

Digital ballot design studio

Select, Deselect + Scroll, and Paging

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Executive summary

This is a report on a workshop to explore ways to design a ballot that supports voters and prevents over-votes while creating a good voting experience



Goals

No interaction in marking a digital ballot is more critical than what happens when a voter tries to select more candidates than allowed in the voting rules.

The Help America Vote Act says that voters must be informed of an overvote and allowed to correct it.

Current voting systems handle this requirement in many different ways: with error messages or by simply not allowing selections past the allowed number. There is debate about the best design solution to protect voters while allowing a good voting experience.

To provide input to the Human Factors and Privacy Working Group on this issue, this design studio worked to generate new ideas for how voters can manage this interaction, even in large or a multi-member contests.

The goal was to form ideas that put the voter in control of marking the ballot, while supporting them through the complexities of voting rules.

How we worked

The Ballot Design Studio took place in December, 2016 in Boston, MA.

The participants included designers, researchers, developers, and experts in interaction and motion design, as well as accessibility who work in fields with constraints similar to elections, like government services, healthcare, and finance.

The workshop participants were urged to draw inspiration from their own work or from ideas in current user experience design, while also considering the constraints of elections.

The day started by brainstorming initial ideas, which were used as input to more complete designs as the teams worked together to refine the concepts. By the end of the day, we had several concepts that had gone through several iterations and many smaller ideas.

The work was done in in rough sketches, allowing ideas to be expressed quickly so the group could focus on the underlying concepts rather than “finished” designs.

Guiding principles

As a starting point for the design work, these guiding principles and constraints helped the group keep the elections context in mind.

Ballots must be be:

- accessible to voters with disabilities
- not frustrating or hindering
- help voters mark their ballots as they intend
- implementable by voting system developers
- future tolerant

Design constraints

- Voters may not be digitally literate or comfortable with technology.
- The design must work for both vote-for-one and multi-select contests.
- Contests may have many candidates.
- Scroll bars cannot be the only means of means of navigating within a page.

What we learned

Several themes emerged from the design studio. They are illustrated in the next section.

- Subtle motion in the interface can be helpful in drawing attention to buttons or showing that there is a long list of candidates.
- Visual cues like animation can be coordinated with information in the audio ballot so that both interaction modes have an equivalent experience.

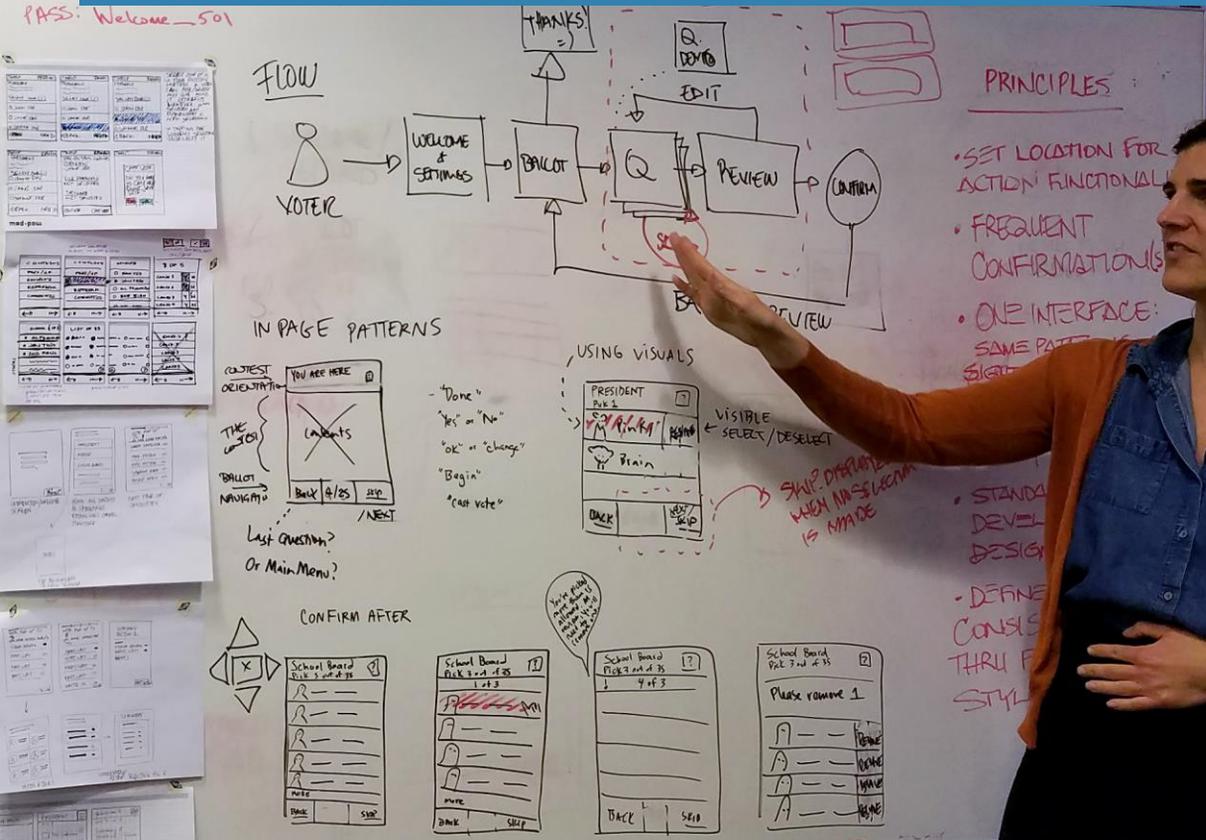
Some of the ideas were surprising in the context of elections at first, but as they developed, could be promising for supporting voters. They include:

- More explicit ways of providing feedback about the number of selections as they are made.
- Transforming error messages into active windows where voters can make corrections quickly and easily.

Design ideas

The ideas generated during the design studio can be inspiration for future ballot design. They can be used individually or in combination.

WiFi
PASS: Welcome_501



PRINCIPLES

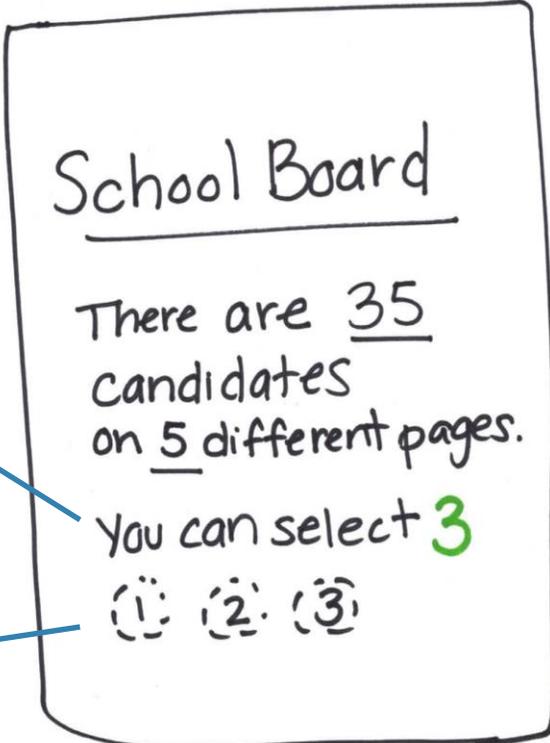
- SET LOCATION FOR ACTION FUNCTIONALITY
- FREQUENT CONFIRMATIONS
- ONE INTERFACE: SAME PATTERNS
- STANDARD DEVELOPMENT DESIGN
- DEFINE CONSISTENT STYLE

Lindsey Wagner
UX Designer / Researcher

Previewing + summarizing

Can a preview of the ballot set expectations for what voters will encounter on the ballot?

Idea: An initial preview page alerts voters about what to expect on their ballot, including number of candidates, number of pages, and number to select. Visual cues reinforce this information.



The image shows a hand-drawn rectangular card representing a ballot preview. The text on the card is as follows:

- School Board
- There are 35 candidates on 5 different pages.
- You can select **3**
- (1) (2) (3)

Annotations and callouts:

- A blue line points from the text "Gives simple instructions in plain language" to the main text on the card.
- A blue line points from the text "Gives visual cues, that change appearance to show how many are selected" to the number "3" in the selection instruction.
- Text to the right of the card reads: "Works for either paged or scrolling layouts".

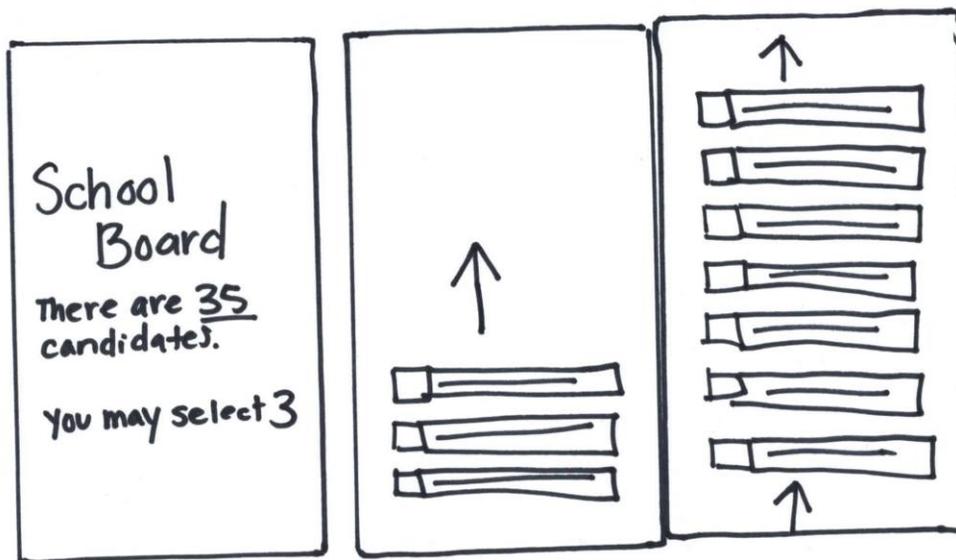
Animating a preview

Can animation be a useful tool to preview the ballot?

