

Ned App - Product Vision Document

Version: 1.1

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Executive Summary

Ned is an AI-powered homework companion designed for kids with ADD/ADHD and executive function challenges. Unlike generic AI tutors, Ned builds a longitudinal learning profile over years, integrates directly with school systems (Canvas, Aspen), and shifts homework ownership from parents to kids.

The core insight: The value isn't in being a better AI. It's in being the AI that *knows your kid*.

The Problem

For Kids with ADD/Executive Function Challenges

- **Can't hold it all in their head** - Forget assignments, deadlines, materials
- **Struggle to start** - Task initiation is genuinely hard, not laziness
- **Time blindness** - "I'll do it later" becomes "it's midnight"
- **Shame spirals** - Forgetting → guilt → avoidance → more forgetting
- **Generic help doesn't fit** - Every brain works differently

For Parents

- **The nag cycle is exhausting** - "Did you do your homework?" destroys relationships
- **No visibility** - Canvas is confusing, kid says "I did it" (didn't)
- **Expensive tutors** - \$50-150/hour, hard to find good fit
- **Don't know how to help** - 7th grade math has changed since we learned it
- **Worry without action** - Know something's wrong, can't pinpoint what

For Divorced/Co-Parenting Families

- **No visibility at the other house** - Is homework happening? No idea.

- **Can't help remotely** - Want to be involved but physically not there
 - **Different standards** - Hard to maintain consistency across households
 - **Communication gaps** - Kid falls through the cracks between homes
 - **Guilt and helplessness** - Want to support but can't be present
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The Solution

What Ned Is

An AI homework companion that:

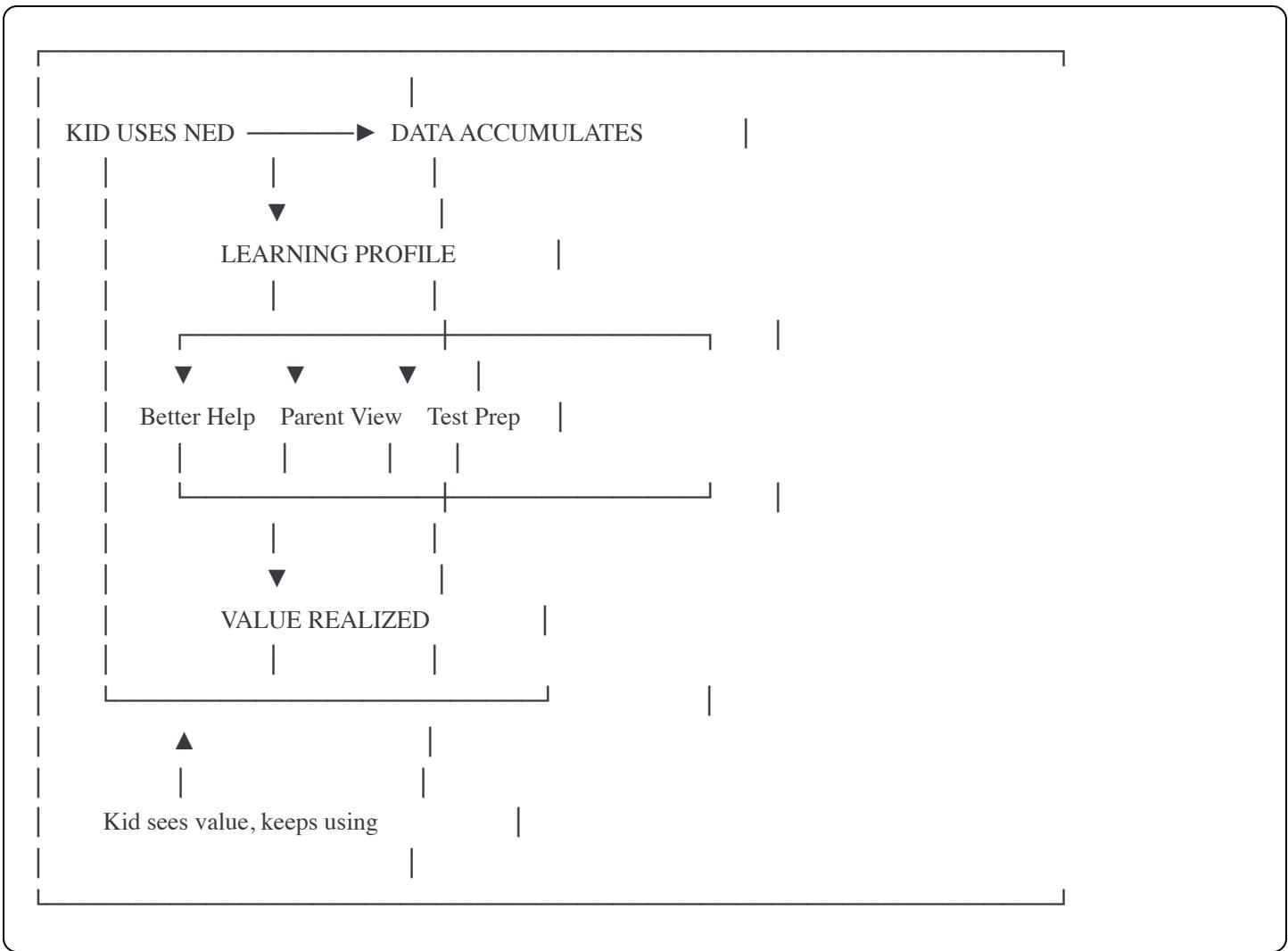
1. **Knows what's due** - Syncs with Canvas/school systems automatically
2. **Knows how your kid learns** - Builds a profile over months/years
3. **Provides the right help** - Socratic guidance, not answer-giving
4. **Creates ownership** - Kid manages themselves, parent steps back
5. **Gives visibility** - Parents see patterns, not transcripts
6. **Works across households** - Same system whether at Mom's or Dad's

