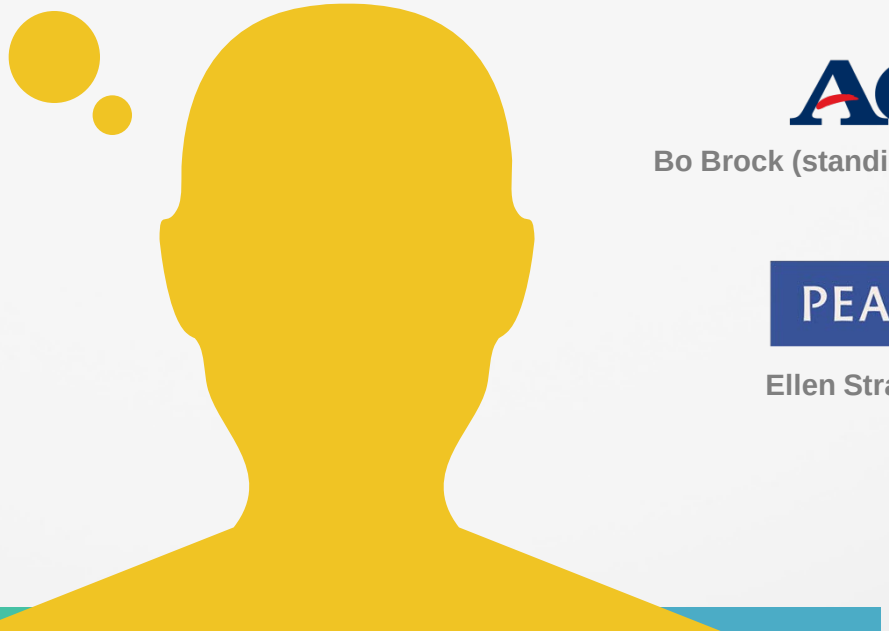
Testing with Tablets: What ELSE do you need to know?



Based on a series of cognitive labs, usability studies, and test session observations conducted jointly and independently.

ACT

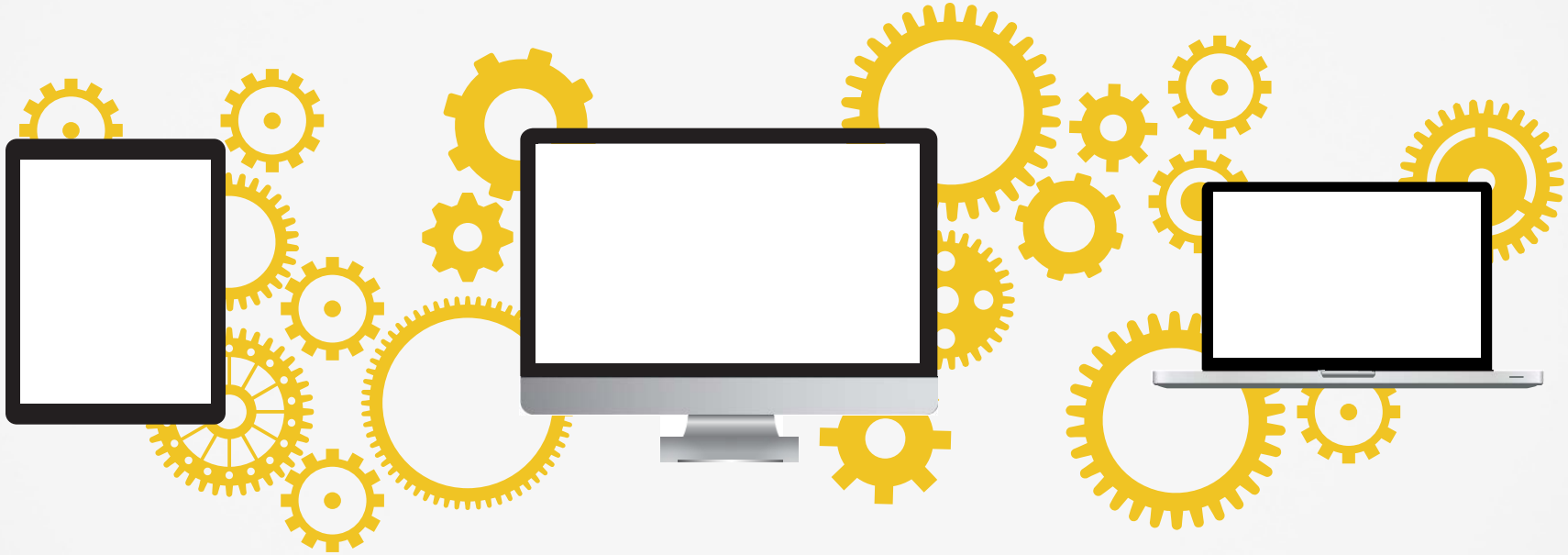
Bo Brock (standing in for Matt Arnold)

PEARSON

Ellen Strain-Seymour

Success with Device Heterogeneity

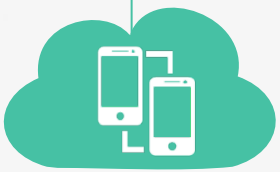
Assessment should equitable and secure regardless of the device used to administer the tests.



