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CASE STUDY

Digitizing record keeping in the classroom

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Roles: Research, Design, Engineering (solo project)

PROBLEM

The Orange County Department of Education's special education department wanted to improve the way instructors were tracking students' progress.

Teachers were using paper evaluation forms that were cumbersome to manage and limited teachers' ability to customize goals to fit each student's unique needs.

SOLUTION

A web app that allows teachers to manage students' academic and behavioral goals, log evaluations digitally, and track student progress over time.

IMPACT

The ability to submit evaluations with their phone increased the total number of evaluations submitted by more than 30%.

Better records ensured compliance and protected the school against litigious parents.

CONTEXT

When a student enters a U.S. special education program, they receive an Individualized Education Plan, or **IEP**, a document that outlines the student's needs and the goals the school must help the child accomplish.

PARENTAL CONCERN

Parents want to know that their child is getting the resources they require and that the school is holding itself accountable for the their child's progress.

ADMINISTRATION FEARS

Schools are regularly sued by parents who feel their child's needs are not being properly met.

INSTRUCTOR FRUSTRATION

Teachers want to keep accurate records, but their time is limited and they prefer to put energy into teaching rather than bureaucratic tasks.

Need finding

Design Questions

Why aren't teachers tracking student progress in the proper way?

How might we encourage more accurate record keeping?

Process

Interviewed two admins, five teachers, three behavior analysts and two parents

Reviewed examples of student IEPs and evaluation forms

Competitive analysis of goal tracking software

Observations

Older instructors are uncomfortable using unfamiliar software

Paper evaluation forms require two hands (or a desk) – a challenge for teachers walking around a classroom.

Goal descriptions are quite lengthy.

Behavior analysts manage creation of individualized education plans and are most invested in a solution

Design Principles

Any software solution needs to be simple and easy to use

Logging evaluations needs to be straight forward and designed for mobile phones

Allow teachers to import goals or copy and paste text from their desktop.

Software alone will not solve the problem. More process and accountability are needed

"The problem is more than 'lack of technology'.... There is no process for tracking student progress... and very little oversight for teachers."

– Jenny, Special Education
Dept Director

"I feel like the nanny state.... I have to hound the teachers to get me their evaluations."

– Ross, Applied Behavior Analyst

Flexible templates

10-23-2015 TUD NAD Set 1 y 5

Student: [redacted] Instructor: [redacted]
Date of Initial Instruction: OCT. 2015 Projected Date of Accomplishment: 10-2016

Annual Goal: 1. FUNCTIONAL ACADEMICS/FINE MOTOR/RECEPTIVE/COMMUNICATION LIFE SKILLS
By 10/20/2016, During a structured computer activity, [redacted] will follow verbal directions to complete a "winning task". Given a computer set up with a large "button interface" and verbal prompts, [redacted] will follow the button to "win the story" paired with audio's light screen or other. [redacted] will follow task "to turn" the pages of the story by clicking the screen, until he hears "THE END" 10 per trial day, @100% accuracy 4 of 10 trial days as measured by the SANDS, data collection and number observation. This goal was collaborated on with the Vision Specialist as well as recommendations from [redacted] current IEP, assessment, and recommendations.

