CS 147 · AUTUMN 2026 · ASSIGNMENT 5

Pawse & Pages

low-fi prototyping & pilot usability testing

A pause outside. A page for you.



PRINCE · ANDY · TENZIN · JIA

PRESENTED BY JIA

Stressed, isolated people rarely step outside for themselves

I

Primary user

Stressed, isolated individuals: busy students, remote workers, anyone who feels stuck inside.

II

Problem

They value nature but rarely go outside for themselves, held back by low motivation and little time.

III

Solution

An interactive story gets you outside, personalized to your time and place, offering pages to self-reflect.

Outline

02 Sketching explorations

03 Selected interface & rationale

04 Low-fi prototype

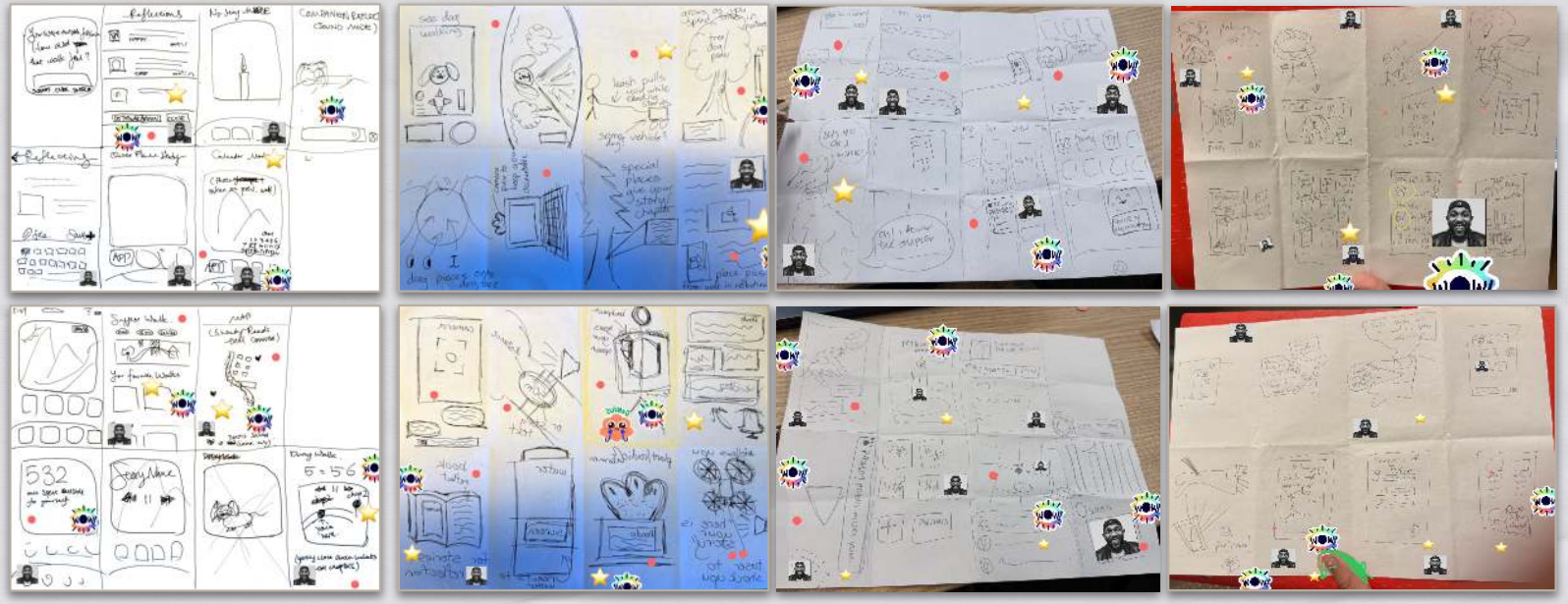
05 Three task flows

06 Testing methodology