We have conducted a number of studies focusing on the usability of tools, navigation, and technology-enhanced items on the tablet and on the comparability of test scores across tablets and computers. In the course of these studies, we have come up with a short list of "odds and ends" -- factors often overlooked but which should be considered when expanding an online testing program to include tablets.

Security

How is tablet security different from security with paper, laptops, and desktops?



Space

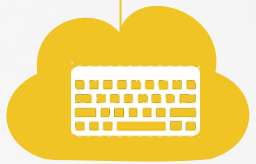
When tablets are brought into a classroom, how is desk real estate managed?

Side Effects

What are some of the unintended consequences (good and bad) of tablet-based assessment and 1:1 tablet initiatives?

Position

What position should the tablet be in when a test has writing items and items requiring on-screen manipulation?.



Keyboards

All keyboards are not created equal: what to look for.

Be prepared for a new ecosystem. Understanding the range of issues that can affect security, student performance, and the overall smoothness of test administration using tablets and proactive management of these issues will be key to the success of tablet-based testing.

SECURITY

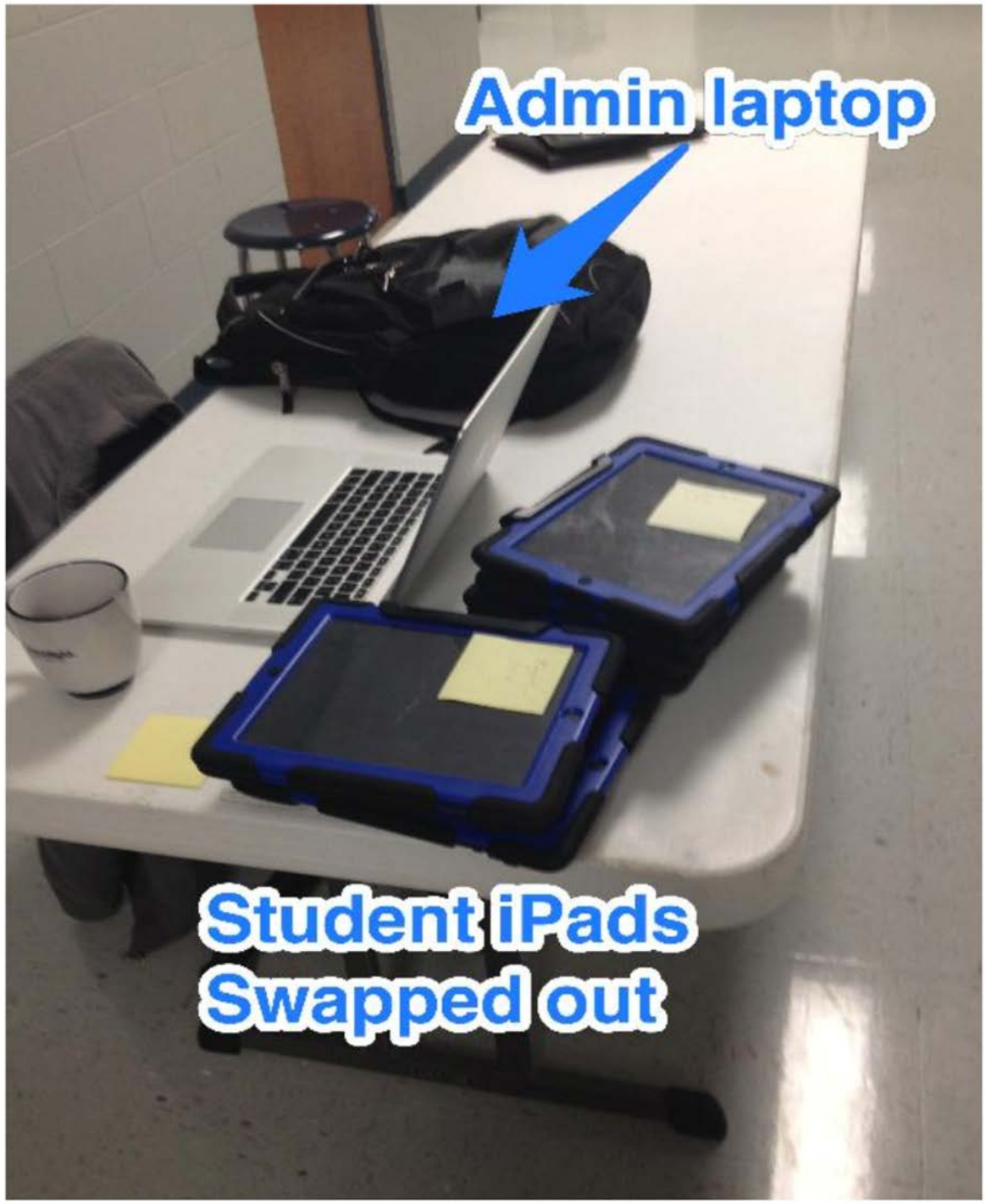
iPad Logistics

Testing lockdown and bandwidth at Florence High School in Alabama, a campus with a 1:1 iPad initiative

Casper Mobile Device Management Suite from JAMF Software

Difficult to adjust settings (e.g., brightness) while in lockdown mode

About 120 mbps required for data with all the devices (!)