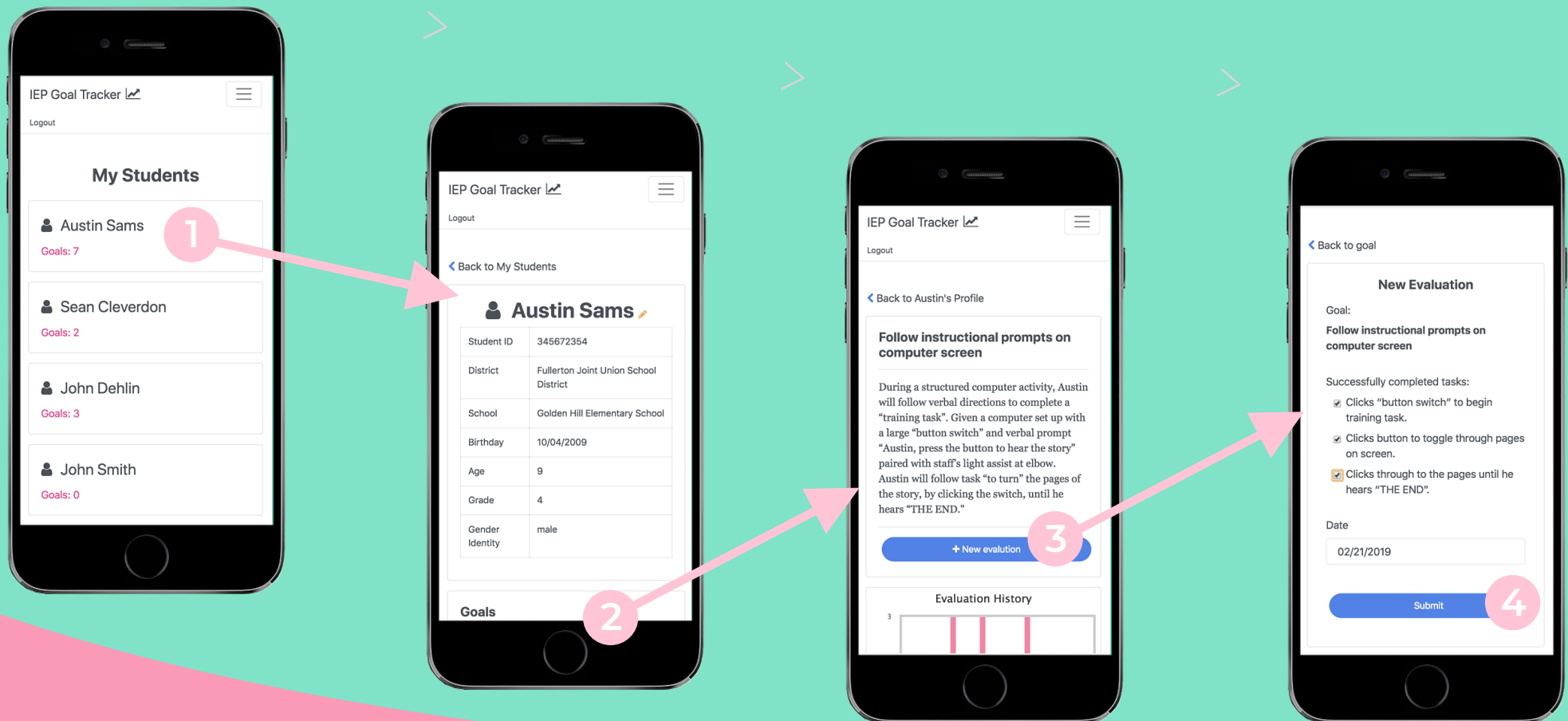
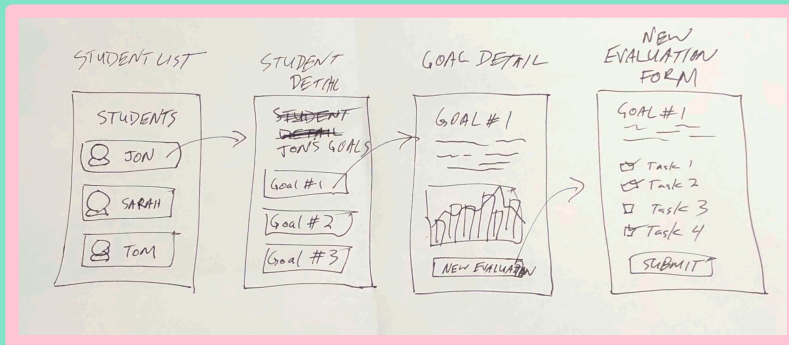
Correct Response with Breakdown of Short Term Objective

