

# Digital Camera

## A Heuristic Evaluation

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Yared is 27 years old and has extensive photography experience. He has been seriously pursuing photography for the past 12 years. He has joined several organizations, which promote the field and has even taken advanced courses to help him improve his techniques. Yared thoroughly enjoys taking pictures of people as they are in their environments. He owns several vintage cameras, all which require a deep understanding of the functions to successfully operate.

Since Yared is balancing another full time career, he has the luxury of approaching the field of photography as an artistic expression more so, than a means of generating an income. This is not to say that he is not as serious about pursuing photography as a viable career. In 2000, for instance, he launched a photography website that promoted his photos and services. He was able to reach a larger audience with his website, which resulted in several sales of his limited edition prints and showings at galleries across the United States.

He also is very methodical and deliberate with his approach to taking photos. For this reason, Yared has not been an early adopter of digital cameras. He feels the camera industry has removed the sensorial experience one gets by taking pictures with analog cameras. He only purchased a digital camera last year when it was required by another photography course he enrolled in. At first, he was skeptical of the new technology. The camera was rather expensive, yet the image quality was not that of a comparable analog camera. He was also frustrated with the limited manual settings. Even more so, the release button on digital cameras has a 2 second delay before taking a picture of the image. He wondered how would he capture those split second decisive moments of people in their environments.

After many months of use, however, he is beginning to see some value of digital cameras. He appreciates the immediate feedback he gets by viewing the image he just took a picture of. He also values the storage capacity of digital cameras vs. analog. The most a roll of film can hold is 36 images where his latest memory card for his digital camera can hold 180 at super fine mode. He is currently pursuing photography work for several leading magazines and knows that he will need a more robust camera for these challenging assignments. He wonders whether or not an advanced prosumer or digital SLR camera will provide him the same freedom and manipulation of images as a medium format analog camera.

# Cognitive Human Factors Narrative – Digital Camera

Yong Gyun Ghim

## **Title**

Setting Aperture

## **Situation**

Yared recently got a new digital camera and has wanted to take some nice shots with his new gadget. It's a bright Saturday morning in November, and he thinks that it would be a good chance to experiment with his new camera. So, he decides to go to the Millennium Park in downtown Chicago after having lunch at home.

The weather changes suddenly, however, while he is heading to the Millennium Park. When he comes out to the park from the parking lot, he finds that it's already cloudy and very foggy. He is afraid if it would not be too dark to take sharp pictures, but he decides to take some photos anyway as it would rather be a great chance to see how the new camera works.

Yared walks to Cloud Gate, a huge reflective sculptor, and takes out his camera. From his long experience with professional analog cameras, he knows that it would be the best way to take shots with larger aperture at the aperture priority mode in such a cloudy and dark day.

## **Method**

- 1) grab the camera
- 2) find mode setting dial or button
- 3) check current mode setting
- 4) go to AP (aperture priority) mode
- 5) check current aperture setting
- 6) find aperture setting dial or button
- 7) set the aperture
- 8) check if the desired aperture is set

## Camera Zoom Function

### Situation

Yared is in Millenium Park and wants to take a closer photo of the digital face on Crown Fountain, but is too far away to capture the shot. He walks closer to the fountain to see if he could frame the picture in his digital camera display. He realizes that moving too close to the fountain would only distort the angle of the photo because the fountain is very tall, so Yared decides to use his zoom to get closer to the face instead. Yared frames the photo and waits for the right moment when the water spits out of the digital face's mouth and takes the photo.

### Method

The user will take the following steps to use the zoom function:

1. Turn camera on.
2. Make sure camera is in shoot mode.
3. Look through camera lens and locate photo subject.
4. Locate zoom button.
5. Zoom into or away from image.
6. Take photo.

### Execution

#### Canon G3

1. Locate power button on top of the camera.
2. Press and hold the safety for the ON button with your thumb.
3. With the safety button pressed down, turn the dial left to point to SHOOT ON.
4. The camera will make a sound while turning on and the lens cover will fall off as the camera lens comes out.
5. Flip open the LCD display.
6. Adjust the direction of the LCD display for the best viewing angle.
7. Hold the camera up and locate the subject.
8. Position camera so the subject is framed within the display.
9. Locate the zoom button.
10. Zoom into or away from the image by swiveling the zoom button with your index finger towards or away from your hand.
11. Press the shoot button to take the photo.