Spare iPads

Is 1:1 enough on testing day?

School Image

Similar to imaging disks on corporate laptops, but with many fewer options and variables

Swap-outs

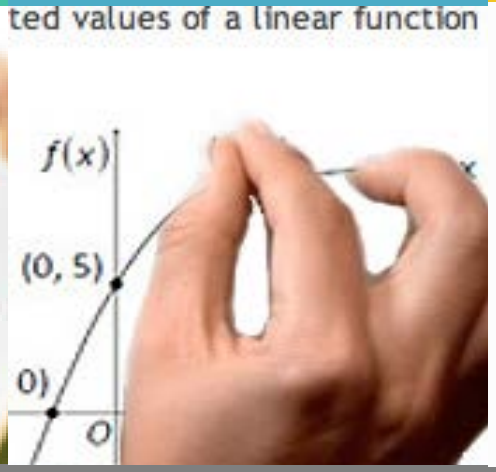
Critically important = for battery issues, cracked screens, lock-ups, low brightness settings, etc.

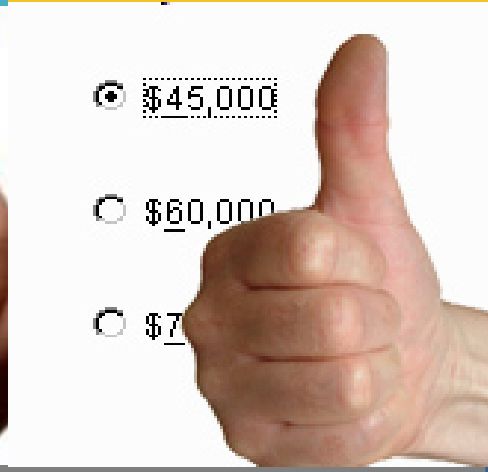
Proctoring & Preparation

The last mile problem doesn't end with digital interfaces.

Cheating in a Few Easy Steps

Tablets have a number of features that can be handy for cheating purposes.





Identify Helper

Use the lightweight form factor of the tablet to reflect light in your helper's eyes to get his or her attention.

Confirm Attention

Be sure you have your helper's attention and tilt your head toward the tablet to indicate your interest in assistance.

Pinch and Zoom

Zoom in on the question number so that your helper knows where you need help.

Gesturing

Your helper can zoom in on the correct answer marked on his or her tablet or respond with a gesture to indicate whether you have responded correctly.

The Great Hack or Crack Pay-out

"I'll give you twenty bucks if you can hack your way out of desktop lockdown."

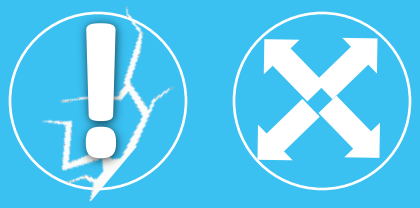
How much did we pay out that day?

