Electronic Data Capture: Nuts and Bolts

Prepared for the USAID workshop

"Designing and Implementing Early Grade Reading Assessments: Understanding the Basics"

March 2015

Recap of Where We Are

- **Identification of Research Design and Sampling Framework**
- **Development/Adaptation of EGRA Instrument**
- **Procedures for EGRA Administration, Scoring and Data Capture**
- **Establishment of Electronic Data Capture System**
- **Enumerator Training, Assessment and Selection**
- **Pilot and Full Data Collection**
- **Use and Dissemination of EGRA Results**
- **Planning and Managing EGRA Implementation**

Session Objectives

- Know how to administer and score EGRA on tablets

- Save and upload student EGRA results

- Learn troubleshooting tips and additional functionality

Electronic Data Collection: Vocabulary to Know

- **Tablet:** The name for the small electronic device (hardware).

- **Tangerine:** The name for one of the software applications (app) that is used to administer EGRA, EGMA, and SSME instruments electronically.

- **Stylus:** The name for the small "pen" used to select options on the tablet and to mark a child's responses. Tap gently! You do not need to use much force when pressing on the screen.

Preparing to Use Your Tablet

- Hold your tablet horizontally.

- Make sure the child being assessed cannot see the tablet.

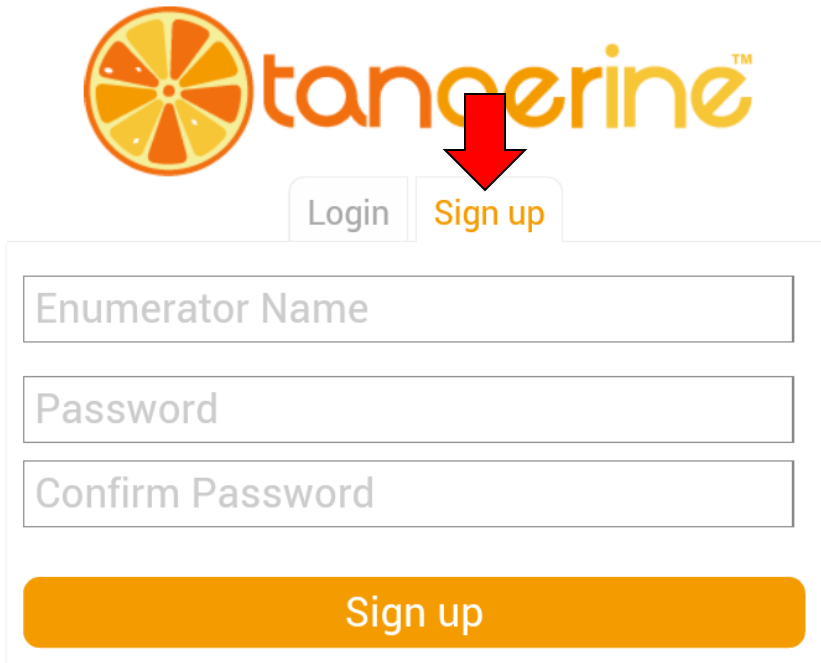- Clear away all papers and other materials from the desk or floor.

Using the Tablet for Data Collection

- **Turn on the tablet.** Press the button on the top right. If the tablet was "asleep," it will start immediately. If it was completely turned off, it will take a few seconds to warm up. Wait patiently!

- **Unlock the tablet.** Swipe the stylus (or your finger) across the screen in any direction.

- **Start Tangerine.** Click on the image on the desktop that looks like a slice of orange.

> **<u>Do not click on the dots at the bottom of the screen</u>** or launch any other applications. This may cause your tablet to lose power or interfere with Tangerine.

Create a Username and Password

To get into Tangerine, create a Username and Password as follows:

1. Tap the "Sign up" tab on the main login screen to establish a new account on the device (accounts are not shared across tablets).