Progress Date	1	2	3	4	5	X	N	O
OCT. 2015	X	X	X	X	X			
NOV. 2015	X	X	X	X	X			
DEC. 2015	X	X	X	X	X			
JAN. 2016	X	X	X	X	X			
FEB. 2016	X	X	X	X	X			
MAR. 2016	X	X	X	X	X			
APR. 2016	X	X	X	X	X			
MAY. 2016	X	X	X	X	X			
JUN. 2016	X	X	X	X	X			
JUL. 2016	X	X	X	X	X			
AUG. 2016	X	X	X	X	X			
SEP. 2016	X	X	X	X	X			
OCT. 2016	X	X	X	X	X			
NOV. 2016	X	X	X	X	X			
DEC. 2016	X	X	X	X	X			
JAN. 2017	X	X	X	X	X			
FEB. 2017	X	X	X	X	X			
MAR. 2017	X	X	X	X	X			
APR. 2017	X	X	X	X	X			
MAY. 2017	X	X	X	X	X			
JUN. 2017	X	X	X	X	X			
JUL. 2017	X	X	X	X	X			
AUG. 2017	X	X	X	X	X			
SEP. 2017	X	X	X	X	X			
OCT. 2017	X	X	X	X	X			
NOV. 2017	X	X	X	X	X			
DEC. 2017	X	X	X	X	X			
JAN. 2018	X	X	X	X	X			
FEB. 2018	X	X	X	X	X			
MAR. 2018	X	X	X	X	X			
APR. 2018	X	X	X	X	X			
MAY. 2018	X	X	X	X	X			
JUN. 2018	X	X	X	X	X			
JUL. 2018	X	X	X	X	X			
AUG. 2018	X	X	X	X	X			
SEP. 2018	X	X	X	X	X			
OCT. 2018	X	X	X	X	X			
NOV. 2018	X	X	X	X	X			
DEC. 2018	X	X	X	X	X			
JAN. 2019	X	X	X	X	X			
FEB. 2019	X	X	X	X	X			
MAR. 2019	X	X	X	X	X			
APR. 2019	X	X	X	X	X			
MAY. 2019	X	X	X	X	X			
JUN. 2019	X	X	X	X	X			
JUL. 2019	X	X	X	X	X			
AUG. 2019	X	X	X	X	X			
SEP. 2019	X	X	X	X	X			
OCT. 2019	X	X	X	X	X			
NOV. 2019	X	X	X	X	X			
DEC. 2019	X	X	X	X	X			
JAN. 2020	X	X	X	X	X			
FEB. 2020	X	X	X	X	X			
MAR. 2020	X	X	X	X	X			
APR. 2020	X	X	X	X	X			
MAY. 2020	X	X	X	X	X			
JUN. 2020	X	X	X	X	X			
JUL. 2020	X	X	X	X	X			
AUG. 2020	X	X	X	X	X			
SEP. 2020	X	X	X	X	X			
OCT. 2020	X	X	X	X	X			
NOV. 2020	X	X	X	X	X			
DEC. 2020	X	X	X	X	X			
JAN. 2021	X	X	X	X	X			
FEB. 2021	X	X	X	X	X			
MAR. 2021	X	X	X	X	X			
APR. 2021	X	X	X	X	X			
MAY. 2021	X	X	X	X	X			
JUN. 2021	X	X	X	X	X			
JUL. 2021	X	X	X	X	X			
AUG. 2021	X	X	X	X	X			
SEP. 2021	X	X	X	X	X			
OCT. 2021	X	X	X	X	X			
NOV. 2021	X	X	X	X	X			
DEC. 2021	X	X	X	X	X			
JAN. 2022	X	X	X	X	X			
FEB. 2022	X	X	X	X	X			
MAR. 2022	X	X	X	X	X			
APR. 2022	X	X	X	X	X			
MAY. 2022	X	X	X	X	X			
JUN. 2022	X	X	X	X	X			
JUL. 2022	X	X	X	X	X			
AUG. 2022	X	X	X	X	X			
SEP. 2022	X	X	X	X	X			
OCT. 2022	X	X	X	X	X			
NOV. 2022	X	X	X	X	X			
DEC. 2022	X	X	X	X	X			
JAN. 2023	X	X	X	X	X			
FEB. 2023	X	X	X	X	X			
MAR. 2023	X	X	X	X	X			
APR. 2023	X	X	X	X	X			
MAY. 2023	X	X	X	X	X			
JUN. 2023	X	X	X	X	X			
JUL. 2023	X	X	X	X	X			
AUG. 2023	X	X	X	X	X			
SEP. 2023	X	X	X	X	X			
OCT. 2023	X	X	X	X	X			
NOV. 2023	X	X	X	X	X			
DEC. 2023	X	X	X	X	X			
JAN. 2024	X	X	X	X	X			
FEB. 2024	X	X	X	X	X			
MAR. 2024	X	X	X	X	X			
APR. 2024	X	X	X	X	X			
