Follow up 3/11/2011 meeting

Attendees: Christie, Clamann, Gil, Jeon, Qin, Tupler, Yu, Zhu

Hello everyone,
As a follow-up to the meeting on 3/11/2011, below are the notes and the action items I recorded. Please advise if I have missed anything.

Meeting Notes

1. Biwen & Zeno: Preliminary Data Analysis (see also data analysis.doc):
   1) Biwen conducted preliminary data analysis (Learning % and slope of coefficient):
      i. The result showed that the native block training resulted in significantly quicker learning rate than other two training (i.e., basic VR and augmented VR).
      ii. ANCOVA: Biwen will conduct data analysis again with new data set. First trial group will be used as a covariate. It will normalize the data set.
   2) Zeno and Biwen conducted ANOVA test with pre and post-test data (i.e., matrix reasoning and native block design)
      i. There is no significant effect of pre/post-tests on matrix reasoning (d.o.f.=13, t=1, p=0.3356).
      ii. There is significant effect of pre/post-tests on native block design (d.o.f.=13, t=7.2, p<.0001).
         1. However, there is no significant effect of condition (BD vs. basic VR, BD vs. aug. VR).
   3) When we look at the data:
      i. Subject 2, 6 and 13 showed negative value of score differences between pre and post-test.
      ii. Some of them also show abnormal learning curve. This graph is the learning curve of subject 13.

![Learning Curve Graph]

iii. We will recruit 3 more subjects to replace these data sets.
4) ROCF Scoring
   i. Caesar provided Dr. Tupler with ROCF packet.
   ii. Dr. Tupler suggested collecting total time to ROCF task completion (from start to end).
      1. ROCF program already collecting this data.

2. Augmented VR program issues
   1) Caesar talked about the behavior of subjects when they conducted augmented VR block design test.
      i. Some of them spent too much time to make perfect blocks. Since there is a force feedback for wrong block, it was not easy to make the perfect edge line. Linus may eliminate force feedback only when the blocks are on the grid line.

3. Subject screening questionnaire
   1) Even though subjects have appropriate score of Edinburgh Handedness Inventory, someone have another experience of using non-dominant hand such as guitar, piano, typist, etc.
   2) Janet and Zeno will record this when they meet subjects first.

4. Preparation of full experiment.
   1) How to reduce learning time of haptic device.
      i. Linus suggested another augmented VR concepts such as adding gain control when manipulating blocks to turn blocks to 90 degrees. In this case, a subject only need to turn his/her hand to 10 degrees (square root of 90 degree).
      ii. Biwen suggested another training session before therapy session to spend more time to learn how to manipulate haptic device. Training may include moving stylus with/without block, turning blocks, etc.

These are all the items that I noted or recalled from the meeting. If you have other points, please let me know.

Guk-Ho Gil