2. Enumerator Name **MUST** be composed of the first letter of your first name, followed by the your complete surname. For example:
   – Greg Banda = gbanda
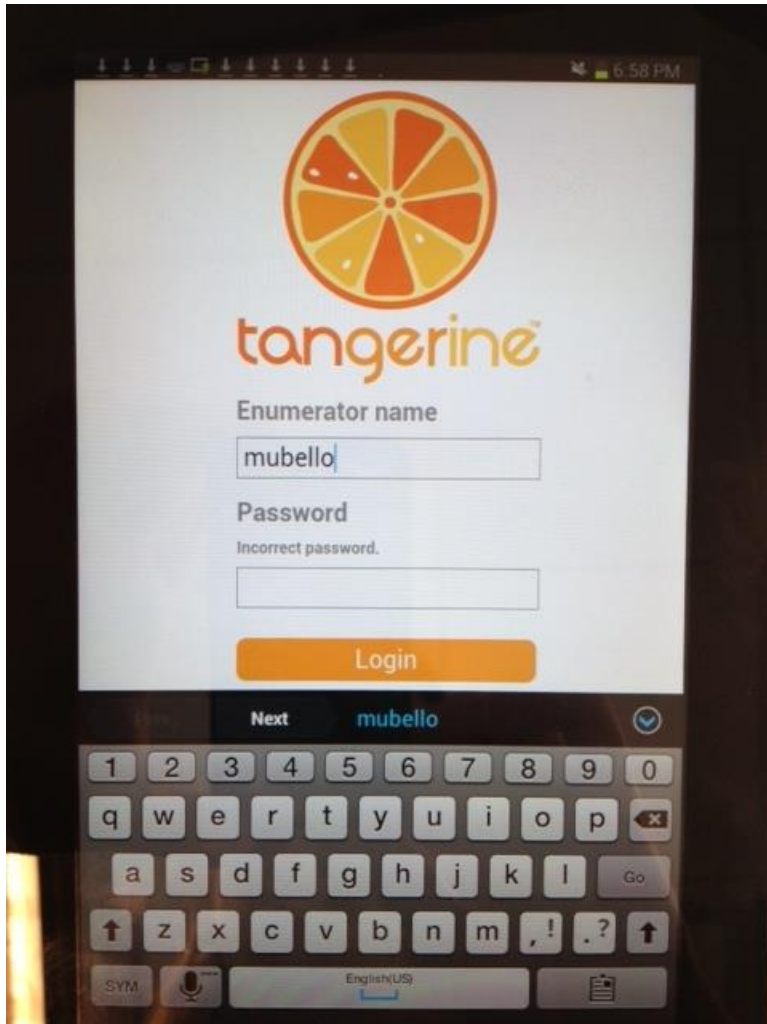
Create a Username and Password, continued

3. <u>Password</u> can be the same as your username so that it is easy to remember.

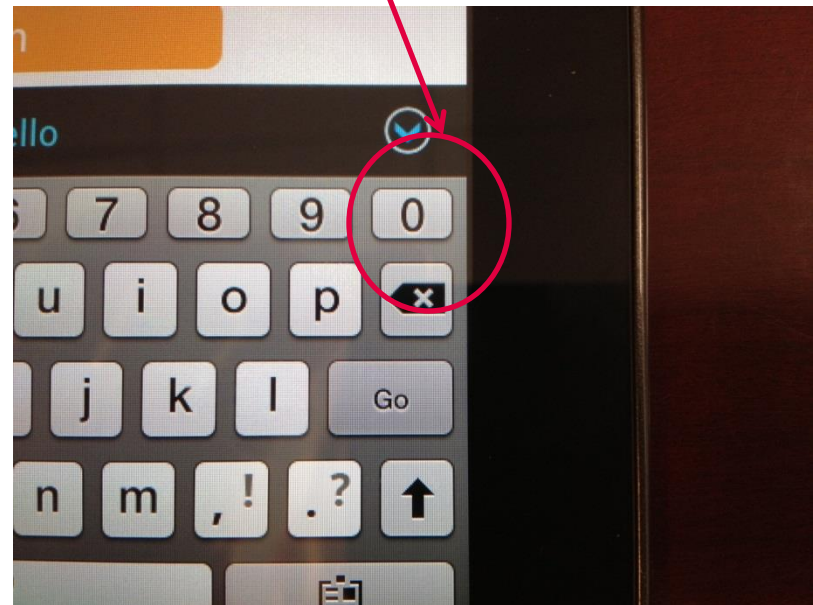4. Once you type your username and password, tap "**Sign up**."

