Mike Cole’s talk on org. learning

2 areas Mike’s concerned about:
1. Bring together cultural-historical activity theory (CHAT) w/ distributed cognition perspective of the dCog Lab at UCSD + Engestrom & others.
2. Bud’s theme -- “Inter-institutional collaboration and dissemination of innovation”

LCHC has done work in after school settings using CHAT. Now they’re trying to bring it together with dCog. Data from after school settings is field notes from little-trained undergrads. They’re trying to see what occurs with a game called “Island Survivors”, which deals with eco balance. Human inhabitants depend on balance of flora, fauna, and human activities. The cognitive challenge is managing multiple inputs: estimated life-cycles, food supply, weather, interaction of ecosystem. Failure to balance ecosystem led to starvation.

Players have to interpret graphs, avoid shortage or excess of key elements. They try to progress through 3 levels of game – beginner, intermediate, and advance. Mike read excerpts from one undergrad’s field notes and added ad-lib commentary:

- **Session 1:**
  - 3 people:
    - Daisy, undergrad
    - Vivian, little girl
    - Anthony, little boy
  - Daisy asked Anthony if he could explain game to Vivian. Anthony taught her the game. There was close collaboration between the children, and close fusion of emotion of cognition.

- **Session 2**
  - Vivian had great difficulty with keyboarding skills, but remembered important details of the game. She suggested reading the hints, but they were too advanced.

- **Session 3**
  - Still on beginning level. Vivian was very motivated to advance to next level. She was very alert to maintaining food level in good range, but she limited her food-gathering activities to fishing, and became mechanical in that activity.
  - Moved on to intermediate level, and Vivian learned to hunt when the fish supply was wiped out by a wizard.
  - Vivian demonstrates conceptual understanding of how food chain works. Earns her own island, decides which animals and plants to populate her island. Had trouble picking some of animals.
  - Again her motor actions became so ritualized that she often neglected to look at screen when talking to Daisy, and failed to notice if screen had changed.
Vivian had to write hints to progress to advanced level. These amounted to her own heuristics, such as how much fish to catch to balance hunger and overfishing.

- Last session in series -- final field note:
  - 2 newcomers -- Vivian taught them expertly, showing them how to allocate inhabitants to different jobs, and how to maintain adequate food supply.

- Mike liked this example because it goes from total naiveté to expert-teacher. Problems:
  - It was not videotaped, and it’s hard to videotape such nuanced behavior.
  - This was a voluntary after-school activity. It sounds like propagation of representation across media, but they need a way to distribute it. He wants to work with the dCog lab for software tools to enhance research.

The second line of research Mike wants to pursue with the distributed learning center relates to Uri Wilensky’s proposal, tracking keystrokes of kids while using audio and video. That learning situation is anchored by a course that meets 3X/week.

After several years of collaboration between UCSD and the Preuss School, Bud and colleagues starting to apply what they’ve learned to a charter school, Gompers. This has tremendous evaluation challenge because Gompers students walk in the door, whereas Preuss School students are selected. (See last week’s discussion.)

Preuss-Gompers ties to Yrjo Engestrom’s work on intervention research. Mike wants to identify similar principles in dCog and CHAT: “Inter-institutional collaboration and dissemination of innovation”

- Collaborations:
  - Bud’s: UCSD-Preuss School--Gompers
  - Mike’s: Mira Costa Community College
    - Collab in conduct of after-school classes. Running those interventions is after-school activity in Oceanside

- Questions:
  - Who initiates an intervention?
  - How to modulate power relationships?
  - Transaction costs:
    - Mike believes they have undertheorized and underfunded transaction costs – slippage in coordination between institutions.
  - Retrospective look: trade-off between collab and intervention, e.g. disseminating what was learned from Preuss to Gompers.

- Cole & Engestrom (1993): dCog: “Psych and educational considerations.” Community of learners program in Oakland was tremendously effective in designing research with tight statistical controls, but dissemination failed.
• Dissemination of Mike’s 5th Dimension work succeeded, but it was hard to evaluate social ecology. After-school program was voluntary, and which activity kids did at it was voluntary, so they had high rate of kids walking away. --> big evaluation challenges.
• Community of learners program did not disseminate principles and died out. Attempts to replicate it at Stanford and Vanderbilt were unsuccessful. In contrast, as indicated by 31 sites on UCLinks.org website, 5th Dimension proliferation has succeeded in many, but not all attempts.
• 1 problem with dissemination = creating lethal mutant. “I don’t believe we ever created a lethal mutant,” although some sites died and others spread.
  o Every 5th dimension site is different. All are decentralized. Ongoing, overlapping, redundant set of communications that lets participants develop good idea of what’s necessary, e.g., all parties have to like it.
  o Mike believes that cult norm develops, or it dies.
• Yrjo
  o dCog
  o CHAT
  o Soc analysis ~ Bud – looking at larger social system
• Mike’s view: any such effort requires collab of experts w/ diff backgrounds. Studying DL requires DL teamwork.
• Risk factors: Discontinuities in system, e.g.,
  o When psychological coordinator leaves – no prob
  o When teacher leavers – bigger prob
  o When center closes – enormous prob
  o Mike has theories about how these discontinuities occur.
• All these different from people in this project have items in common, but they’re struggling to bring them together before NSF visit – Venn diagrams, concept maps, or something else may tie in.