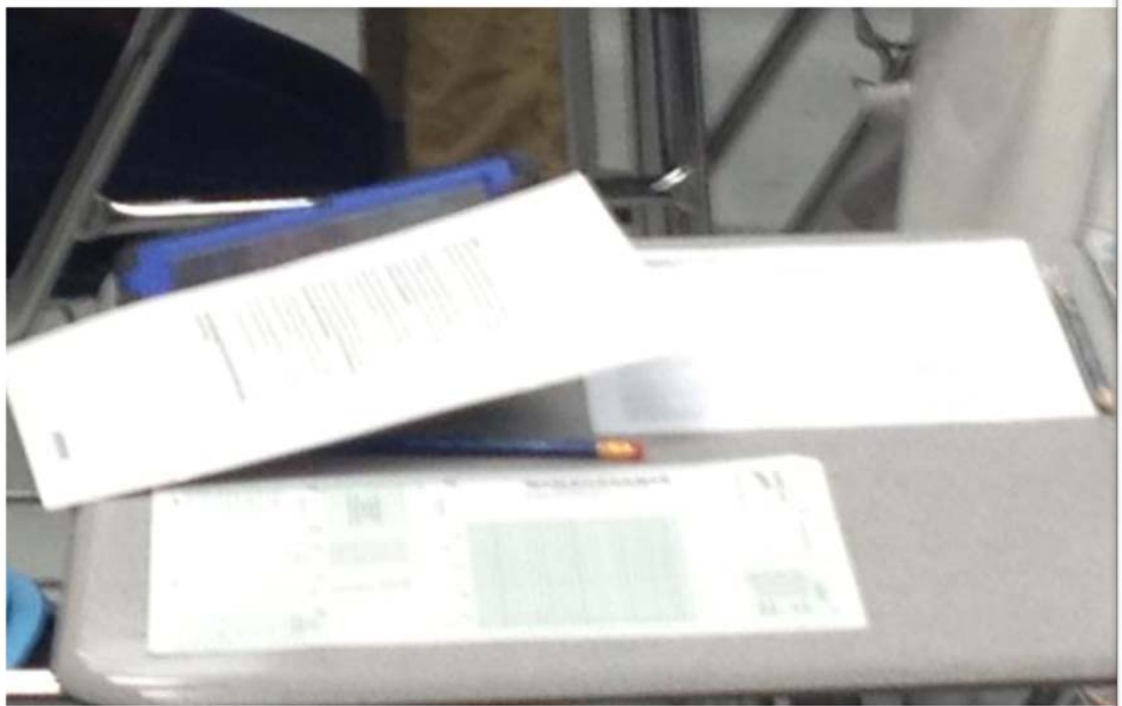
REAL ESTATE

Crowded Much?

Possible items to fit on desk: tablet, scratch paper, calculator, external keyboard, tablet stand, pencil, thesaurus, dictionary, formula sheet, snack.

In this scenario: reference sheet, iPad, test booklet, pencil, and answer document





SIDE EFFECTS

Directions:
The questions are numbered, and the possible answers for each question are lettered. On the answer document, the rows of ovals are numbered to match the questions, and the ovals in each row are lettered to correspond to the possible answers.

For each question, first decide which answer is correct. Next, locate on the answer document the row of ovals numbered the same as the question. Then, locate the oval in that row lettered the same as your answer. Finally, fill in the oval completely. Use a soft lead pencil and make your marks heavy and black. **Do not use ink or a mechanical pencil.**

Mark only one answer to each question. If you change your mind about an answer, erase your first mark thoroughly before marking your new answer. For each question, make certain that you mark in the row of ovals with the same number as the question.

Only responses marked on your answer document will be scored. Your score will be based only on the number of questions you answer correctly during the time allowed. You will NOT be penalized for guessing. **It is to your advantage to answer every question even if you must guess.**

You may work on this test ONLY when your room supervisor tells you to do so. If you finish this test before time is called, you should use the time remaining to reconsider questions you are uncertain about.

Lay your pencil down immediately when time is called. Do NOT fill in or alter [illegible] the answer document after time is called.

Do not fold or tear the pages of your test booklet.

DO NOT OPEN THIS BOOKLET UNTIL YOUR ROOM SUPERVISOR TELLS YOU TO DO SO.

Paper vs. Digital

I know it says not to but I needed to….

1:1 Observations

Florence High School, Alabama

COMMUNICATION
Using Edmodo, they feel teacher-to-student communication improved

1:1 INITIATIVE
District moving to 1:1 for grades 5-12 next year

HALLWAY MANAGEMENT
Students spend less time at lockers (iBooks)