General Sign-in Tips

- **Use the SAME username and password EVERY time** you log on to Tangerine.

- You do NOT need to use the same tablet—just the same username and password.

Enter Your Username and Password

Tap the "delete" button if you make a mistake. Retype the letter or letters.

Getting Set Up

To conserve battery power, go to "Settings" and turn **OFF** the following features:

- – Wi-Fi (wireless)

- – Sounds (mute)

- – Bluetooth

Getting Set Up, continued

- Turn your tablet horizontally when administering the subtasks so you can see all the letters/words/problems

- **NEVER** click on any of the buttons in black at the very top or very bottom of the screen during an assessment. Clicking on these buttons can bring the user to the Home screen and stop the assessment.

- While conducting a test, you **CANNOT** navigate pages using the "back" button at the bottom of the screen.

- The other Android buttons (below) present should also be avoided during assessments.

Using the Tablets for Data Collection

- Once you are logged in, you will see a list of different assessments and questionnaires.

- Click on the **orange arrow button** to the left of the instrument you want to "run."
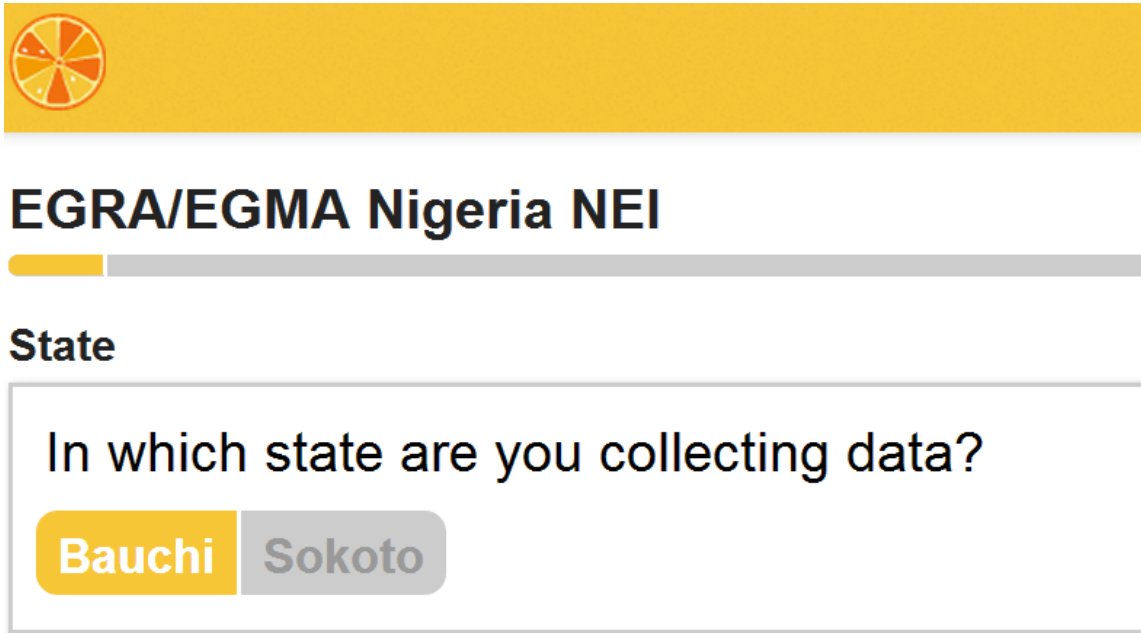

- To move from one screen to the next, tap the "**Next**" button.

Fill in School Information and Generate ID

- You will be asked to fill in information about the month, school location, and school name. Select the correct information from the drop-down menu.

- Next, generate a random identification number by tapping on the "**Generate**" button.

Assent Page

EGRA/EGMA Nigeria NEI

Shafin Neman Izini

help

Ina kwana? Sunana _____ kuma ina zaune a _____. Bari in fara da faɗa miki/maka ko ni wace ce/wane ne [misali, iyali, firamaren da aka yi, wasanni, da ire-iren haka]. To, yanzu ke/kai kuma ki/ka ba ni naki/naka labari in ji, ko?

