

**NISTIR 7596**

**Guidelines for Writing Clear Instructions  
and Messages for Voters  
and Poll Workers**

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May 2009

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U.S. Department of Commerce  
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# Guidelines for Writing Clear Instructions and Messages for Voters and Poll Workers

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## Introduction

### Clear instructions are necessary

Voters are exercising an important right as American citizens. If they cannot understand how to use their voting materials, they may not be successful in voting for the candidates and positions of their choice.

They may make mistakes that invalidate their ballots. They may vote for candidates or positions that are not the ones they meant to vote for. They may be intimidated by unclear or insufficient instructions and give up without voting. Indeed, they may choose not to try to vote. They may not even come to the polling place or ask for an absentee ballot – in part because they fear that they will not understand what to do with the ballot or because they had an earlier experience in which they did not understand what to do.

Clear instructions are a necessary part of the voting process whether voters use paper ballots, mechanical devices (lever or punch card), electronic devices, or any other medium.

### This handbook gives guidelines for instructions and messages

This handbook includes 20 guidelines for clear ballot instructions for both paper and electronic ballots. It also gives seven guidelines for writing clear system messages on electronic voting machines.

### Each guideline includes a statement, rationale, and example

With each guideline, I include at least three sections:

**What?** – a statement of what writers must or should do

**Why?** – a rationale, an explanation of the importance of the guideline

**Example** – one or more examples from actual ballots

Some guidelines also include notes and cross-references to other guidelines.

### The 20 guidelines for instructions are divided into five categories

**Placement** – where to give instructions on a ballot

**Order** – how to organize instructions

**Sentences** – how to write short, succinct, clear sentences

**Words** – how to use gender-neutral, simple, and consistent language

**Topics** – what to cover

## The guidelines are about writing (language) and not about design

Design is the topic of a different project.

## The revisions illustrate good design

However, in revising examples to show best practice, I use best practice in design as well as in language. Thus, the revised examples also illustrate the following design guidelines:

### Use mixed case in sentences, not all capitals.

Instead of: IF YOU MAKE A MISTAKE  
Do this: If you make a mistake

### Use mixed case in bold for emphasis in sentences, not all capitals.

Bold by itself serves as emphasis; do not use bold capitals.

Instead of: **DO NOT ERASE.**  
Do this: **Do not erase.**

### Use sentence capitals in instructions, not initial capitals.

Sentence capitals = first letter of sentence, "I," special words  
Initial capitals = every word capitalized like a book title

Instead of: To Begin Voting Insert Voter Card Into Slot Below.  
Do this: To begin voting, insert Voter Card into slot below.

### Use bold initial capitals in titles and headings, not all capitals.

Initial capitals = every word capitalized like a book title.

Instead of: **INSTRUCTIONS FOR VOTERS**  
Do this: **Instructions for Voters**

### Put text flush left and ragged right; do not center text.

Note: I offer a rewrite in language as well as design for this example.  
See Guideline 10, pages 18-19, for the rationale.

Instead of:

**NOTICE**  
If you tear, deface or make a mistake and wrongfully mark any ballot, you must return it to the election board  
and receive a new ballot or set of ballots.

Do this: If you make a mistake or want to change a vote,  
ask the election official for a new ballot.

## The guidelines come from a review of many ballots

The guidelines and examples come from my review of both paper and electronic ballots. Here is a summary of what I reviewed:

For paper ballots and mechanical device ballots

- ballot samples from 50 states and the District of Columbia, collected by Professor Richard G. Niemi
- ballot samples from 15 states and the District of Columbia, collected by the National Institute of Standards and Technology (NIST)<sup>1</sup>

For Direct Recording Electronic voting machines (DREs)

Vendor	Material reviewed
Diebold	online demo
ES&S	online fact sheets, guides on CD, paper instructions, machine
Hart	online demo, guides on CD, messages provided in an email
Sequoia	online demo, guides on CD, machine

## The guidelines and revisions are based on research

The guidelines in this handbook are based on research in many disciplines. I draw on research from:

- cognitive psychology
- human-computer interaction
- information design
- linguistics
- reading
- technical writing

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<sup>1</sup> Notes about the paper ballots and mechanical device ballots

- In both sets of ballots (Niemi, NIST), a state's folder often included samples from different counties and precincts. Therefore, I had far more than 50 samples to review in each collection.
- The Niemi samples date mostly from 1998 and 2000 elections; the NIST samples date mostly from 2004 elections. The difference in dates, however, is not important here; the language is similar in similar ballot types across all these dates.