MAY. 2024	X	X	X	X	X			
JUN. 2024	X	X	X	X	X			
JUL. 2024	X	X	X	X	X			
AUG. 2024	X	X	X	X	X			
SEP. 2024	X	X	X	X	X			
OCT. 2024	X	X	X	X	X			
NOV. 2024	X	X	X	X	X			
DEC. 2024	X	X	X	X	X			
JAN. 2025	X	X	X	X	X			
FEB. 2025	X	X	X	X	X			
MAR. 2025	X	X	X	X	X			
APR. 2025	X	X	X	X	X			
MAY. 2025	X	X	X	X	X			
JUN. 2025	X	X	X	X	X			
JUL. 2025	X	X	X	X	X			
AUG. 2025	X	X	X	X	X			
SEP. 2025	X	X	X	X	X			
OCT. 2025	X	X	X	X	X			
NOV. 2025	X	X	X	X	X			
DEC. 2025	X	X	X	X	X			
JAN. 2026	X	X	X	X	X			
FEB. 2026	X	X	X	X	X			
MAR. 2026	X	X	X	X	X			
APR. 2026	X	X	X	X	X			
MAY. 2026	X	X	X	X	X			
JUN. 2026	X	X	X	X	X			
JUL. 2026	X	X	X	X	X			
AUG. 2026	X	X	X	X	X			
SEP. 2026	X	X	X	X	X			
OCT. 2026	X	X	X	X	X			
NOV. 2026	X	X	X	X	X			
DEC. 2026	X	X	X	X	X			
JAN. 2027	X	X	X	X	X			
FEB. 2027	X	X	X	X	X			
MAR. 2027	X	X	X	X	X			
APR. 2027	X	X	X	X	X			
MAY. 2027	X	X	X	X	X			
JUN. 2027	X	X	X	X	X			
JUL. 2027	X	X	X	X	X			
AUG. 2027	X	X	X	X	X			
SEP. 2027	X	X	X	X	X			
OCT. 2027	X	X	X	X	X			
NOV. 2027	X	X	X	X	X			
DEC. 2027	X	X	X	X	X			
JAN. 2028	X	X	X	X	X			
FEB. 2028	X	X	X	X	X			
MAR. 2028	X	X	X	X	X			
APR. 2028	X	X	X	X	X			
MAY. 2028	X	X	X	X	X			
JUN. 2028	X	X	X	X	X			
JUL. 2028	X	X	X	X	X			
AUG. 2028	X	X	X	X	X			
SEP. 2028	X	X	X	X	X			
OCT. 2028	X	X	X	X	X			
NOV. 2028	X	X	X	X	X			
DEC. 2028	X	X	X	X	X			
JAN. 2029	X	X	X	X	X			
FEB. 2029	X	X	X	X	X			
MAR. 2029	X	X	X	X	X			
APR. 2029	X	X	X	X	X			
MAY. 2029	X	X	X	X	X			
JUN. 2029	X	X	X	X	X			
JUL. 2029	X	X	X	X	X			
AUG. 2029	X	X	X	X	X			
SEP. 2029	X	X	X	X	X			
OCT. 2029	X	X	X	X	X			
NOV. 2029	X	X	X	X	X			
DEC. 2029	X	X	X	X	X			
JAN. 2030	X	X	X	X	X			
FEB. 2030	X	X	X	X	X			
MAR. 2030	X	X	X	X	X			
APR. 2030	X	X	X	X	X			
MAY. 2030	X	X	X	X	X			
JUN. 2030	X	X	X	X	X			
JUL. 2030	X	X	X	X	X			
AUG. 2030	X	X	X	X	X			
SEP. 2030	X	X	X	X	X			
OCT. 2030	X	X	X	X	X			
NOV. 2030	X	X	X	X	X			
DEC. 2030	X	X	X	X	X			
JAN. 2031	X							

Quick and simple

Paper evaluations require a surface to write on, two hands and shuffling through dozens of forms.

Log an evaluation in **4 taps**.



Real-time data visualization

- Parents expressed a desire to receive updates more frequently than their child's quarterly report cards.
- Behavior analysts complained that teachers rely on "gut checks" rather than data.
- Even teachers who tracked goals religiously had trouble synthesizing their results at the end of each quarter.

The animated charts provide sense of student progress at a glance.

