Accessible Voting Systems:

Promises and Pitfalls

Where are we today?

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Background

- HAVA requires 1 AVS per polling place
- Assumption of all electronic voting
  Now back to paper ballot
- Assumption of polling place voting
  Now multiple voting “places”
- Assumption of federal funding
  Now state/local funding for AVS

Research: Barriers Persist

- **NCD 2012 Survey (N=900)**
  - 45% reported barriers involving voting machines
  - 25% identified untrained poll personnel as barrier
  - http://www.ncd.gov/publications/2013/10242013
- **Rutgers 2012 Survey**
  - 2000 w disabilities, 1022 w/o disabilities
  - Statistically significant - "difficulty understanding how to vote or use the voting equipment" (10% -1%)
- **NFB 2012 Survey (N=537)**
  - 25% blind voters unable to use AVS (not set-up, poor instructions, no assistance from poll workers, etc.)

ATAP-RAAV Research Question

Can demonstration and training enable voters with disabilities use the accessible voting system to vote privately and independently rather than voting absentee with assistance or not voting at all?

Demonstration Overview

- Demonstrations conducted in 5 states
- Four different AVS were demonstrated
- AVS demonstrated was machine that participant voter would use at their polling place
- Demonstrations were done by AT specialists with experience in conducting AT demos and familiarity with the AVS

Demonstration Data Summary

- **506** total demos conducted

- Disability types: vision – 64%
  motor – 27% intellectual – 16%
  hearing/speech/other – 8% to 4%

- Age: seniors – 47%
  middle aged – 36%
  young adults – 17%

- AT Use: 52% total; **less than 10%** with AT experience transferable to AVS (screen reader, screen enlargement, etc.)

Independent Use of AVS

- 1 to 25 minutes training needed
- 5 minutes average (across all features)
- 4% - 33% never independent
- Average twice as long to complete ballot using AVS - Maximum 9 times longer to complete ballot using AVS
- Training time, number never independent and ballot completion time all correlated to complexity of access feature, not age or prior AT use

Pre/Post Rating Data

- Self rating of comfort using the AVS on 1 to 10 scale before and after demo
  - Pre-demo = 4.14 (not very comfortable)
  - Post-demo = 8.23 (very comfortable); full 4 point increase
- 84% of demo participants reporting increase in comfort using the AVS
- 5.93% would now use AVS at poll instead of absentee or not voting

Secondary Information: Equipment Improvement Recommendations

1) Larger text display – AVS “large text” is not nearly large enough
2) Larger touchscreen strike areas and adjustable sensitivity
3) Improve audio navigation and general instructions
4) Improve switch input navigation

Large Text Research (N=94)

- CCTV comparison to identify preferred size when AVS size too small
- Mean preferred text size = 17.46 mm (VVSG requires 6.3 to 9 mm as LP)
- Only 12% preferred CCTV to AVS because of visual-motor coordination skill requirements

What does the data tell us?

- AVS are not intuitive or “easy” for many voters to learn
- AVS need improvements in access features
- Training can help improve use of AVS
- Cannot expect poll workers to provide demo/training on election day
- Voters with disabilities require more time to complete their ballot using the AVS

Short-term Recommendations

- **Make AVS demos widely available**
  - Create voters confident in using AVS
- **Improve AVS access features**
  - Especially large display
- **Expand voting opportunities**
  - Early voting before election day
  - Extended time while voting

Last thoughts: Is the concept of 1 AVS per polling place providing real accessibility?

- Vote-by-mail and other remote voting bypasses this requirement now
- As long as security experts insist on paper ballots, full accessibility will be elusive
- Trying to build all access features into one voting machine creates great complexity
- Voters with significant disabilities need to be able to use their own IT and AT interface to mark, verify and cast a ballot

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