Data Analysis, part deux

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Announcements

- Permission forms on Monday?
- Gospel insights: Loraine
    - Next: Darin
- Today: Data analysis, part deux
- Drafts of sections due to peers next Thursday, to me a week after that
- Move Reflection paper #5 and associated readings up to next time (p. 375-410)
- Report on data analysis?

Activity

- Take 5 minutes and categorize your buttons as a group!
  - What do you think is the best way to categorize them?
  - What other ways could you organize them?

"Data must be interpreted, not simply analyzed." — Fitzpatrick, Sanders, & Worthen

What is the difference?

Visualizing Data

- Can you organize your findings into a ...
  - Table?
  - Graph?
  - Figure?
  - Drawing?
- Why is this useful to readers?

Some pictures just convey the message better than words!

Table?

Table 1 Summary of conceptual change models

The model	Authors	Characteristics	
		Strengths	Weaknesses
Theory of conceptual change	Posner et al. (1982)	Identified key cognition factors contributing to conceptual change in students' learning	Lack of focus on the role of instructors in students' conceptual change learning process
Revisionist theory of conceptual change	Strike & Posner (1992)	Added affective factors (e.g., motivation) as contributing factors to students' conceptual change learning process	Still lack of focus on the role of instructors in students' conceptual change learning process
Teaching for conceptual change	Hewson et al. (1998)	Recognized the significant role of the instructor's teaching in students' conceptual change learning process	Lack of attention to the dynamic relationship between teaching and learning
Processes of change	Merenluoto and Lehtinen (2004)	Recognized the different paths that students may take based on their different cognitive, metacognitive, and motivational sensitivity to the task	Lack of attention to the impact of the instructor's teaching on the paths that students may take

Song, L.; Hannafin, M.; & Hill, J. (2007). Reconciling beliefs and practices in teaching and learning. *Educational Technology, Research, and Development.* *55*(1): 27-50.

Figure?

Community of Practice	Community of Innovation
	
Stable	Dynamic
Present	Distributed
Trajectories	Shifting roles
Learning to do	Learning by creating
Emergent	Deliberately designed
Produces practice	Produces innovations
Crystallized knowledge	Fluid knowledge
Develops competence	Promotes "flow" (learning at the edge of competence)
Asymmetric distribution of expertise	Symmetric distribution of expertise
Motivation: external, top-level	Motivation: hacker ethic
Case study: Insurance claims processors	Case study: IDEO industrial design

Ideas adapted from: Benton & Giovagnoli, 2006; Hakkarainen et al., 2004; Himanen, 2001; Wenger, 1998; and others cited in this paper.

West, R. E. (2009). What is shared? A framework for studying communities of innovation. *Educational Technology, Research, & Development, 57*(3). 315-332.