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## Guidelines for clear instructions on ballots

### Placement

1. Put instructions where they are needed – not all together at the top.
2. Put instructions before they are needed – not after.

### Order

3. Put instructions in logical order.  
First task, first; last task, last.
4. Put warnings about consequences before – not after – the voter is likely to act.
5. On DREs, wait to highlight the option to vote until voters have been through all the races and measures.
6. On DREs, match the order of buttons to the order of the instructions

### Sentences

7. Start each instruction on a new line.
8. Write directly to the voter.
9. Keep each instruction as short as possible.
10. Watch the tone. Help voters; don't threaten them.
11. Write in the positive.
12. Put the context before the action.
13. Be consistent in the way you give instructions.

### Words

14. Do not use gender-based pronouns.
15. Use simple English words that voters know
16. Be consistent in the words you use.
17. On DREs, do not use technical, computer jargon.
18. On DREs, be explicit in naming buttons.

### Topics

19. Cover all important situations.
20. Consider voters' likely mistakes.



# 1. Put instructions where they are needed – not all together at the top

## What?

Instructions must come "just in time" – when voters need them – at the beginning of the section where they are relevant.

## Why?

Having all the instructions at the beginning poses a heavy burden on voters' memory.

People tend to pay attention only if the instructions seem relevant to their current needs. They may not read instructions that do not apply at the moment they are reading them.

The more there is to read in one place, the more likely it is that many voters will just skip the instructions. When instructions come "just in time," there are fewer to give at any one place on the ballot.

If voters do not memorize all the instructions when they first see them, when they need them later, they may not even remember that there were instructions at the beginning.

Some voters will go back, which requires finding the right place. Some will just do what they assume is correct without going back to read.

## Note

The DREs often have "just in time" instructions. For example, most of them tell voters how to finish – how to actually cast the ballot – only when the voter has been through all the races.

Some paper ballots, however, have all the instructions at the beginning. These would be better if they were divided into smaller sets of instructions with each set coming at the place in the ballot where voters are ready for it.

**Example on the next page**

**X** Voters need instructions on voting for measures only when they get to the measures. They need information on what to do when they have finished voting at the end of the ballot, not at the beginning.

**INSTRUCTIONS TO VOTER:** To vote for the candidate of your choice, **completely fill in the oval to the right of the candidate's name for whom you wish to vote.**

To vote for a candidate who is not on the ballot, you may write in the person's name, and completely fill in the oval to the right of the write-in space. If that oval is not marked, your vote cannot be counted for the write-in candidate.

To vote on a measure, **completely fill in the oval next to your choice of "YES" or "NO."**

Place your ballot inside the secrecy sleeve, take your ballot to the ballot box.

If you make a mistake while voting, return the ballot to the election official for a new one. A vote which has been erased or changed will not be counted.

**✓** Voters need only these instructions at the top of the ballot. They need the other instructions at other places later in the ballot.

**Instructions for voting:**

To vote for the candidate of your choice, completely fill in the oval to the right of that person's name.

To vote for a person who is not on the ballot, write in the person's name. Also, completely fill in the oval to the right of the write-in space. You must fill in the oval for your vote to count.

If you make a mistake or want to change a vote, take the ballot back to the election official and get a new one. We cannot count a ballot that has been erased or changed.

## 2. Put instructions before they are needed – not after

### What?

Instructions for specific parts of a ballot must come just before the voter has to act.

This guideline does not conflict with the previous one. Voters need instructions at the place in the ballot where the instruction is relevant. And they need those instructions just before and not after the options the instructions relate to.

### Why?

People read and act in the order in which information comes to them. They do not skip over the action part to look for instructions.

### Example

**X** The instructions come after the voting options.

Many voters will not notice the instructions until after they have voted.

FOR DISTRICT COURT JUDGE  
DISTRICT 8, DEPT 3

Shall Judge **Kenneth R. Neill** of the Eighth Judicial District, Department 3, of the State of Montana be retained in office for another term?

YES

NO

(Blacken the oval  before the word "YES" if you wish the official to remain in office. Blacken the oval  before the word "NO" if you do not wish the official to remain in office.)

**✓** The instructions come before the voting options.

This is the logical order for voters.

In voting for judges:

If you want the judge to stay in office for another term, blacken the oval  before the word YES.

If you do not want the judge to stay in office for another term, blacken the oval  before the word NO.

**For District Court Judge  
District 8, Dept. 3**

Do you want Judge Kenneth R. Neill of the Eighth Judicial District, Department 3, of the State of Montana to stay in office for another term?