#### Nikon Coolpix 5000

1. Take off lens cap.
2. Locate the power button on top of the camera.
3. Swivel the on button with your index finger until the line on the button matches up with the word ON.
4. Wait for the camera to make a sound while the lens comes out.
5. Flip open the LCD display.
6. Adjust the direction of the LCD display for the best viewing angle.
7. Hold the camera up and locate the subject.
8. Position camera so the subject is framed within the display.
9. Locate the zoom button.
10. Zoom into or away from the image by pressing the navigation button with your thumb to the left or right.
11. Press the shoot button to take the photo.

Browsing through the stored pictures and related functions like zooming and deleting.

### Situation

Yared an avid photographer has recently bought a new digital camera and is exploring the possibilities and features it offers. Being accustomed to a SLR camera he knows the aperture and shutter speed setting corresponding to the environment he is clicking his subject in. He realizes with the new digital camera he can set different apertures and view results instantly there by he feels like he is not compromising on his creative input while able to use a digital camera and benefitting by its view mode feature. This new technology Befits his requirement of learning through endless experimentation and trials by immediately look at the images captured and the output.

### Method

Its nearing dusk a time of the day when light conditions vary with each passing moment. Yared is standing in his balcony looking at these children playing on the basketball court they seem to be very energetic and enthusiastic which appeals to yared and he wants to capture this setting. He rushes inside and brings out his new digital camera the sun is setting and he wants to capture the right shot which portrays the light of the sun setting and the vigour of the young children having a great evening. As its getting dark he wants to capture the right light conditions and is running short on time. He pulls out his camera and turns it on. He looks at the LCD screen to confirm if its in the shoot mode which he can concur by the movement of the image along with the movement of his hand there fore the image projected is real time. He clicks several pictures changing trying out various aperture settings and keeps storing them. Then he presses the mode change button to view stored images which is a play icon universal to most cameras. Once in view stored picture mode he can see they are all numbered. On display is the picture he shot last so he goes to the navigation arrows and shuffles back to previous images to compare how each of them have come out in different aperture settings. Some have come out well and some seem too dark so he presses the zoom key to zoom this way he can look at thumb nails of all the pictures at once and decide which to chose and which to delete. He zooms in on the picture he likes the most so that its visible on the entire span of the LCD screen. He now presses the zoom key in the reverse direction to zoom in on the picture and see the details of certain areas. Yared is a keen photographer and always likes to learn something new so he wants too see how his aperture settings effect the details of the different pictures which he can see by zooming into them. On close inspection picture looks badly composed as it does not capture the children in an interesting posture while playing and the light conditions looks very surreal so he decides to delete the picture. Yared searches for the delete button usually represented as trash can icon and presses it. He gets a feed back from the display to conform if he wants to delete the picture selected yes/no. He presses yes and the LCD displays the next image in the storage. Yared is not sure if he has actually deleted the picture as he does not like to store redendant picures or the ones he doesn't like so he rechecks by browsing using navigation arrows. While hes doing this he observes that he could have done this once he downloaded the images or while he was viewing the contents of his camera storage space through the computer interface.

### Execution

Once Yared is in the play mode where he can view previously stored images he realises that his camera affords the provision of a jog dial which helps him view all the images more rapidly but at a lower resolution this helps him decide if the postures of the children he has captured as composed has he had wanted. This also helps him rapily decide if he needs to click more pictures or if the ones he has taken are sufficient. He also notices the menu navigation functions are placed in such a way that he can operate them with one hand. While he is viewing the pictures and zooms into one of them he realises that is 2" LCD screensize affords him better visibility of details. He looks back at the image he does not like and deletes it, just as he does this he wonders if he could have taken that very image to photoshop and improved it but its too late and the picture is lost from the memory..

## manually focusing a prosumer digital camera

### situation

Having spent a considerable amount of time learning about digital cameras and already being familiar with analog cameras, Yared chooses to test out a prosumer camera by pushing the limits of a critical, make-or-break feature for any camera: the focus feature. Save a disposable analog camera, all cameras have a focus feature. In lower-end models, the only focus feature is an automatic mechanism - a “point-and-shoot” feature. In higher-end models, there is generally a choice between the automatic setting and a manual setting. Yared’s camera has the ability to operate in both an automatic setting and a manual setting.

