University of Venda

COM 2126: Human Computer Interaction

Assignment TWO

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GROUP MEMBERS

Mukhari ZM - 24067649

Manganyi KC - 21023999

Mabuza NM - 24038945

Mdondolo Y - 23026754

Mphaphuli N - 24002296

Ramaswiela LG - 22019889

1.1

1.1.1

a) Auditory display
b) Voice controlled interface
c) Large button/ phone icons
d) Wearable device interface

1.1.2

a) **Auditory display** - Elderly people commonly experience hearing loss so it will inhibit their social interaction.

b) **Voice Controlled Interfaces** - This can be helpful in situations where aging adults lack mobility or struggle to operate a touch screen phone by providing medication remainder and by placing regular outgoing calls.

c) **Large buttons/phone icons** - Elderly people's width of visual field reduce, so large button and icon phones will minimize chances of error when dialing or navigating menu.

d) **Wearable Device Interface** - Wearable devices will offer emergency services, fall detectors, health metrics and vital signs which provide peace of mind for seniors and allow them to live independently.

1.2 **HEURISTICS**

- Visibility of system status
  Designers should always keep users informed about on-going situations and solutions, through appropriate feedback within a reasonable timeframe.
  E.g. Internet Download Manager.

- Consistency and standards
  The way system looks and work should be consistent all times to create a familiar environment for user and so that the users feel that the system is a safe space.
  E.g. Google sheets.

- User control and freedom
  There are often a series of unintentional actions done by users when they attempt to perform a task. There therefore is a need for clearly marked “emergency exit” options to help them the leave unwanted actions.
  E.g. YouTube
- Match between system and real world
  System should speak the user’s language with words, phrases and concepts similarly to user rather than system oriented terms to make the impression that there is a relationship between the user and that particular system as the use of the user’s phrases would indicate a bond between the system and the user which there implies that there is an increased interaction between the two.
  E.g. Apple notes app and keyboard

- User Control and Freedom
  Users should be able to undo actions and make choices that are desirable to them at each time which gives the user a sense of control over the system and the confidence to make decisions freely.
  E.g. The "undo" button in a text editor allows users to revert changes.

1.3

1.3.1 NO

1.3.2 The interface fails to reduce the short-term memory load because it requires the user to memories the functions that are not do not appear direct which is unfair because the system has to cater for all age groups .It also does not provide clear information about what each icon does, which is vital for younger users who might be of need of the obvious visual clues. It also does not support internal locus of control, meaning that children might feel they do not have enough control over their actions which may be upsetting and frustrating leading to them boycotting the taskbar .As the toolbar appears to have been made for adults doing tasks like editing documents, and not for children as it is hard for an uniformed (first time user) to navigate it .Lastly the icons are too abstract and do not show their purpose in a simple or appealing

way. This lack of clarity increases the chance of confusion and errors when a child uses the toolbar proving this taskbar is bias against children.

1.3.3 The traffic light isn't set up correctly because its colors aren't in the usual order, which makes it confusing for young users as they are most likely familiar with the normal order of colour placing (rainbow) . Normally, red comes on top, yellow in the middle, and green at the bottom, a sequence that quickly tells us what to do. With this expected order missing, the connection between each color and its meaning isn't as clear, the overall setup feels off, it's harder for users to know what the light is signaling, and kids have to think a little harder before acting. Changing this order disrupts the expected mapping between the colors and their corresponding signals. This inconsistency violates the principle of consistency and proper mapping, which are fundamental to reducing user confusion—especially for young users.

1.4

- **Overloading the interface with too much information**:
  Sometimes, designers attempt to fit as much functionality or information as possible onto a single screen, overwhelming users and making it difficult for them to concentrate on crucial activities.

- **Poor visual hierarchy:**
  Viewers find it difficult to discern what is significant from what is secondary when there is a lack of obvious organisation (such as headings, spacing, or contrast), which causes confusion and inefficiency.

- **Lack of white space:**
  Not using enough spacing between elements makes the interface feel cramped and cluttered. Proper use of white space helps improve readability and user focus.

1.5 The assertion that modern computer user interfaces (UIs) are biased toward users with good vision and neglect others is significantly accurate. Although many advancements have been made to improve accessibility for all, mainstream interfaces still largely prioritize visual elements, often at the expense of users with visual impairments. Here follows a discussion with everyday examples.

Most apps, websites, and software are designed based on general assumptions that users can see everything clearly. They use tiny icons, bright colors, complex layouts, and lots of visuals to guide users. If your eyesight is good, that works fine. But if it isn't it then means that it will be hard for you to navigate that particular software which means that u the software is bias because it creates difficulties for certain people.

A second example would be one of you using your phone. You're swiping through Instagram stories, and all the navigation is done by visual cues (left, right, swipe up). If you're blind or visually impaired, that whole experience becomes frustrating, unless the app was carefully designed to work with tools like a screen reader. Which honestly suggests that most apps lack.

Another example would be of ever tried shopping online. lf a website doesn't properly label its buttons or forms, someone using a screen reader might hear "button…button… button…" with no clue what each one does. That's what happens on a lot of poorly built sites.

In conclusion, we've made progress, but computer interfaces still assume that everyone sees the world the same way and that is not true. To be entirely inclusive, designers need to stop making vision a requirement and start designing for all kinds of user from the beginning with the assumption that people see the world differently, and different is normal.