the empathy lab

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UX/UI Heuristic Evaluation Example

Educational Android App

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Introduction

Heuristic Evaluation

Heuristic Evaluation

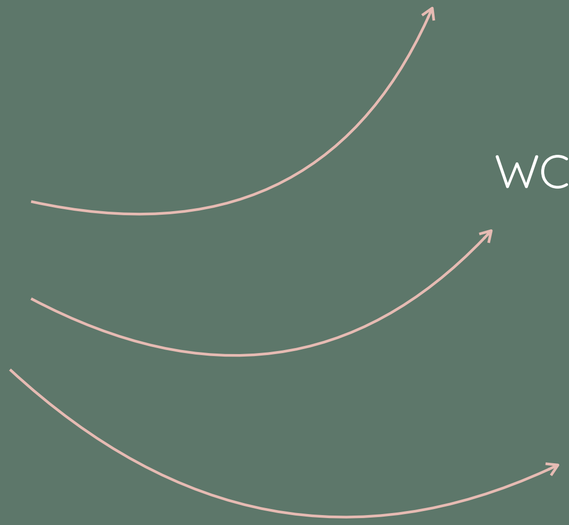
A heuristic evaluation aims to identify usability issues (UX and UI) with a website according to predefined, universal guidelines and principles (heuristics) for good design, UX and accessibility.

This document focuses on the most critical and commonly recurring problems that may significantly impact the user's experience of the Edukite app, underlining the urgency and importance of addressing them.

Issues identified are grouped by themes. Some issues relate to others, and where this is the case, it has been noted. Each issue is linked to specific heuristics and includes screenshots (where applicable), a severity rating and recommendations.

Heuristics and devices

Evaluation was done using

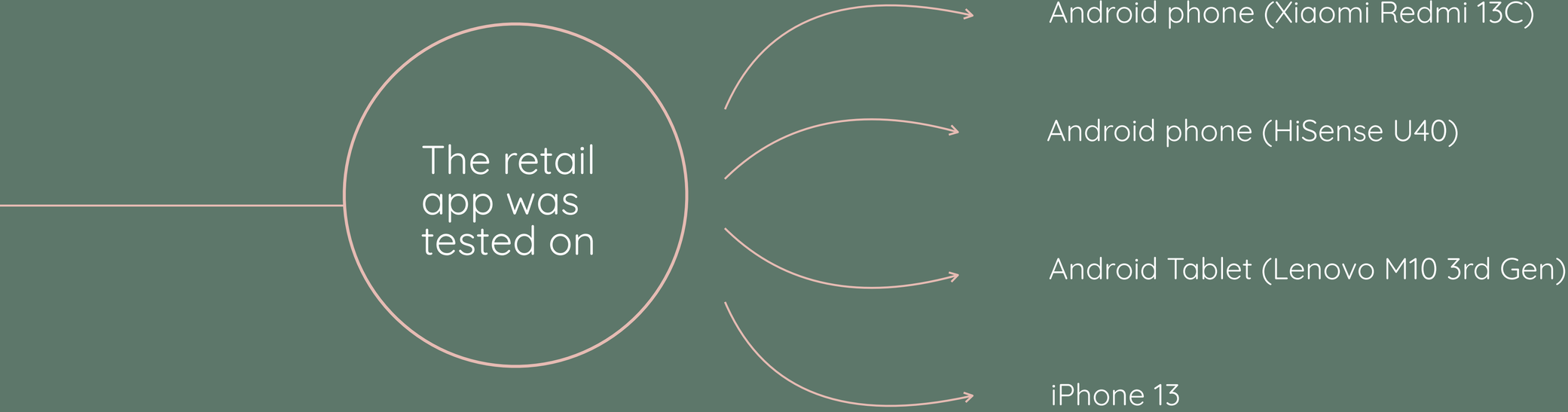


Nielsen’s 10 Usability Heuristics

WCAG 2.1’s Four Principles of Accessibility

Ben Shneiderman’s 8 Golden Rules of Interface Design* as a baseline

*See Appendix for details



Rating issues

An uneven Lickert scale has been used for severity ratings of 1-5, where:

- **1 = minor inconvenience to user.** The user might notice this, but it shouldn't block them from completing a task / achieving a goal.
- **3 = a noticeable hindrance to the user**. The user will notice this; it will slow them down.
- **5 = dealbreaker**. The user will not be able to perform a task/achieve a goal.