Idea: An animation either on the welcome screen or before each contest will scroll through the ballot so voters can see what they will be asked to do.

Teach through animation.

Works for either pagination or scroll layouts



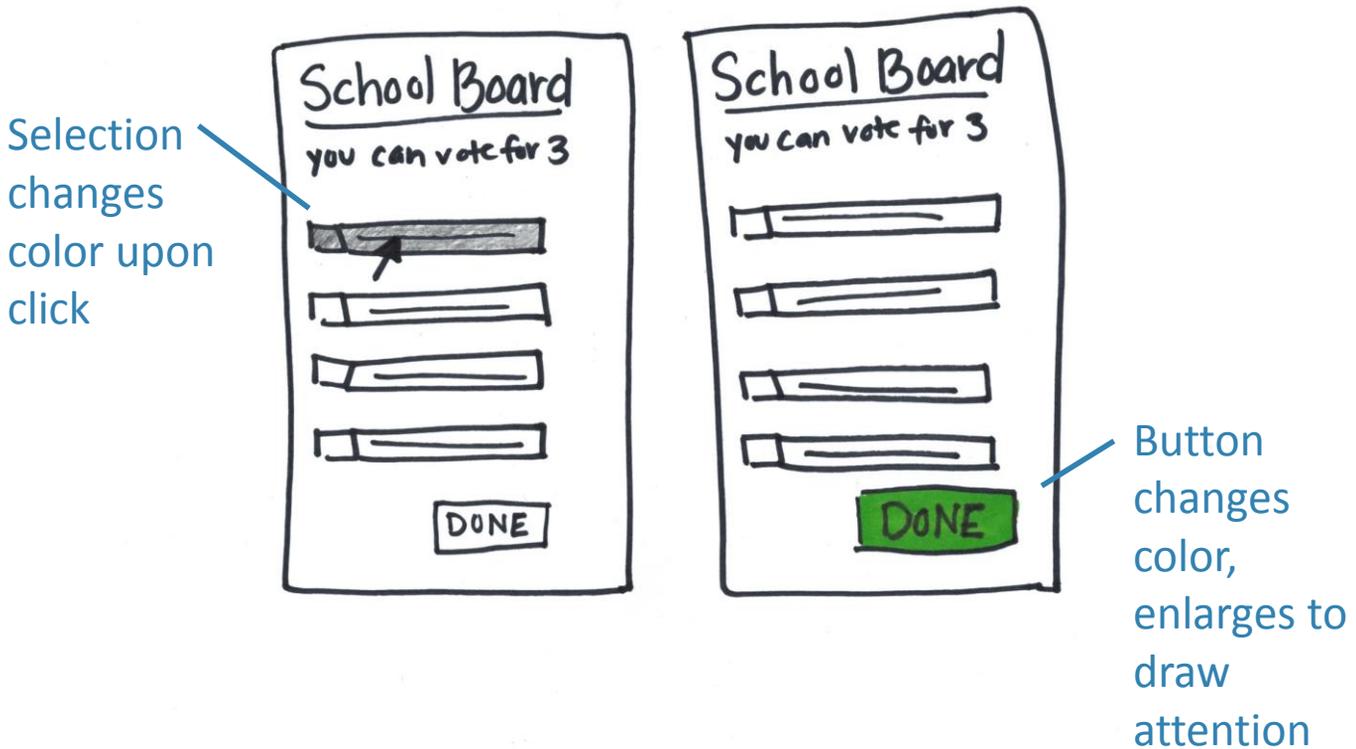
Opening is an opportunity to include brief tutorial on how to vote in this contest

Sets expectations about number of candidates on the ballot.

Getting attention

How can voters be given feedback as they navigate their ballot?