• Bari in faɗa maki/maka dalilin da ya sa na zo nan a yau. Ni ina aiki ne tare da ma'aikatar ba da ilimi, kuma muna son mu ga yadda yara suke koyon karatu da kuma yin lissafi. Taimakonki/ka muke so game da wannan aikin.
• An tsamo sunanki/ka ne domin yin wannan wasar karatu da kuma lisssafi
• Ta hanyar amfani da wannan Kwanfuta, zan ga lokacin da zai ɗauke ki/ka karantawa da kuma yin aikin lissafi.
• Sam wannan ba jarrabawa ba ce, kuma ba wanda zai faɗi in an yi.
• Haka ma, zan yi miki/ maka wasu 'yan tambayoyi game da makarantarku, da kuma gidanku.
• Sam, Sam, Sam, ba zan rubuta suna ba, don haka ba wanda zai san cewa amsoshinki/ka ne.
• Idan kuma muka fara, kika/ka ji ba ki/ka son amsa wata tambaya, shi ma wannan ba komai, sai mu wuce ta.
• Akwai tambaya? Kin/ka fahimta, mu fara?

Ko kin/ka sami amincewar yarinya/yaro?

yes, continue   no, stop

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Administering the Test

- After the assent page, you must fill in information about the child's grade, class section, and other information.

- Directions to you, the assessor, can be found by tapping on the "**Help**" button at the top of the tablet.

- **You <u>MUST</u> read all of the instructions that are in bold in the gray box to the child.**

Administering EGRA with the Tablet

- Read the instructions verbatim to the child.

- For timed subtasks, tap the **"Start"** button when the child says the first item (letter, word, or number).

- The letters and words will **not** appear until you hit the "Start" button.

- **The timer will automatically start** counting down from 60 seconds once you hit start.

Marking Responses

- **To mark an item incorrect,** tap the item once. A horizontal bar will appear across the letter and it will turn blue.

- **If the child self-corrects,** tap the item a second time so the bar disappears and the letter remains gray.

- **If the child skips a row,** click on the star (*) at the end of the row. All items will be marked incorrect.
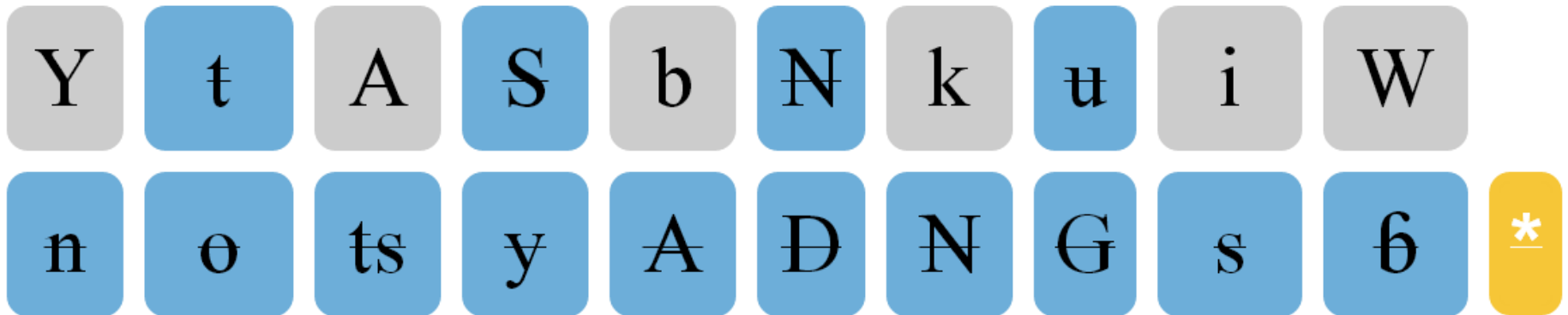
Administering EGRA with the Tablet, continued

- When the time is up (0 seconds remaining), the screen will flash. (You do not need to hit the "stop" button).

- Tell the child to stop and quickly **tap the last letter attempted. A bracket will automatically appear after the last item attempted.**

- Thank the child for his or her effort.