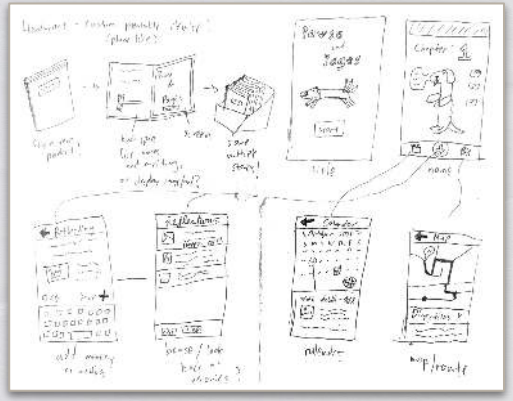
07 Results

08 Discussion

We sketched 40+ ideas across 9 modalities



Three realizations: Hardware, Phone App, AR notes



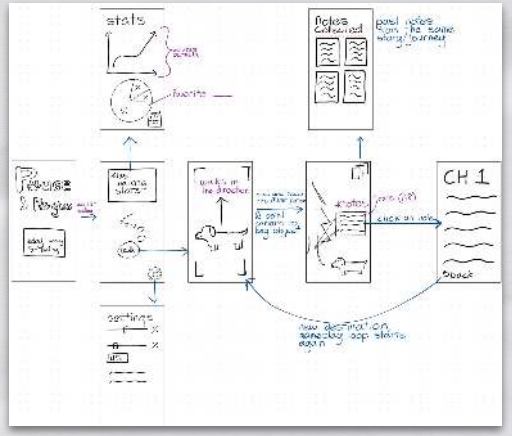
Pocket Booklet

A phone-like booklet: pick a story, follow its route, and write reflections.



Map App & Widget

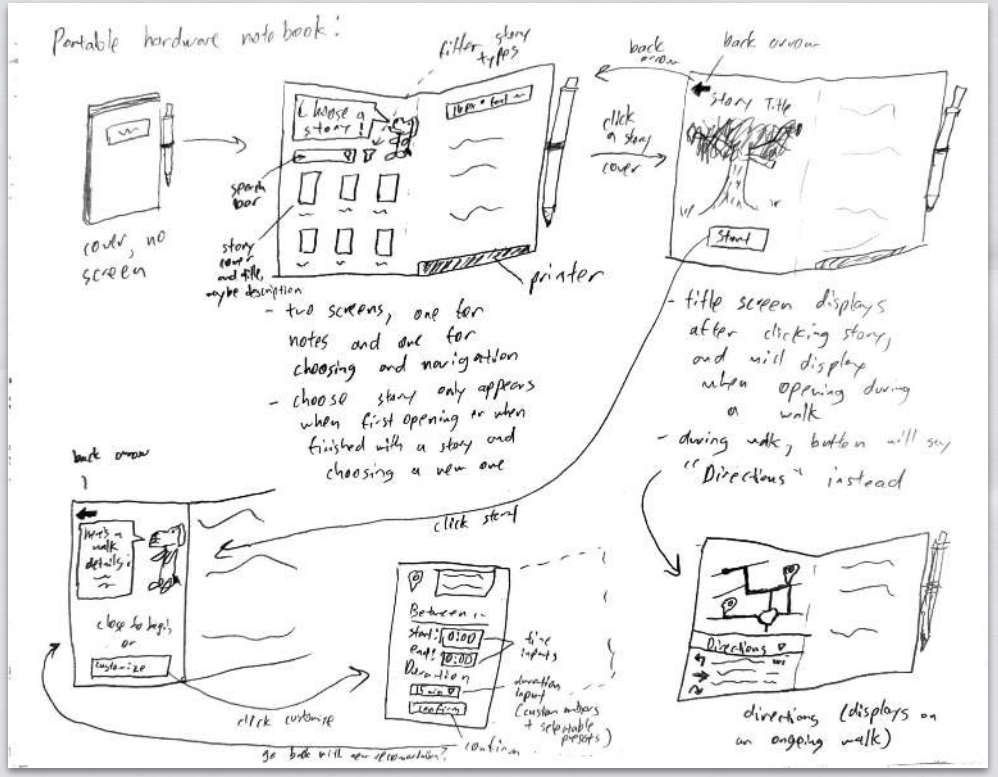
A phone app and quiet widget that suggests routes by time and place, with chapters unlocked through walks



AR Note Collecting App

Following a dog companion to each spot, point your camera at landmarks and collect floating notes

Hardware: Booklet with printer



CORE INTERACTION

Pick a story and plan the route on the left screen, write reflections with the stylus on the right, and print a page to keep.