What Ned Is NOT

- A surveillance tool (parents see insights, not conversations)
 - An answer machine (guides to understanding, doesn't do homework)
 - A replacement for human connection (augments tutors, doesn't replace)
 - A generic AI with a skin (deeply personalized over time)
-

The Critical Dependency: Engagement

None of the value exists if the kid doesn't use it.



Why Willy Would Use Ned (Not ChatGPT)

Reason	How We Deliver It
It's faster	Photo upload, voice input, knows his homework already
It actually helps	Remembers what works for him, adapts
It's not school	Barcelona personality, dad jokes, feels like a friend
It doesn't lecture	Short responses, no walls of text
It's always there	9pm homework crisis? Ned's ready
He sees himself improving	Progress tracking, streaks, wins celebrated
It helps with tests that matter	HSAT prep personalized to his gaps

Engagement Design Principles

- 1. Zero friction** - Voice-first, photo upload, minimal typing
- 2. Immediate value** - First interaction should help, not onboard
- 3. Personality matters** - Barcelona, humor, feels human
- 4. Never punish** - Missed a day? "No worries, here's today"

5. **Celebrate wins** - Streaks, progress, genuine encouragement

6. **Kid controls it** - Their tool, not parent's surveillance app

Value Propositions by Stakeholder

For Willy (The Student)

Primary value: Help that actually fits my brain

Need	How Ned Delivers
Remember what's due	Daily briefing, synced from Canvas
Get unstuck on homework	Voice/photo → guided help in seconds
Not feel stupid	Patient, never judges, celebrates progress
Prep for tests	Quizzes me on what I'm actually bad at
Feel capable	Builds self-advocacy skills, tracks improvement
Not be nagged	Ned reminds me, so Dad doesn't have to

The pitch to Willy:

"Ned's like having a friend who's really good at school and knows Barcelona stats. He helps you figure stuff out without just giving answers. And your parents stop bugging you about homework because they can see you're handling it."

For Parents (Peter & Julia)

Primary value: Visibility and peace of mind without being the bad guy

Need	How Ned Delivers
Know homework is getting done	See completion data, not transcripts
Stop nagging	Ned handles reminders, you celebrate wins
Early warning on struggles	Alerts before bad grades
Understand how he learns	Learning profile builds over years
Help without hovering	Insights guide your support
Afford support	80%+ reduction vs. traditional tutoring

The pitch to parents:

"Stop being the homework police. Ned handles the daily stuff so you can be a parent again. You'll see how your kid learns and where they struggle - without reading over their shoulder."

For Divorced/Co-Parenting Families

Primary value: Stay connected and involved regardless of custody schedule

Challenge	How Ned Helps
No visibility at other house	Same dashboard, same data, both homes
Want to help remotely	See what he's working on, send encouragement
Inconsistency between homes	Ned is consistent wherever he is
Kid falls through cracks	Automated reminders don't forget
Feel disconnected	"I saw you crushed math this week!" - from 30 miles away

The pitch to co-parents:

"Whether Willy's at your house or not, you know homework is happening. You can celebrate his wins from anywhere. You're involved in his learning without being physically present."

Specific features for co-parents:

- Shared parent dashboard (both parents see same data)
 - "Send encouragement" - note appears in Ned's greeting
 - Weekly summary email to both parents
 - No custody schedule conflicts - Ned works everywhere
 - Neutral third party - homework isn't a co-parenting battleground
-

For Executive Function Coaches

Primary value: Implementation layer + visibility between sessions

The Problem with EF Coaching Today:

Willy has had executive function coaches at two different schools. Neither gained traction. Why?

Coach Reality	The Gap
Sees kid 30-60 min/week	Strategies forgotten by Tuesday
Teaches "plan on Sunday"	No one there Sunday to prompt it
Works on organization	Kid's Canvas is still a mess
Tracks goals on paper	Paper gets lost (executive function, remember?)
Guesses what happened	No data between sessions
Measures by self-report	"Yeah I did my homework" (didn't)

How Ned Bridges the Gap:

Coach Does	Ned Does
Teaches planning strategies	Prompts "let's look at your week" Sunday night
Teaches organization	Everything in one place, synced automatically
Works on task initiation	Available at moment of need, not 4 days later
Teaches self-advocacy	Tracks "I don't understand" patterns to surface
Sets weekly goals	Monitors progress daily, reports back
Meets weekly	Available 24/7

Data Coaches Don't Have Today:

COACH REPORT (What Ned Could Provide)

PLANNING & TASK INITIATION

- Started homework before 5pm: 3/7 days (43%)
 - Started homework after 7pm: 4/7 days (57%)
 - Completion rate when starting early: 95%
 - Completion rate when starting late: 60%
- Insight: Early start = success. Focus on initiation triggers.