YES

NO

### 3. Put instructions in logical order First task, first; last task, last

#### What?

Instructions for specific parts of a ballot must come in the order that voters need them.

#### Why?

Instructions make more sense if they come in the order in which people will use them. Also, if voters go back to look for what to do in case of a problem, they will likely look to the end of a list of instructions.

#### Example

**X** These instructions are not in logical order. Voters find out how to recover if they do it wrong before they find out how to do it right.

**✓** In this version, voters first learn what to use – the pencil. Then they learn how to use the pencil.

The instructions on what to do if something goes wrong come after the instructions on how to do it right.

**INSTRUCTIONS TO VOTER :**

1. To vote you must blacken the oval (●) completely next to the name of the candidate for whom you wish to vote.
2. If you spoil your ballot, do not erase, but ask for a new ballot.
3. Use a **lead pencil**.
4. To write-in a name, you must blacken the oval (●) to the left of the dotted line provided, and write the complete name on the line provided for that purpose.

#### Instructions to voters

1. Use a lead pencil.
2. To vote, blacken the oval (●) completely next to the name of the candidate for whom you wish to vote.
3. To write in a name, blacken the oval (●) to the left of the dotted line and write the complete name on the dotted line.
4. If you spoil your ballot, do not erase; ask for a new ballot.

## 4. Put warnings about consequences before – not after – the voter is likely to act

### What?

Voters must learn about the potential negative consequences of an action before the instruction to take the action.

### Why?

People often act as soon as they see an instruction. If they act before reading the warning, they will not be able to heed the warning.

On some electronic voting machines, information warning voters about the consequences of actions comes after the voter is likely to have taken the action. That's too late.

### Example

The diagram shows a light blue rounded rectangle representing a ballot screen. Inside, the text is as follows:

Ballot not complete!

You have not made a choice in some contests.

Press "Confirm" or the Vote button to finish casting your ballot.

Note: Once you press "Confirm" you can not return to the ballot to make changes.

Press "Return to ballot" to make changes or selections.

Two red-bordered callout boxes with red arrows pointing to the screen:

- The first callout box points to the instruction "Press 'Confirm' or the Vote button to finish casting your ballot." and contains the text: "X Voters may act on this instruction without reading further down the screen."
- The second callout box points to the instruction "Press 'Return to ballot' to make changes or selections." and contains the text: "X If they act on the instruction above this, they may miss out on changes they would have made if the note and final instruction had come earlier on the screen."

Example continues on the next page

Ballot not complete!

You have not made a choice in some contests.

Note: Once you press "Confirm," you cannot return to the ballot to make changes.

To make changes or selections, press "Return to ballot."

To finish casting your ballot, press "Confirm" or the Vote button.

✓ In this version, we make the consequence clear before the instruction.

✓ In this version, the instruction that cannot be undone comes last. As the final instruction, it should come at the end.

---

## 5. On DREs, wait to highlight the option to vote until voters have been through all the races and measures

### What?

Voters must be given all the races and measures to vote on *before* they are given the signal to cast the ballot.

### Why?

People are drawn to the first and brightest message that they see. Flashing words or buttons are very eye-catching even when they are in our peripheral vision.

If a bright or flashing message suggests that it is time to vote, many voters will be distracted and not realize that they have not yet looked at the rest of the screen.

### Example

#### **X** Poor practice

DRE: As one DRE gets to the last page of the ballot, the VOTE button at the top lights up. It is very bright and attracts attention.

That button is a form of instruction. It is an imperative verb, calling to the voter to push it.

It is at the top of the device so the voter sees it before reading anything else on the page – even though the rest of the page includes races or measures not yet voted.

Many voters will be distracted and push the vote button without going over the last page of the ballot.

#### **✓** Good practice

DRE: Set the VOTE button to light up only after the voter has been through all the pages of the ballot – and after the voter has been given the opportunity to return to any undervoted part of the ballot.

## 6. On DREs, match the order of buttons to the order of the instructions

### What?

The order of choices in the instructions and the order of the buttons that relate to those choices must match.

### Why?

Voters may assume that the order is the same. Inconsistency between the instruction and the buttons may cause voters to make mistakes. And, in some cases, (as in the example below), voters will not be able to recover from their mistakes.

### Example

**X** The second line on the screen gives voters two options in this order:

- Cast your ballot
- Make changes

The buttons give the same options, but in the opposite order:

- Make changes
- Cast your ballot

Please Review The Paper Record Of Your Ballot

You May Now Cast Your Ballot Or Make Changes

Make Changes

Cast Ballot

Example continues on the next page



✓ First, notice that the sentences now have a capital letter only at the beginning. They are easier to read this way.