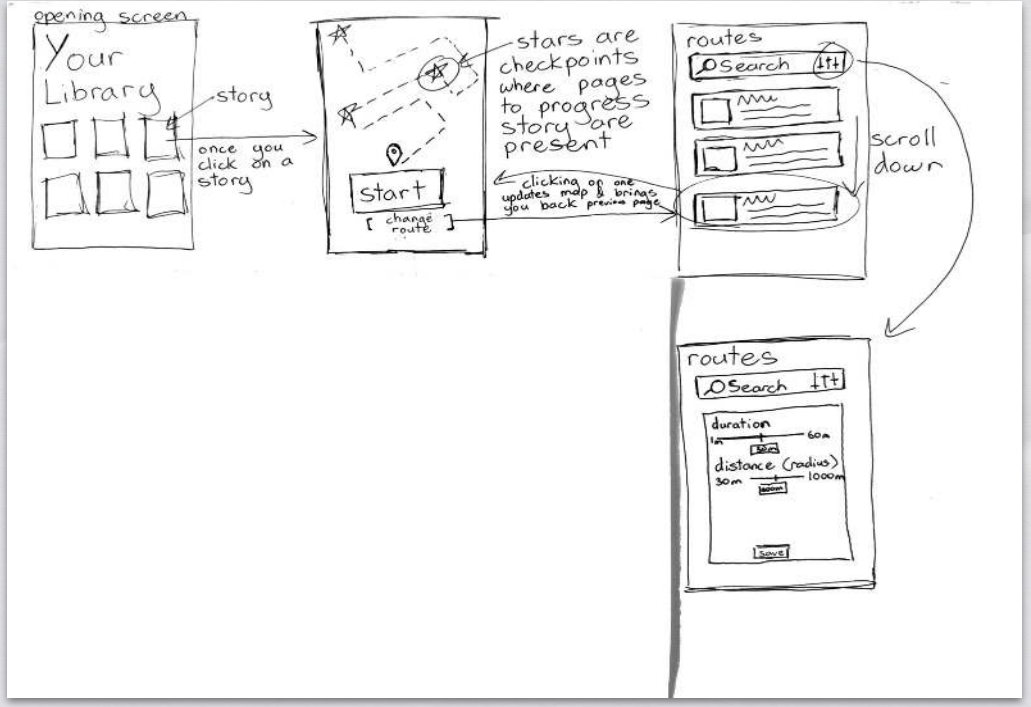
MODALITY

Hardware: a foldable two-screen booklet with a stylus and a built-in thermal printer.

EXPLORES

2 separate screens
Closing the cover starts the walk
The “Start” button becomes “Directions” mid-walk
Customize by time window and duration

Map App: pick a story, then a route that fits



CORE INTERACTION

Choose a story from your library, then pick or filter a route. Stars on the map mark where each chapter unlocks.

MODALITY

A phone app plus a home-screen widget, story-first.

EXPLORES

The story library as home screen
Star checkpoints on the route map
Route search with filters
Changing the route updates the map right away

We chose Pocket Booklet because:

SELECTED



Hardware (Booklet + printer)

TOP PROS

No pull back to the screen
Prints become keepsake

TOP CONS

One extra thing to carry
Hard to update

NOT SELECTED



Map-based Phone app

TOP PROS

Familiar interface
Works with apps they already use

TOP CONS

More screen time
Crowded market

WHAT SHAPED THE DECISION

Constraints; Recognition over recall

Paper prototype: how we simulate pocket booklet



MATERIALS

Paper, cardboard to simulate foldable device, cut-out buttons, cut-out draggable maps

HOW IT RUNS

Team plays computer to swap out screens and act as audio story narrator, haptics or GPS are human-simulated, printer action is narrated

AFTER CA CHECKPOINT

Implemented more interaction:

1. move the icon
2. printing
3. dynamic buttons
4. loading and feedback screens

TASK 1 OF 3 · SIMPLE

1. You've been at your desk for hours and need to a reason to go outside.

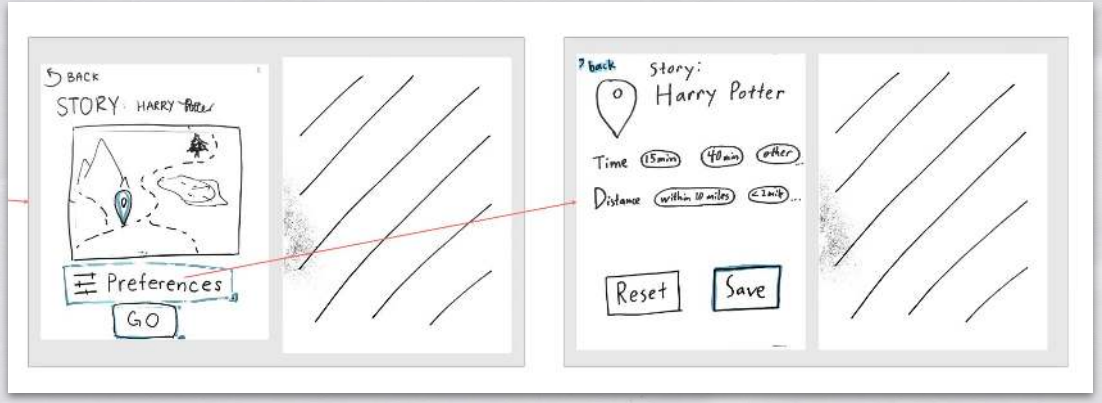


WHY SIMPLE

One clear goal, no real decisions, and the user only has to get started. It’s quick to complete and has no wrong path.

TASK 2 OF 3 · MODERATE

2. You need to find an experience that fits your limited time and location preferences.



WHY MODERATE

The user has to compare options against their own constraints (time, location) and make a judgment call.

TASK 3 OF 3 · COMPLEX

3. During your walk, many ideas and self-reflection have come up. You want to put these thoughts into words so you can come back to them later.



WHY COMPLEX

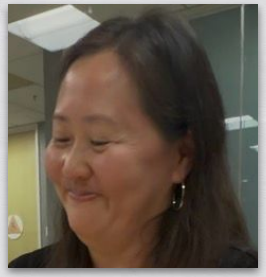
It's the full journey, with multiple goals chained together: choosing something suited to your mood, getting somewhere physically, finding calm, and capturing a personal thought. It depends on the environment, takes the most time, and has the most room for things to go wrong, like noise, crowds, or not knowing what to write.

We tested with 4 target users



Rob

Middle age, male, works in RD&E



Jules

Middle-age, female, mother of Stanford student



Elle

Late 20s, female, tourist



Fey

Early-30s, male, tourist

Each test ran the same script in Old Union



TEAM ROLES

Facilitator	Computer	Observer	Greeter
Prince	Andy	Tenzin & Jia	Tenzin & Jia

PROCEDURE

Walk up, Confirm if they are not students at Stanford → Consent → brief demo (no task hints) → one task at a time, think-aloud → wrap-up. Full script in Appendix C.

ENVIRONMENT & APPARATUS

Recorded by phone, note taking on laptop

Two usability goals guide this design through A6

I Intuitive

KEY MEASUREMENT · BOTTOM-LINE

Number of errors per session (+ seconds to pick a story)

PROCESS DATA

Hesitations over 10 s, wrong taps, asking permission, confused think-aloud

WHY THIS GOAL NOW

A digital booklet is a new kind of object. If people can’t tell how to open, start and close it, nothing else matters

II Pleasing

KEY MEASUREMENT · BOTTOM-LINE

Number of compliments or pleasant surprises per session

PROCESS DATA

Smiles, exclamations (“Let’s go!”), asking for more features

WHY THIS GOAL NOW

Our value prop is emotional: a reason to step outside. Low-fi is the best time to check that

All 4 users stalled when the booklet became a walk

	CRITICAL INCIDENTS	SEVERITY	USERS
—	Unclear that closing the booklet starts the walk	4	4/4
—	Cover art looked tappable; no clear way in	3	1/4
—	Didn’t realize the story was audio, so story and walk felt separate	2	2/4
+	Every user had a delight moment: familiar story, GO, buzz, handwriting	0	4/4

“Do you want me to actually walk?”