- Then **tap "Next"** to go to the next subtask.

Y	t	A	S	b	Ŋ	k	ʉ	i	W
ɲ	ɵ	ts	y	A	Đ	N	G	s	ɓ	*
m	ƙw	T	i	w	m̶	Z	K	ʉ	sh	*
A	e	S	N	ƙ	E	gy	d	ƙ	a	*
M	c	A	K	E	a	C	l	kw	e	*
u	A	R	I	gy	U	s	U	a	Đ	*

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Indicate the Last Item Attempted

Early Stop (Auto-Stop) Rule

Tangerine will automatically stop the subtask if a certain number of items has been marked incorrect (e.g., the first 10 letters).

What to Do If the Child Finishes Before Time Is Up

- If a child attempts **ALL** items in a subtask before the time is up, **tap the "Stop" button to stop the timer. Do NOT let the timer run down to 0.**

- You should see the number of seconds remaining in the top right-hand corner.

- Tap the last item attempted (it should be the last letter, word, or problem of the subtask).

Start

Y	t	A	S	b	N	k̶	u	i	W	
n	o	ts	y	A	D	N	G	s	ɓ	*
m	k̶w	T	i	w	m	Z̶	K	u	sh	*
A	e	S	N	k	Ɇ	gy	d	k̶	a	*
M	e	A	K	E	a	C	l	kw	e	*
u	A	R	I						Đ	*
A	r	g	ky	M	i	d	L	n	gw	*
N	f	y	r	I	t	n	i	K	'y	*
j	N	gy̶	W	A	K	U	H	Y̶	s	*
F	B	h	I	R	n	T	i	O	k̶y	*

Please mark last item attempted

Stop

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Practice Marking the Letters
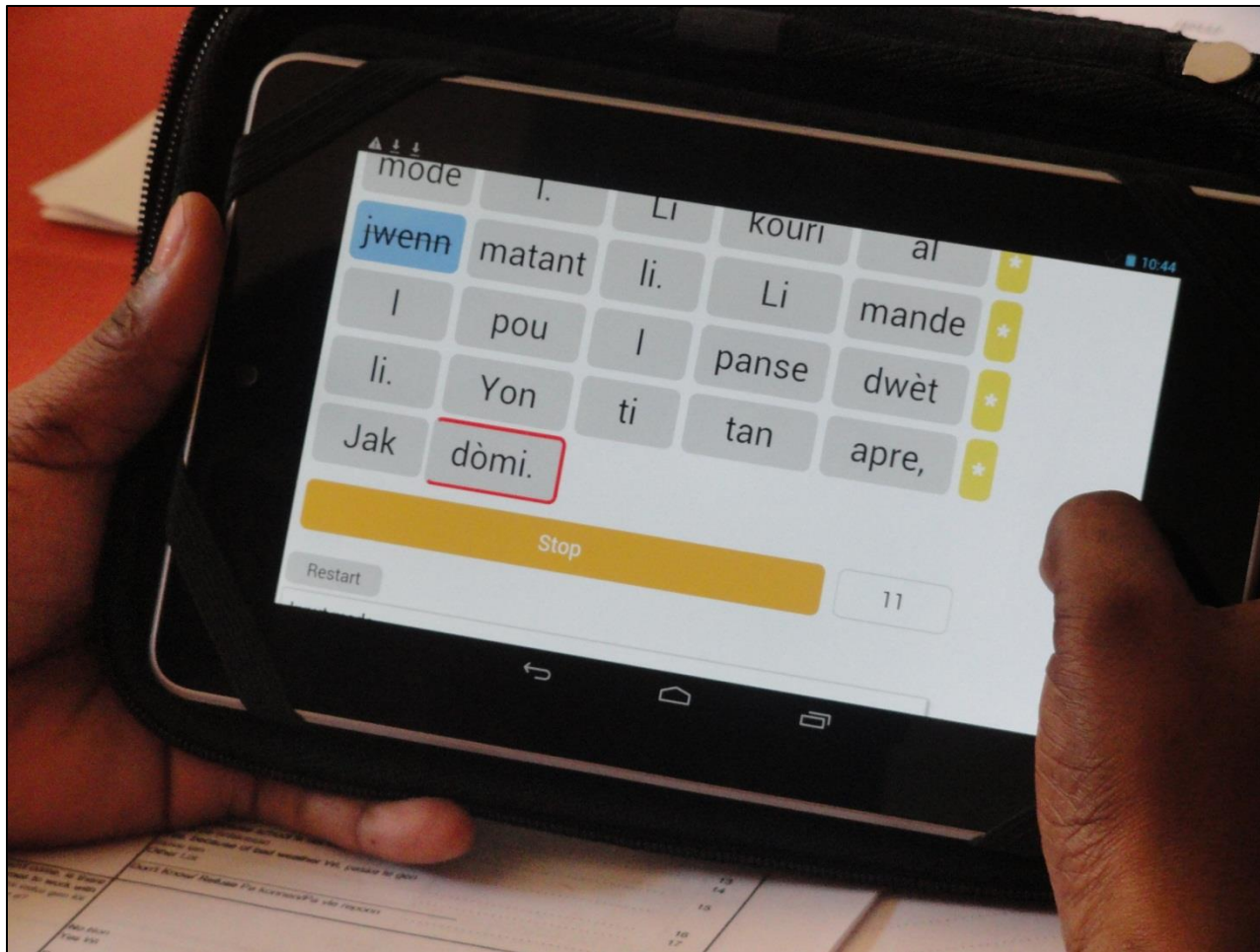
Input Mode

