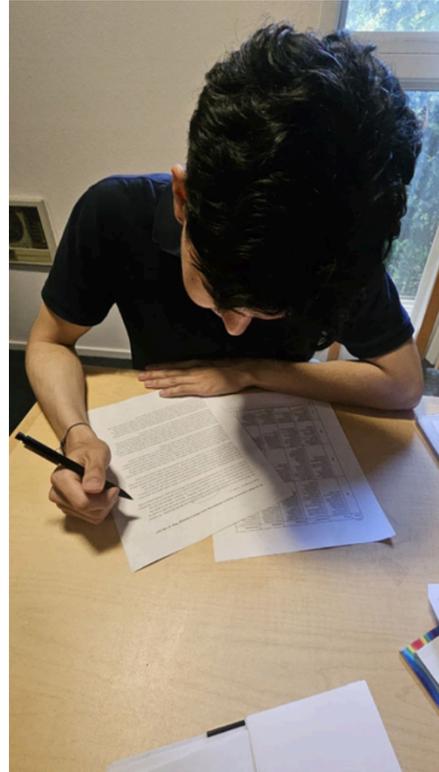
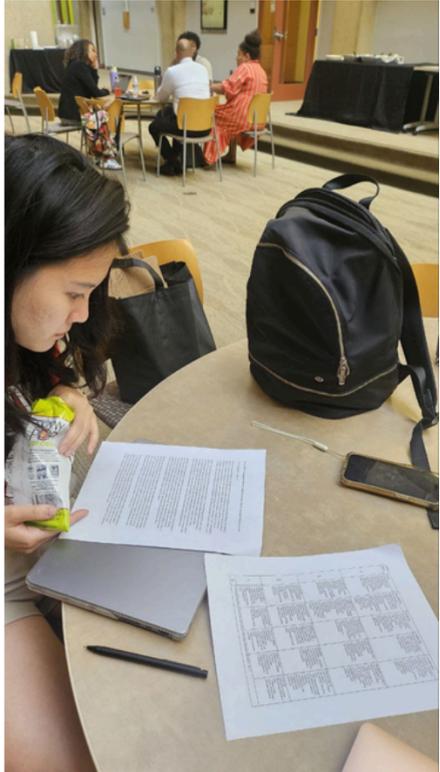
Organization: 3

Evidence: 2

Language: 2

Conventions: 3

PROCESS & ARTEFACTS



ChatGPT Generated Scoring

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POST-ACTIVITY SURVEY & FINDINGS

“I was very impressed with how ChatGPT was able to **pick up on things I didn't see.**” - Imama

“Pretty in-line with thoughts that they had. Reading the responses on language made me realise the mistakes they missed - **ChatGPT was in line with human rationale**” - Nick

“I didn't have as much attention to detail. I was a little tired from the day & people are affected by what they feel and experience in the day. **Less attention to detail compared to AI**” - Jen

“Overall, the feedback was pretty much in line with what I was thinking. The focus on language issues helped me realize there were a few things I hadn't noticed, so that was helpful. **The AI seems to pick up on logic quite well.**” - Avery

Enhanced Attention to Detail: Users noted that ChatGPT identified language issues and details they missed.

Alignment with Human Thought: The AI's feedback often aligned with users' own insights

POST-ACTIVITY SURVEY & FINDINGS

Teachers **trust an AI** to **generate feedback** for their students



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Alignment with Human Thought: The AI's feedback often aligned with users' own insights



Velma

18 Year-old

Student who has just graduated from the
K-12 system

POV STATEMENT

We met: Velma, an 18 year old student. She has recently gone through the K-12 education system, which has become increasingly AI-centric where classrooms adopt AI tools for writing and language learning.

We were surprised to realize that: She believes learning grammar will become more challenging because of the rise of AI platforms - which often performs grammar checks for you.

We wonder if this means: Velma believes that **students need to depend less on AI [NEED]** for language support, because it potentially stunts their own understanding and mastery of grammar.

It would be game changing to: **leverage AI tools for active grammar learning [INSIGHT]**, instead of just being a passive tool students use to check their work. ■

TOP 3 HMW STATEMENTS

- HMW create immersive realistic environments where Velma can practice her grammar skills

[IDENTIFY UNEXPECTED RESOURCES]

- **HMW leverage AI to adapt grammar lessons for Velma based on real-world language patterns and student needs?**
- HMW help Velma reduce her dependence on tools like spell-check, autocorrect, etc?

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PROPOSED SOLUTION

Use AI to evaluate student performance in class by analyzing speech rate, confidence, word usage, and sentence complexity. It prompts teachers on ways to adjust lesson pacing and content based on students' language progress.



KEY ASSUMPTION TO TEST

AI can accurately plan for an effective lesson according to teaching and learning objectives

PROPOSED SOLUTION

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Testing Instructions

Seek teacher's input on lesson plan - what does teacher want to teach before getting ChatGPT to generate plan.

Teacher to evaluate the lesson plan

Post-Activity Survey:

1. How would you rate the accuracy of the lesson plan?
2. How would this be helpful in planning for your own class? Why or why not?