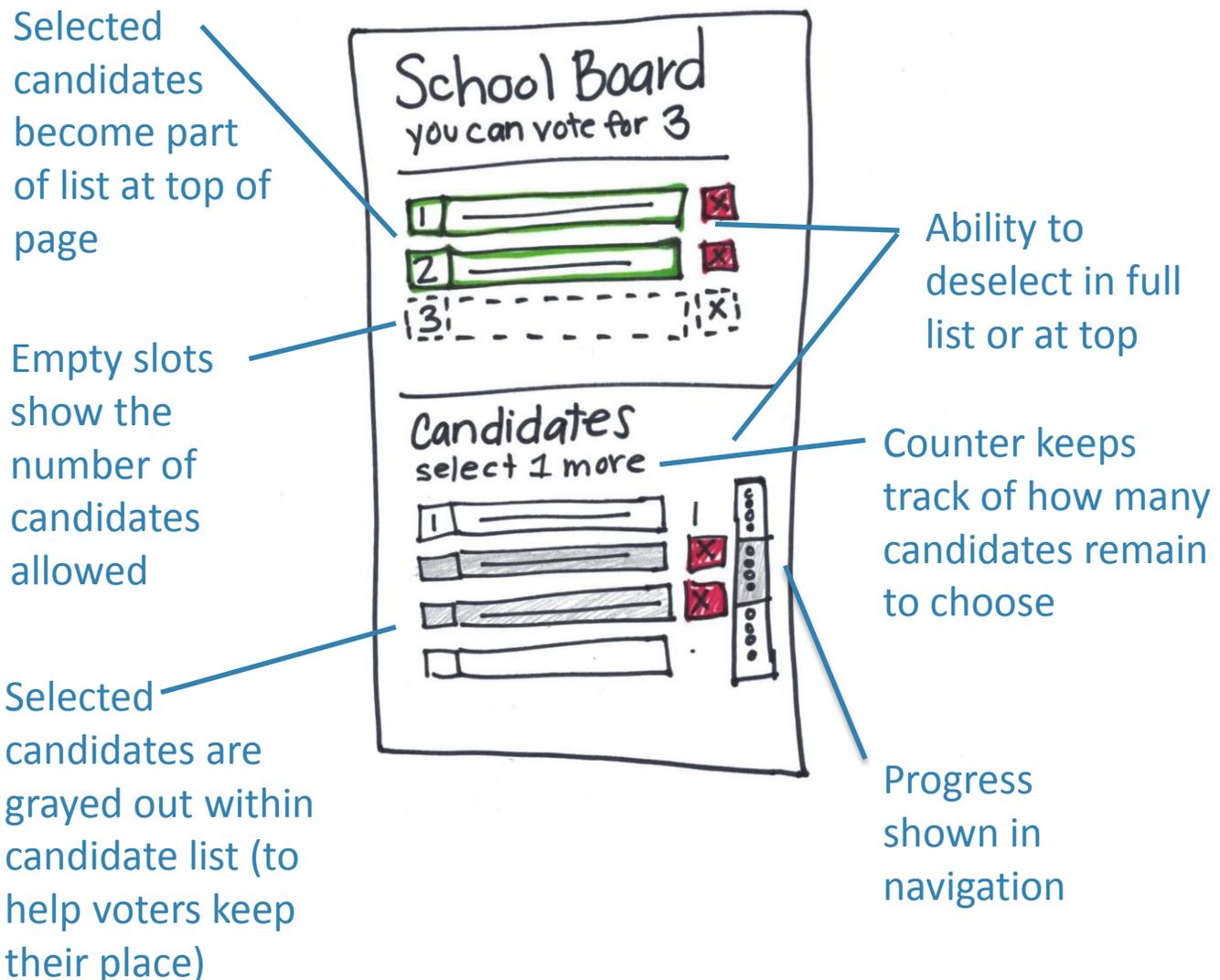
Idea: Build simple responses into the buttons to give voters instant feedback upon click, including visual style and bits of animation.



Selecting candidates

Will building a list of selected candidates help voters select their candidates from a long list?

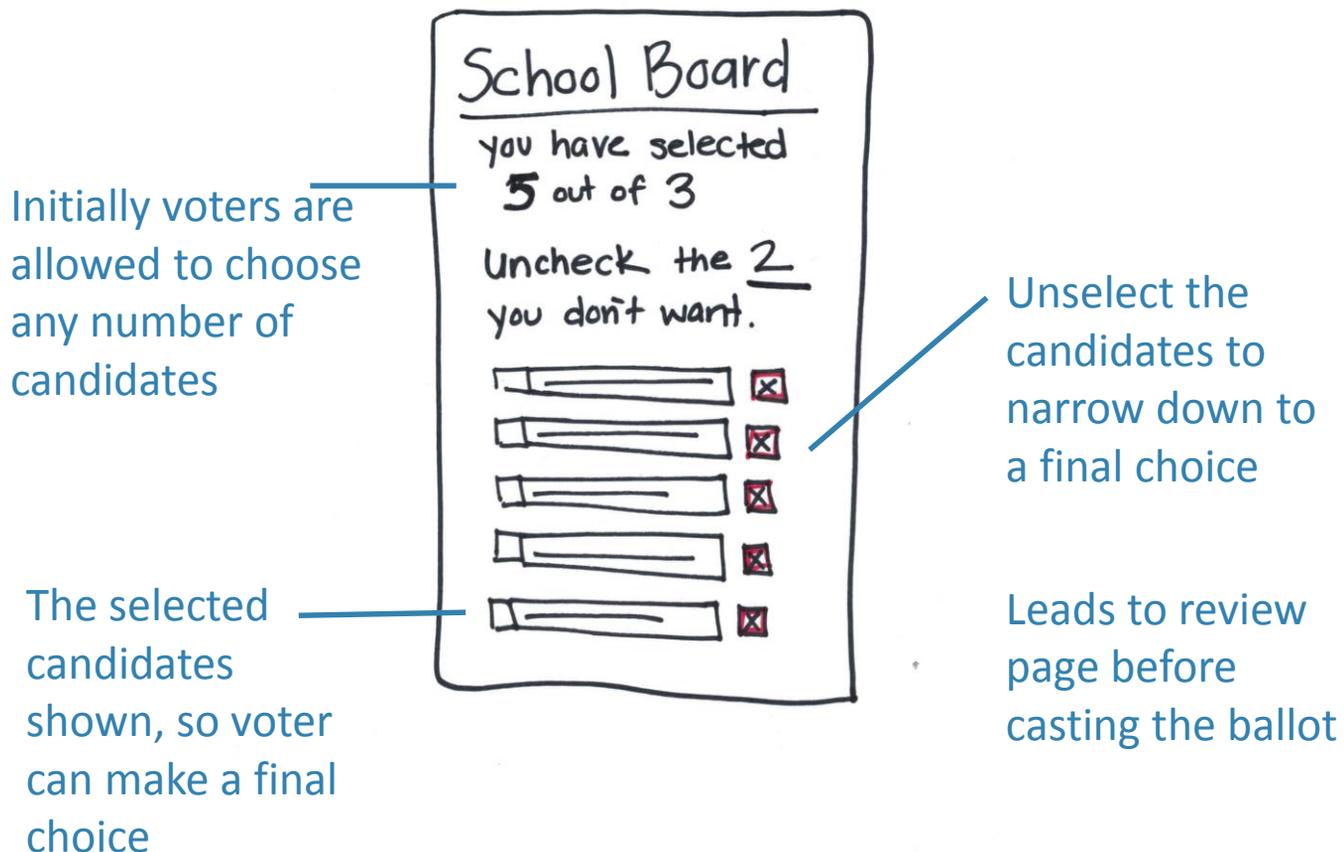
Idea: Selected candidates create a list that will move to the top of the page. Voters edit or confirm to vote.



