TEP 290: Distributed Learning  
Visit with Chris Dede (Harvard)  
10.31.2005

**Original Issues to Discuss:**
- What unique capabilities do MUVEs provide for studying distributed learning?  
- How do MUVEs allow us to measure the trajectory of inquiry learning?

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| Jim Levin (UCSD) | - We are visiting with Chris Dede from Harvard School of Education  
                   - Displayed on front boards are the MUVE and then slides, along with UMICH & Harvard on Polycom TV screens |
| Chris Dede       | - Chris says the powerpoint replicates much of the readings  
                   - Chris is asking how we want to use the seminar time |
| Jim              | - Talk about how MUVEs impact distributed learning and connection with other groups involved |
| Chris            | - Look at 3rd slide  
                   - Internship is an example of situated learning; everything in the real world we can do in the virtual world with MUVE  
                   - Difference is that we have complete control over the virtual world  
                   - Ideal environment for studying situated and distributed learning |
| Joanne (UCSD)    | - Wondering if it provides same real world complexity, especially with interaction |
| Chris            | - Wandering around by yourself is less interesting, so won’t have rich interactions  
                   - Visiting during the session in which there are 30 kids in a class, you see something much different… intensive interactions with avatars, artifacts, etc  
                   - Not like real world – major difference is in bandwidth – does not convey richness in such things like non-verbal communication, voice intonation, etc |
| Mike Cole (UCSD)| - Focused on SDLC; convinced by data and papers found by Dede’s group  
                   - To get dynamic learning environment, you said you need a bunch of avatars at the same time – dependence upon synchronous (vs asynchronous) to be effective… NSF is wondering if it is useful for a distributed center  
                   - How do we think about MUVE for NSF visit? |
| Chris            | - [Introduces colleagues that are present (paper co-authors: Diane and Jody)]  
                   - Three dimensions for role of MUVEs in center:  
                     - 1. distributed situated learning  
                     - 2. center-wide MUVE  
                     - 3. design a MUVE for specific projects  
                   - Synchronous and asynchronous: what are the tradeoffs? To what extent can you make synchronous work (across various time zones)?  
                   - Claim: We can gain value by trying to make things work through our own efforts |
| Mike             | - Face to face vs. Virtual issue…  
                   - What about the center MUVE?  
                   - For example, Interpretation of fMRI topic that Hutchins lab is exploring |
| Chris            | - [MUVE interface described]  
                   - Could see the fMRI artifact in the right hand window  
                   - Right now people spend some of their time in real *and* some in virtual worlds  
                   - MUVE is just one type of media in society – need to figure out how we weave it in |
| Jim              | - If we do create successful interaction via MUVE, collaborative environment becomes an object of study |
Chris - [Powerpoint slide 7 on Logfiles]
- MUVE captures rich logfiles
- We can do rich searches on that database; we ask questions, form hypotheses, etc
- We get this rich data for free (while in the real world, this is tedious and time consuming)
- Can also visualize the data – where students went [slide 16]

Jim - Problem is always too much data in these kinds of studies
- Idea of using data mining techniques to identify regions of interest is promising

Chris - Part of what we are developing is new research methods
- Document which methods succeed and which fail

Jerry B (UCSD) - Given NSF interests, how do you see how MUVEs could synergize asynchronous research efforts (between us)?

Chris - Beyond experimenting, the other thing is helping projects in which MUVEs may be useful for them
- MUVE – intrinsically a synchronous medium – not set up to be asynchronous; for asynchronous discussions, go back to threaded discussions, other asynchronous mediums
- [Someone asks about possibilities for asynchronous?]
- [Chris describes an example]: Could provide spatial grounding

Bill Griswold (UCSD) - How could it approximate face-to-face interaction
- Jim Hollan’s “Beyond Being There” paper
- Environments like these allow more than a replication of face-to-face environment
- Ubiquitous Presenter and ActiveClass: through use of these technologies, can see how the social aspects are so important

Chris - Allowing social interaction, emotions, etc – open question
- All sorts of virtual interactions in the real world (e.g. IM, video games)

Jody (Harvard) - Can follow how students progress and log files become evidence of students progress/trajectory

Diane (Harvard) - Numerous examples in which students who were never “leaders” take on leadership roles in the virtual environment – evolution of independence and leadership

Mike - Asking Stephanie about collaborative learning environments
- MUVE: lots of interesting data collected: how do you collect info? Like Chris?

Stephanie (Michigan) - Jude is interested in blogs
- How is MUVE different from using blog or chat?