EXPERIENTIAL PROTOTYPE (TESTERS)



Jasmine

27 Year-old
Language Tutor for middle &
high school students



George

22 Year-old
Language Tutor for SATs

English Language tutors (Public)

English Language tutors (Private)



PROCESS & ARTEFACTS

EP 2.1 - George:

Chat GPT plan:

Here's a lesson plan for an SAT English session, structured around the Pre-Activity / Main Activity / Consolidation format. This plan focuses on building skills in Reading Comprehension, Grammar, and Evidence-based Questions, as these are critical areas on the SAT.

Lesson Plan: SAT English Tutoring Session

Objective:

- Enhance comprehension skills for SAT Reading passages.
- Improve knowledge and application of SAT-specific grammar rules.
- Strengthen ability to identify and interpret evidence-based questions.

Materials Needed:

- SAT Reading and Writing practice questions (printouts or digital).
- Notebook for note-taking.
- Timer (for timed practice).
- Highlighters/pens.

1. Pre-Activity (10 Minutes)

- **Goal:** Set the stage for the lesson by reviewing key concepts and identifying areas of focus.
- **Activity: Warm-up Discussion**
 - Briefly discuss the student's progress on SAT Reading and Writing sections. Ask:
 - "How have your recent SAT practices gone? Any particular challenges?"
 - "What types of questions are you finding most difficult?"
 - Review the main types of questions in the Reading and Writing sections, including:
 - Main ideas and details
 - Evidence-based questions
 - Vocabulary in context
 - Grammar rules, such as verb agreement, pronoun usage, and punctuation.
 - Share today's objectives based on the student's needs and goals, such as improving speed and accuracy or targeting a specific question type.

2. Main Activity (35 Minutes)

- **Goal:** Provide targeted practice on reading comprehension and grammar skills.
- **Activity A: Reading Comprehension Practice (20 Minutes)**

PROCESS & ARTEFACTS

Lesson Plan: English Presentation Skills (30 minutes)

Duration: 30 minutes

Level: Secondary School (Adaptable)

Objective: By the end of the lesson, students will be able to organize their presentations using a clear structure, deliver confidently using vocal and physical techniques, and engage the audience effectively.

Lesson Outline:

1. Introduction & Warm-Up (5 minutes)

- **Objective:** Recognize the value of clear and effective presentation skills.
 - **Activity:** Begin with a brief discussion. Ask students to share a time when they had to give a presentation or speak in front of a group. What did they find challenging (e.g., organizing thoughts, speaking clearly, feeling nervous)?
 - **Discussion Prompts:**
 - What makes a presentation engaging?
 - What do you think are the most important skills when presenting?
 - **Materials:** Whiteboard for listing student responses, focusing on skills like clarity, confidence, and audience engagement.
-

2. Skill 1: Organizing the Presentation (10 minutes)

- **Objective:** Learn how to structure presentations clearly and logically.
- **Key Points:**
 - **Introduction:** Capture attention with a hook (story, question, or interesting fact). Clearly state the purpose and give an overview.
 - **Body:** Divide your content into 2-3 main points. Use signposting language like "Firstly," "Next," and "In conclusion" to guide the audience.
 - **Conclusion:** Summarize key points, restate the purpose, and end with a call to action or memorable closing remark.

Lesson Plan: English Presentation Skills (30 minutes)

Duration: 30 minutes

Level: Secondary School (Adaptable)

Objective: By the end of the lesson, students will be able to understand and apply basic presentation techniques, including structure, delivery, and audience engagement.

Lesson Outline:

1. Introduction & Warm-Up (5 minutes)

- **Objective:** Introduce the importance of effective presentation skills.
- **Activity:** Ask students if they've done a presentation before and what they find most challenging. Discuss why presentation skills are important in both academic and professional settings.
- **Materials:** Whiteboard to list key challenges and benefits of good presentations.

2. Understanding Presentation Structure (10 minutes)

- **Objective:** Learn to structure a presentation effectively.
- **Teaching Points:**
 - **Introduction:** Hook, purpose, and overview.
 - **Body:** Main points with examples and transitions.
 - **Conclusion:** Summary and key takeaways.
- **Activity:** Provide a short outline template for students to fill in with a topic they know well (e.g., favorite hobby or school subject).

POST-ACTIVITY SURVEY & FINDINGS

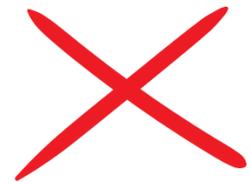
“Its pretty accurate I would say. It follows a good flow of what an SAT lesson looks like. **It is a bit too detailed though.** For the main lesson I would just give them a passage and let them solve it. Also I think there is no need for such a long consolidation. I would be curious to see if it can come up with a lesson plan for harder, more specific teaching topics that SAT tutoring because SATs are very well defined.” - George

“**The ChatGPT lesson plans are too general.** Very common sense and nothing tailored to middle school students. Didnt give concrete examples. **After I prompted it to give more details, it got better**” - Jasmine

Need for Tailored Content: ChatGPT often lacked the specificity and customization needed for different student demographics.