Second, notice that the buttons are now in the same order as the options in the sentence just before the buttons.

Please review the paper record of your ballot.

You may now make changes or cast your ballot.

Make Changes

Cast Ballot

## 7. Start each instruction on a new line

### What?

Each instruction must start on a new line. Different instructions must not be combined together in a single paragraph.

### Why?

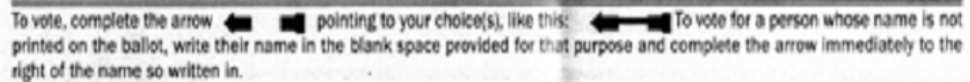
If each instruction starts on its own line, voters



- are less likely to miss an instruction
- can more easily see that there are multiple situations and multiple instructions
- will more easily find an instruction if they come back to look for it

Under the time stress of most voting situations, many voters scan rather than read. Instructions on separate lines are easier to scan than instructions in a paragraph.

### Examples

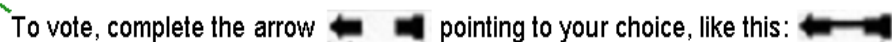
**X** The paragraph looks like a lot to read. Also, it is difficult to remember so much all at once.





To vote, complete the arrow  pointing to your choice(s), like this:  To vote for a person whose name is not printed on the ballot, write their name in the blank space provided for that purpose and complete the arrow immediately to the right of the name so written in.

**✓** Separate instructions make it clear that there are two situations.

Voters who need the instruction about writing in a candidate later will find it more easily as a separate instruction.



To vote, complete the arrow  pointing to your choice, like this: 

To vote for a person whose name is not on the ballot, write the name in the blank space provided for that purpose. Also, complete the arrow immediately to the right of the name you wrote in.

**Another example on the next page**

X This paragraph has four instructions all run together.

#### INSTRUCTIONS TO VOTERS

Complete the oval (○) at the left of the name of the candidate for whom you choose to vote, like this: (●). You may vote for a person whose name does not appear on the ballot by writing the person's name and municipality of residence in the blank space provided and completing the oval at the left. If you make a mistake, you may request a new ballot. **DO NOT ERASE.**

✓ Separating the instructions makes them easier to see and more likely to be read.

#### Instructions to Voters

To vote for the candidate you want, complete the oval (○) to the left of that candidate's name, like this: (●).

To vote for a person whose name is not on the ballot, write the name and the city where the person lives in the blank space provided for that purpose. Also, complete the oval to the left of the name you wrote in.

#### **Do not erase.**

If you change your mind or make a mistake, ask for a new ballot.

## 8. Write directly to the voter

### What?

Instructions must be in the imperative. ("Do this...")

Statements of fact or law must not replace instructions.

### Why?

Instructions tell people what to do. People are more likely to act appropriately when they read instructions than when they read statements about the ballot.

Also, sentences with imperative verbs are in the active voice.

English sentences can be in either active voice or passive voice.

An active sentence is in the order:

Actor – Verb – Object

Passive sentences are in the order

Object – Verb – by the Actor

Passive sentences are more difficult to understand than active sentences because the pieces of a passive sentence are not in logical order from the voter's point of view.

### Example

This ballot stub shall be removed  
and retained by the voter.

**X** This is a statement about the ballot stub. Voters may not understand that they are meant to act on this statement.

**X** The statement is in the passive voice (...be removed and retained...).

The voter must remove  
and keep this ballot stub.

This statement is the same message in the active voice. The actor (the voter) is now at the beginning of the sentence.

Remove and keep  
this ballot stub.

**✓** This is an instruction to the voter. Writing with an imperative verb (Remove... keep...) is the most direct way of telling voters what to do. Imperative sentences are also in the active voice.

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## 9. Keep each instruction as short as possible

### What?

Instructions should be as short as possible while conveying the essential message. Leave out unnecessary words. Try to keep sentences to 20 words or less.

### Why?

Voters are more likely to read short sentences. Short sentences are easier to remember.

### Example

**X** 26 words. The last part seems redundant.

To vote for the candidate of your choice, completely fill in the oval to the right of the candidate's name for whom you wish to vote.

**✓** 19 words. Does it convey the same message?

To vote for the candidate you want, completely fill in the oval to the right of that person's name.

## 10. Watch the tone

### Help voters; don't threaten them

#### What?

Many paper ballots tell voters what to do if they somehow mess up the paper and need to start again. The message about this must not blame the voter. It must be in words that are clear to voters. It must have a friendly tone.