A note on accessibility: the WCAG guidelines are intended to help build an equitable internet for all users with different abilities. While Edukite may not have learners using screen readers (for example), any steps taken towards accessibility standards will benefit all users and are therefore always worth the time and effort to implement.

Theme 01

Navigation

aipx

Sample Issue 1.1 // Navigation

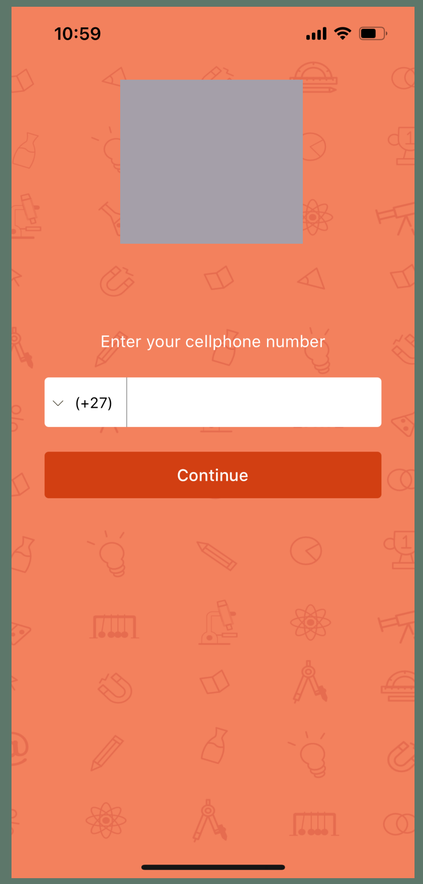
Description: there are instances where the navigation is a dead-end or inconsistent with other aspects of the app.

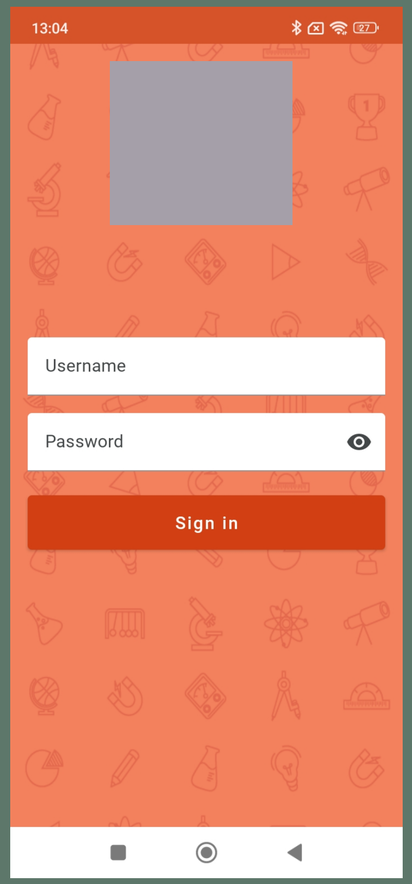
Relevant heuristics:

- Nielsen #3: User control and freedom.
- WCAG2.1 #2: Operable.
- Shneiderman #6: Permit easy reversal of actions.
- Shneiderman #7: Support internal locus of control.

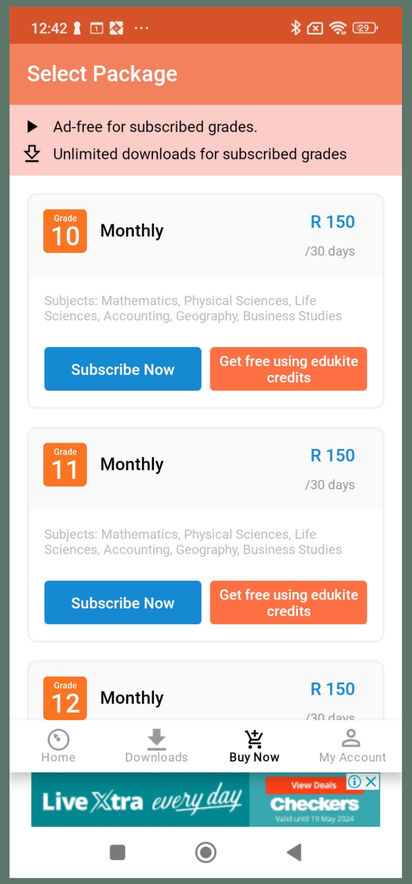
Type: UX

There is no way to get back in the flow from the sign-up / in screens.