Armed with this new camera and walking through the streets of Chicago, Yared happens upon the new Millennium Park, the much-talked-about attraction near the Loop that opened this summer. Eager to try out the new device, he makes his way over to “Cloud Veil,” a unique bean-like reflecting sculpture on one side of the park. As always with the sculpture, there are a number of people crowded around the sculpture, staring at their bent, distorted reflections.

He decides to take clear photos of a series of subjects to determine the manual focusing feature. Standing five feet away from the bean, Yared decides to capture a number of different photos with the camera, including a distorted image of the city skyline as reflected through the bean, an image of the crowd around “Cloud Veil,” and a detailed photo of the imperfections in the welding of the sculpture.

### method

1. Yared turns the camera on.
2. He switches the camera over to shoot mode.
3. Then he chooses a manual setting.
4. Yared chooses manual focus,
5. He gauges the distance of his subject.
6. He then adjusts the manual focus to the appropriate distance of the subject (infinity for the skyline, ten feet for the crowd, and five inches for the close shot).
7. When he is convinced that the image is in-focus, Yared takes a shot.
8. To ensure that the photo is in-focus, Yared evaluates the photo in playback mode.
9. Afterwards, he retakes the shot if it’s not in-focus.

### execution (Canon G3)

1. Press down and hold the ON safety, then
2. Switch the camera over to SHOOT ON with your thumb.
3. Switch manual setting dial on top of camera to manual mode (e.g. P, Av, or M)
4. Press the manual focus button on the rear of the body (indicated by MF)
5. Determine the distance that you are from the object using an eyeball measurement (or be precise and measure your distance with a tape measure)

6. Use the dial near your right index finger to adjust the focal distance of the camera. Scroll one way to focus closer, the other to focus farther.
7. Click the shoot button with your index to take the shot.
8. Follow the steps for browsing a photo to view the shot and determine if the image is clear.

### **execution (Nikon CoolPix 5000)**

1. Turn the power switch to the ON position.
2. Make certain that the camera is in SHOOT mode (based on a switch on the rear of the camera),
3. Switch camera setting to manual (e.g. P or M) by simultaneously pressing the MODE button and turning the camera dial.
4. Determine the distance that you are from the object using an eyeball measurement (or be precise and measure your distance with a tape measure)
5. Press the manual focus button on the rear of the body (indicated by MF) and simultaneously turn the camera dial to change the focal length in the camera.
6. Scroll one way to focus closer, the other to focus farther.
7. Click the shoot button with your index to take the shot.
8. Follow the steps for browsing a photo to view the shot and determine if the image is clear.

**Kimberly Dziedzic**

## **Cognitive Human Factors: Ind. HW #2 - Narrative**

### **Digital Camera Unique Task: Recharging Battery**

#### *Situation*

Before recharging the battery begins, Yared has been out in Millenium Park taking photos and notices that his battery level is low. His intended outcome is a fully charged battery so that he's ready for more photo opportunities. He usually recharges the battery at home, but he will do it at the office because it is closer to the park. Yared's enviromental constraint for recharging the battery is access to an available electrical outlet.

#### *Method*

1. Yared turns camera off
2. He connects battery to charging unit
3. He then plugs charging unit into wall outlet
- time lapse--
4. Yared detaches battery from charging unit
5. He unplugs charger
6. Yared views indicator to confirm battery fully charged

#### *Execution for Canon G3 Camera*

1. Check the battery level. If low:
2. Turn power off.
3. Open the charger door.
4. Locate the cable opening.
5. Attach the charge cable.
6. Plug into the wall.
- time lapse--
7. Unplug.
8. Detach charge cable.
9. Close the battery hatch.
10. Check the battery level indicator.

#### *Execution for Nikon Coolpix 5000 Camera*

1. Check the battery level. If low:
2. Turn power off.
2. Open the battery hatch.
3. Slide the battery out.
4. Insert the battery into charger.
- time lapse--
5. Check the charging indicator to see if the battery is fully charged.
6. Remove th ebattery from charger.
7. Open the the battery hatch.
8. Insert the battery.
9. Close the battery hatch.
10. Check the battery level indicator.