Balance in Complexity: The mixed feedback highlights that ChatGPT may struggle with finding the right balance between detail and simplicity.

POST-ACTIVITY SURVEY & FINDINGS



AI can accurately plan for an effective lesson according to teaching and learning objectives

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Nathan

9 Year-old

Current student in the K-12 system

POV STATEMENT

We met: Nathan, a 9 year old student who enjoys reading, learns concepts quickly and is generally very curious about the world around him.

We were surprised to realize that: He does not read ahead or beyond the classroom curriculum because he fears that knowing too much will lead to boredom in school.

We wonder if this means: Nathan is **actively trying to avoid boredom [NEED]** by limiting his exploration beyond and outside the classroom. He wants to keep his learning experiences fresh and connected to the classroom environment.

It would be game changing to: Create learning opportunities outside of class that allow Nathan to explore his interests in engaging ways that **enhance his classroom experience rather than detract [INSIGHT]** from it. ■

TOP 3 HMW STATEMENTS

[Identify unexpected resources]

- **HMW rely on AI to offer learning activities that complement what he's learning in class?**
- How might we use technology to connect Nathan's reading interests with relevant class topics?
- How might we create reading solutions where Nathan can share his interests and make meaningful connections to class content?

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PROPOSED SOLUTION

Technology can be used to create learning projects like presentations, videos, and blogs. These tools can also help assess his language skills by checking language complexity, sentence structure, and grammar.



KEY ASSUMPTION TO TEST

Assumption: Students are self motivated to do personal learning projects.

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KEY ASSUMPTION TO TEST

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Testing Instructions

1. Get students to read the given passage.
2. Get students to respond on padlet by doing the 3 activities.

Post-Activity Survey:

1. How did you find the activities? Is there any one that you preferred more than others?
2. Would this be something that you would consider doing after class?
3. How regularly would you do this activity/activities?



EXPERIENTIAL PROTOTYPE (TESTERS)



Kim

17 Year-old student in K-12



Daisy

20 Year-old
Student who has gone through
K-12



Current student

Graduated



PROCESS & ARTEFACTS

Written Reflection - Daisy

- reminded to change my passwords even though I don't often do that
- AI job displacement reminds me of the huge SWE job industry
- reminded of facebook scams and spread of misinformation / cypastas

Image - Daisy



I chose this image because it's what comes to mind when I think of cyber security and hacking

Are we too scared?

Having awareness makes me feel like I have agency and sure, as change happens, it's difficult to understand what it would entail. However, I feel like we are quite good at adapting as a species.

More awareness and insights into potential (and very real) pitfalls can help people be mindful of how they use technology



Just something that popped in my head!



POST-ACTIVITY SURVEY & FINDINGS

“Simple and easy to do, but I like the video the most because it **makes me think of what is in my actual space**. It’s like putting the concept into real life. This is a good thought process experiment to think about the negative / focus on psychology. But **I would prefer an in-class activity instead. External motivation is necessary for things outside of the classroom.**” - Daisy

“I really liked the picture because **I didn’t have to think a lot / personalise customise / I don’t like to think**. Something like journal might work but the way we give homework can be changed. Maybe something like a digital journal. **Need to rethink what homework can be**. If giving in addition to homework- then maybe that’s a lot.” - Kim

Practical and Relatable Assignments:

Tasks are practical and relatable & generally does not require much effort to do.

Importance of Classroom Engagement:

Responses suggest that collaborative, interactive learning environments may be more effective for them than independent tasks.

POST-ACTIVITY SURVEY & FINDINGS



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WHICH SOLUTION?

Potential
Tested Assumption
Feedback Quality

Francis



An app that creates diagnostic assessments for English Language. It scans students' work, identifies areas for improvement, and provides written feedback. It also generates personalized practice problems in grammar, spelling, and other language skills.

Velma



Use AI to evaluate student performance in class by analyzing speech rate, confidence, word usage, and sentence complexity. It prompts teachers on ways to adjust lesson pacing and content based on students' language progress.

Nathan



Technology can be used to create learning projects like presentations, videos, and blogs. These tools can also help assess his language skills by checking language complexity, sentence structure, and grammar.

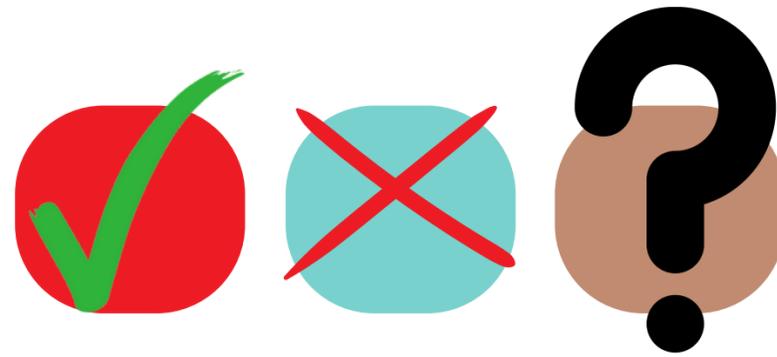
WHICH SOLUTION?