Selecting, then choosing

Can a two-step process help voters quickly and easily select their candidates?

Idea: With a two-step process, voters select any candidate they may be interested in and then make a final choice to vote.

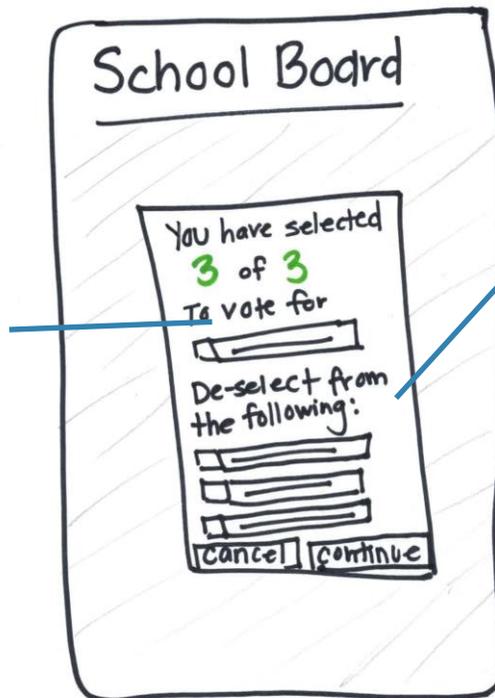


Making corrections

How can error messages be designed to reduce the amount of confusion and error?

Idea: When errors occur, the system shows a working box where voters can change or confirm their selections.

When too many are selected a box pops-up where the voter can refine the list



In-line validation to guide voter

When working box appears, all other text is grayed out

Choosing one at a time

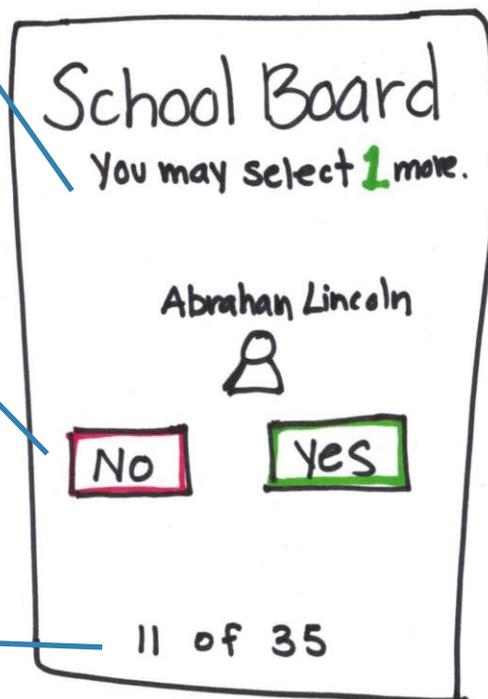
Can simplifying the choices make the voting process easier and better?

Idea: This idea breaks the ballot down into its simplest form by asking the voter to select 'yes' or 'no' for each candidate or ballot measure.