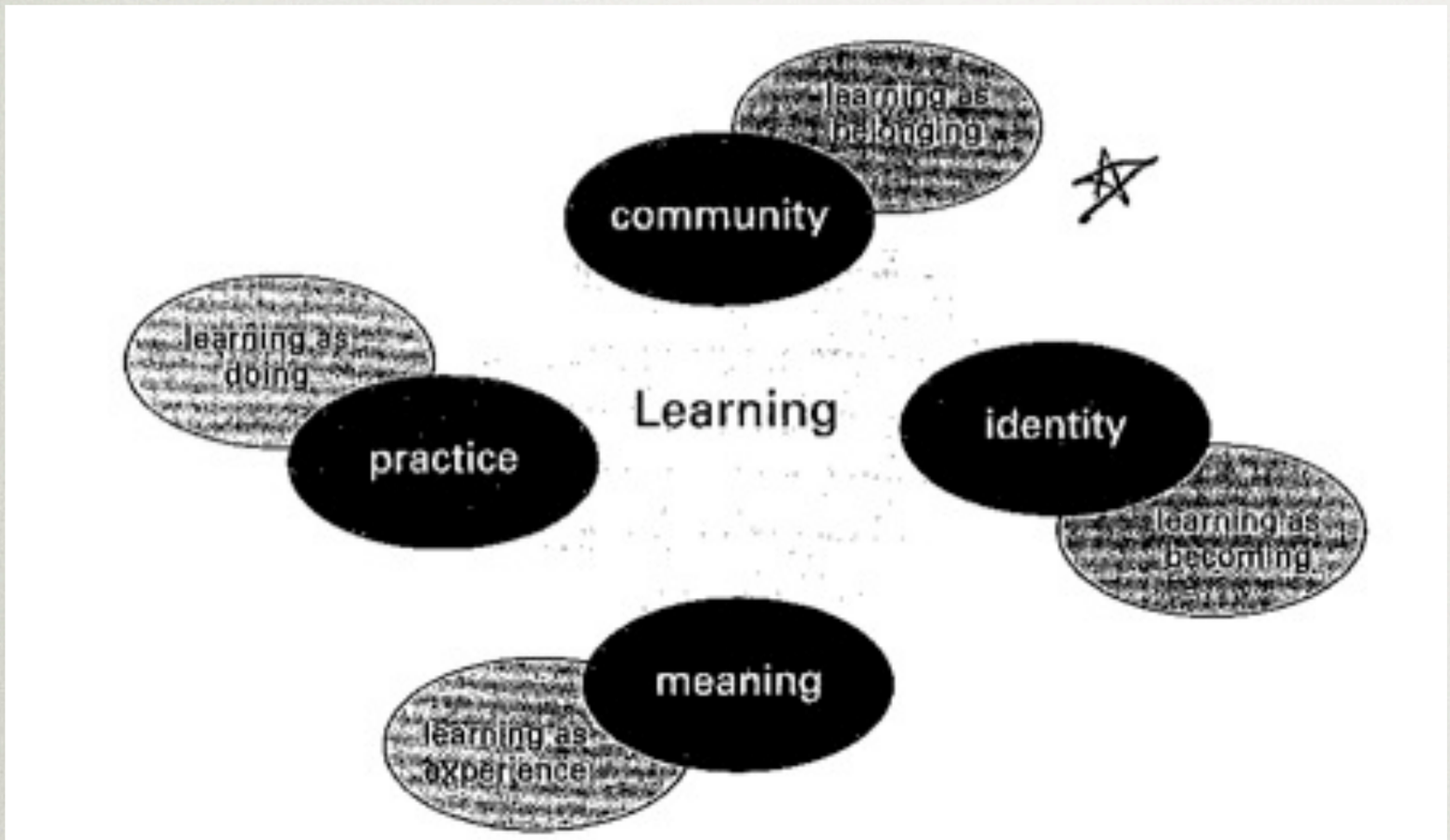
