The Derby Dozen
Augmented & Mixed Reality Usability Heuristic Checklist

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Heuristic checklists are used to provide an overview of potential product pitfalls as well as areas of delight to prospective users. Based on previous research on which aspects impact the user's experience of AR & MR, we have created a heuristic checklist.

This heuristic checklist includes **12 heuristics and 109 checklist items**. It can be used to evaluate aspects of usability for AR or MR devices and applications.

The paired toolkit includes
- Excel spreadsheet with the 12 heuristics and 109 checklist items
- Instructions and dropdown options for easy evaluations
- Automated chart generation and descriptive summaries of your evaluation for easy analysis

The 12 Heuristics

Unboxing & Setting Up
5 checklist items

Comfort
12 checklist items

Instructions
12 checklist items

Feedback to the User
6 checklist items

Organization & Simplification
8 checklist items

Intuitiveness of Virtual Elements
6 checklist items

Consistency & Flexibility
23 checklist items

Collaboration
9 checklist items

Integration of Physical & Virtual Worlds
8 checklist items

Device Maintainability
5 checklist items

User Interaction
9 checklist items

Privacy
6 checklist items

See examples of checklist items for each heuristic on the back!

Interested in learning more? Email: jessycad95@gmail.com or chaparb1@erau.edu

The Derby Dozen Item Examples

Download the Toolkit

Unboxing & Setting Up
"Is the unboxing process a positive experience?"
"Is it easy to set up the device and/or application between uses?"

Instructions
"Does the tutorial explain all of the necessary actions/mechanics to use the device/app?"
"Do instructions provide actional feedback?"

Organization & Simplification
"Does the device's/app's user interface avoid clutter, as appropriate?"
"If the quantity of information is large, is it organized in a layered or hierarchical manner?"

Consistency & Flexibility
"Is the contrast between the background and text sufficient enough so the text can be read easily?"
"Does the device/app avoid lag, delays, jitter, drift, and other forms of virtual element malfunctions?"

Integration of Physical & Virtual Worlds
"Do the virtual elements help the user accomplish the required tasks in a meaningful way?"
"Are virtual elements accurately placed on the real environment?"

User Interaction
"Does the device/app include multiple forms of interaction so users can choose based on ability, preference, & skill?"
"Does object manipulation work well in all instances?"

Comfort
"Are physical interactions safe and comfortable?"
"Does the device easily adjust for a diverse set of users?"
"Does the device's accessories and cords avoid hindering work?"

Feedback to the User
"Does the device/app provide feedback for user input?"
"Does the device/app provide feedback on its status? E.g., loading screen, scanning environment, etc."

Intuitiveness of Virtual Elements
"Are virtual elements and icons self-explanatory?"
"Are virtual elements and controls placed near objects they reference?"

Collaboration
"Is it easy to share virtual content to other users?"
"Are avatars representative of a diverse population?"
"Is it clear what another user is referencing using non-verbal cues?"

Privacy
"Is it clear how user data is collected, stored, used, and protected?"
"Does the app allow users to preserve virtual elements from other users' changes?"

Device Maintainability | 5 items
"Are device parts fixable and replaceable as needed?"
"Is it easy to clean the lenses, cameras, and other components on the device?"