Discussion

• Bud suggested unit of analysis as key concept to get a handle on problem. In Island Survivors, it was dyad or triad. Bud suggests notion of intersection encounter to recognize role of FTF encounters, us. dyads or triads. Power is distributed in system, but it’s not coming from outside. It’s negotiated in each interaction. Wants to study what’s happening in each interaction.

• Mike
  o It’s a Q of how far in and how far out you go. In 5th dimension program they tape recorded some meetings of staff from different institutions, and video recorded other meetings. Nationwide, after school programs are going toward commodification and institutionalization.
• Relates to interrelationship between levels. His impression is that coupling between levels is loose. There are days when internal relations in 2 units are bad, but their external interactions are good.

• Bud: spider web analogy -- not linear

• Jim: Mike covered both evaluation and dissemination

• Stephanie comments on 5th dimension – how to relate eval of 5th dimension to eval of the center? How many interactions like Mike’s example from Island Survivors do you need to say the program was a success?

• Mike proposes frequency as 1 measure. Says Yrjo proposed showing growth and transformation in FTF inter-unit interactions.

• Stephanie: how to quantify successes in a way that captures rich context of Mike’s example from Island Survivors? Proposed social network as one tool, but recognized lack of concept map or other (visual?) tool. They’re experiencing that synergy starts with proposal writing process, not after funding occurs.

• Mike confirms that they’ve benefited at UCSD from trying to get funding.

• Jim says he’s been saving all messages for project and has 3,000.

• Bud: Valuable to have grad and undergrad students between profs and children. Profs could exchange grad students to cross-pollinate and thereby accelerate learning of all people in center projects. Should someone coordinate that?

• Mark: yes

• Reuven: He likes the idea of theory, but it’s hard to keep technology in step.

• Mark: Audio conferencing is not the most effective way today. Would be more valuable to use video conf.

• Jude: Technology needs to be up to scratch, requiring expertise to set it up.

• Stephanie: Would be nice to have views of different sites during remote conferences, as with Polycom.

• Jude: Need goal for seminar, not just having seminar for sake of seminar.

• Stephanie: There is some goal, since this seminar is for demo purposes. However, they need better idea of seminar purpose and syllabus after NSF visit.
• Mike: Build into center budget idea for every grad student to spend a week or so at other centers. We’ve learned that distributed conferences are no substitute for FTF meeting. Could be AREA or other venue for participants, especially grad students, to meet.

• Stephanie concurred, and gave an example of traveling to establish personal relationships with remote peers. She also suggested that SD group has a set of coherent ideas. We may take for granted some things they have trouble with.

• Mike to Stephanie: “Part of what brings the group together is you.” Many here at SD don’t know each others’ names.

• Barbara: She’s not satisfied with progress of seminar.

• Derek: Need back channel, and IRC could provide it.

• Doug explained NASA’s approach to sidebars and multiple site video presence

• Mike excuses himself

• Jim invites new arrivals to introduce themselves.

• Jerry Balzano: Talking about coordination of ideas: Yrjo mentioned concept maps, and proposed something more concrete. Jerry suggests documenting uses of language, and proposed glossary as something that is relatively easy to contribute to, e.g., idiosyncratic usage of words. Asks group if glossary is the kind of thing Yrjo proposed, and why it’s not more used when it’s so simple to do.

• Joanne: She didn’t have sense that glossary was what Engestrom was referring to. Ideas progress over time. Need to see how ideas change over time.

• Jerry: If we strip away glossary and need some concrete way for people to self-reflect. Simplest way is for people to engage in some kind of self-reflection, capture it at some point in time.

• Jim:
  o Other resources are notes and videos of discussion
  o Next week: Brian Goldfarb will speak on how to study modes of learning that elude conventional means of assessment.
  o Proposal Brian for research on Tourette’s.

• Joseph Goguen: There are tech blogs, spiders, etc. to harvest and aggregate w/ RSS feeds, Recent issue of Economist has article on technorati, whcih

• Doug: It’s unrealistic to capture all FTF data

• Joseph Goguen: It’s not necessary to.

• Bill: Grad students can go back and verify.
• Wiki:
  o ?: Has had trouble getting onto wiki
  o Jim straightened out website vs. wiki
  o Bud: must keep technology simple.
  o Derek: Just need IRC or other simple channel.
  o Jim: problem is complexity of introducing a new media
  o Jerry: There’s startup cost to anything, even learning to eat w/ fork
  o Joanne: Depends whether you’re onsite or offsite. Hard to get to right place in wiki.
  o Derek: Has had great exp w/ IRC back channels because everyone able to interact simply; volunteered to help
  o Reuven: Chat on tapped in is IRC-like
  o Derek: Logins are a deterrent to use because we all have so many dozens of logins.
  o Bill: would be helpful to have video for backchannel, too.
  o Jim discussed logistics of polycom setup.
  o Paul Dourish: He’s investigating open-source video conferencing.
  o Bill: we can mix and match video systems
  o Jim
    • confirms multi-point mix and match.
    • reminder of Brian Goldfarb’s talk next week.
    • Jim will be remote (in Illinois next week)
    • Invited more discussion of center
    • Tom interested in deaf community, Lisa and Brian interested in Tourette’s community. Thus assistive technology is minor focus of center.
  o Mark – Those aren’t minor projects in assistive technology
  o Jim –
    • minor only in sense of 2 of 17 projects.
    • For UCI people: Do you want FTF meeting? (Answer = yes)
  o Stephanie: can’t join FTF meeting, but glad to join via video.
  o Jim: Started to put more syllabus in wiki, agenda for site visit, use wiki as whiteboard.