-  Potential
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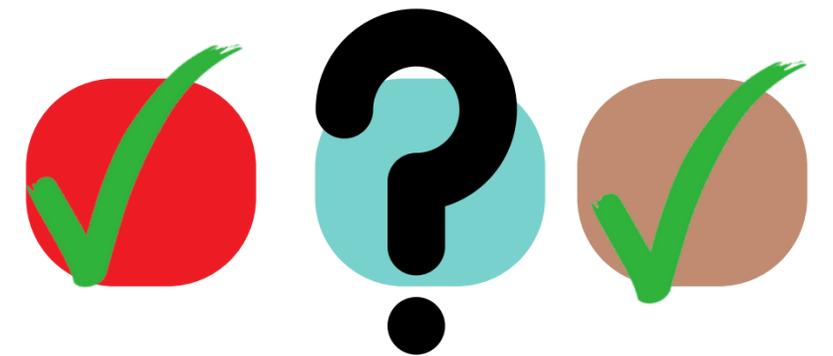
Francis



Velma



Nathan



WHAT ETHICAL IMPLICATIONS?

Francis



An app that creates diagnostic assessments for English Language. It scans students' work, identifies areas for improvement, and provides written feedback. It also generates personalized practice problems in grammar, spelling, and other language skills.

Data Privacy: Collecting and analyzing students' work raises concerns about data security and privacy.

Bias and Fairness: The app's algorithms must be free from biases that could disadvantage certain groups of students, particularly those from diverse linguistic or cultural backgrounds.



WHO DOES IT SERVE/EXCLUDE?

Francis



An app that creates diagnostic assessments for English Language. It scans students' work, identifies areas for improvement, and provides written feedback. It also generates personalized practice problems in grammar, spelling, and other language skills.

Serve:

English Language Learners & Teachers

Might Leave Out:

Non-Traditional Learners: Students who do not fit conventional learning styles may not benefit from a standardized assessment approach.



THE TEAM



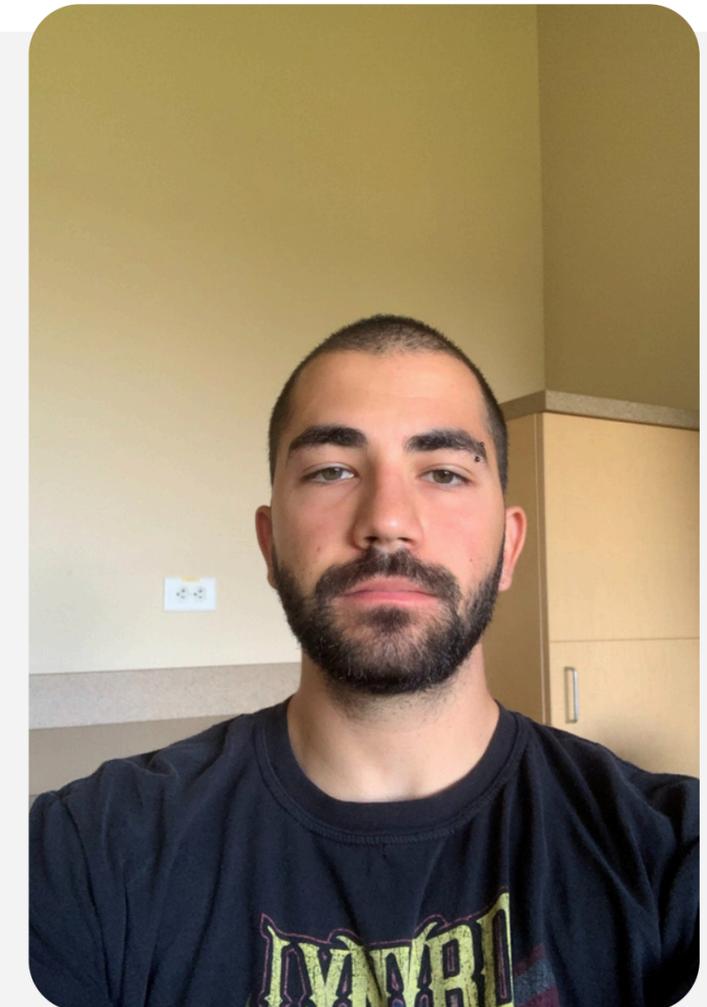
Violet Crow
Junior '26, Symbolic
Systems



