**Visibility**
Large targets to minimize misclicking

Illiterate adults have weaker fine motor control and narrower fields of vision.

**Solution**
1. Large elements
2. Clear bounding boxes
3. Significant separation

**Robustness**
Restrict users from making mistakes. Handle errors intelligently.

When internet connection is lost, cache to the device to allow work to continue.

Override hardware buttons to prevent accidental minimizing/closing.

**One-time authentication:**
- User signs in one time
- Remains logged in indefinitely
- No accidental logout

---

**Rule #1:** Make it **Intuitive**

- Enjoy using: 4.8
- Easy to learn: 4.8
- Easy to navigate: 4.6
- Easy to use: 4.1
- Usable independently: 3.8
- Need more help: 2.1
- Hard to use: 1.6

---

**Rule #2:** If it’s not intuitive, make it **Learnable**

- Lessons in a Course are unlocked in order
- "Continue" button selects the newest Lesson
- Can scroll to previous Lesson before continuing

---

**Consistency**
Minimize cognitive load in navigation.

**No: Minimalism**
Yes: High-contrast

1. **Shapes**
   - Card = unit with elements inside
   - Each Course card differs only by its image

2. **Patterns**
   - Glossy = Interactive elements
   - Can be used with all colors and shapes

3. **Colors**
   - Color-coordinated exercise types
   - Backgrounds, buttons, cards, etc.

---

**Iconography**
Use established icons to convey ideas.

- Play sound
- Feedback
- Go forward

**Q:** How to convey ideas with no established icons?
**A:** Establish them!

1. Build a paired association between an image and its meaning
2. Reinforce the association through experiential learning

**No conflicting associations!**

- Correct? Continue? Accept?

---

**Usability Study**
11 users: 7 with smartphones, 4 without

Intuitive: % success on the first try

- Scroll(V): 80%
- Enter Course: 88%
- Radio Button: 100%
- Scroll(H): 78%

Learnable: % success after first success

- Scroll(V): 45%
- Enter Course: 56%
- Radio Button: 82%
- Scroll(H): 50%

- 88% succeeded on their first attempt
- 92% did not fail after their first success
- 63% 82%
- 98% 90%

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Illiterate adults have weaker fine motor control and narrower fields of vision.

**Question:** How do you design educational mobile software for users who can’t read?

**Designing a Literacy-Based Mobile Application for Adult Learners**

Jennifer Hill and Rahul Simha

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