Countdown ticker lets voter know how many more they can select

Voters make a choice for each candidate

Cues voter to the number of candidates and where they are in the list



The AVTI EZVote project used a similar idea

Works for audio and digital

Pagination or scrolling is not a problem

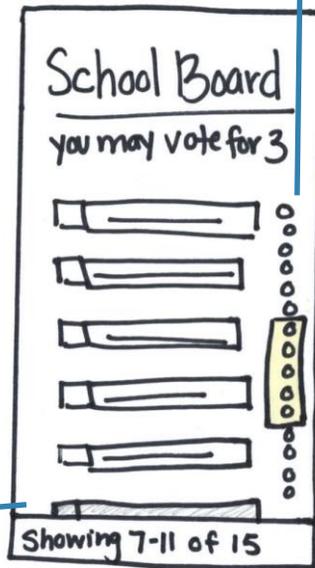
Leads to a review/confirmation page

Scrolling + paging

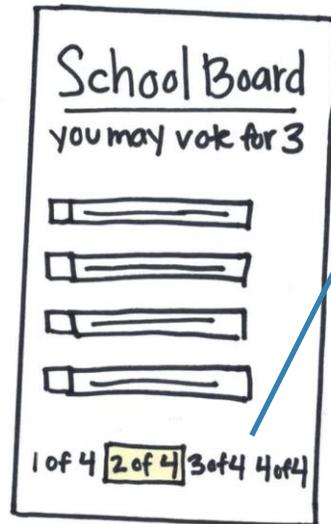
How can the scrolling or pagination mechanism be designed to hint to where voters are in a long list?

Idea: Use scrolling mechanism as indicator of location in list.

Scroll bar has one dot for each candidate, and highlights current view.



Cuts last entry on the screen in half to show continuing list

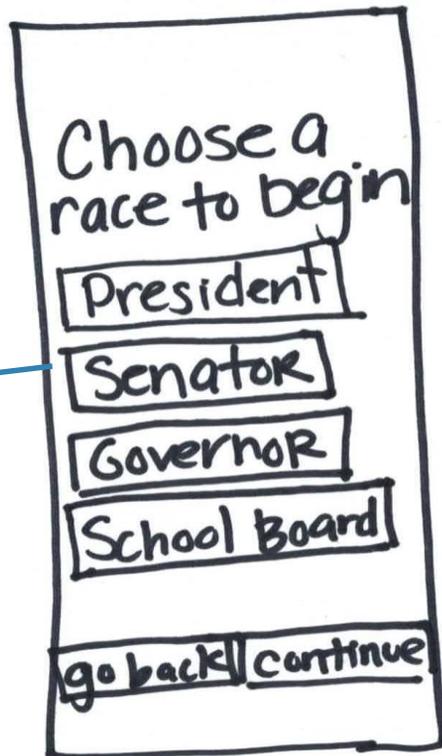


Shows complete number of pages and highlights current page

Choosing your own adventure

Can voters customize the voting process for an optimal voting experience?

Idea: Prompt voters to select the settings that work best for them in addition to providing more voting options throughout the ballot, including what order they would like to vote in, their preferred order, or whether they would like to vote by party.



Sets structure for ballot by letting voters know what races to expect

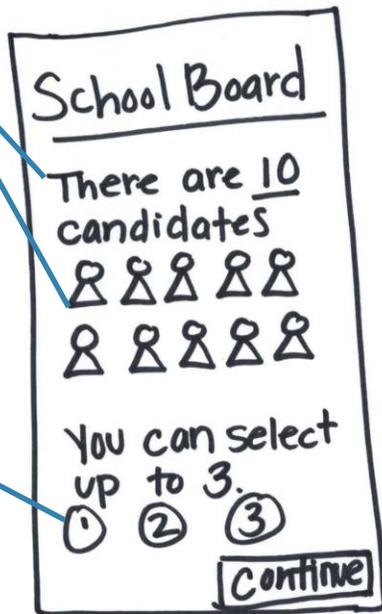
Allows voters to select their preferred order for their ballot?

Visualizing cues

Can visual cues help voters move through the voting process quicker and more easily?

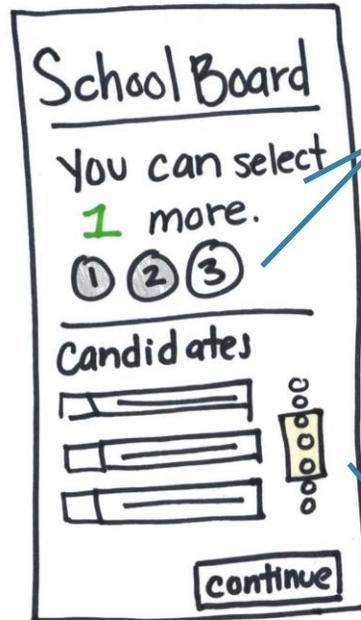
Idea: Include consistent visual representations throughout the platform to reinforce how the ballot works and to let voters know what to expect.