ORGANIZATION

- Opened Ned to check homework: 5/7 days
 - Subjects most often forgotten: Spanish (3x), Science (2x)
 - Missed assignments this week: 1 (Spanish worksheet)
- Insight: Spanish tracking needs reinforcement

SELF-ADVOCACY

- Asked for help proactively: 4 times this week
 - Topics where help requested: Math word problems (3x), Science metabolism (1x)
 - Average time before asking for help: 12 minutes
- Insight: Good help-seeking in math. May need prompting in other subjects.

WHAT'S WORKING

- Barcelona player stats as motivation: High engagement
- Voice input: Used 80% of the time (low friction = more usage)
- Streak tracking: Currently at 8 days (personal best)

The Value Proposition:

"Ned isn't a replacement for executive function coaching - it's what makes coaching actually work. The coach teaches the strategies. Ned implements them 24/7. The coach gets data on what's working. The kid builds habits, not just knowledge."

Potential Features for Coaches:

- Coach dashboard view (separate from parent)
- Exportable progress reports for sessions
- Goal-setting that syncs with Ned's prompts
- "Focus areas" that coach can adjust
- Notes that appear in Ned's guidance ("Coach wants you to try...")

Business Angle (Later):

- Coaches recommend Ned to clients → organic growth
 - Coach subscription tier with advanced analytics
 - Network of EF coaches who use Ned → referral ecosystem
 - Insurance/school reimbursement for "digital EF support tool"
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Primary value: Finally, something built for ADD/ADHD kids

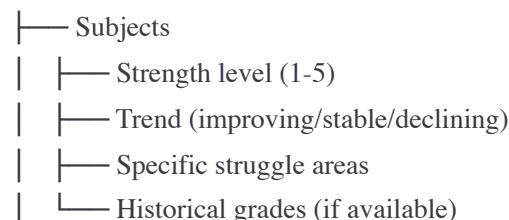
Why Current Tools Fail	How Ned Succeeds
Generic tutoring	Learns individual patterns over time
Parent-controlled apps	Kid-owned, builds autonomy
Answer-giving AI	Socratic method, actual learning
One-size-fits-all	Adapts to learning style
No school integration	Syncs with actual assignments
Expensive tutors	AI-first with human augmentation

The Learning Profile

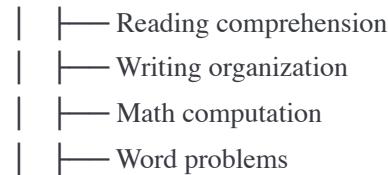
What We Track (Over Years)

LEARNING PROFILE SCHEMA

ACADEMIC PATTERNS



Skills



- └─ Memorization
 - └─ Test taking
 - └─ Long-term projects
-
- └─ Content Mastery
 - └─ Topics covered
 - └─ Topics mastered
 - └─ Topics needing reinforcement

LEARNING STYLE

- └─ Explanation preferences
 - └─ Concrete → abstract (or reverse)
 - └─ Visual vs. verbal vs. kinesthetic
 - └─ Examples first vs. rules first
 - └─ Effective analogy types (sports, games, food, etc.)
-
- └─ Session patterns
 - └─ Optimal session length
 - └─ Break frequency needed
 - └─ Best time of day
 - └─ Signs of fatigue/frustration
-
- └─ What works
 - └─ Approaches that clicked
 - └─ Approaches that failed
 - └─ Breakthrough moments logged

EXECUTIVE FUNCTION

- └─ Task initiation
 - └─ Needs prompts? How many?
 - └─ Best prompt types
-
- └─ Organization
 - └─ Checklist usage
 - └─ Planning capability
 - └─ Material management
-
- └─ Time management
 - └─ Time estimation accuracy
 - └─ Deadline awareness
 - └─ Procrastination patterns
-
- └─ Self-monitoring
 - └─ Recognizes when stuck?

- |— Asks for help appropriately?
 - |— Checks own work?

ENGAGEMENT PATTERNS

- |— Usage frequency
 - |— Session lengths
 - |— Features used most
 - |— Drop-off triggers
 - |— Re-engagement patterns

GROWTH OVER TIME

- |— Confidence indicators
 - |— Independence progression
 - |— Self-advocacy development
 - |— Milestone achievements