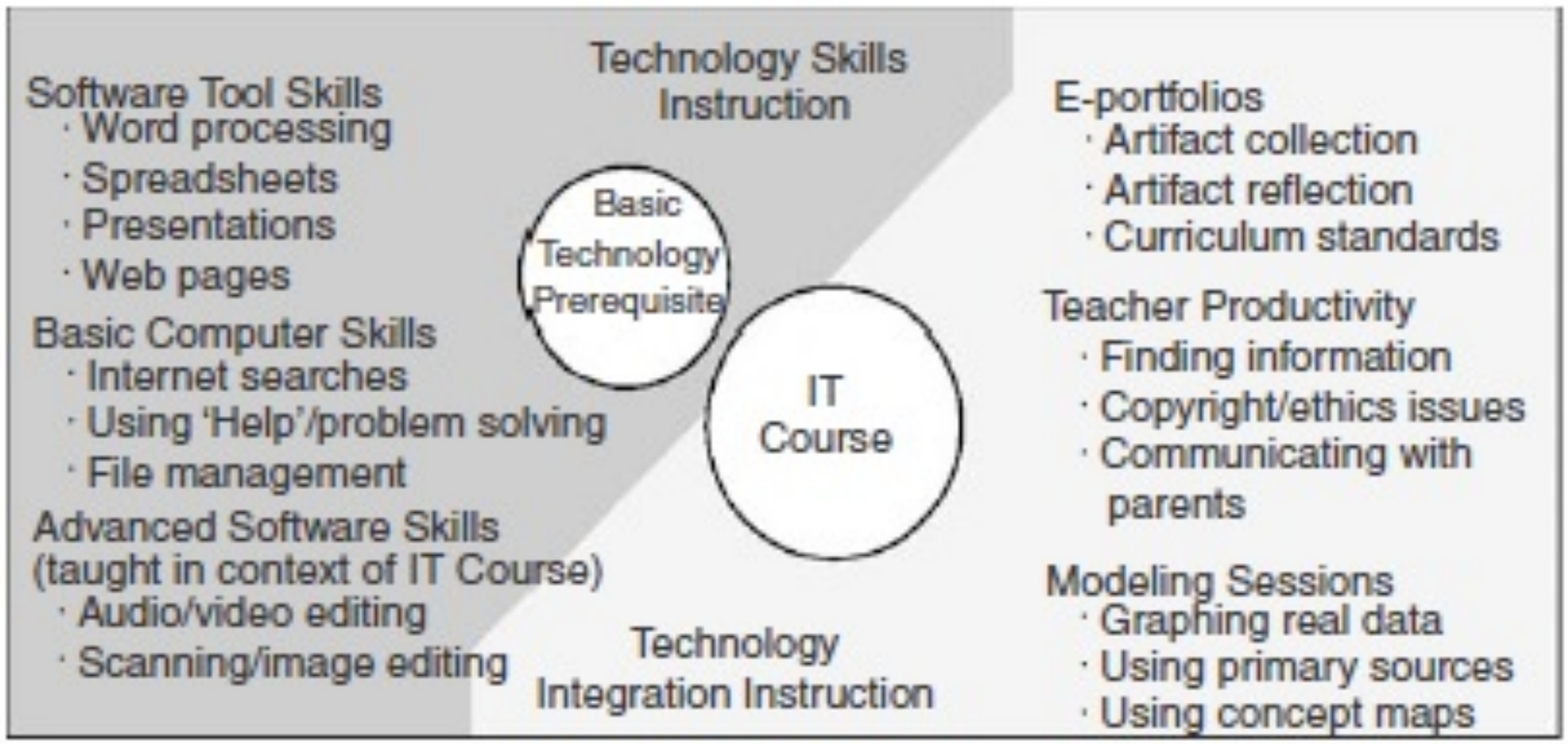