# Heuristic Evaluation

## Nikon CoolPix 5000 vs. Canon PowerShot G3

### tasks

#### Aperture Setting

1. Power on
2. Change to shoot mode
3. Find setting dial/button
4. Go to aperture priority mode
5. Check current aperture
6. Find aperture setting dial/button
7. Change aperture to 2.8
8. Check the aperture
9. Take photo

#### Zoom

1. Turn camera on
2. Make sure camera is in shoot mode
3. Look through camera lens and locate photo subject
4. Locate zoom button
5. Zoom into or away from image
6. Take photo

#### Browse taken images

1. Turn power on
2. Check your mode
3. Change mode to playback
4. Go front and back to check total number of pictures
5. Zoom in to check focus on last picture taken
6. Delete that picture
7. Check if the image is deleted (feedback)

#### Manual focus

1. Power on
2. Change to shoot mode
3. Switch to manual mode
4. Choose manual focus
5. Gauge distance from subject
6. Adjust focal distance to match subject
7. Take photo
8. Evaluate photo by browsing
9. Retake if not in focus

#### Battery Recharge

1. Check battery level
2. Turn power off
2. Open battery hatch
3. Slide battery out
4. Insert battery into charger
- time lapse--
5. Check indicator
6. Remove battery from charger
7. Open battery hatch
8. Insert battery
9. Close hatch
10. Check indicator (battery level)

#### Battery Recharge Alternative

1. Check battery level
2. Turn power off
3. Open battery door
4. Locate cable opening
5. Attach charge cable
6. Plug into wall
- time--
7. Unplug
8. Detach charge cable
9. Close battery door

# Heuristic Evaluation

## Nikon CoolPix 5000 vs. Canon PowerShot G3

### usability heuristics

#### 1. Visibility of system status

The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

#### 2. Match between system and the real world

The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

#### 3. User control and freedom

Users often choose system function by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

#### 4. Consistency and standards

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

#### 5. Error prevention

Even better than good error messages is a careful design which prevents a problem from occurring in the first place.

#### 6. Recognition rather than recall

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

#### 7. Flexibility and efficiency of use

Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

#### 8. Aesthetic and minimalist design

Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

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Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

#### 9. Help users recognize, diagnose, and recover from errors

Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

#### 10. Help users recognize, diagnose, and recover from errors

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

#### 11. Outcome verification

Users should be able to determine if the intended goal will be reached through feedback from the system. The system should predict the eventual results of a task.

#### 12. Appropriate placement

Buttons, dials, and icons should be placed where the user expects to see them. Follow conventions.

#### 13. Appropriate labeling

Labels should be located near or on top of the appropriate buttons or dials. The user should not have to wonder what the function of a particular button or dial is.

#### 14. Ease of handling

Camera components should have appropriate tactile qualities that relate to or give meaningful feedback to the user about particular functions.