Shi Han
Masters'25 Learning
Design & Tech



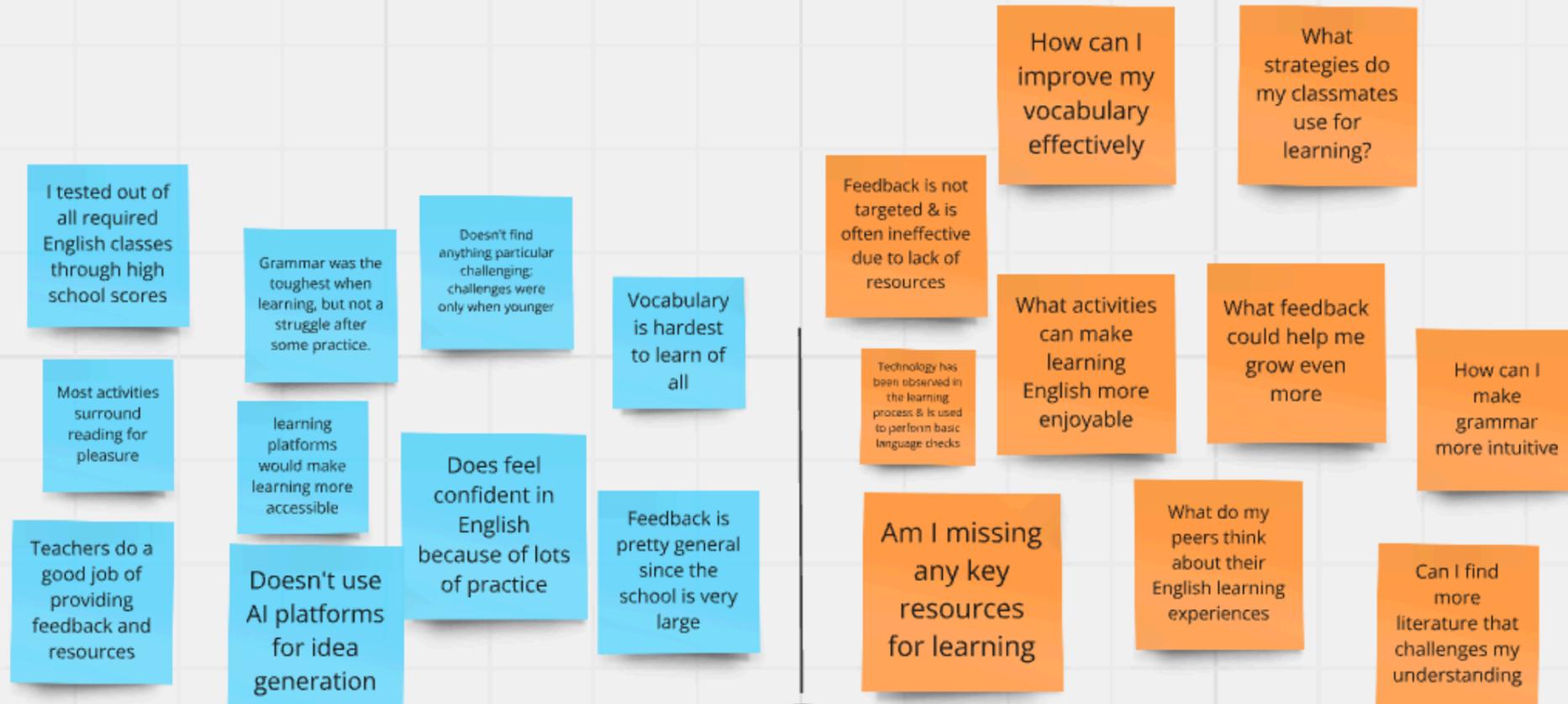
Abhi Desai
Senior'25 CS



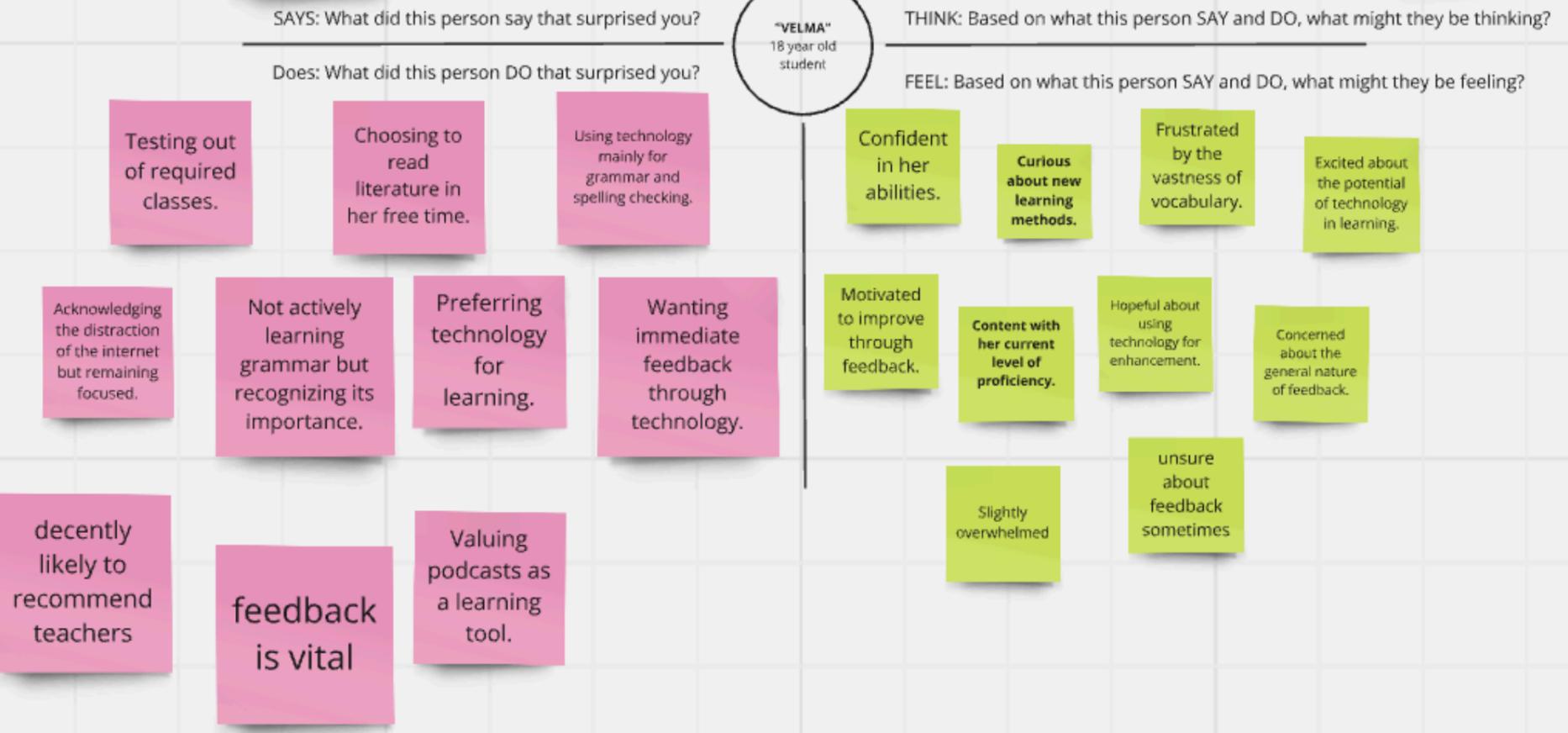
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THANK YOU

APPENDICES



"VELMA"
18 year old student



"Tony"
22 Year-old SAT
Tutor who tutors
high school
students on SAT
English.

SAYS: What did this person say that surprised you?

Realized could make a lot of money by stressed mothers wanting to send their kids to US schools.

It's not that important to him, just a way to make extra money.

Being very lovingly direct is the best way to do it

There's not much you can do for SAT motivation. It is really boring after all.

Does not think ChatGPT is useful.

There are two types of student... The biggest challenge though is just teaching them a language that isn't as intuitive to them as their first language

SAT learning has so many readily available resources so he thinks he's good on resources

Does not think ChatGPT is useful.

They understand it but it takes time for them to act on it because language feedback needs a bit of time to sink in

Itell them to be exposed to English as much as possible through media.

Kinesthetic learners have a harder time I guess

I guilt trip them by telling them how much their parents want this and are paying for this."

THINK: Based on what this person SAY and DO, what might they be thinking?

reflecting on his primary motivation for teaching and whether it aligns with a deeper purpose

He may be concerned about his ability to meet the diverse needs of his students effectively.

learning is not conducive to learn in class

recognition of the potential benefits of technology in education,

forward-thinking mindset, contemplating how advancements in technology might shape education.