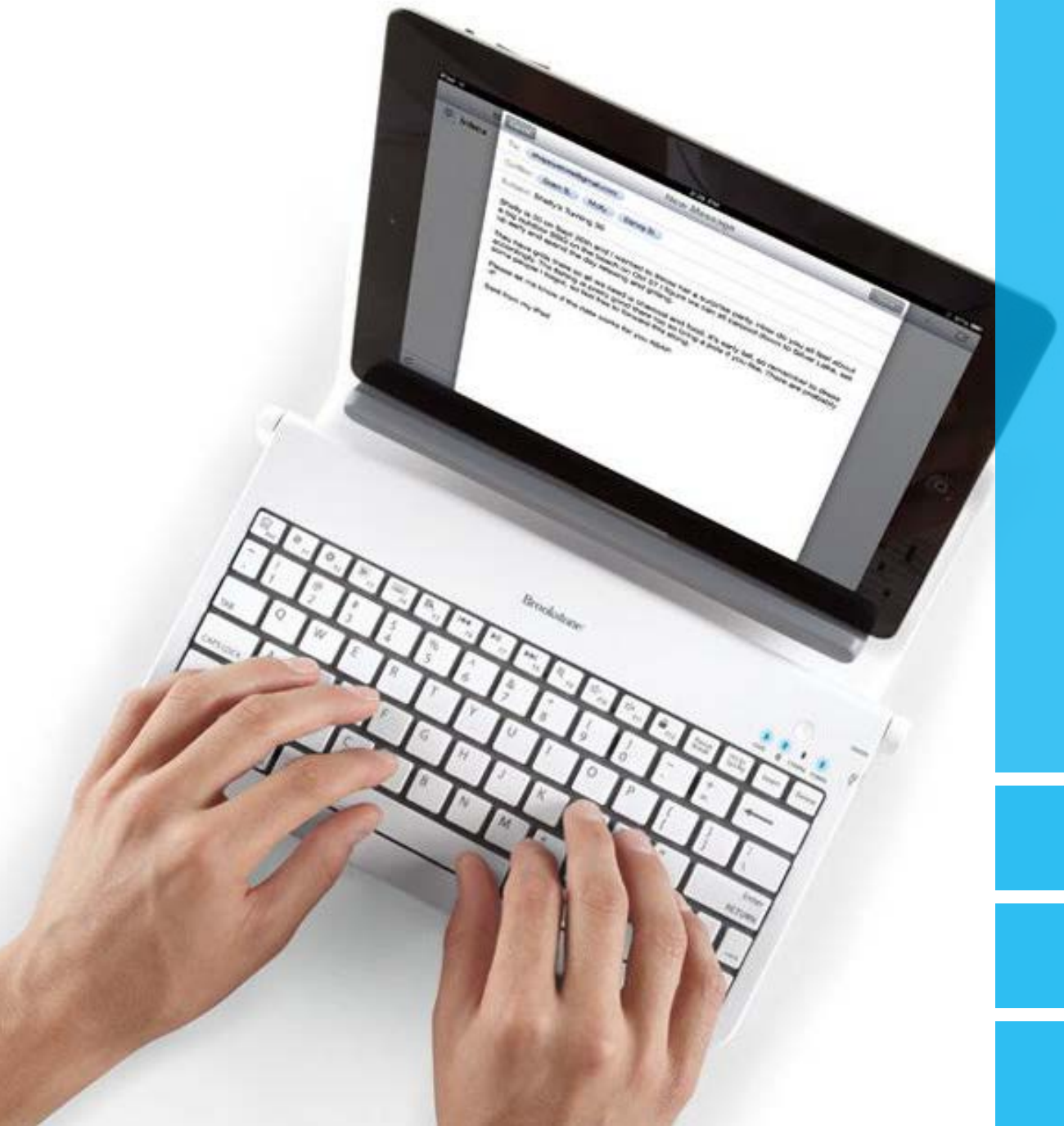
FINDING APPS
Struggle to keep up with which educational apps to use

DEVICE MANAGEMENT
Apple management seemed to "get wonky" at about 700 devices — that's why they're using Casper

CALCULATORS
2 of the 3 classes had not used the calculator app, one had used the "free" version — students noted a learning curve issue