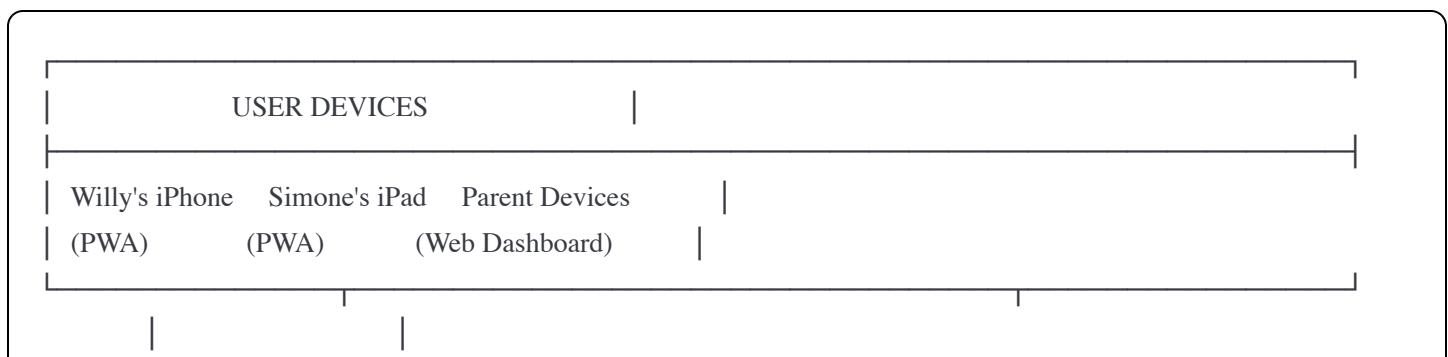
How It's Built

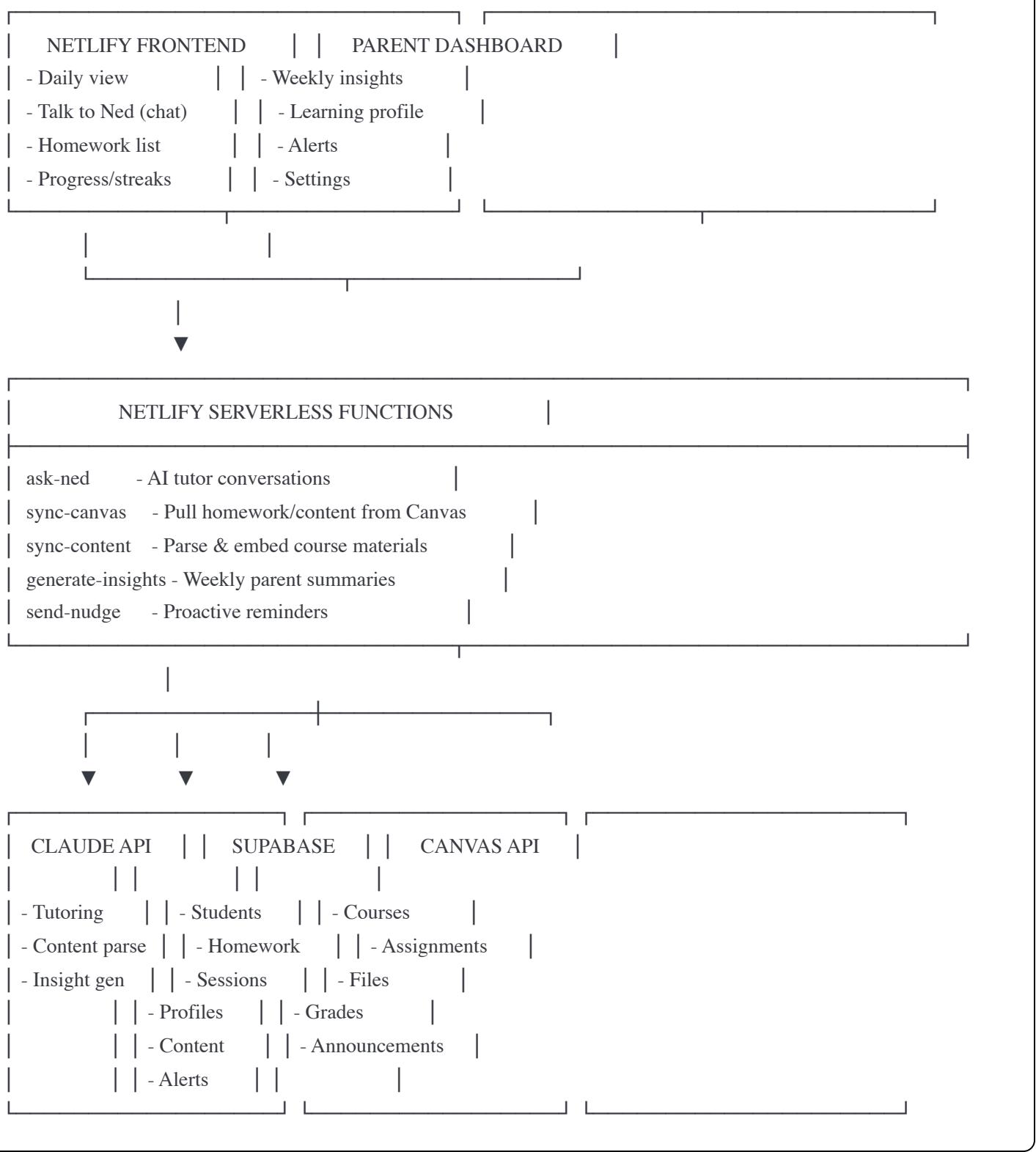
The profile isn't filled out in a form. It emerges from interactions:

Data Source	What It Reveals
Tutoring sessions	What explanations work, where he gets stuck
Homework check-offs	What he completes vs. avoids
Time patterns	When he's productive, when he fades
Question types	What he asks about reveals gaps
Correction patterns	How quickly he integrates feedback
Canvas grades	Objective performance data
Session sentiment	Frustration vs. confidence indicators

Technical Architecture

High-Level System Design





Database Schema (Key Tables)

sql

-- Core entities

students (id, family_id, name, grade, school, lms_type, settings)
families (id, name, subscription_tier)
users (id, family_id, role [parent/student], email)

-- School data

homework_items (id, student_id, source, title, subject, due_date, status)
course_content (id, student_id, course, file_type, content, embedding)
grades (id, student_id, course, assignment, score, date)

-- Learning profile

learning_profiles (id, student_id, updated_at)
profile_subjects (id, profile_id, subject, strength, trend, struggles[])
profile_patterns (id, profile_id, pattern_type, pattern_data)
profile_breakthroughs (id, profile_id, date, description, topic)

-- Interactions

tutor_sessions (id, student_id, session_id, message, response, topics[])
session_analysis (id, session_id, struggle_detected, approach_worked)

-- Parent features

parent_alerts (id, student_id, type, severity, message, reviewed)
weekly_summaries (id, student_id, week, summary_data)

-- Engagement

streaks (id, student_id, current_streak, longest_streak, last_active)
achievements (id, student_id, achievement_type, earned_at)

Data Flows

DAILY SYNC (Automated)

6:00 AM | Canvas API → New assignments → Supabase

- | Update homework_items table
- | Check for new announcements (quiz alerts)

WHEN WILLY USES NED

Message | Retrieve relevant course_content (vector search)

- ↓ | Retrieve learning_profile
- ↓ | Build personalized prompt
- ↓ | Claude API generates response
- ↓ | Log to tutor_sessions

- ↓ | Analyze for struggle/success patterns
- ↓ | Update profile_patterns if significant

WEEKLY SUMMARY (Automated)

- Sunday | Aggregate week's tutor_sessions
- evening | Analyze patterns, struggles, wins
 - | Generate parent summary
 - | Email to both parents
 - | Flag any alerts needing attention

Feature Roadmap

Phase 1: Foundation (Completed)

- Basic PWA with homework display
- Canvas API integration (homework sync)
- Supabase database setup
- Barcelona theme and personality

Phase 2: AI Tutor (Current)

- Talk to Ned chat interface
- Voice input support
- Conversation logging
- Basic tutoring with Socratic method
- Safety monitoring

Phase 3: Engagement & Ownership

- Streak tracking
- Progress visualization (for Willy)
- Gentle nudge system
- Achievement celebrations
- Daily briefing feature

Phase 4: Richer Context

- Photo upload for worksheets
- Canvas content ingestion (slides, PDFs)
- Semantic search across course materials

- Assignment-aware tutoring

Phase 5: Learning Profile

- Schema implementation
- Pattern detection from sessions
- Approach effectiveness tracking
- Breakthrough logging
- Profile visualization

Phase 6: Parent Dashboard

- Weekly summary view
- Learning profile display
- Alert system
- Co-parent shared access
- Progress over time charts

Phase 7: Test Prep Mode

- HSAT-specific preparation
- Personalized practice based on profile
- Timed practice sessions
- Progress tracking toward test date
- Weak area focus

Phase 8: Multi-Child & Scale

- Simone onboarding (Aspen integration)
 - Profile switching
 - Family dashboard
 - Beta family onboarding
 - Authentication system
-

Success Metrics

For Willy (Leading Indicators)

Metric	Target	Why It Matters
Weekly active sessions	3+	He's actually using it
Homework completion rate	>85%	It's working

Metric	Target	Why It Matters
Streak length	5+ days	Building habit
Tutoring sessions/week	2+	Finding value in help
Self-initiated usage	>50%	Ownership, not nagging

For Parents (Outcomes)

Metric	Target	Why It Matters
Nagging incidents/week	<3	Relationship improving
Surprise bad grades	0	Early warning working
Dashboard check frequency	1-2x/week	Engaged, not obsessive
Co-parent alignment	Both see same data	Reduces conflict

For Learning (Long-term)

Metric	Target	Why It Matters
Grade trend	Stable or improving	Actually learning
Self-advocacy instances	Increasing	Building skills
Profile accuracy	Validated by parent	Data is meaningful
Test score improvement	>10% vs. baseline	Prep is working

Risks and Mitigations

Risk	Likelihood	Impact	Mitigation
Willy doesn't use it	High	Fatal	Voice-first, Barcelona, zero friction, genuine value
Just uses it for answers	Medium	High	Socratic method enforced, learning profile tracks actual understanding
Parents over-monitor	Medium	Medium	Show patterns not transcripts, encourage stepping back
Data doesn't accumulate	Medium	High	Make every interaction count, background logging
Canvas API changes	Low	Medium	Adapter pattern, manual fallback
AI gives wrong info	Medium	Medium	Ground in course content, flag uncertainty
Privacy concerns	Medium	High	Clear data policies, kid controls visibility

The Vision in One Page

The Problem: ADD kids struggle with homework not because they're not smart, but because executive function

is hard. Parents become the bad guy. Expensive tutors help but aren't always there. Executive function coaches teach great strategies, but there's no one there Tuesday at 7pm to implement them. Generic AI gives answers but doesn't teach.