—Jules

Pleasing met; intuitive only partly met

4/4

FINISHED ALL 3 TASKS (1 needed a prompt)

2.5

AVG ERRORS PER TEST

2

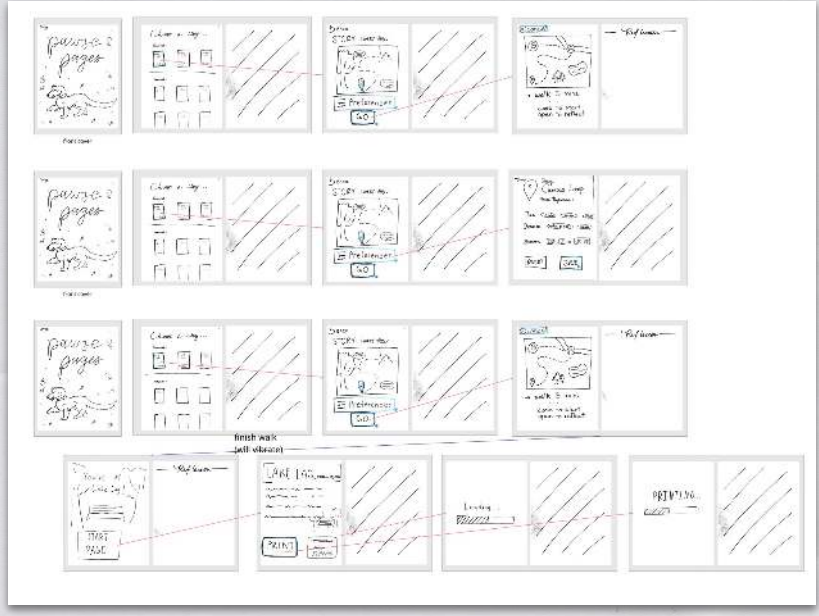
SEVERITY 3+ PROBLEMS

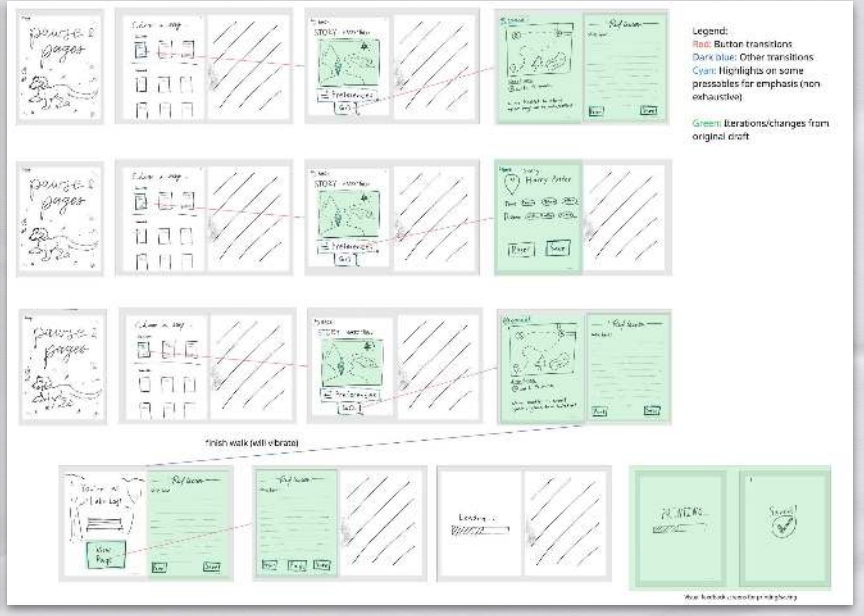
2.0

AVG DELIGHT MOMENTS PER TEST



Changes Made





CURRENT CHANGES

Rephrasing, reflection page, removed confusing options on preferences, etc.