Shows and tells complete number of candidates to expect



Representation of number of candidates to be selected

Shows and tells number of selections remaining



Progress bar indicates location in list

Designing for audio

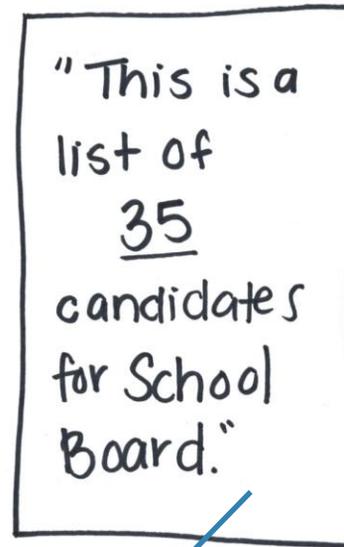
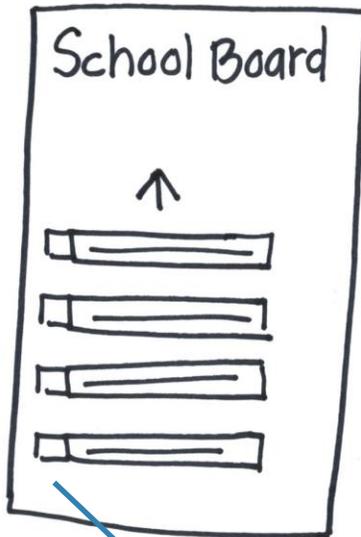
How can we design for audio?

Idea: For every visual action there is a comparable audio prompt.

Visual screen

Audio script

The visual screen scrolls through 35 candidates



The audio script tells the number of candidates

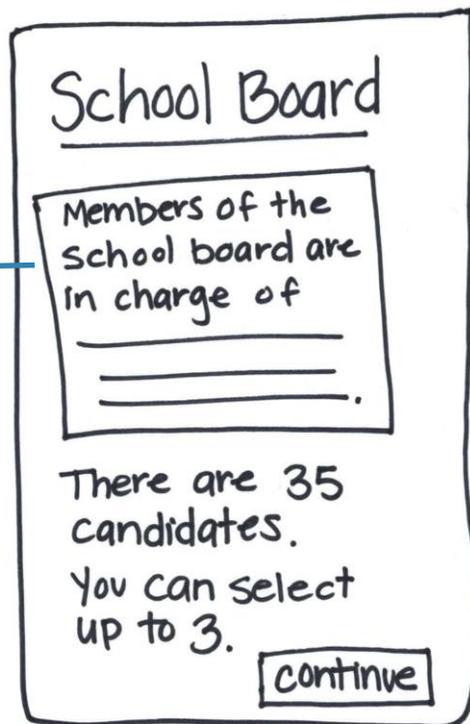
For every action on the visual side, there is the same action with audio.