This function is only used if you have made a mistake when recording the pupil's responses and need to change your markings. It should **not** be used very often.

- **Mark:** Tap the "mark" button located at the bottom of the screen. Then tap on the item you want to change (i.e., change it from correct to incorrect, or incorrect to correct).

- **Last attempted:** Tap this button if you need to change the position of the bracket. After tapping "last attempted," you can tap where the bracket should go.

Marking Procedures for Other EGRA Subtasks

- Marking procedures for the rest of the EGRA subtasks are the same.

- Tangerine will automatically stop the nonword identification subtask if the first 5 words are marked as incorrect.

- The oral reading passage will also automatically stop after the indicated number of words.

- Tangerine will ONLY present the questions related to the amount of text the child has read.

At the End of the Assessment

- When you get to the end of the assessment, you will have the option to provide comments related to the test administration. **This is not necessary** and should not be provided unless there is a significant reason.

- **Example circumstances:** Significant disruption during the test, child became ill, you marked "boy" but the child was a girl, a child may have vision problem, etc.

- **Do not** provide commentary such as "did a great job" or "needs improvement."

At the End of the Assessment, continued

- Assessment complete

Perform another assessment   saved

PRACTICE IN SMALL GROUPS

Additional Tangerine Functionality and Troubleshooting

Verifying the Number of Assessments You Have Administered

- To verify the number of assessments that have been administered, tap the "Results" icon to the right of any instrument you would like to review.

- Scroll down to the list of assessments administered. Count the number of assessments that have been administered that day.

- **Remember:** Any incomplete assessments will show the word "**Started**" in bold and will list that student's start time. Completed assessments (where the assessor tapped "Save Result" on the final screen) will not show the word "started" and will have the end time listed.

How to Upload Data

1. Scroll down from the top of the tablet (the black area) until the drop-down menu appears.

2. Verify that you are connected to correct Wi-Fi. (During training and data collection, assessors will need to select a network set up for the portable USB modems.)

3. Click on the "home" icon at the bottom of your tablet. (It looks like a little house with a roof.)

4. Tap the Tangerine icon.

5. Tap "universal upload" at the bottom of the list of assessments.

6. Wait until you see the message "Results synced to cloud successfully."

Challenges in the Field: Indonesia's Case

- Difficulty in selecting the school names:
  - In Indonesia, school names were very similar; for example:
    - SDN 0021 Kembang Seri
    - SDN 0021 Terusan
- Data upload
  - Assessors were suggested to upload the EGRA assessment results in batches. For example: all 12 students' assessment results
  - If the assessors uploaded the results sequentially, sometimes the data overlapped
- No network connection during data collection
  - In most cases, due to limited telecommunication infrastructure, assessors failed to upload the data in real time
  - They were suggested to save the results and to upload the data when they moved to an area with a good network, after work