#### Why?

Voters who feel blamed or shamed are less likely to request a new ballot.

The reason for needing a new ballot may not be a "mistake" or "spoiling" or "defacing" but simply that the voter decided to change a vote.

#### Example

**X** Does the language in this example make voters feel bad about themselves?

Is it intimidating?

- The title **NOTICE** in all capitals is less friendly than an instruction would be.
- The words "deface" and "wrongfully mark" blame the voter when the voter may simply have decided to change a vote.
- The demand "you must" is harsher than the more direct verbs, "ask," "return," that most ballots use.

#### NOTICE

If you tear, deface or make a mistake and wrongfully mark any ballot, you must return it to the election board and receive a new ballot or set of ballots.

Example continues on the next page

Most ballots have a much friendlier instruction. This instruction would be better still with even simpler language and without capital letters.

**\*IF YOU MAKE A MISTAKE**, return the ballot to the Election Officer at the ballot table to receive a second ballot.

✓ This instruction is much calmer and friendlier. It is in simple language. It recognizes that some "mistakes" are in fact voters changing their minds.

If you make a mistake or want to change a vote, ask the election official for a new ballot.

## 11. Write in the positive

### What?

Voting instructions must be in the positive whenever possible.

Rewrite double negatives as positive sentences.

### Why?

Positive sentences are easier for voters to understand.

In English, two negatives make a positive. You can rewrite an English sentence that has two negatives into a simpler positive sentence.

### Example

**X** Double negative

If that oval is not marked, you vote cannot be counted for the write-in candidate.

**✓** Positive

You must fill in the oval for your write-in vote to count.



## 12. Put the context before the action

### What?

Many instructions for voting are sentences with two parts:

- what the voter wants to do (the context, "to do...")
- what the voter must do to accomplish that (the action, "do...")

Voting instructions must put the context before the action.

### Why?

Research shows that if you give people the action before the context, many will begin to act before reading the end of the sentence. They make mistakes because they did not read all of the instruction.

### Examples

**X** Action

**X** Context

Press "Return to ballot" to make changes or selections.

**✓** Context

**✓** Action

To make changes or selections, press "Return to ballot."

More examples on the next page

**X** Action

**X** Context

Complete the oval to the left of the candidate's name to vote for the candidate of your choice.

**✓** Context

**✓** Action

To vote for the candidate of your choice, complete the oval to the left of that person's name.

**X** Action

**X** Context

TOUCH the NEXT button at the bottom right of the screen to move to the next ballot page.

**✓** Context

**✓** Action

To move to the next ballot page, touch the NEXT button at the bottom right of the screen.

---

## 13. Be consistent in the way you give instructions

### What?

Voting instructions must keep the same pattern for similar instructions.

### Why?

Research shows that people are very pattern-oriented. Patterns help people grasp information quickly and accurately.

### Examples

#### **X** Inconsistent pattern

To change a selection, touch the X again. The X will disappear and you may make a new selection.

Touch the NEXT button at the bottom right of the screen to move to the next ballot page.

#### **√** Consistent pattern

To change a selection, touch the X again. The X will disappear and you may make a new selection.

To move to the next ballot page, touch the NEXT button at the bottom right of the screen.

Another example on the next page

**X** Inconsistent pattern

To vote for the candidate of your choice, completely fill in the oval to the right of that person's name.

You may write in a person's name in the space provided for that purpose to vote for a candidate who is not on the ballot and completely fill in the oval to the right of the write-in space.

**✓** Consistent pattern

To vote for the candidate of your choice, completely fill in the oval to the right of that person's name.

To vote for a candidate who is not on the ballot, write that person's name in the space provided. Also, completely fill in the oval to the right of the write-in space.

## 14. Do not use gender-based pronouns

### What?

Instructions and statements on ballots that are addressed to both men and women must not use references to only one or the other gender.

Note: If the statement refers to a particular person, it is correct to use the appropriate gender pronoun for that person.

### Why?

Gender-based pronouns and words exclude the other gender from consideration. Election officials do not mean to exclude women as write-in candidates or voters, but statements that refer to write-in candidates or voters as "he" or "his" have that effect.

### See also

Guideline 8. Write directly to the voter.

### Examples

**X** "His" is a gender-based pronoun. It sends the message that only men may be write-in candidates.

#### WRITE-IN

To vote for a person not on the ballot, write the title of office and his name in the space provided

**✓** If we change "his" to "the person's," the sentence applies to both men and women.

#### Write-In

To vote for a person not on the ballot, write the title of office and the person's name in the space provided.