The Solution: Ned is the AI that knows your kid. It remembers what works, adapts to their brain, and builds a learning profile over years. Kids own their homework. Parents see insights, not transcripts. Co-parents stay connected across households. And EF coaches finally get an implementation layer that makes their strategies stick.

The Moat:

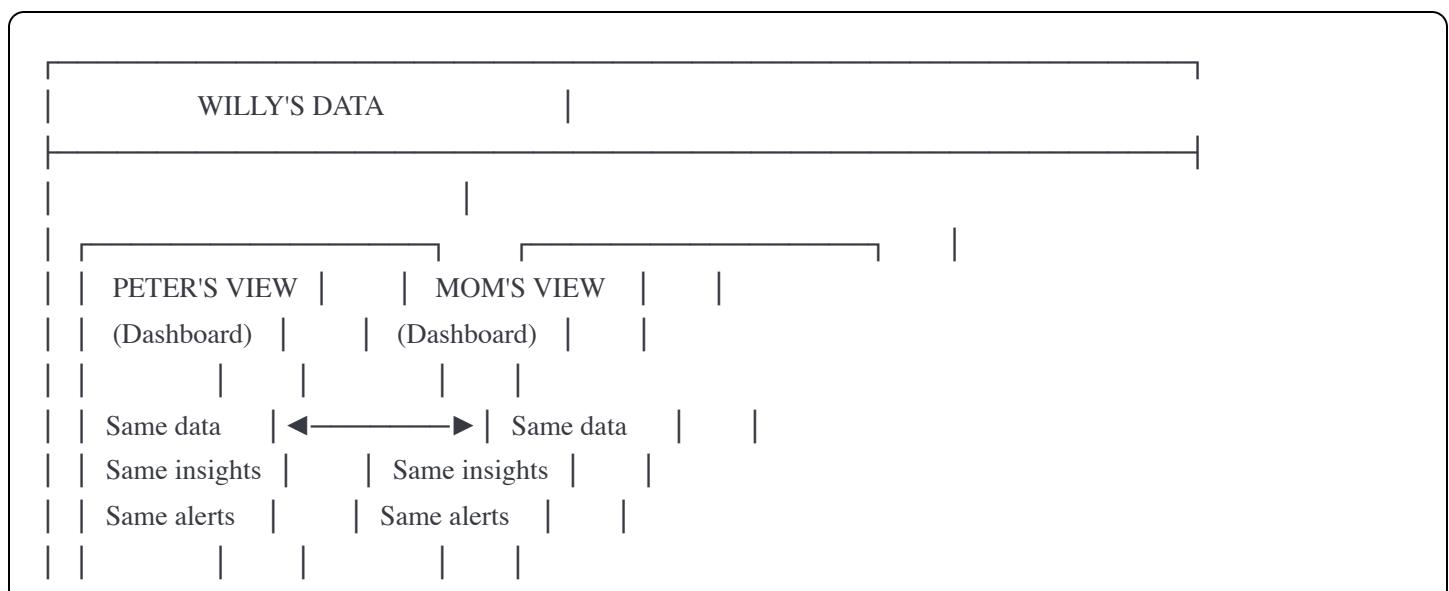
- Accumulated learning profile (ChatGPT starts fresh every time)
- School system integration (knows actual assignments)
- Personality the kid likes (engagement is everything)
- Trust built over years (switching cost increases)
- Data that coaches/parents can't get anywhere else

The Bet: If we can get Willy to actually use it, the data flywheel creates compounding value. Better help → more usage → more data → even better help.

The North Star: In 5 years, Ned knows more about how Willy learns than anyone - teachers, tutors, coaches, even parents. That knowledge guides his education from 7th grade through SAT prep. He develops self-advocacy skills, understands his own brain, and owns his learning.

Appendix: Co-Parent Feature Details

Shared Visibility Model



SHARED FEATURES

- Weekly summary email (to both)
- Alert notifications (to both)
- Encouragement notes (either can send)
- Settings changes (logged, visible to both)

NED (NEUTRAL)

- Same experience at either house
- Doesn't favor either parent
- Homework is homework, location irrelevant
- Kid's relationship with Ned is HIS

What Each Parent Sees

Weekly Summary Email:

Subject: Willy's Week with Ned (Nov 25 - Dec 1)

Hi Peter (and Julia),

Here's how Willy's week went:

OVERVIEW

- 6 homework sessions completed
- 3 tutoring conversations
- Current streak: 4 days

SUBJECTS

- Math: Strong week, finished all assignments
- Science: Needed help with metabolism concepts
- Spanish: Vocabulary quiz Friday - he's prepping

HEADS UP

- Word problems still tricky - might need extra support
- Seemed frustrated Tuesday but pushed through

WINS

- Asked Ned for help proactively on Thursday!
- Percentage concept finally clicked

SUGGESTION

Consider celebrating the percentage breakthrough -
it was a big moment for him.