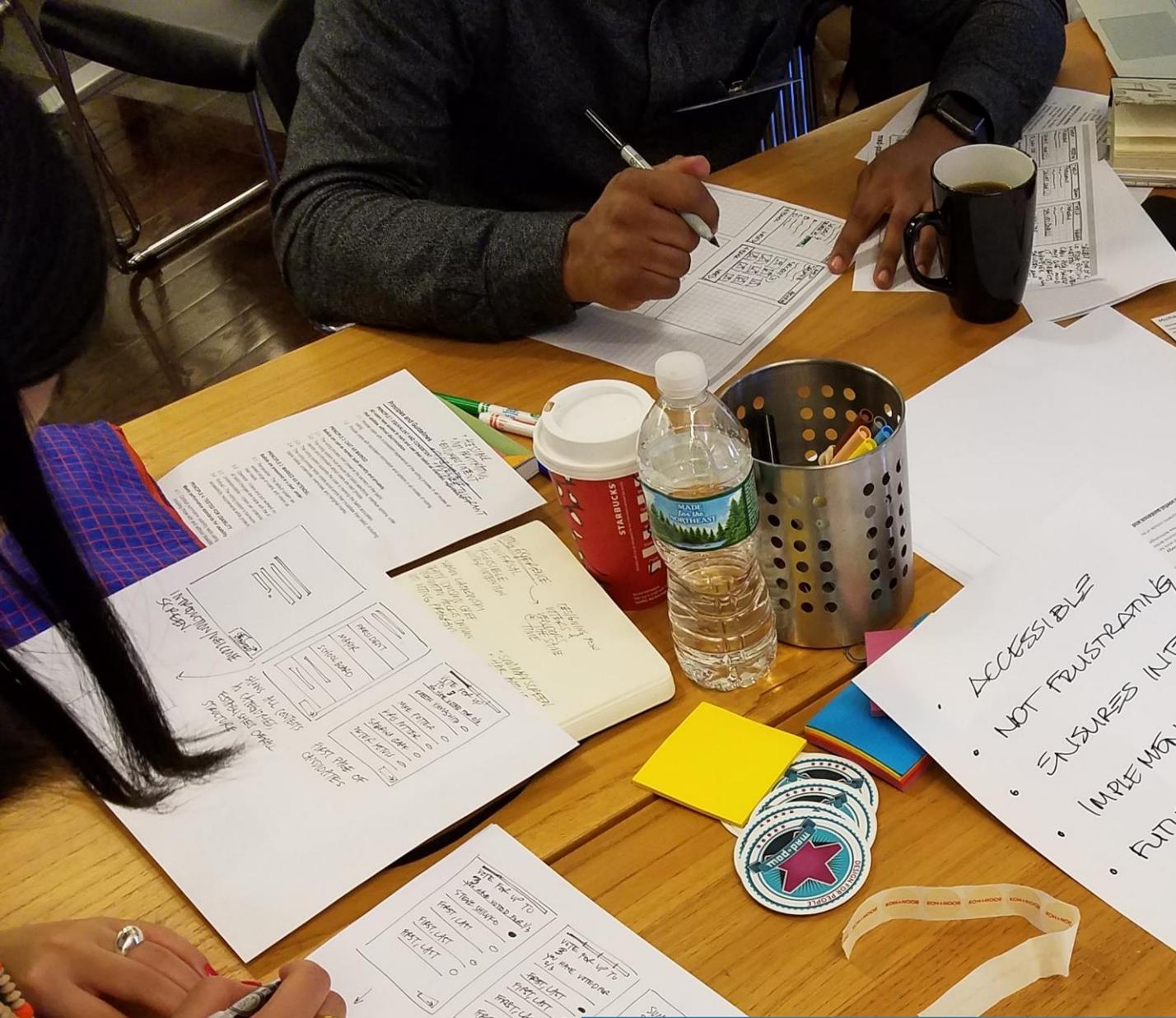
Explaining civics

Can providing civics information help voters make decisions?

Idea: Include short information about the position or amendment being voted for right in the ballot.

Includes concise information about the position in plain language.





- ACCESSIBLE
- NOT FRUSTRATING
- ENSURES INTERACTION
- IMPLEMENTATION
- FUTURE

About the workshop

About design studio

We organized this work as a design studio. This method is a process for bringing a team together to generate ideas, explore design solutions, and review them.

It was created* as a way to bring a user-centered design approach into agile software development. The design studio is characterized by:

- Rapid sketching and iteration of ideas
- A focus on the user experience and consideration of different user needs
- Bring the whole team together in the design process, with different kinds of designers, developers, and other roles working together.
- Constructive evaluation, with both critique and appreciation of new ideas.

Ungar and White (2008) *Agile User Centered Design: Enter the Design Studio – A Case Study*. CHI 2008 Proceedings

Sketches from the workshop

These are just a few of the original sketches from the day, from which the concept drawings in this report were created.

School committee
Pick 3

Candidates 5 of 35

Hand-drawn ballot interface for picking 3 candidates from 35. It shows a list of candidates with checkboxes, some of which are checked and shaded. A 'SHOW MORE' button is at the bottom.

Hand-drawn ballot interface titled "School Board / P3". It shows "7 of 3" candidates, a message "You need to remove 4 or show all", a search bar with "A" entered, and "back done skip" buttons. A "MY BALLOT" label is at the bottom.

Hand-drawn ballot interface showing a list of candidates with a "MORE" button at the top and bottom. A vertical scroll bar is on the right, with the current position highlighted in yellow.

Hand-drawn vertical scroll bar interface with a list of horizontal lines representing items and a vertical line indicating the current position.

Hand-drawn ballot interface titled "Transition" with the text "Senate You can choose up to 3". It shows a list of candidates with checkboxes and a "NEXT" button at the bottom.

QUICK
SCROLL
TO BEGIN
EACH
CONTEST
TO DISPLAY
FULL
FIELD

Three hand-drawn ballot interfaces showing different stages of a ballot review process. The first shows "SENATE" with a "SELECT 7" button. The second shows "SELECT (7)" with a grid of candidate checkboxes. The third shows "SELECT (7) SENATE" with a grid of candidate checkboxes.

Participants

We were lucky to welcome many talented designers from the private and public sectors.

Participants:

Person	Organization	Role
Brady Bonus	Mad*Pow	UX Designer
Kate Brigham	Patients Like Me	Design Director
Isaac Chansky	Code for Boston and Commonwealth of Massachusetts	App Developer
Jonathan Follett	Involution Studios	Designer, emerging technology
Flavia Gnecco	Patients Like Me	UX Designer
Val Head	Val Head	Motion/animation designer
Josephine Holmboe		Creative Director
Jodi Leo	Critical Mass, School of Visual Arts	Executive Director/Professor
Keela Potter	SY Partners	Designer
Eduardo Ortiz	U.S. Digital Service	Designer
Steve Turbek		Head of UX Design
Jamie Thomson	Mad*Pow	Interaction Designer
Rebecca Ussai	R/GA	UX Design Director, Motion Designer
Lindsey Wagner	Commonwealth of MA	UX Designer + Researcher

Participants

Center for Civic Design and NIST led the workshop and also joined as participants to share election knowledge.

CCD + NIST Participants:

Person	Organization	Role
Sharon Laskowski	NIST	Deputy Division Chief, Information Access Division, long time NIST Voting Program researcher
Shanéé Dawkins (remote)	NIST	Visualization and Usability Group and Voting Program
Dana Chisnell	CCD	Co-director, principal researcher
Whitney Quesenbery	CCD	Co-director, principal researcher
Maggie Ollove	CCD	Service designer

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