Another example on the next page

**X** "His" is a gender-based pronoun. It sends the message that only men may vote.

INSTRUCTIONS TO VOTERS  
CANDIDATES  
Punch a hole opposite the name of the person for whom you wish to vote. The voter shall cast his vote in accordance with this instruction, and shall vote in no other manner.

**✓** If we change to the plural, "voters," the sentence applies to both men and women. Plural pronouns are gender-neutral.

Punch a hole opposite the name of the person for whom you wish to vote. Voters shall cast their votes in accordance with this instruction and shall vote in no other manner.

#### **A note on this example**

The gender-biased writing, "The voter shall cast his vote..." is a statement, not an instruction.

Is the statement required? If it is, use the gender-neutral way of writing. If it is not, eliminate it.

Instructions are gender-neutral because they are in the imperative: "Touch..." "Punch..." "Fill in..." "Write in..."

## 15. Use simple English words that voters know

### What?

The words on ballots must be ones that voters understand.

### Why?

If voters do not understand the words they read, they may

- not vote
- not return as voters in future elections
- vote in ways other than what they wanted to do
- feel embarrassed or ashamed or angry or frustrated

### Examples

<b>X Poor practice</b>	<b>✓ Good practice</b>
remain	stay
retain	keep
reverse side	back of
such candidate as you desire	the candidate that you want

<b>X Poor practice</b>	<b>✓ Good practice</b>
make a cross (X) in...	put an X in...

### A note on this example

Many voters associate "cross" with a religious symbol that does not look like an X. Many would not draw a cross as an X.

### Examples that need research

Ballots include many words that are special to voting. Research is needed to find out which of these words voters know and which they do not. These special words include:

- candidate
- cast a ballot
- contest / race
- early cast
- mixed ticket
- non-partisan
- partisan
- party
- split ticket
- straight ticket

---

## 16. Be consistent in the words you use

### What?

Instructions and messages must use words consistently. Once you name something, use that name throughout the ballot or DRE.

### Why?

Voters may be confused if the same object has different names. Voters may think that the instructions and messages are talking about different objects.

### Example

**X** Inconsistent words

On one DRE, the card that voters use has three different names:

VOTER CARD  
voter activate card  
Vote Card

The card itself says:  
VOTER CARD

The place to insert it has the instruction:  
Insert voter activate card here.

The message on the screen at the beginning of the process says:  
To Begin Voting Insert Voter Card Into Slot Below

The message at the end of voting calls the card:  
Vote Card

**Example continues on the next page**



✓ Consistent words

The plastic card should be referred to by the same name throughout.

If the name is **Voter Card**, the instructions should be:

Insert **Voter Card** here.

To begin voting, insert **Voter Card** into slot below.

**Voter Card**

## 17. On DREs, do not use technical, computer jargon

### What?

This is a special case of the guideline to use words voters know.

Instructions and all other material for voters must talk to voters in their language and not use technical, computer words that they are likely not to know.

### Why?

Many voters are not familiar with computer terminology. If they do not understand the instructions, they may act incorrectly, have to take poll-workers' time to find out what to do, or abandon the task.

### Note

In a study with blind people using web sites, researchers found that half of the people in the study did not click on the phrase "skip navigation" even though that is what they wanted to do. They did not recognize "navigate" as relevant to getting somewhere on the web site. (Theofanos and Redish, 2003)

### See also

Guideline 15. Use simple English words that voters know.

### Examples

**X** Computer jargon

Your electronic ballot is activated.

**✓** Plain language

You may now start to vote.

**More examples on the next page**

**X** Computer jargon

navigate forward through the ballot

**√** Plain language

move to the next ballot page

**X** Computer jargon

Enter Your Access Code

**√** Plain language

Use the wheel to put in the four-number Access Code you were given. Then press Enter.

**A note on this example**

The plain language version of the last example is much longer than the computer jargon version. In this case, that may be necessary for voters to understand what to do. The computer-jargon version assumes that voters will understand that they must do what is made explicit in the plain language version.

## 18. On DREs, be explicit in naming buttons

### What?

This is another special case of using the voters' words and using simple English. Buttons must be meaningful to voters.

### Why?

Touching or otherwise selecting buttons on DREs are one way that voters take actions. They must understand what they are choosing with each button.

### Example

This is the message that comes up on one DRE if a voter changes from a straight party vote for one party to a straight party vote for a different party.

The candidates of  
*party*  
will be replaced with  
*party*  
Candidates you have selected  
from a different party  
will be retained.