He's questioning the impact of his feedback and whether it genuinely supports student growth.

reflecting on his overall fulfillment in his teaching role and considering changes.

He might be contemplating the ethics of his motivational strategies, particularly the use of guilt

evaluating whether the resources at his disposal are adequate for effective teaching.

shows his awareness of varied learning styles and a desire to customize his teaching approach.

Does: What did this person DO that surprised you?

use Online prep guides cause they have advice he hasn't thought of

Guilt trips them by telling them how much their parents want this

I teach on Zoom mostly so an iPad whiteboard needs to suffice

Teaches one student at a time so giving feedback is not har

There are two types of student. The one that thinks it is stupid and will eventually quit, and the one that is really stressed about getting into a good school

Getting kids good scores to boost reputation so he can make more money

Thinks he's good on resources, even though there could be gaps in other teaching contexts

Haven't tried [any digital tools he'd like to integrate]

Prefers to not have unmotivated students so he doesn't mind if they quit.

You just have to figure out how each student learns the best

FEEL: Based on what this person SAY and DO, what might they be feeling?

Frustrated with unmotivated students.

Doubtful about his teaching methods.

determined to challenge status quo

Curious about new teaching tools.

Proud of tailoring lessons effectively.

Hopeful for student engagement.

Relieved by available resources.

Conflicted about his teaching methods.

Impatient with slow progress.

Satisfied with student relationships.