Trying to Upload the Data: Indonesia's case

Upload the data near the BTS, after work

Upload the data after work

Troubleshooting Uploading

- If you have not seen the message "Results successfully synced to cloud" on all or any of the tablets, follow these steps to create backup copies of each tablet's data on all the tablets in your possession:

  - Connect all tablets to the mobile hotspot network
  - On the main assessments page of each tablet, press the "Sync tablets" button at the bottom of the screen and wait until the process has completed. Syncing tablets is done only when data cannot be uploaded. Only tablets connected to the same mobile hotspot will be synced.

Troubleshooting

- When you log in, press **GO** after you type your username. Then press it again after you type your password.

- If a window or menu appears that you don't want, click the **X** in the corner to make it go away.

- To get to the list of assessments, always go to the Tangerine icon in the top left-hand corner (NOT the one at the bottom of the screen).

- If the Tangerine icon disappears from the desktop, swipe from one screen to the next until you see it.

Troubleshooting: Resuming an Assessment

If you leave the test by accident during administration, **follow these steps to RESUME.** DO NOT begin a new assessment with the same pupil.

- Click on the Tangerine icon in the top left-hand corner.
- Once you are back in Tangerine, tap the "Results" icon next to the assessment you were administering.
- Scroll down to find the assessment you were administering. You can identify that assessment by looking at the time next to the assessment.
- Any incomplete assessments will show the word "started" in bold and will list the administration time. Completed assessments (where the assessor tapped "Save Result" on the final screen) will not show the word "started" and will have the end time listed.
- Once you have identified the assessment you were administering, tap the button labeled **"Details"** and then the button labeled **"Resume."**

Troubleshooting

- If you've tapped the "**Back**" [image: Back button icon] or "**Home**" button [image: Home button icon]

  you will see this message: "Confirm: Assessment not finished. Continue to main screen?"

- Tap "**Cancel**" and you will be able to resume the assessment.

- If you have tapped "OK" by mistake, or if you have tapped the "Home" button, follow the instructions for how to "Resume" an assessment.

- For additional issues, consult the handouts.

Handout 6.1: Nexus Tablet Reference Sheet
Handout 6.2: Samsung Tablet Reference Sheet

Launching Tangerine and Starting Assessment

To start, press the single black button on the side of the Nexus. Swipe the screen to unlock the device. If the device had been shut down completely, you will need to wait for it to power on.

Power button: Tap once to 'wake' the tablet, —————————→
Tap once to put the tablet to 'sleep.'
Press and hold the Power button to turn the tablet off completely
or to turn it on if it has been powered off.

←————————— **Power Button**

- Go to the 'Applications' menu by clicking the (:::) symbol on the main page. Click on the Tangerine icon to launch the app.
- Login: Your username should be the first letter of your first name, followed by your complete surname. If you are Greg Banda, your username will then be: gbanda. Choose a password that is easy to remember. Keep the password in a safe place that will be easy for you to access.

- To begin an assessment or survey, click on the run icon ▶ located to the left of the correct item.
- Use your finger or the pen (stylus) to mark the test/activate items. You do not need to use much force when pressing on the screen.
- Some screens may take a few moments to load fully.

- If you have selected the incorrect assessment or questionnaire item, Click on the Tangerine Icon, to return to the TANGERINE HOME SCREEN and select again.

Handout 6.2: Samsung Tablet Reference Sheet
E-data Capture Nuts and Bolts

Launching Tangerine and Starting an Assessment

To start, press the single black button on the side of the Samsung. Swipe the screen to unlock the device. If the device had been shut down completely, you will need to wait for it to power on.

Power button:

- Tap once to 'wake' the tablet,
- Tap once to put the tablet to 'sleep.'
- Press and hold the Power button to turn the tablet off completely or to turn it on if it has been powered off.

