Quality Assurance for a Customized Game for Rehabilitation
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Purpose
The purpose of this summer project was to help improve a game, which will be used for rehabilitation with patients who are disabled.

Background

• Initial observational studies of persons with disabilities brought attention to the need to test off-the-shelf video game technologies for use in rehabilitation (Flynn et al., 2007)
• Focus groups and interview raised potential issues with the use of these technologies in the clinical setting (Lange et al., 2009, Flynn and Lange 2010)
• In order to design game-based rehabilitation tools that are appropriate for persons with disabilities, the user must be a part of an iterative, multidisciplinary design process (Lange et al., 2010)
• Quality assurance is an important and necessary step in the process of creating a user-centered product (Proffitt et al., 2012)

Methods

• The steps in the User centered design cycle are shown in figure 1.
• Quality assurance fits in user feedback and in analysis because once someone who has tried it gives their opinion of the game and analysis it the improvements can be made.
• Their opinion will also determine the quality of the game and how useful it can be.

• Role of quality assurance:
  • Finding bugs in the game (Figure 3)
  • Playing games multiple times with different setting options
  • Changing options within the games
  • Reporting bugs by interactions with mentor
  • Reporting bugs by filling out bug report form (Figure 2)

Figure 1: User Centered Design Cycle

| Bug Number: |
| Bug Date: |
| Assigned To: |
| Game Version: |
| Overview Description of Bug: |
| Steps to Reproduce: |
| Actual Results: |
| Expected result: |

Figure 2: Bug Reporting Form

Figure 3: Game-based Rehabilitation Tool

Results

• During game play, some bugs would interfere with the ability to play the game.
• 3-4 bugs were found in the game
• Some games such as Mental Manipulation had more bugs than others.
• Some of the bugs were minor such as the game doing hand discrimination after the setting was unchecked
• Some other bugs affected the game more such as a repeating number display that limited ability to move forward in the game

Discussion

• It is not the same to just build a game for people who need some sort of rehabilitation in comparison to people who are perfectly fine.
• This impacts the way that the games for rehabilitation are built because what has to come into consideration is that the person playing it may not be able to do some movements.

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References