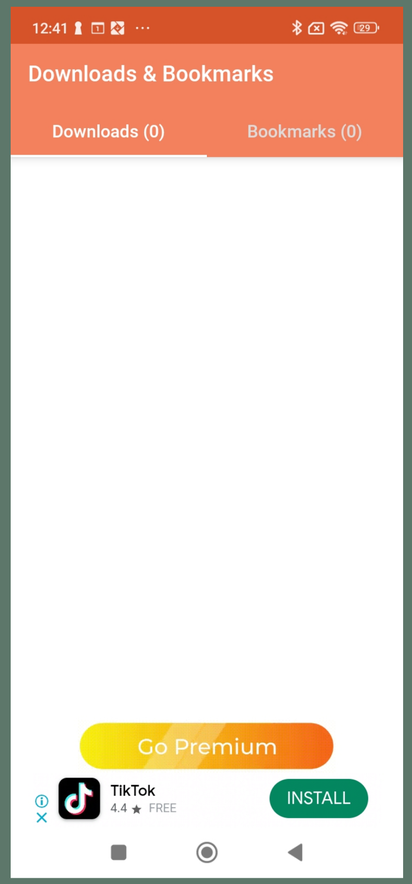




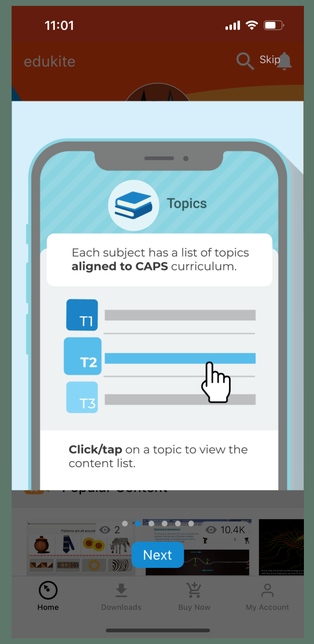
The only way to get out of the Buy Now screen is via the bottom menu.



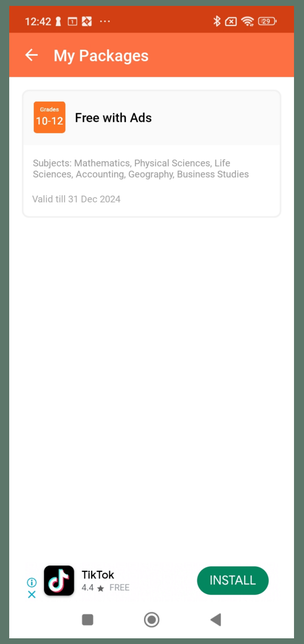
There is no way to get back / out of the Downloads screen.



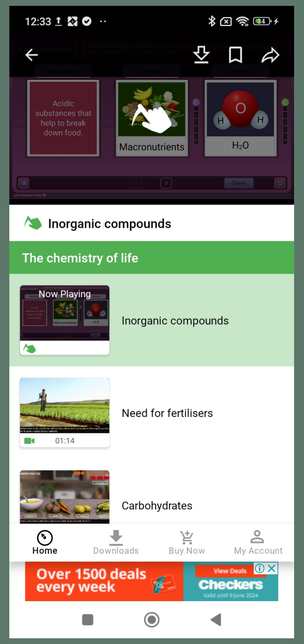
Low contrast Skip and Next buttons.



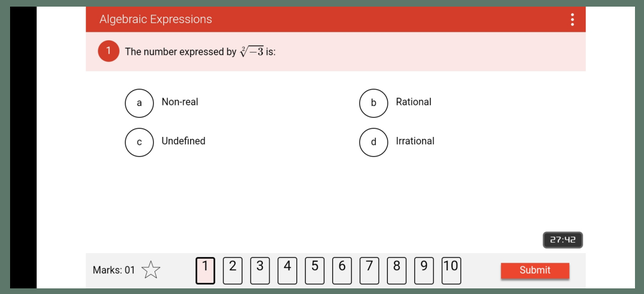
Material back arrow with clear heading.