Chris - Avatars capture everywhere you go, any utterance, etc – you are completely surveilled
- A blog is like a “think aloud” or a diary
- Each team can have access to different data in the MUVE
- We can vary things in the MUVE; MUVE is much richer environment than e.g. a blog

Stephanie - Not fully convinced that experience for user is richer
- Less interested in colleagues

Diane - Identity and feeling of getting to know someone gained via MUVE

Mike - We have a bunch of tradeoffs; MUVE needs to be synchronous

Stephanie - Students have open chat during a colleague’s lecture, projected on overhead
- Text seen in MUVE is similar to text on this messaging
Diane - Someone can give another a tour, or follow someone through the world
Jim - MUVE provides the spatial element
Chris - Not arguing that MUVE is best possible environment for collaboration; we should experiment with many other avenues/media
- When is it good enough to use just IM, MUVE, in person, etc
Stephanie - Important to know which media work in which situations and why
Sonja (UCSD) - What is difference between MUVE for educational purposes, vs. MUDs/MOOs for more social purposes?
Chris - Early to be able to draw clear contrasts
- Entertainment MUVEs appeal to a particular gender
- In education, work quite hard to design things for any student
Jody - We are finding that all genders and all students are engaged
Sonja - To what degree is the community in MUVE (cyber?) or classroom community with regards to culture?
Diane - In final letters to mayor, students show authentic care for “I hope this helps” etc
Mike - Concerned about Center level activities
- NSF thought we were going to depend entirely on the MUVE to bring the center together
- Not clear on mixtures of synchronous and asynchronous that we are looking at here… To what extent are we mixing what Stephanie and Chris are doing?
- Can we provide a multi-dimensional mapping of what we are dealing with in this center?
Chris - How can we help the other projects succeed? Need to get this dialog going.
- We are happy to help other projects build a MUVE if that will help them.
Mike - Come back to center level activities
- For example, the fMRI research of Hutchins/Hollan lab – micro-coordinations to analyze and draw more generalized principles from
- How face-to-face are we? How distributed are we?
Joanne - Reflect on Engestrom: coordination – using same data; approach by looking at universal questions
- Key issues need to be identified
Mike - You see certain types of issues come up over and over again; overlapping clumps
- Jim Levin uses idea of multiple mediational systems: multiple systems of representation
- Collaboration comes up several times
- Jigsaw idea (Chris) – drawing a continuum; needs to be socially organized and coordinated
- Data analysis: how do we follow trajectories?
- Stephanie – wondering how much you would like to have the traces of what is recorded in the MUVE?
Stephanie - I can capture everything (button clicks, etc)
- What is the valuable data? What kind of data is needed? What can you and can’t you answer given the type of data you can collect?
- Figure out what we have and figure out where we can go with it?
Jim - Do you get trace data?
Stephanie - Can’t capture everything; must decide what to capture
- Constantly making tradeoffs as to what you decide to capture
Mike - Chris, you have made some headway on that problem – there are certain kinds of questions you can identify that are aggregated at a certain level
Chris - Center could do some interesting experiments
- For fMRI data analysis: could have various groups each using different type of medium to discuss the data and see how it works for each group
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<td>Stephanie</td>
<td>In the last cycle, what was funded was different than what was in the proposal; process of competition leads to revision</td>
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<td>Jerry</td>
<td>We can look and see how people accomplish things in various environments</td>
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|               | Don’t see why a MUVE couldn’t include, e.g. the blogging place  
|               | Monolithic environment  
|               | In our seminar, we have been concerned about the various settings and environments to remember logins, etc. One inclusive environment may be more useful/easier.                                                                                                                                                                                                                                                                                                   |
| Chris         | Premature to know what the best synthesis of our work is  
|               | Do design experiments in the first couple of years — will help others too figure out what the best way to do collaboration over distance                                                                                                                                                                                                                                                                                                                                  |
| Bill          | Trend in web systems — people have trouble with a “one size fits all” solution  
|               | Integration elements are important, but the way learners bring tools together to learn, it’s all very different — not a system, usually chaotic  
|               | There are interesting questions: ecological perspective as to how things comes together and its cohabitation; loose fit vs tight fit, etc.                                                                                                                                                                                                                                                                                                                                |
| Derek (UCSD)  | Synchronicity of MUVE environment  
|               | Exploring role of avatar and critical mass                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Diane         | Depends on the person and aims of using the MUVE                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Chris         | Purpose of the MUVE — doesn’t make sense to administer a lecture via the MUVE                                                                                                                                                                                                                                                                                                                                                                                              |
| Jerry         | Yes to multiple tools, but “we need the box”                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Jim           | There are several goals: for River City, looking at middle schoolers learning science  
|               | Here (for SDLC), MUVE will let researchers in the Center to be able to collaborate  
|               | There may be different MUVE designs to accommodate different groups                                                                                                                                                                                                                                                                                                                                        |
| Doug (UCSD - UCI) | Text vs Voice: There may be more of a knee-jerk reaction with IM — fastest typists have the advantage (vs threaded discussions)                                                                                                                                                                                                                                                                                                                                                               |
| Chris         | It is possible in the SDLC world to have voice  
|               | It’s a question of tradeoffs; typing privileges people in a different way  
|               | Make clear: we are not trying to claim that a MUVE is the right collaboration or is better than others  
|               | Early goal to know how to collaborate and to study                                                                                                                                                                                                                                                                                                                                                     |
| Mike          | Need to figure out plan for NSF site visit                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Chris         | Groups that think a MUVE would benefit their work could contact Chris  
|               | All other groups could think about what they could put on the table to help other collaborators across projects, etc. Other offers to be put on the table. Put forward a “menu” for NSF’s site visit.                                                                                                                                                                                                                                         |
| Mike          | Accumulate these in a synthetic working document                                                                                                                                                                                                                                                                                                                                                                                                                      |