Introduction

- Technology is becoming increasingly prevalent in modern society.
- In the future, people living with dementia may find that they are required to interact with technology, and their user interfaces, on a more regular basis.
- Current interfaces are not always designed with people living with dementia in mind.

To support people living with dementia to remain independent for as long as possible, it is important to ensure that the devices they interact with are developed to take changes associated with the condition into account.

This research aimed to produce a set of guidelines to support the development of interfaces for use by people living with dementia.

Methods

- Secondary research carried out through the use of a systematic literature search
- Searches aimed to find articles relating to interface design and technology acceptance in older people and those living with dementia
  - Older users included as people living with dementia will also experience the effects of ageing
- Used the Discovery Service provided by the University of Portsmouth, allowing for multiple databases to be searched simultaneously
- Searches were limited to between January 2008 and December 2013 to ensure latest articles were found
- Search terms were combined using boolean logic to narrow the possible results, and eliminate inappropriate articles.

Results

- A total of 150 searches were carried out between September and December 2013
- 25,828 articles were found for inclusion in the study
- 256 articles remained after inclusion criteria was applied to the abstracts and duplicates removed
- Only 17% (43) of the remaining articles related directly to dementia
- Upon reading the articles, 4,339 relevant quotes were included in the content analysis
- Content analysis based on context (problem identification, and solution recommendation) suggests that problems are often identified, but no solution recommended:
  - Problem identification: 28% (1,213 quotes)
  - Solution recommendation: 19% (834 quotes)
- Literature synthesis aimed to support the development of guidelines to help designers when developing interfaces for people living with dementia

Developed Guidelines

1. Provide a system which is user-paced.
2. Encourage interface simplicity and minimise complexity.
3. Develop an easy-to-use system, which takes into account the possible impairments experienced.
4. Provide an interaction which aims to be intuitive, but with provision for training and post-adoption support.
5. Provide options for interface customisation.
6. Where possible, avoid the use of hierarchical navigation structures.
7. Enhance available resources, whilst supporting those which have declined.
8. Demonstrate usefulness and benefit to the users.
9. Choose input and output modalities appropriate to the users and the tasks to be performed.
10. Provide support to adopt new technologies.
11. Ensure the introduction to technology is appropriate to the person, their self-image, and the task to be carried out.

Conclusion

- There is insufficient research into the interface needs of people living with dementia.
- 11 guidelines have been developed to support designers when developing interfaces for use by people living with dementia.
- The guidelines are not designed to replace participatory design, but to help produce more appropriate initial designs.

- Future work will aim to:
  - Include articles which have been published recently
  - Evaluate whether the guidelines are able to support designers to develop dementia friendly interfaces
  - Eliminate the bias introduced through the use of only one researcher to carry out the content analysis

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