Both parents receive this same email.

Ned works the same at both houses.

Remote Encouragement Feature

PETER'S DASHBOARD (While Willy is at Mom's)

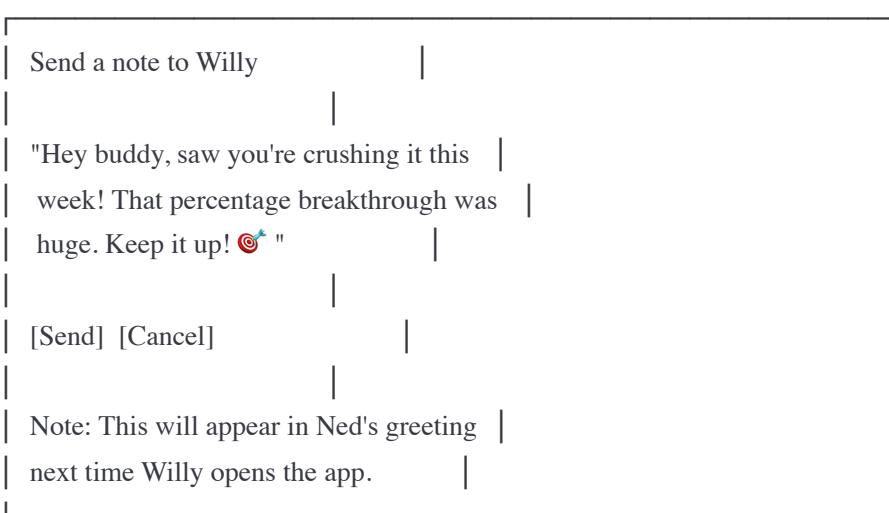
[Current Status]

Last active: Today, 4:32 PM

Working on: Science homework

Streak: 4 days 🔥

[Send Encouragement] ← Click



WHAT WILLY SEES NEXT TIME HE OPENS NED:

"Hey Willy! 🤝 Your dad sent you a message:
'Hey buddy, saw you're crushing it this week!
That percentage breakthrough was huge. Keep it up! 🎉'

Ready to tackle tonight's homework?"

Document Version 1.1 - Living document, will evolve as we build

Appendix: Executive Function Coach Integration

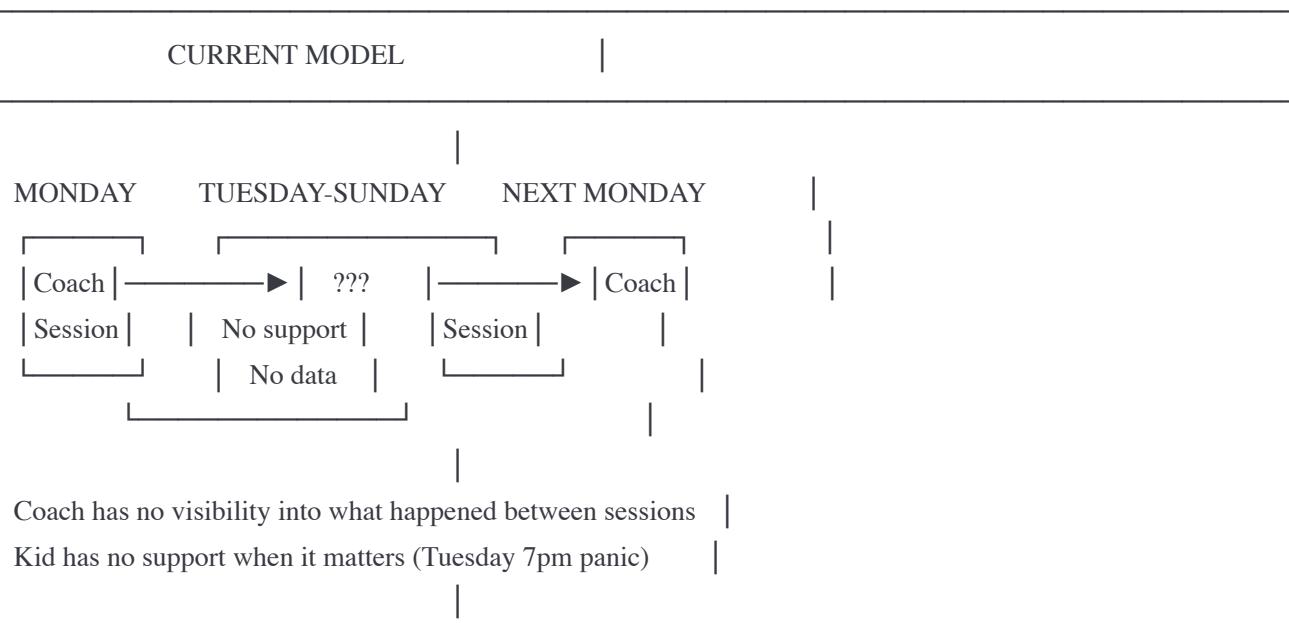
Why This Matters: Willy's Story

Willy has had executive function coaches at two schools now. Both were well-intentioned, skilled professionals. Neither achieved lasting traction. The pattern:

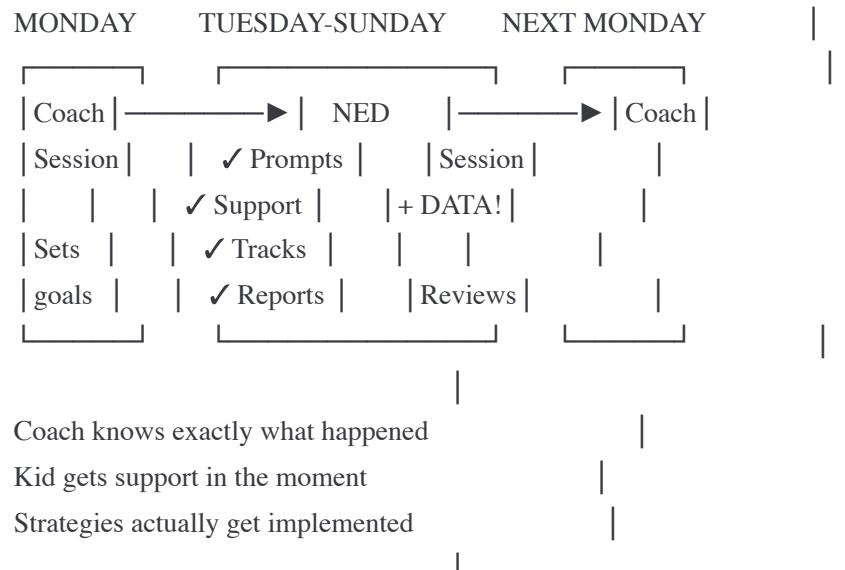
1. **Week 1-2:** Coach teaches strategies (use a planner, check Canvas daily, break tasks down)
2. **Week 3-4:** Willy nods, tries it, partially succeeds
3. **Week 5-6:** Old habits creep back, planner abandoned
4. **Week 7+:** Coach repeats strategies, limited progress

The problem isn't the coaching - it's the **implementation gap**.

The Implementation Gap



NED-AUGMENTED MODEL



Sample Coach Report

EXECUTIVE FUNCTION PROGRESS REPORT

Student: Willy Hammond

Period: November 25 - December 1, 2024

Generated by: Ned App

FOCUS AREA 1: TASK INITIATION

Goal: Start homework within 30 min of getting home



Success rate: 60% (3/5 school days)

Trend: Improving (was 40% last week)

Pattern detected: Wednesday after-school activity (basketball)

delays start. Consider: homework before practice on game days?

FOCUS AREA 2: ASKING FOR HELP

Goal: Ask for help within 10 min of getting stuck

Help requests this week: 6

Average time before asking: 8 minutes ✓

Subjects where help requested:

- Math (word problems): 3 times
- Science (metabolism): 2 times
- Spanish (vocab): 1 time

Progress: Last month average was 22 minutes before asking.

Significant improvement in self-advocacy.

FOCUS AREA 3: WEEKLY PLANNING

Goal: Review upcoming week every Sunday

Sunday planning session: ✓ Completed (6 minutes)

What Willy identified:

- Spanish quiz Friday
- Science project due Thursday
- Math test next week

Ned's automated prompt was triggered at 7pm Sunday.

Willy engaged without parent prompting.

NOTABLE MOMENTS THIS WEEK

- ★ Wednesday 7:23pm - Willy said "I don't get this at all" about fractions → percentages. Ned walked through it using Barcelona possession stats ($68\% = 68/100$). Breakthrough moment.
 - ★ Thursday - First time Willy opened Ned BEFORE being reminded. Self-initiation is emerging.
 - ⚠ Wednesday late start correlated with incomplete Science assignment. Fatigue after basketball may be factor.
-
-

RECOMMENDATIONS FOR NEXT SESSION

1. Celebrate the self-advocacy improvement (22 min → 8 min)
 2. Discuss Wednesday pattern - is pre-practice homework realistic?
 3. The fraction/percentage breakthrough might transfer - test it
 4. Self-initiation emerging - reinforce without pressure
-
-

Integration Possibilities

Near-term (No coach involvement needed):

- Export reports as PDF for coach appointments
- Parent shares Ned data with coach manually
- Coach reads report, adjusts approach

Mid-term (Coach-aware features):

- Coach login with limited dashboard view

- Coach sets focus areas that appear in Ned's prompts
- Coach leaves notes that Ned incorporates

Long-term (Full integration):

- Coach management portal
- Multi-student dashboard for coaches with multiple clients
- Insurance/school billing integration
- Outcome tracking for coach effectiveness

The Pitch to EF Coaches

"Your strategies work - when kids implement them. The problem is you're not there at 7pm on Tuesday when panic hits. Ned is. You teach the skills. Ned prompts them daily. You get data on what's working. Together, you actually change habits."

This isn't about replacing coaches. It's about making their work stick.