Back arrow only visible if clicking on video / activity.

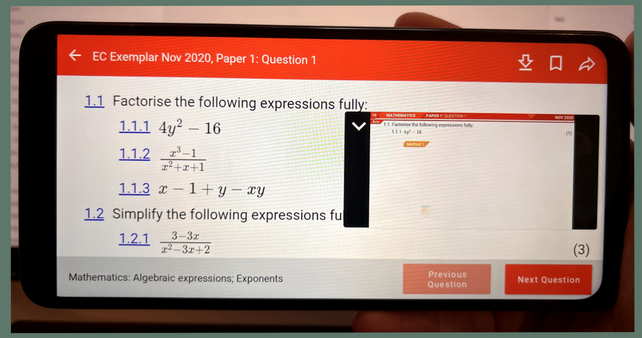


When a video finishes nothing happens - no prompt for next video, no autoplay, no signal to indicate video is done.

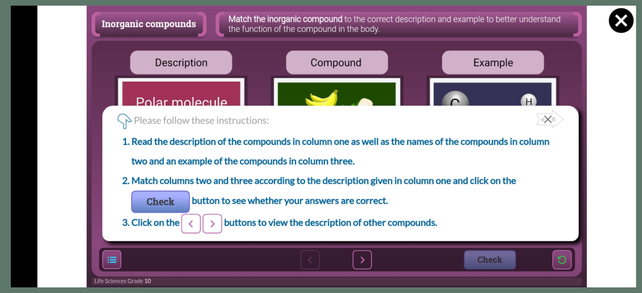


No obvious way to go forward, back or exit.

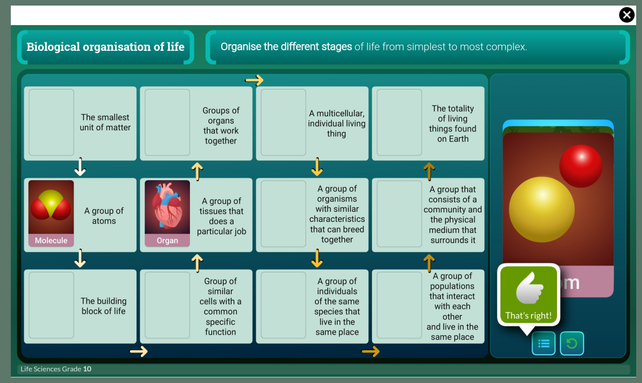
Material back arrow with clear heading.



Popup close icon on the right.



Close icon top right.



Sample Issue 1.1 // Navigation

Severity: 4 / 5.

- Inconsistent navigation and the lack of patterns add to the UX's complexity and increase cognitive load. Combined with the constantly changing close mechanisms for the ads (which is by design — dark UX), it can quickly feel overwhelming — like every screen uses a different pattern.

Recommendations

- Make the bottom nav sticky - to sit below and ads that display there.
- Ensure users can return to all flows (e.g., sign up / in).
- Ensure that the placement and usage of the back/exit icon are as consistent as possible throughout the app's features.

Theme 02

Colours + Fonts

Sample Issue 2.1 // Low Colour Contrast

Description: There are many instances where the colour contrast of text on the background fails to meet all WCAG 2.1 standards.

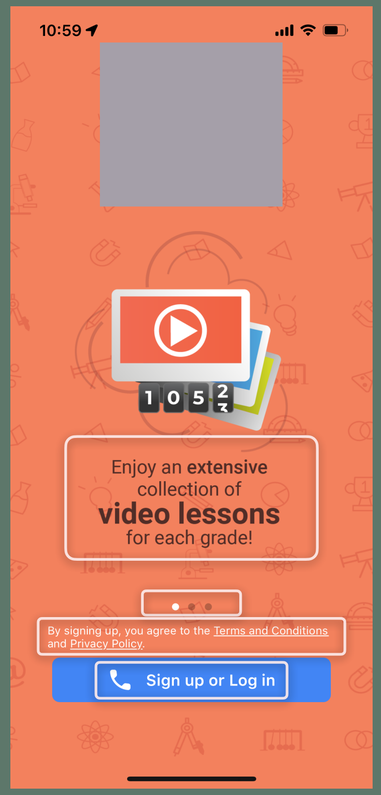
Relates to: Issue 2.2 below - font styles (small fonts make contrast lower).