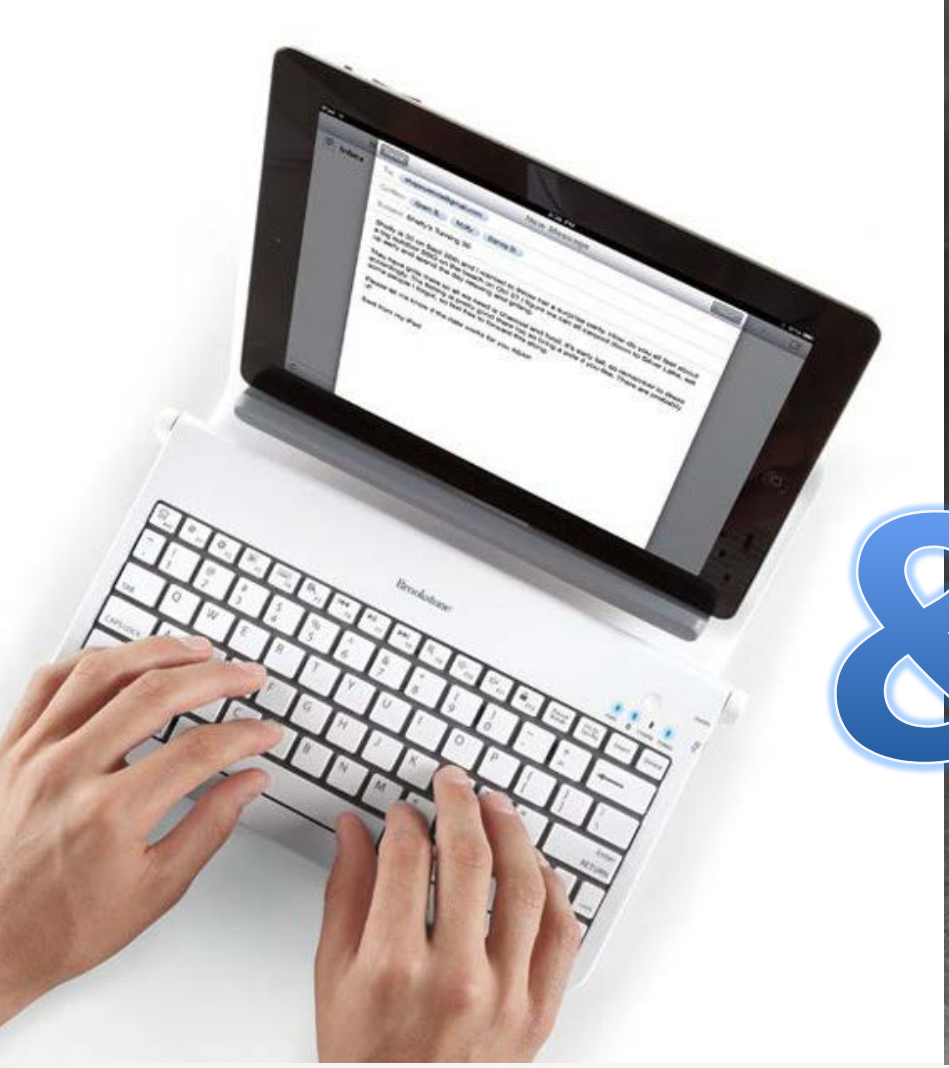
POSITION

The ideal position for touch interactions (manipulating drag-and-drop interactions, highlighting passage selections, measuring with a draggable ruler or protractor, selecting hot spots) is flat or slightly angled.



Typing

Ideal position emulates a laptop or desktop set-up with the screen upright.



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What about tests that have writing prompts and drag/swipe/tap intensive interactions?

Tablet Stands

The most important features to look for…

Upright Position for Writing

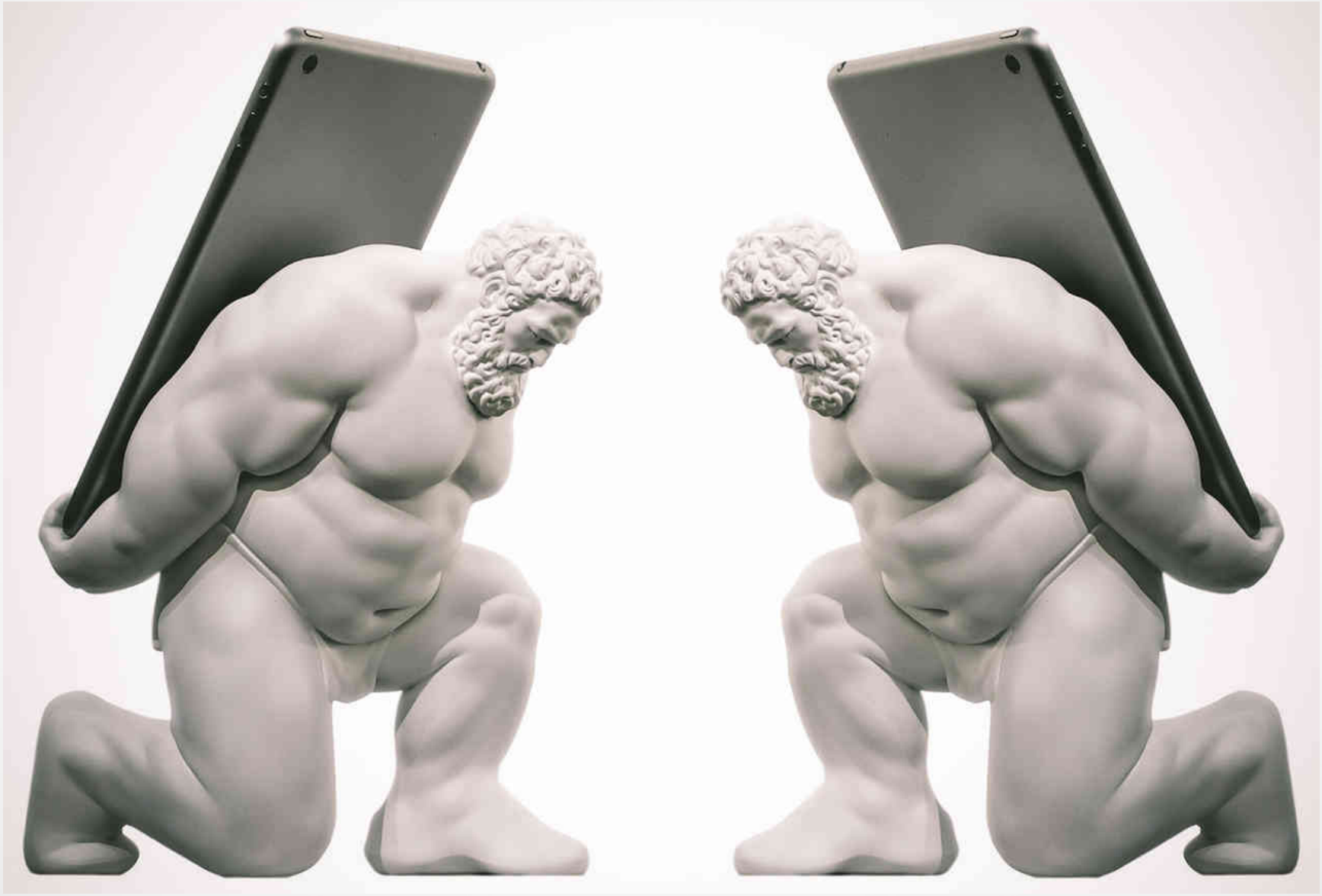
Since most students feel comfortable using the tablet in a flat position for drag, swipe, and tap intensive work, the position that is most critical for a stand to support is the upright position for use with a keyboard