Figure 0.1. Components of a social theory of learning: an initial inventory.

Wenger, E. (1998).
Communities of Practice

FIGURE 5. The plan to implement a technology prerequisite to cover basic technology skills instruction.



Graham, C. R., Culatta, R., Pratt, M., & West, R. E. (2004). Redesigning the teacher education technology course to emphasize integration. *Computers in the Schools, 21(1/2)*, 127-148.

Drawing?

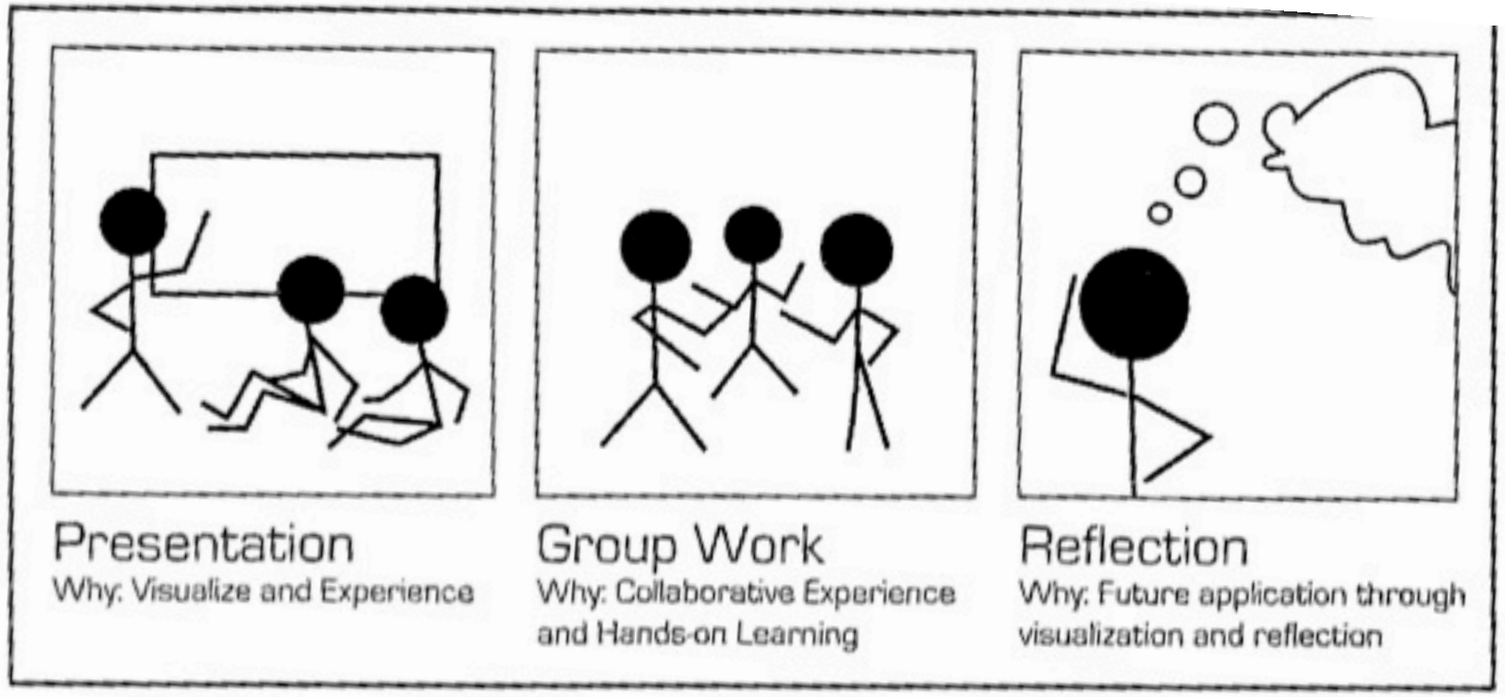


Figure 2. BYU's method for modeling technology integration includes three phases.

West, R. E. (2005). Thesis.

Preparing Budgets

Preparing Budgets

- How much time for data collection?

Preparing Budgets

- How much time for data collection?
- How much time for quantitative data analysis? Qualitative?

Preparing Budgets

- How much time for data collection?
- How much time for quantitative data analysis? Qualitative?
- How much time for writing the report?

Preparing Budgets

Preparing Budgets

- How much time for other stuff?

Preparing Budgets

- How much time for other stuff?
  - Consultations

Preparing Budgets

- How much time for other stuff?
  - Consultations
  - Presentations

Preparing Budgets

- How much time for other stuff?
  - Consultations
  - Presentations
  - Materials and tools

Preparing Budgets

- How much time for other stuff?
  - Consultations
  - Presentations
  - Materials and tools
  - Overhead

Preparing Budgets

- How much time for other stuff?
  - Consultations
  - Presentations
  - Materials and tools
  - Overhead
  - Travel

Preparing Budgets

- How much time for other stuff?
  - Consultations
  - Presentations
  - Materials and tools
  - Overhead
  - Travel
- How much per hour?

Streamlining Budgets

- Use available volunteers or internal people (pros/cons?)
- Use local specialists to reduce travel (pros/cons?)
- Train less-costly personnel (pros/cons?)
- Borrow equipment, people, materials, etc.
- Using existing measures, data, or reports
- Other ideas?

Developing Plans

- Stufflebeam's checklists:
  - www.wmich.edu/evalctr.checklists

Budget Activity

- Create a sample budget for the future evaluation proposal

Workshop

Data analysis with Jacob and Savannah. Tasks:

In groups, report data and discuss possible:

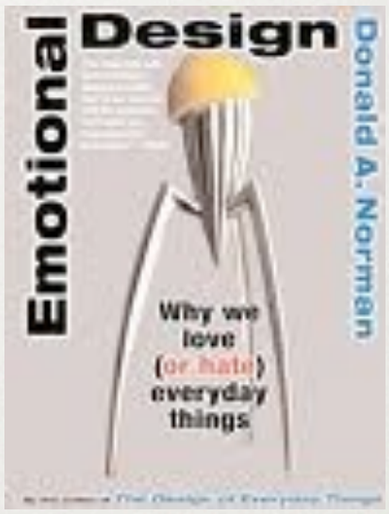
- Findings
- Conclusions
- Limitations
- Recommendations
- Future evaluations

Usability Evaluation

- Evaluation of the ability of users to actually use a product
    - Focuses on interfaces, but can also include the logical flow of the product

Fox Trot by Bill Amend

Donald Norman



- [It's not the user's fault]
- "Knowing how people will use something is essential."
- "We expert teachers know that motivation and emotional impact are what matter."

FoxTrot

by Bill Amend

www.foxtrot.com
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The "Guru" (NYT)

- Jakob Nielsen
- http://www.nngroup.com/reports/
- http://useit.com

Usability Eval Methods

- Eye tracking software
- Usability observation booths (e.g. CTL's talk aloud station)
- Heat surveys
- Observations (Where do they look? Click? Mouse?)
- Interviews (What were they expecting? Where would they expect it to be? What features would they expect? Why did you think that or look there? How does it make you feel? Which version do you prefer?)

Remember Accessibility

- Evaluate for people with disabilities

Next Steps

- Draft of all sections due in 1 week (to team members)
- On Thursday we'll discuss reporting issues

Sources

- Fitzpatrick, J. L.; Sanders, J. R.; & Worthen, B. R. (2004). *Program Evaluation: Alternative Approaches and Practical Guidelines*. Boston: Pearson Education.
- Otherwise as cited