Relevant heuristics

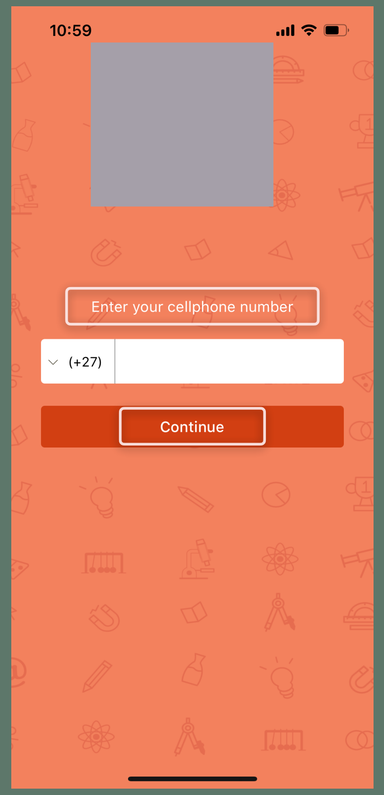
- Nielsen #4: Consistency and standards.
- WCAG 2.1 #1: Perceivable.
- Shneiderman #7: Reduce short-term memory load.

Type: UX & UI

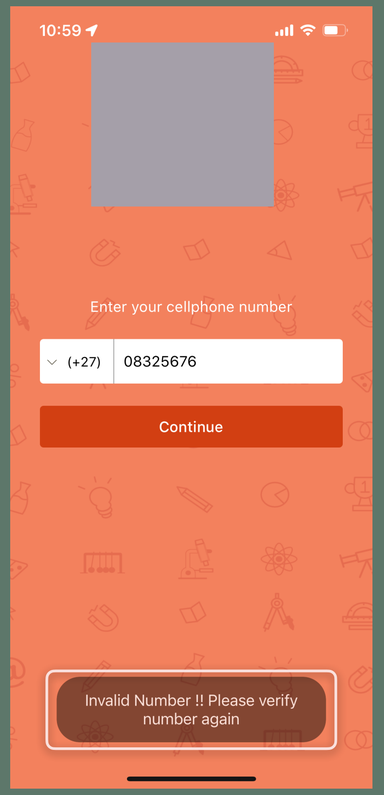
Sign up / in flow



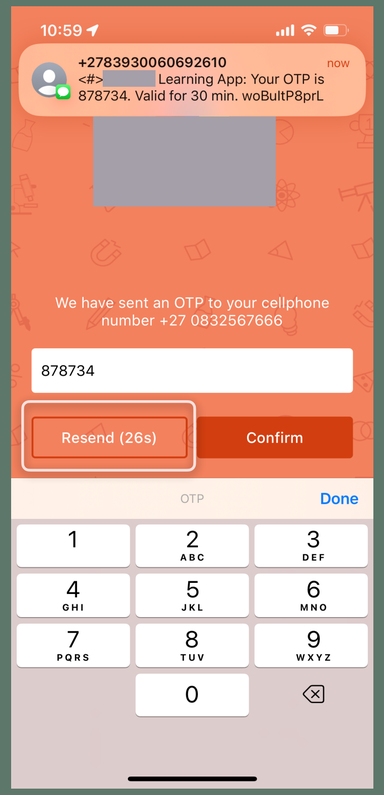
- dark text on light orange 4.62:1 ✅
- white text on light orange 2.58:1 = FAIL at all font sizes ❌
- white text on blue: 3.56:1 = FAIL ❌
- 3 dots slider icon 2.58:1 = FAIL at all font sizes ❌



- black input text on white: 21:1 ✅
- white text on light orange 2.58:1 = FAIL at all font sizes ❌
- white text on dark orange button 4.7:1 ✅
- dark orange button on light orange bg 1.81:1 = FAIL ❌



- white text on transparent black toast: 4.11:1 = FAIL ❌



- secondary button white text on light orange 2.58:1 = FAIL at all font sizes ❌
- secondary button border on orange background 1.81:1 = FAIL ❌

Sample Issue 2.1 // Low Colour Contrast

Severity: 3 to 5/5.