POV	Francis
Game changing...	“Help Francis offer as much personalized and effective feedback as he wants, without spending additional time and resources on his work.”
HMWs (10+ each)	<ol style="list-style-type: none"> 1. HMW make it easier for Francis to offer feedback? 2. HMW show Francis new types of feedback that are quicker? 3. HMW make Francis’ feedback-giving process faster? 4. HMW give Francis another way to get feedback to his students? 5. HMW convince Francis that his students don’t need as much feedback? 6. HMW find extra time during class for Francis to offer feedback to students? 7. HMW make it so Francis only has to give feedback to some of his students at a time / per day, and not all? 8. HMW add time between assignments in Francis’ class, so he has more time to offer feedback? HMW de-emphasize the importance of direct feedback in Francis’ class? 9. HMW integrate technology to make Francis’ feedback process quick and easy? 10. HMW prioritize key areas of feedback so Francis can focus on what’s impactful? 11. HMW make feedback more collaborative, allowing students to contribute and reduce demand on Francis?

HMWs (Top 3 Total)

HMW integrate technology to make Francis' feedback process quick and easy? [Change status quo]

Solutions (10-15 each)

1. AI tool to view a student's work and give Francis feedback suggestions
2. AI tool that views a student's work and generates feedback autonomously or according to pre-set parameters
3. Wearable glasses that view student work as Francis is viewing it and overlay feedback onto the display
4. Smart scanner (either app or physical) that scans in a worksheet, essay, etc and then produces a PDF or printed copy with feedback overlaid on it
5. AI tool that can analyze a student's work over time to generate graphs showing their progress in different areas to help Francis direct his feedback
6. App/AI tool that will generate diagnostic assessments, analyze the students' work on them, tell Francis where the problem areas are, and generate both written feedback and a new set of individualized further practice problems for homework for each student
7. "Virtual TA" chatbot that Francis can delegate feedback tasks to or ask questions of
8. Website/app that students submit their own work to that generates feedback for them based on Francis' instructions/directions
9. Watch or phone app that guides Francis through the feedback process with timers and directions (e.g. "here's 1 minute to find problems in the work, next 1 minute to write a positive comment", etc)
10. App that generates "student work" and gives Francis 'practice feedback' scenarios/problems to help him improve the quality of his feedback and his speed Voice-to-Text
11. Feedback Assistant: Create a voice-activated tool that allows users to dictate their feedback. This could help capture thoughts quickly without needing to type, especially during busy times.
12. Feedback QR Codes: Generate QR codes for specific projects or tasks that students can scan to provide instant feedback. This method would make feedback submission seamless.
13. Instant Polling Tool: Introduce a quick polling feature integrated into team communication platforms (like Slack or Teams) that allows for rapid feedback collection on specific topics with a simple thumbs up/down or emoji response. Interactive
14. Feedback Templates: Create customizable digital templates that guide students through the feedback process with prompts and examples, making it easier to articulate thoughts effectively.
15. Feedback Reminder Bots: Deploy chatbots that periodically remind peers to give feedback on specific projects or tasks, ensuring that feedback becomes a regular part of the workflow rather than an afterthought.
16. Feedback Chat Rooms: Establish dedicated chat rooms for ongoing feedback discussions, allowing team members to post thoughts and respond in real time, keeping the conversation fluid and engaging.

POV	Velma
Game changing...	“leverage AI tools for active grammar learning, instead of just being a passive tool students use to check their work.”
HMWs (10+ each)	<ol style="list-style-type: none">1. HMW help students reduce their dependence on tools like spell-check, autocorrect, etc?2. HMW use AI to provide real-time, grammar feedback during active learning activities?3. HMW use AI to simulate real world scenarios where she can apply grammar4. HMW help her self asses her skills5. HMW track her progress over time6. HMW simulate conversations between her and the AI to put her in difficult grammar situations and give her live feedback7. HMW create difficult scenarios where the context is hard to distinguish but is also well defined and not ambiguous8. HMW create a personalized learning environment just for her that tailors to her specific learning needs9. HMW create immersive realistic environments where she can practice her skills10. HMW leverage AI to identify gaps in grammar understanding and offer contextual feedback in real-time?11. HMW leverage AI to adapt grammar lessons based on real-world language patterns and student needs?

HMWs (Top 3
Total)

HMW leverage AI to adapt grammar lessons for Velma based on real-world language patterns and student needs? [Go after adjectives]

Solutions (10-15
each)