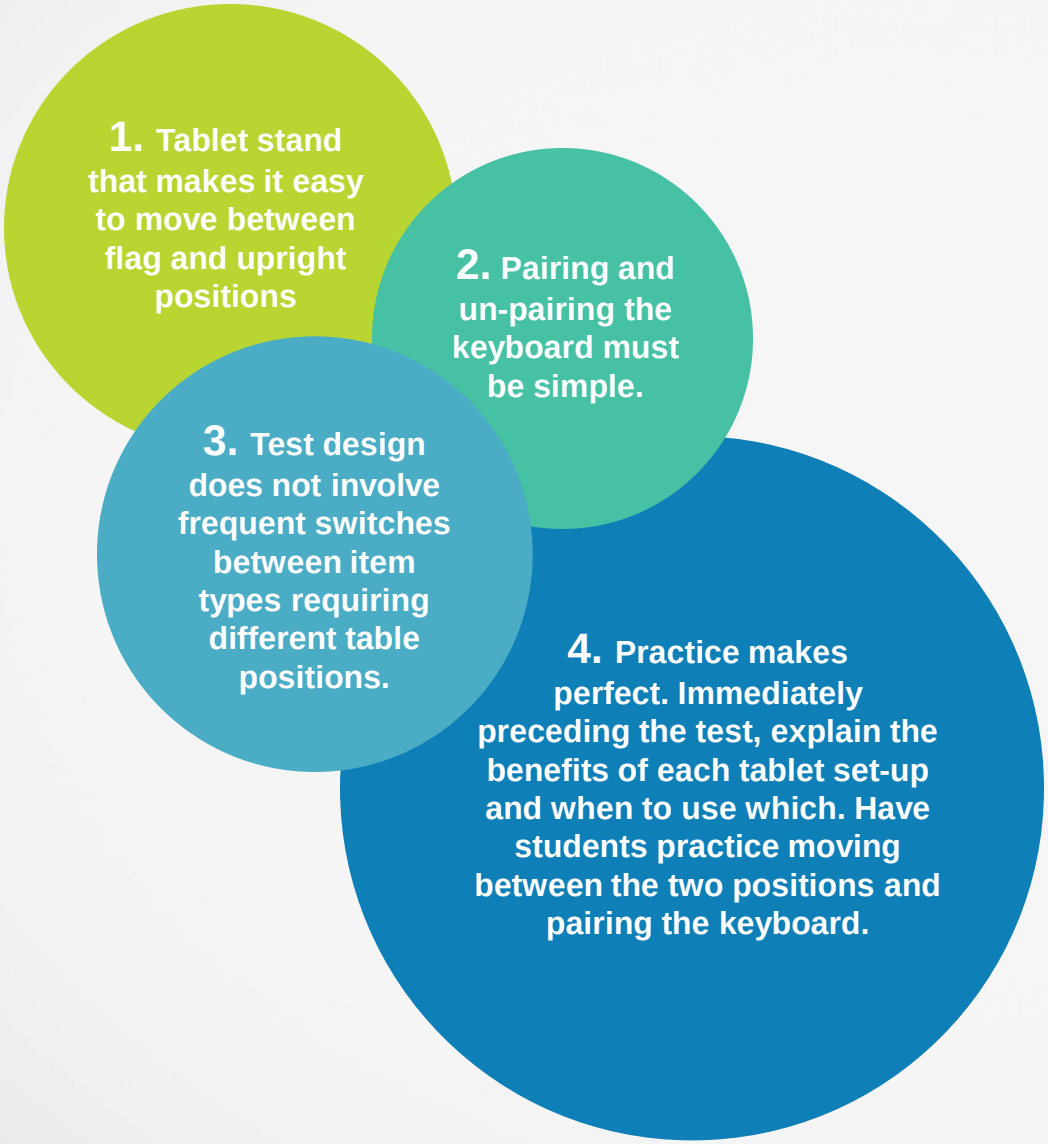
Near Instantaneous Position Shift

Many students struggle with the folding covers, despite a seemingly simple design. Look for something as simple and immediately intuitive as an easel design.