FUTURE CHANGES

Making front cover invite opening; like/favorite options on story select; headphone icons; clearer reasons for printing

Shortcomings of the usability test

I

Fidelity

Paper can’t simulate audio, haptics or GPS triggers the way the app would

II

Participants

Sample size and who we reached vs. the full target user group and characteristics

III

Setting

Indoor or table tests vs. a real walk outside

WHAT THIS MEANS FOR Med-fi and Hi-fi testing

- Build real audio and buzz first, then retest whether users understand that the story plays as they walk.
- Recruit closer to our target user: people who rarely go outside or feel stuck indoors.
- Set targets before testing: at most 1 error and at least 2 delight moments per session.

Thank you

QUESTIONS & FEEDBACK

PRINCE · ANDY · TENZIN · JIA

Appendix

A	Full pros & cons
B	Low-fi prototype link
C	Test script
D	Critical incident logs
E	Timestamped quote data

APPENDIX A

Full pros & cons for both realizations

Foldable Booklet

PROS (5)

1. Makes the walk intentional
2. Prints become keepsakes
3. Pausing to write feels natural
4. No pull back to the screen
5. A clear goal on every panel

CONS (5)

1. One more thing to carry
2. Tiny panels limit content
3. Hard to adapt on the fly given online constraints
4. Maintenance of the hardware
5. A clear goal on every panel, less freedom

Map-based app

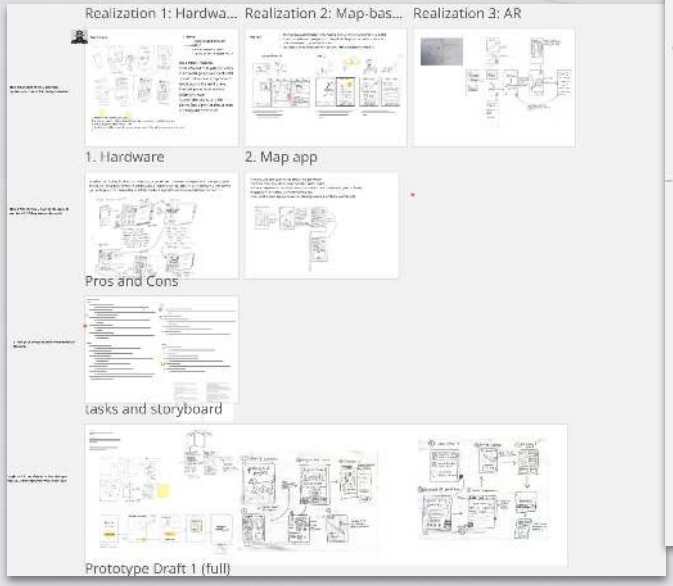
PROS (5)

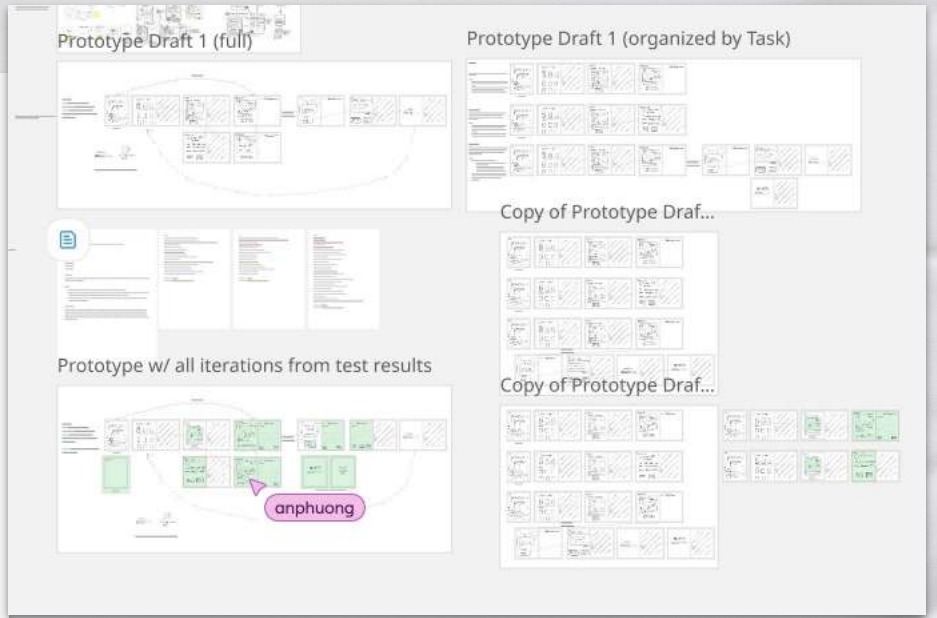
1. Works with apps they already use
2. Nothing new to buy
3. Stories can adapt and change easily
4. Familiar interface, little to learn in terms of gesture, tapping
5. Safety features can be built in with GPS