- There are instances where low colour contrast renders things (effectively) invisible on the screen, particularly at smaller sizes.

Recommendations

- Conduct a full audit of grade colours; interactive activities colours
- Establish a clear set of brand and colour guidelines that:
  - specify consistent the use of brand colours, fonts, and font weights;
  - specify the use of subject colours;
  - specify the use of activity colours;
  - Meet WCAG 2.1 AA contrast standards.

Appendix

Heuristics Used

Nielsen’s 10 Usability Heuristics for User Interface Design

#1: Visibility of system status: The design should always keep users informed about what is going on, through appropriate feedback within a reasonable amount of time.

#2: Match between system and the real world: The design should speak the users' language. Use words, phrases, and concepts familiar to the user, rather than internal jargon. Follow real-world conventions, making information appear in a natural and logical order.

#3: User control and freedom: Users often perform actions by mistake. They need a clearly marked "emergency exit" to leave the unwanted action without having to go through an extended process.

#4: Consistency and standards: Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform and industry conventions.

#5: Error prevention: Good error messages are important, but the best designs carefully prevent problems from occurring in the first place. Either eliminate error-prone conditions, or check for them and present users with a confirmation option before they commit to the action.

Nielsen’s 10 Usability Heuristics for User Interface Design

#6: Recognition rather than recall: Minimise the user's memory load by making elements, actions, and options visible. The user should not have to remember information from one part of the interface to another. Information required to use the design (e.g. field labels or menu items) should be visible or easily retrievable when needed.

#7: Flexibility and efficiency of use: Shortcuts — hidden from novice users — may speed up the interaction for the expert user so that the design can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

#8: Aesthetic and minimalist design: Interfaces should not contain information that is irrelevant or rarely needed. Every extra unit of information in an interface 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 error codes), precisely indicate the problem, and constructively suggest a solution.

#10: Help and documentation: It’s best if the system doesn’t need any additional explanation. However, it may be necessary to provide documentation to help users understand how to complete their tasks.

WCAG2.1 Four Principles of Accessibility

The guidelines and Success Criteria are organised around the following four principles, which lay the foundation necessary for anyone to access and use Web content. If any of these are false, users with disabilities will not be able to use the Web.

Anyone who wants to use the Web must have content that is:

- Perceivable - Information and user interface components must be presentable to users in ways they perceive.
  - This means that users must be able to perceive the information being presented (it can't be invisible to all of their senses)

- Operable - User interface components and navigation must be operable.
  - This means that users must be able to operate the interface (the interface cannot require interaction that a user cannot perform)

- Understandable - Information and the operation of the user interface must be understandable.
  - This means that users must be able to understand the information as well as the operation of the user interface (the content or operation cannot be beyond their understanding)

- Robust - Content must be robust enough to be interpreted reliably by a wide variety of user agents, including assistive technologies.
  - This means that users must be able to access the content as technologies advance (as technologies and user agents evolve, the content should remain accessible)

Ben Shneiderman’s 8 Golden Rules of Interface Design

1. Strive for consistency:
   Consistent sequences of actions should be required in similar situations.

2. Enable frequent users to use shortcuts:
   As the frequency of use increases, so do the user's desires to reduce the number of interactions.

3. Offer informative feedback:
   For every operator action, there should be some system feedback.

4. Design dialog to yield closure:
   Sequences of actions should be organised into groups with a beginning, middle, and end.

5. Offer simple error handling:
   As much as possible, design the system so the user cannot make a serious error.

Ben Shneiderman's 8 Golden Rules of Interface Design

6. Permit easy reversal of actions:
   This feature relieves anxiety, since the user knows that errors can be undone.

7. Support internal locus of control:
   Experienced operators strongly desire the sense that they are in charge of the system and that the system responds to their actions. Design the system to make users the initiators of actions rather than the responders.

8. Reduce short-term memory load:
   The limitation of human information processing in short-term memory requires that displays be kept simple, multiple page displays be consolidated, window-motion frequency be reduced, and sufficient training time be allotted for codes, mnemonics, and sequences of actions.

Thank you

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