

Creating Conditions for Participation: Conflicts and Resources in Systems Development Susanne Bødker



Computational Thinking [presentation by chris frisina Special@vt.edu Second Computational Thinking [presentation by chris frisina Second Secon

Computational Thinking Computer Science 6604 Fall, 2013

Chris Frisina







- * Undergrad: Female Gendered Communication { UNCC [Charlotte] (49ers) ≠ UNC [Chapel Hill] (tar heels) }
 - Nüshu Script Language "women's writing"
 - Only female created language in the world, for the purpose of women
 - Sung and written, not spoken
 - Taught form grandmother to granddaughter
 - Dead/Dying language unfortunately
- * Industry

Virginia

Tech.

- Harris Teeter [managed the grocery department and inventory management]
- performing managers and tailored training and solutions for them]
- * VT Advisor [Deborah Tatar] First year CS PhD Student

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Beside a well one does not thirst, beside a sister one does not despair.



Ground

• FedEx Ground [redesigned the package handling process to ensure delivery, in Excel, worked with under-FedEx





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Interests





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chris[topher] special frisina













CT is an individually constructed, socially and scientifically influenced, way of thinking by defining models and relationships between them; testing the relationships, assumptions, and corner cases; problem identification; and problem solving; with a literate CTer being able to adjust one's scope or position to refine models, clarify and eliminate assumptions, and account for and incorporate corner cases, by participating in structured / creative techniques.



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My Computational Thinking Definition















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Structure of the Studies

- Scandinavian Projects (three generations)
 - * AT (Copenhagen)
 - * Utopia
 - * Danish DUE
 - * NLIS (took advantage of the VIRK)



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Russian designed: Alexei Leontiev (Leont'ev) Sergei Rubinstein They see human activities as complex, socially situated phenomena



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Activity Theory

It considers all people and objects in a 'system', as well as history, culture, and motivations of each entity

AT recognizes internal and external process by its members interacting with tools, in addition to the result from the interaction(s)





Participatory Design

Assumptions

- * Identification of and access to users
- User's initial and continued interests
- Fights paternalistic choices, encourages democratic and communal input/decision making
- Design, interaction, and implementation only occur while the process/project is running



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Observations

- Education is problematic (self efficacy and organized instruction)
- Organizational structure sometime impedes participation

Implementations (current)

- * Distributed Participatory design (crowdsourcing)
- Rapid Prototyping
- * Q & A sites / forums / portals





Human Development

Grundtvig

Education rooted in own experiences, and discuss it with others

Anti-elitist

Collective growth



Engeström

- Borrows a lot from Vygotsky's Cultural-Historical and Leontiev's Activity Theory
- Constant artifact [model] reconstruction
- Change occurs at different levels and times
- Methodological structure
- <u>FROM</u> an analysis of the activity
- <u>TO</u> a final new instrument into the organization
- Zone of proximal development
- **OUTSIDE** of current skill level and cognitive conception, there is a zone within which the person is capable of learning and is motivated to learn.





Human Development

Grundtvig

Education rooted in own experiences, and discuss it with others

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Organizational Change Management CT

Evaluation

Goals

Innovation

Processes

Observations

Analysis

Feedback / Adaptation



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Why do the processes change with scale?

What other attributes effect the design?







Human Development

Grundtvig

Education rooted in own experiences, and discuss it with others

Anti-elitist

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Engeström

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Senior













Senior





Novice \wedge \int Senior $\overset{}{\swarrow}$ $\stackrel{}{\searrow}$













Senior





- Resource acquisition and allocation
- Evaluations on user participation
- conscripted interests and analysis for conflicts and and alignments
- **Education requirements**
- Continuous system efficacy (never ending introspection)
 - Robust feedback paths
- Appropriate voting techniques to ensure different voices/ ideas are given weight and taken into consideration and implemented
- Any implemented system MUST account for differences between entities, where no entity should compare to an immutable model of perfection



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Aaron Koblin:

http://www.aaronkoblin.com/work/thesheepmarket/

Draw a left facing sheep using Amazon's Mechanical Turk



How do we enable ourselves to avoid becoming monotonous consumers, and more so [producing] participants?





Design Assessment (continued)

Everything doesn't need to be comparable by a computer intuitively

Amazon's price searching requires a department to be chosen

Lowe's compare feature can only compare 4 items

How do we assess financial motivations?

Workload / contribution balance?



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There is a desire to understand, and drilling down requires appropriate data

There is a desire to solve, and building up requires appropriate settings and adequate experience





Contribution Towards VT

Since participation is necessary, is there a minimum, ideal, or maximum? How do we screen prospective students to achieve those percentages? What are the consequences if those percentages aren't met?



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Potential Implementations
Student Government
Interdisciplinary interaction
Graduate vs undergraduate interaction
Student and Administration interactionss
Employee/Department communication

Conspicuous open data Clear results



WHAT DO YOU CALL AN ALLIGATOR IN A VEST?



INVESTIGATOR.

Virginia

Tech.