# Heuristic Evaluation

## Nikon CoolPix 5000 vs. Canon PowerShot G3

### Canon PowerShot G3



		Common Heuristics	impact	frequency a	frequency b	persistence a	persistence b	
<b>1. Aperture Setting</b>								
1. Power on	x	• Could not find power button • Might switch to playback mode instead of shoot mode	Aesthetic and minimalist design User control and freedom	prevents nuisance	few some	rarely occasionally	avoidable no	no no
2. Change to shoot mode								
3. Find setting dial/button								
4. Go to aperture priority mode	x	• Says Av instead of AP - took longer to find	Match between system and the real world	some nuisance	rarely	yes	no	
5. Check current aperture								
6. Find aperture setting dial/button	x	• Difficult locating aperture dial • Could not locate aperture number	Aesthetic and minimalist design Visibility of system status	prevents hinder	some few	rarely rarely	yes yes	no no
7. Change aperture to 2.8								
8. Check the aperture								
9. Take photo								
<b>2. Zoom</b>								
1. Turn camera on								
2. Make sure camera is in shoot mode								
3. Look through camera lens and locate photo subject								
4. Locate zoom button	x	• Used navigation button instead of zoom button	Error prevention	nuisance	some	rarely	yes	no
5. Zoom into or away from image	x	• Didn't know if camera was already zoomed in or out (didn't know initial state)	Visibility of system status	nuisance	all	frequently	no	yes
6. Take photo								
<b>Browse taken images</b>								
1. Turn power on								
2. Check your mode								
3. Change mode to playback								
4. Go front and back to check total number of pictures	x	• Using zoom to navigate instead of jog dial • Could not find number of total pictures	Error prevention Visibility of system status	nuisance nuisance	few all	rarely rarely	yes yes	no yes
5. Zoom in to check focus on last picture taken								
6. Delete that picture	x	• Could not find confirm delete button - is set button	Consistency and standards	prevents	some	rarely	yes	yes
7. Check if the image is deleted (feedback)								
<b>Manual focus</b>								
1. Power on								
2. Change to shoot mode								
3. Switch to manual mode								
4. Choose manual focus	x	• Trouble selecting manual focus (MF Button)	Aesthetic and minimalist design	prevents	some	rarely	yes	no
5. Gauge distance from subject	x	• Difficult to gauge distance to subject	Outcome verification	prevents	all	frequently	no	yes
6. Adjust focal distance to match subject	x	• Trouble finding dial to adjust focal distance • Tried to use the zoom to adjust focal distance	Appropriate placement Error prevention Appropriate placement	prevents hinder	some few	rarely rarely	yes yes	no no
7. Take photo								
8. Evaluate photo by browsing	x	• Can't tell if photo is in focus	Error prevention	nuisance	all	frequently	no	yes
9. Retake if not in focus								
<b>Battery Recharge</b>								
1. Check battery level	x	• Trouble finding battery level	Visibility of system status	nuisance	few	rarely	yes	no
2. Turn power off								
3. Open charger door	x	• Opened card door instead	Appropriate placement	nuisance	few	rarely	yes	no
4. Locate cable opening								
5. Attach charge cable								
6. Plug into wall								
--time--								
7. Unplug								
8. Detach charge cable								
9. Close battery door								