Press here  
to Cancel

Press here  
to Continue

**X** What do the two buttons here mean? What do voters get by pressing Cancel? What happens if they press Continue?

The image shows a light blue rounded rectangular box representing a DRE screen. Inside the box, there is text about candidate replacement. At the bottom of the box are two buttons: 'Press here to Cancel' and 'Press here to Continue'. A red callout box with a red border and a red arrow pointing to the buttons contains a red 'X' and the text: 'What do the two buttons here mean? What do voters get by pressing Cancel? What happens if they press Continue?'

---

## 19. Cover all important situations

### What?

Although we do not want to overburden voters with instructions, voters must have instructions for relevant situations, including how to

- mark a ballot
- write in a candidate
- vote straight party and split ticket  
(if those are options for the ballot)
- vote to keep a person in office
- vote on measures
- cast the vote or turn in the ballot

Voters must also know how many people they may vote for in each race whether that is an exact number or a maximum number.

### Why?

Where there are no instructions, there is an implicit assumption that voters will know what to do by themselves. If that assumption is wrong, some voters will be confused.

- Voters may act incorrectly, which may lead to other problems.
- Voters may ask for assistance, taking extra time and taking poll workers from other duties. Also, then, poll workers must have and understand the instructions.
- Voters may think that they cannot do something and abandon voting in the situation for which they have no instructions.

### Examples

#### **X Poor practice**

Sample ballots on two DREs that I reviewed allowed straight party voting. Neither explained what that meant or gave instructions for voting a straight party ticket.

#### **X Poor practice**

The write-in screen on a DRE has no instructions on how to use it.

**More examples on the next page**

### **X Poor practice**

The write-in screen on another DRE explains basic use but does not tell voters what to do if they make a mistake or change their mind.

### **X Poor practice**

One DRE has an area for writing that is much longer than the number of characters (letters, numbers, and spaces) it allows – without telling voters that there is a maximum number.

When voters try to type more than that number, no message appears even though the write-in area still has space.

Voters may think they have done something wrong or that the machine is broken.

### **✓ Better practice for this situation**

For the write-in screen on this DRE:

- Design the write-in area to be the length of the maximum number of characters allowed.
- Tell voters about the maximum.
- If the voter tries to type more than the maximum number of characters, have the system send an informative (and non-blaming) message to the voter.

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## 20. Consider voters' likely mistakes

### What?

Instruction writers must think about the ways that people might misinterpret the instructions. They must write instructions to avoid those misinterpretations.

### Why?

People always bring their earlier experiences to new situations. They have expectations from those earlier experiences that may make them interpret situations differently from the way that the ballot or DRE works.

### Examples

#### **X** Poor practice

To vote on one DRE, voters must push a plastic card into a slot until it clicks and leave it there while they are voting.

Many voters push the card in quickly and pull it out again. They are probably thinking of how they use a credit card to pay for gasoline or of how they use a hotel room key card. In those situations, the proper procedure is to push the card in and pull it out again quickly – and not leave it in.

#### **✓** Better practice for this situation

The instruction on the DRE should tell voters to push the card in until it clicks and leave it there while they are voting.

Another example on the next page

### **X Poor practice**

Situation: a "vote for no more than one" race  
the voter wants to change a selection

Voters on one DRE must first deselect the candidate or option that they no longer want. If they try to change their choice by touching the new choice, nothing happens. The choice does not change. No message appears.

### **√ Good practice**

Same situation on another DRE

On another DRE, voters need not first deselect a previous choice. If they touch the candidate or option they now want, their vote is changed from the candidate or option they had previously selected.

For voters who have used computers in other situations, this is the way they probably expect a DRE to work. In other computer programs, when only one choice is allowed, you change that choice by clicking the selection (radio button) you now want. You do not have to deselect your previous choice first.



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## Guidelines for clear system messages

On Direct Recording Electronic voting machines (DREs), in addition to instructions and messages that voters see in the normal course of voting, messages must be available for times when something goes wrong.

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### Understanding the audience for messages about problems

We are concerned here with any message that might be seen by a voter or by a poll worker.

If the message could come up while a voter is at a DRE, the message must be clear to voters. If a message could come up while a poll worker is at a DRE, the message must be clear to poll workers.

Voters span a very wide range of literacy, of English language skills, and of experience with computers.

Many poll workers are older, retired people. They did not grow up with computers; they may have never used computers. Although they may have been acting as poll workers for many elections, they are likely to be new to electronic voting. The job is one they do infrequently (annually, bi-annually, or only once every four years).

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### Understanding the context for messages about problems

Troubleshooting messages appear only when the problem occurs.

