

**Austin Tate – 14-Oct-2011**

### **Understanding Learning - Learner Group - Emergency Response Training**

One element of my recent research has involved providing an instrumented virtual collaboration environment to allow emergency responders to train and perform experimental exercises together (Tate et al., 2010). This is both to improve their own abilities and to provide human psychology researchers with experimental data on the performance of these specialists on their tasks to help make improvements in future.

On reflection, I can see that the work we have done and the support provided by the human psychology researchers involved, had been principally focused on the tasks this group are meant to perform, and ways in which this can be mapped to appropriate tools and technologies, e.g. using "Cognitive Work Analyses" (Vicente, 1999). And work has gone heavily into protocols based on social science and social network interactions of small team collaboration (Cross and Parker, 2004) to assist them in getting the best results in what can be stressful and high stakes operations.

But, in considering this assignment, and a suitable learner group to comment upon, I realised that we have little information or record in the project on the emergency responders as individuals or even as specific role players, we also have little record of their individual levels of knowledge of computers, collaboration methods, etc. hence I thought it would be a good group to focus on and apply the assessment question to. Initially this will just be done using the experience we gained in running two one week long emergency response scenarios with two teams in each case using a mixture of traditional and computer mediated collaboration, with one team acting as a control and the other making use of experimental facilities, or specific guidance or protocols for the interactions.

### **What We Know About the Learner Group**

The group consists of those involved in emergency response at an operational level. They include senior executives and administrators, military commanders and staff, political decision makers, administrators, scientists, specialists and many more types of people. Frequently a coalition of these is created involving civilian agencies, Non-government agencies, and military authorities to address complex emergencies. The emergencies can be at local, regional, country or international levels. Due to the particular focus groups we have worked with, I will target my analysis of the learner group as those involved in emergency response at a metropolitan city level.

1. We have observed during training exercises and experiments to date that the members of the group have a very wide range of expertise in computing systems and their uses. More so, their use of collaborative technologies varies from significant to non-existent. Almost no member of the learner group had used virtual worlds (or equivalent game environments) or established an avatar at the time the work started, and this might typically be the case for new learners joining the group or in future experiments.
2. Some members of the group had negative impressions of the computer support that can be offered to them in their real emergency management tasks.
3. The type of device used to access meetings can vary from full involvement and rich computer access to simple devices and mobile phones. Corporate and government firewalls can interfere with the permitted choice of tools.
4. The learner group members are almost without exception exceptionally busy people, who have little patience with time wasting exercises.
5. The members of the learner group can be observed to be very highly motivated individuals who really care about the work they do and know massive trust is placed in them by the public for their health and safety. Their decisions really are a matter of life or death.
6. The members of the group are on call effectively 24/7 and may be called away during training and exercises if real events demand that. We observed and had to cope with a number of the group having to leave one experiment half way through due to a large disruptive snow storm in their area of responsibility. This may be a feature for learners in this group in any training.

### **Observations**

1. We found during experiments and training exercises that many members of the training group could and would easily go into incredible levels of real detail of the scenario. They could deep dive well beyond what was needed for a simulated exercise.
2. The group members were very scenario driven and keen to do well on the task at hand. That motivation saw them through any technical difficulties.
3. Some of the people involved were very senior, and working alongside other more junior staff, in some cases their own staff. They did not want to be made to look foolish or too "newbie" in their uses of the virtual worlds aspects of the technology.
4. Many of the group members had not used collaborative media, and certainly not used virtual worlds and avatars before. It was also tricky to set up due to firewall blockage prone technologies such as shared media screens and voice. So learner support was desirable to assist some of them without disrupting the experiment or exercise.
5. The biggest difficulty for new users was typically setting up for voice. Unless uniform headset and computer equipment is used, this may continue to be an issue for users.

6. We wanted the learner group to focus on improving the ways in which they found and took into proper account specialised expertise available **beyond** their own decision making and technical capabilities. It was about being able to bring in specialists from external agencies whether civilian or military government agencies, non-government agencies, scientists and academics and individuals with specialised skills and knowledge.

### **Learning Group Goals and Support**

We might want to be clearer about what types of individuals are involved in the learning group, and whether there are some roles or categories they can be clustered into.

We should be clearer about what the learning goals for the group are in future work, rather than seeing them as experimental subjects primarily.

We might be able to categorise some of the technology familiarisation, setup, testing and social interaction elements to provide more focused learner support in future.

We might simplify the collaboration environment to reduce the amount of learning and familiarization required.

We had been asked NOT to intervene and help in the actual simulated operations centre exercises. But we were able to establish a single receptionist/assistant virtual personality who would always be available just outside the door and who could take people aside to help them set up and test and give them advice. This was especially useful for voice setup. FAQs on the web were prepared to assist in this, and were updated as more issues came up to be more helpful in future.

The learning experience should focus on the scenario, event list, issues to be addressed and decisions to be made to motivate the learning group. But be designed to keep a focus on the learning goals of showing ways in which the team can find and pull in analyses and expertise from the external specialist beyond the skills of those in the core training group.

### **References**

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