# Heuristic Evaluation

## Nikon CoolPix 5000 vs. Canon PowerShot G3

### Nikon CoolPix 5000



		Common Heuristics	impact	frequency a	frequency b	persistence a	persistence b
<b>1. Aperture Setting</b>							
1. Power on							
2. Change to shoot mode							
3. Find setting dial/button	x	<ul style="list-style-type: none"> <li>• Trouble finding aperture setting - too much information on screen with icons that don't mean anything; Mental model is having a dial; tried navigation arrow, but didn't work; Looking for function dial; Tried Func, but switched from P to something else; Tried AF, but only got flower, mountain, timer</li> <li>• Need to look at screen to determine setting</li> <li>• No one button/dial - need to press mode button down</li> <li>• Two places to see status button - one is easier than the other</li> <li>• Lack of feedback - don't know if it changed</li> </ul>	<p>Aesthetic and minimalist design</p> <p>prevents</p> <p>all</p> <p>occasionally</p> <p>yes</p> <p>no</p>				
4. Go to aperture priority mode		<ul style="list-style-type: none"> <li>• Need to look at screen to determine setting</li> </ul>	<p>Visibility of system status</p> <p>nuisance</p> <p>all</p> <p>rarely</p> <p>yes</p> <p>no</p>				
5. Check current aperture		<ul style="list-style-type: none"> <li>• No one button/dial - need to press mode button down</li> <li>• Two places to see status button - one is easier than the other</li> </ul>	<p>Aesthetic and minimalist design</p> <p>prevents</p> <p>all</p> <p>frequently</p> <p>no</p> <p>no</p>				
6. Find aperture setting dial/button		<ul style="list-style-type: none"> <li>• Visibility of system status</li> </ul>	<p>Visibility of system status</p> <p>nuisance</p> <p>all</p> <p>rarely</p> <p>yes</p> <p>no</p>				
7. Change aperture to 2.8	x	<ul style="list-style-type: none"> <li>• Need to use same dial</li> </ul>	<p>Recognition rather than recall</p> <p>Appropriate labeling</p> <p>Aesthetic and minimalist design</p> <p>nuisance</p> <p>all</p> <p>frequently</p> <p>no</p> <p>no</p>				
8. Check the aperture							
9. Take photo							
<b>2. Zoom</b>							
1. Turn camera on							
2. Make sure camera is in shoot mode							
3. Look through camera lens and locate photo subject							
4. Locate zoom button	x	<ul style="list-style-type: none"> <li>• Can't locate zoom button - expected it to be the dial in front (like Canon), but it is the back to use with thumb; Expected to use index finger to zoom.</li> </ul>	<p>Consistency and standards</p> <p>Appropriate placement</p> <p>prevents</p> <p>few</p> <p>rarely</p> <p>yes</p> <p>no</p>				
5. Zoom into or away from image	x	<ul style="list-style-type: none"> <li>• Didn't know if camera was already zoomed in or out (didn't know initial state), but finally found one that had zoom level indicator</li> </ul>	<p>Visibility of system status</p> <p>nuisance</p> <p>few</p> <p>rarely</p> <p>yes</p> <p>yes</p>				
6. Take photo							
<b>3. Browse taken images</b>							
1. Turn power on							
2. Check your mode							
3. Change mode to playback							
4. Go front and back to check total number of pictures							
5. Zoom in to check focus on last picture taken	x	<ul style="list-style-type: none"> <li>• Zooms all the way out when you want to zoom out a little bit</li> </ul>	<p>Error prevention</p> <p>nuisance</p> <p>all</p> <p>frequently</p> <p>no</p> <p>no</p>				
6. Delete that picture	x	<ul style="list-style-type: none"> <li>• Could not find confirm delete button - hit delete button, then tried center of navigation arrow, but would not press. So, pressed arrow forward, and it worked.</li> </ul>	<p>Aesthetic and minimalist design</p> <p>Consistency and standards</p> <p>Appropriate labeling</p> <p>hinders</p> <p>some</p> <p>rarely</p> <p>yes</p> <p>no</p>				
7. Check if the image is deleted (feedback)							
<b>4. Manual focus</b>							
1. Power on							
2. Change to shoot mode							
3. Switch to manual mode							
4. Choose manual focus	x	<ul style="list-style-type: none"> <li>• Could not find it - Found AF first, then found MF after. Tried to press AF with thumb and scroll wheel at the same time. Need to keep thumb on AF button when you want manual focus to adjust the distance.</li> </ul>	<p>Aesthetic and minimalist design</p> <p>Error prevention</p> <p>prevents</p> <p>all</p> <p>frequently</p> <p>yes</p> <p>no</p>				
5. Gauge distance from subject							
6. Adjust focal distance to match subject							
7. Take photo							
8. Evaluate photo by browsing	x	<ul style="list-style-type: none"> <li>• Photo is very very dark, but don't know why. Can't tell if in focus or not.</li> </ul>	<p>Error prevention</p> <p>Outcome verification</p> <p>prevents</p> <p>all</p> <p>frequently</p> <p>no</p> <p>no</p>				
9. Retake if not in focus							

# Heuristic Evaluation

## Nikon CoolPix 5000 vs. Canon PowerShot G3

### Nikon CoolPix 5000 (continued)



#### 5. Battery Recharge

1. Check battery level	x	• Just on the little LCD screen, but really high on the LCD screen so really hard to see because it's really high.	Appropriate placement	nuisance	some	rarely	yes	no
2. Turn power off	x	• Tried to press the +/- button because off was written right above it. Used to turning things on/off by pressing buttons (that's his mental model).	Consistency and standards Appropriate placement	nuisance	some	rarely	yes	no
2. Open battery hatch	x	• Looking for DC input - that's where he would want to charge it. Opened card reader instead.	Consistency and standards	nuisance	some	occasionally	yes	no
3. Slide battery out	x	• Slippery - difficult to slide battery out	Flexibility and efficiency of use Ease of handling	nuisance	some	rarely	no	no
4. Insert battery into charger --time lapse--								
5. Check indicator								
6. Remove battery from charger								
7. Open battery hatch								
8. Insert battery	x	• Annoying because you have to hold battery down and close battery door. It doesn't snap shut - need to slide it door shut.	Flexibility and efficiency of use Ease of handling	nuisance	all	frequently	no	no
9. Close hatch								
10. Check indicator (battery level)								