CONS (5)

1. More screen time
2. Battery drain
3. Reflection on a phone feels like work
4. Crowded market
5. Less tactile feel overall

Low-fi prototype Link: https://miro.com/app/board/uXjVEYleo8U=/?share_link_id=162969620516





APPENDIX C

Test script, same for every participant

INTRO & CONSENT

Please think aloud as you go.” → consent form signed. Scenario: “You bought a digital booklet to help you reconnect with the environment around you through familiar stories and reflection.”

DEMO

Show how to use the stylus and open panels, using a screen unrelated to the tasks. Model thinking aloud: “I’m tapping this because...”] We don’t explain how any task works, and the participant decides when each task is done.

TASK 1 · SIMPLE

1. You've been at your desk for hours and need to find a story to go outside.

TASK 2 · MODERATE

2. You need to find an experience that fits your limited time and location preferences.

TASK 3 · COMPLEX

3. During your walk, many ideas and self-reflection have come up. You want to put these thoughts into words so you can come back to them later.

WRAP-UP

“What was your favorite part? What was confusing or frustrating? Anything you expected that wasn’t there?” → thank the participant.

Negative critical incident log

#	PARTICIPANT	TASK	INCIDENT (+ / –)	EVIDENCE (QUOTE, PHOTO)	SEVERITY
1	Jules	T2	– Didn’t realize the walk had started; cancelled it or needed prompting to walk.	“Do you want me to actually walk?”	4
2	Elle	T1	– The cover was confusing: she tapped the art and didn’t know how to get in	Elle tapped the dog and the apple, then swiped the cover: “I should be able to access a story from here?”	3
3	Rob, Jules	T2	– Didn’t realize the story was audio, so the walk and story felt separate	Jules:“I journal based on what I’m reading?” Rob: tapping a story took him to a walk, which confused him.	2
4	Rob	T2	– Tapped the walking directions text as if it were a button	Finger taps below the directions	2
5	Fey	T1	– Hesitated, then tapped a book that wasn’t highlighted	About 28 seconds of hesitation before tapping a non highlighted book	2
6	Fey	T1	– tried to scroll the “Choose a story” page, which has no scrolling	Scrolls on Choose a story’ page	1

SCALE · 0 NO PROBLEM · 1 COSMETIC · 2 MINOR · 3 MAJOR · 4 CATASTROPHE

Positive critical incident log

#	PARTICIPANT	TASK	INCIDENT (+ / −)	EVIDENCE (QUOTE, PHOTO)	SEVERITY
1	Rob	T1	+ Picking a familiar book made him happy	“All I need is Harry Potter right there."	0
2	Rob, Elle	T2	+ Listening to the story while walking, plus the buzz, were favorite parts	Rob’s favorite was the story playing while walking. Elle’s favorite was the buzz.	0
3	Elle, Jules	T2	+ The GO button felt exciting	Elle pressed Go and said, “Let’s go!" Jules: GO is exciting; going to accomplish something."	0
4	Jules	T3	+ Arriving at the destination felt like a reward	At Lake Lag: “I feel very accomplished; this makes me feel very happy and satisfied.”	0
5	Elle	T3	+ Wanting to keep exploring and personalize	Scrolled the stories and imagined “Like” and “Save for later” buttons; excited to personalize.	0
6	Rob, Fey	T3	+ Enjoyed writing the reflection by hand	Rob smiled while writing (“Beautiful Day”). Fey smiled while closing the book.	0

SCALE · 0 NO PROBLEM · 1 COSMETIC · 2 MINOR · 3 MAJOR · 4 CATASTROPHE

Timestamped quote data on user tests



Robert

[0:48] Asks if he can flip through the booklet → intuitive

[0:57] Picks up stylus, TAP12 button interactions with stylus

[1:13] clicks on Harry Potter ("All I need is Harry Potter right there) → happy as experience

[1:21] Flips through pages

[1:23] Presses "fav" → intuitive

[1:40] Uses stylus as guide for reading

[1:42] finger taps below sticky notes

[1:54-1:55] Decides to close → intuitive?