1. AI tool that changes its difficulty based on interactions with student using real-world language
2. AI-Driven Chatpal - AI is involved in your day-day conversations with friends to remind you to use proper grammar
3. Use AI during live classroom sessions to analyze students' spoken language in real-time, providing instant suggestions for grammar corrections and adaptations to lesson plans on the fly.
4. Use AI to assess student performance in class activities and adjust lesson pacing and content based on their understanding and engagement levels.
5. AI virtual assistant that she can talk to and get live feedback on grammar
6. Scrape the internet for casual writing such as in social media to discover trends in language usage and what people often get wright / wrong / slang emergence
7. Identify language patterns and use NLP to create grammar problems that align with current trends
8. Create personalized interactive real world scenarios for grammar practice. Eg ordering food at restaurant or going to the bank
9. Collect data on student grammar trends to identify commonly occurring mistakes Identify and teach how grammar differs in different dialects of a language in order to facilitate learning different dialects
10. Adaptive Practice Exercises: Create interactive exercises that adapt in real-time based on student performance. If a student struggles with descriptive adjectives, the AI can present more examples and varied contexts to reinforce understanding.
11. Augmented Reality (AR) Experiences: Develop AR scenarios where students can interact with objects in their environment, using adjectives to describe what they see. The AI can provide feedback on their usage and suggest more effective or nuanced adjectives.
12. Customizable Vocabulary Lists: Design an AI system that creates personalized adjective vocabulary lists based on student interests, goals, and observed usage patterns, helping to motivate them and make learning more relevant.
13. Gamified Learning Modules: Create engaging, gamified lessons where students earn points for using adjectives effectively in different contexts. The AI can track their progress and suggest areas for improvement, ensuring a fun and interactive learning experience.
14. Peer Comparison Analysis: Use AI to anonymize and compare students' adjective usage with that of their peers or with professional writers. This comparative analysis can help students understand common patterns and learn from successful examples.
15. Contextual Adjective Analysis: Use AI to analyze students' writing samples, identifying frequently used adjectives. The system could suggest lessons that focus on expanding their vocabulary and using more varied descriptors based on their writing context.

POV	Nathan
Game changing...	“Create learning opportunities outside of class that allow Nathan to explore his interests in engaging ways that enhance his classroom experience rather than detract from it.”
HMWs (10+ each)	<ol style="list-style-type: none">1. HMW show Nathan new ways to learn that won't result in boredom at school?2. HMW give Nathan activities that help him learn, without 'repeating' educational content?3. HMW teach Nathan skills that go hand-in-hand with what he's learning in class?4. HMW involve Nathan in project-based learning?5. HMW convince Nathan that reading ahead won't lead to boredom?6. HMW make outside-the-classroom learning more appealing than in-the-classroom?7. HMW make sure Nathan can still learn new things in the classroom if he's already on top of the subject?8. HMW get Nathan into classes that are paced according to the speed at which he wants to learn?9. HMW turn boredom into contemplation/reflection? How might we design engaging activities during reading periods that allow Nathan to connect his interests with classroom topics?10. HMW use technology to connect Nathan's reading interests with relevant class topics?11. HMW create reading solutions where Nathan can share his interests and make meaningful connections to class content?

HMWs (Top 3 Total)

HMW rely on AI to offer learning activities that complement what he's learning in class? [Identify unexpected resources]

Solutions (10-15 each)

1. Implement an AI-powered tutoring app that adapts to Nathan's learning pace and style, providing targeted exercises and resources that reinforce classroom concepts and build related skills.
2. Develop AI-driven simulations that mimic real-world scenarios related to classroom topics, allowing Nathan to practice skills like decision-making, problem-solving, and collaboration.
3. Leverage AI tools that help Nathan create presentations, videos, projects, or blogs related to his studies
4. Develop an AI journaling app that prompts Nathan to reflect on his learning experiences, connecting classroom lessons with skill-building activities, and suggesting new areas to explore based on his interests.
5. Use AI to analyze what he is learning in class and match the syllabus with relevant real world problems and applications. Then create practice problems for those
6. Use AI to generate potential projects that are within the scope of his learning and are hands on, requiring relevant skills
7. Create puzzles or escape room type challenges that require utilization of the skills
8. AI for Nathan's parents that identifies adult responsibilities that his parents have that could be solved using the skills nathan wants to learn. Then make a plan on how parents can incorporate nathan into solving these real world challenges
9. Using Nathan's location data, find ways in which Nathan can build skills that are relevant to both his classes and helping his community. For example if he wants to get more math skills the app can put him calculating inventory for a nearby soup kitchen
10. A mentor matching app that matches students that want to learn certain skills with professionals in those fields that are willing to mentor them
11. Personalized Podcast Recommendations: Use AI to curate personalized podcast episodes related to classroom subjects. This can provide additional perspectives and deepen understanding while allowing students to learn during commutes or downtime.
12. Social Media Learning Communities: Leverage AI to identify and connect students with online communities or groups focused on their subjects. These platforms can provide peer support, discussions, and resources beyond the classroom.
13. Virtual Field Trips: Implement AI that curates virtual field trips relevant to class topics. Students can explore museums, historical sites, or natural wonders, integrating multimedia resources that enhance their learning experience.
14. Crowdsourced Knowledge Platforms: Create an AI-driven platform where students can contribute questions and answers related to their class material, building a living resource of knowledge that evolves with their learning.
15. Dynamic Study Buddy Matching: Use AI to match students with similar interests or complementary skills for collaborative learning activities. This fosters peer learning and allows them to share different perspectives on class material.
16. AI-Generated Art and Media: Encourage students to engage with AI tools that create visual art, music, or video based on class themes. This can help them express their understanding creatively while integrating technology into their learning.