Power Button

- o **Start Tangerine:** Click on the Tangerine icon to start the program.
- o **Sign up/Login:** The first time you use Tangerine on a specific tablet, sign up as a user. Hit the "Sign up" tab and enter your "Enumerator Name" and a password. The "Enumerator Name" should be the first letter of your first name, followed by your complete surname. If you are Greg Banda, your username will then be: gbanda. Choose a password that is easy to remember and write it down in a place you can easily access. Once registered, you will need to enter only your Enumerator Name and password upon login. Tangerine will help you remember your username and provide suggestions as you begin to type. You can also tab the username "reminder" icon to review past users of Tangerine on that specific tablet to avoid double sign-ups.

- o **To begin an assessment or questionnaire:** Tap the run icon located to the left of the instrument you would like to administer.
- o Use the stylus or your fingers to record responses, mark items, or to select items. You do not need to use much force when pressing on the screen. Some screens may take a few moments to fully appear, so be patient.

- o If you have selected the incorrect test or assessment, Click on the Tangerine Icon to return to the TANGERINE HOME SCREEN and select again.

Adjusting Brightness and Amount of Time Before Tablet Goes to Sleep

Brightness:
- Go to the settings menu.
- Tap "display," then "brightness." Adjust the brightness to your preferences.

Sleep:
- Go to the settings menu.
- Tap "display," then "sleep."
- Select the amount of time before the tablet "times out" (2 or 5 minutes is likely sufficient to conserve battery power).
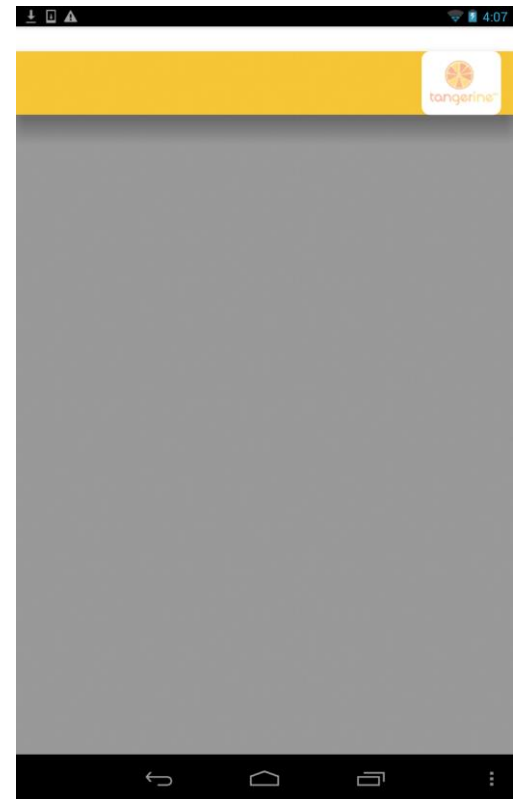
How to Load Tangerine and New Instruments

From the Internet:

- For Nexus tablets, tap on the icon with the (:::) dots. This will take you to the apps page.

- To load new versions of instruments, you must first uninstall Tangerine. Hold down the app icon until you see the trash can appear at the top of the screen. Drag the icon to the trash or "Uninstall" icon.

- Open a browser on your computer and type the link for the instrument .apk, which can be generated in Tangerine by users with administrative privileges.

The First Time You Open a New .apk File…

…it may take a few minutes to load.
While loading it will appear gray
and empty. This is normal.

How to Load Tangerine and New Instruments, continued

Via your computer (RECOMMENDED FOR TRAINING):

- Verify that your tablet has the "ES File Explorer" app installed. If it is not installed, you can install it from this link: bit.ly/TANGesfx.

- Once installed, open a browser on your computer and type the link for the instrument. The .apk file will be downloaded to your computer from the Tangerine website.

- Connect the tablet to your computer by cable. The tablet's menu will appear on your computer. Select "Internal Storage," then the "DCIM" folder.

- Confirm that you have uninstalled Tangerine from the tablet. (To uninstall, hold down the app icon until you see the trash can appear at the top of the screen. Drag the icon to the trash or "Uninstall" icon.)

- Paste or drag the .apk file you've downloaded into the tablet's DCIM folder. Open the "ES File Explorer" app. Open the DCIM folder within it.

- Find the Tangerine .apk you have just placed in this folder and click on it to install.