If a message comes up while a voter is trying to vote, it will almost certainly come as a surprise. The voter will have never seen the message before. Just seeing the message will be a source of stress and anxiety.

These are all reasons why messages must be extremely clear, instantly understandable, include information on what to do, and be calming rather than blaming.

All of those points are equally true for poll workers.

No matter how long a poll worker has been helping on election day, that poll worker is probably seeing the message for the first time. If it is early in the day, the poll worker is likely to be under pressure to get everything set up and ready. If it is late in the day, the poll worker is likely to be very tired.

People's ability to read and absorb information decreases under stress, pressure, and fatigue.

## Understanding how to write clear messages

Useful and usable messages

- explain the problem and its probable cause
- tell users what to do
- use words that users understand easily
- do not blame the user; do not use words like "illegal" to mean that the system does not recognize something the user did

## Considering the messages on DREs

A few DRE messages meet the criteria for useful and usable messages.

Too many, however, illustrate poor practice.

This is somewhat surprising because the research that established good practice in writing software system messages was done in the 1980s, and examples of good messages are common in contemporary software systems.

## Listing seven guidelines for writing clear messages

1. Do not call them error messages.
2. Do not blame the user.
3. Explain the problem.
4. If it will be useful, explain the probable cause.
5. Tell people what to do.
6. Use common words.
7. Use illustrations where they will help.

## Giving examples for these guidelines

On the following pages, you will find examples of actual messages from DREs with a discussion relating the examples to the guidelines. I have not presented these guideline by guideline as I did in the earlier section on guidelines for instructions. In some cases, I do not have enough information to offer a revision of the poor example. In other cases, the example violates several of the guidelines. I believe it will be more useful to developers to see this example by example rather than guideline by guideline.

✓ **Good practice**

This message is in clear language. It tells the voter what the problem is and what to do about it:

Batteries are too low to continue. Please get a poll worker to help you. Thank you.

✗ **Poor practice – clear but insufficient**

The following messages are in clear language, but they do not explain the problem in enough detail for most voters or poll workers to understand what has happened.

They do not tell the voter or poll worker what to do.

Ballot has already been voted.

It is too early to close.

**X Poor practice – computer jargon**

Messages like the following are not in language that either voters or poll workers are likely to understand.

The poll worker who sees one of these messages must go to the manual to discover that it is necessary to call the company's customer service line. Even when on the phone with the company's customer service representative, poll workers may have difficulty remembering or reciting the message because it is likely to mean so little to them.

Ballot checksum in RAM invalid.

Ballot Header pointer is null.

Replace these messages with a plain language statement of the problem.

Also explain what to do, even if that is to call the company's customer service line. Users should not have to go to another place (a manual) to find that information.

**X Poor practice – blaming the user, raising anxiety unnecessarily**

The following message blames the user. It also makes the problem seem much more serious than it probably is.

Illegal password

**✓ Good practice**

Here are two other versions of the same message that are calmer, friendlier, and do not blame the user:

Password does not match the information on file. Please try again.

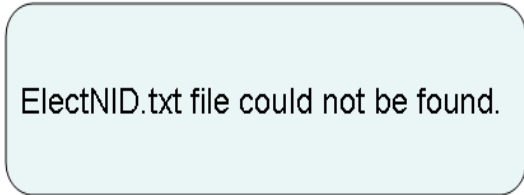
Incorrect password. Please try again.

**X Poor practice** → **✓ Good practice**

Here is an example of how to turn a message that is short but not useful into a clear and usable message.

**The original message**

Most poll workers are likely to be bewildered by a message like this:



ElectNID.txt file could not be found.

**Why this message is not useful**

Poll workers do not know the names of individual files. They don't want to learn those names. They do not need to know the names to fix the problem.

They need information on what to do rather than information on the exact file that is missing.

I found useful information in the manual. However, poll workers need the information on the machine, not only in the manual. The manual may not be readily available. Finding the manual, finding the right place in the manual, and reading the manual are extra steps that put a burden on the very busy poll workers.

**What the message means**

The manual says that likely causes of this problem are

- the compact flash card is missing
- the compact flash card is not properly seated in the terminal

**A better message**

A better message would be something like the screen on the next page.

The voting machine has room for this message on its screen.

Cannot find a necessary file from the compact flash card.

picture of  
flash card

If you do not have the card:

- get it
- put it in the correct slot in the voting machine

picture of  
machine,  
showing slot  
and how to  
put card in

If you have the card:

- take it out of the slot
- reinsert it firmly in the correct slot

If you cannot find the card,  
or if reinserting it does not solve the problem,  
call [company name's] customer service.

[give number if possible]