[2:22] Opens book to re-to down reflections → intuitive

[2:26] Flips through pages

[2:33] Smiles while writing ("Beautiful day") → user enjoy the tactile feel of writing

[2:38] presses start page after done reflecting → intuitive

[2:47] End Screen, presses "Save" (with stylus)

[3:20] Did not remember how to customize walls

[3:29-3:39] Navigated to preferences from story screen → intuitive

[3:55] Preferences Screen, presses "Save" (with Stylus)

Intuitive (# of errors): 1

Pleasing (# of compliments/pleasant surprises): 2

Pat

[1:17] Asks for permission to he can open the booklet → intuitive

[1:19-1:47] Hesitates before deciding to tap on story; taps on non-highlighted book

[1:53] Presses "Back" → intuitive

[1:62] Scrolls on "Choose a story" page

[1:12] Taps on highlighted book

[1:21] Presses on "Preferences" → intuitive

[1:24-1:28] Hesitates before configuring "Preferences"

[1:48] Presses "Go" → intuitive

[1:50-2:05] Decides to close book

[2:08] Confused about max

[2:37] Smiling when closing book

[3:52] Presses "Start Page" → intuitive

[3:58] Confused about what "Middle Page" is

[4:13] Asks about "Print" ("Connect printer and print it out?)

[4:17] Presses "Print" → intuitive

[4:32] Presses "Save" → intuitive

Intuitive (# of errors): 2

Pleasing (# of compliments/pleasant surprises): 1

Elena

[1:11] Taps on dog

[1:24] Taps on apple

[1:26-1:29] Taps on different locations on the dog

[2:36] "Huh, weird"

[2:38-2:41] Swipes on next page

[2:53] "I should be able to access a story from here"

[3:02] Asks for whether she can open booklet

[3:17] Taps on Harry Potter story with stylus → intuitive

[3:24] Zooms in on map

[3:43] Taps "Preferences" with finger → intuitive

[3:47] "It's in weird, right?"

[3:55] Confused about "between" time

[3:59] Assumes, as user, refresh

[4:41] Presses "save" → intuitive

[4:48] Presses "Go", confirmed "Let's go!"

[5:53-6:00] Eventually figures out to close the book

[7:10] Confused about starting point

[7:16] Understands that the right-hand side is for notes → intuitive

[7:40] Understands reflection happens mid-walk

[7:48] Assumes typing on reflection

[8:17] Assumes it is their pocket and excitedly takes it out

[8:25] Presses on "Start Page"

[8:30] Taps on words on "Results" Page, "Interesting"

[8:43] Confused on writing transferring/switching notes

[8:52] Presses "Save"

[9:08] Understands that the story is done

[9:11] Scrolls stories and expresses "Like" and "Save for Later"; excited to personalize

Intuitive (# of errors): 4

Pleasing (# of compliments/pleasant surprises): 2

[0:49] Opens book → intuitive

[1:14] Closed book when waiting for computer

[1:38] Presses "Back" after navigating to a page under construction on all three books

[2:00] Moves between work tool → intuitive

[2:09] Presses "Go"

[2:11] Referring to the page when starting a story: "That looks interesting, I like that" and "It looks like an adventure"

[2:57-3:15] Reflects

[3:17] Presses "Save" with stylus despite having put it down prior

[4:40] Eventually figures out are needs to cancel current walk to change preferences

[4:00-4:54] Locates and confirms cancellation w/ stylus

[5:02] Presses "Preferences" with stylus

[5:06] Confessed the did not notice "Preferences" earlier

[5:14] Configures "Preferences" with stylus

[5:55] Starts typing like a computer

[6:18] Moves location mark 4cm

[6:51] Presses "Saved" icon

1

Sketch Report:
https://docs.google.com/document/d/1RfoR-ksS4CS6p7H-dlco4zwRBy8zBstyEzymgpPizP4/edit?usp=sharing