Topple Proof

The stand must have support for the upper part of the tablet when in an upright position in order to avoid toppling over when students tap in the upper portion of the screen.





Ideal conditions for students to switch between tablet set-ups

Students who do not switch to the tablet set-ups that is most appropriate to the item type may find themselves struggling with tap accuracy , tablet toppling, and/or reduced typing speed.

KEYBOARDS

Size Matters

Keyboards come in all sizes. Smaller keyboards make it more difficult to hit a single key accurately and may leave off or combine keys (requiring key combinations such as Fn + key). Choose keyboards that are close to laptop-sized and that most resemble the typing conditions of he day-to-day instructional environment so students can leverage muscle memory with their typing skills.

Keyboard Considerations

Some things to think about when choosing keyboards…

Keyboard/Stand Combos

Some keyboards have a notch to stand up the keyboard: space saving & a reminder to write in upright position

Batteries

Peripherals, like keyboards, may require charging or battery changing mid-test. Look for auto-off.

Pairing

Should be easy to pair. Watch for cheating via traded keyboard.

Compatibility

There are degrees of compatibility. Be sure that all needed keys and settings work with tablet.

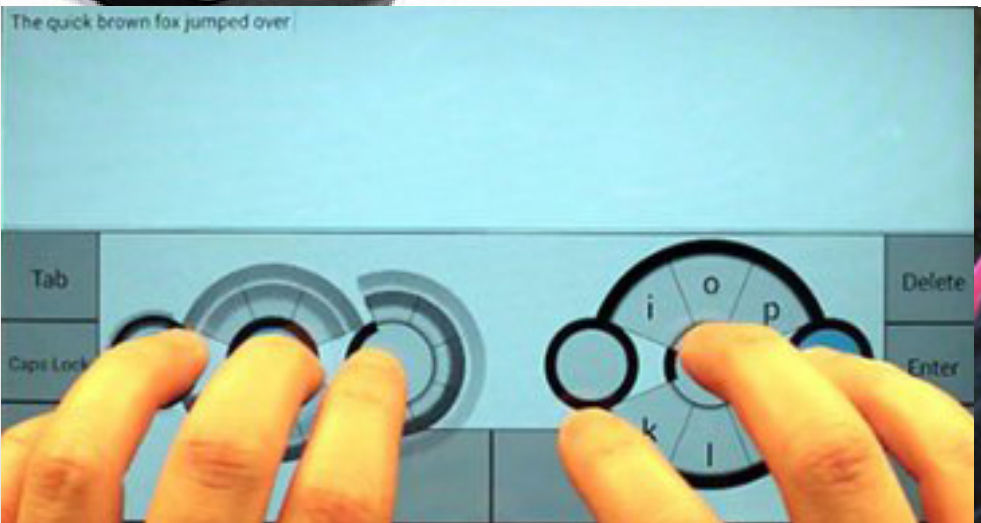
Typing Skills

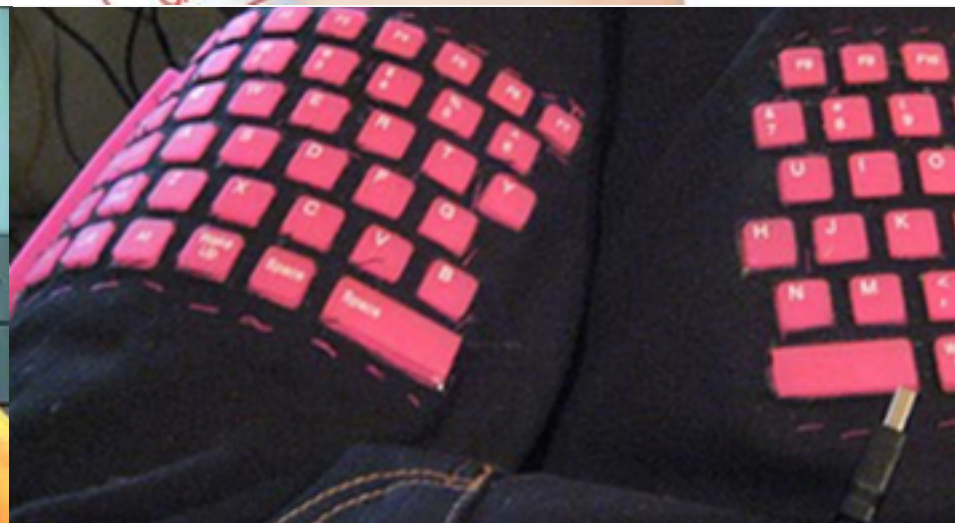
Better typists are usually more frustrated by conditions that do not allow them to leverage their existing skills. Younger students may be less dissatisfied with an on-screen keyboard but may have more problems with locating number keys.

Editing

Selecting a range of characters and inserting the cursor at a precise location continue to be challenging even with a keyboard. Be sure students know how to use the arrow keys on the keyboard.

Expect Change





Questions?

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