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ABSTRACT

Teaching the Internet is hard because the technology keeps changing, the system is complex, the environment is relatively unstable, and it is hard to know how much one needs to know in order to successfully use the Internet. The Internet is a pseudo-complex knowledge domain--the "rules" vary, and it is hard to tell which are the "right" answers. A constructivist approach is applicable to learning and training Internet topics. Constructivism focuses on the learner and states that people construct knowledge based on: shaping internal mental models; using previous experience; taking into account sociological/ emotional issues; building problem solving skills; and the PPP Approach to Training Innovation--a guideline for general technology training by using the techniques of personification, personalization, and "psyching out" problems (PPP). Each technique of the PPP Approach to Training Innovation is explained, and examples are provided. The PPP approach is not a panacea--instructors need to know what it is they are teaching;they must be able to get that across to users; and they have to rely on their experience or hard work to incorporate it all in a training session. (SWC)

Teaching the Net:
Innovative Techniques in Internet Training

Presented at the
11th Annual Computers in Libraries Conference
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Teaching the Net:
Innovative Techniques in Internet Training

Teaching Internet is hard!!

- The technology keeps changing...
  - Not only are there new applications all the time (Java, ShockWave, PUSH), but the versions of tools keep changing (Beta, Ver. 3.1.1, etc.)
- The system is complex...
  - There is no one standard or set of rules, no one "governing body"—this is both the strength AND the weakness of the Internet
- The environment is relatively unstable...
  - Computer hardware rarely keeps up with applications, and presently bandwidth causes lags, delays, and disconnects. And because ANYBODY can and will put programs on the Internet, in many ways it is like "shareware."
- It is hard to tell how much you should know...
  - People often say, "You don't have to know THAT much about car technology to drive it, so why should you have to know about Internet technology?"

You need to know because the Internet is a pseudo-complex Knowledge Domain:

- Simple Domains
  - Basic rules apply, "one right answer"
  - Such as in Math or Physics...
- Complex Domains
  - Several rules to choose from, interpretative and situational answers
  - Such as in Medicine or Law...
- Pseudo-Complex Domains
  - Rules themselves vary, hard to tell what a "right" answer is...
  - Such is the Internet!

Use a constructivist approach (from educational theory) to learning and training

- Constructivism focuses on the learner and states that people construct knowledge based on:
  - Shaping internal mental models, the tools people use to figure out the world around them (e.g., "How many minutes in a year?" is a problem solved with a math mental model)
  - Using experience to "make it connect"—something relevant is more understandable
  - Taking into account sociological/emotional issues—learning technology can be very frustrating for some people!
  - Building problem solving skills—give exercises that ensure problems will be encountered

techman's "PPP" Approach to Training Innovation—a simplistic guideline for general technology training to make training "connect" for the end user by trying to include these three techniques

- Personify
  - Create a visualization for users, which helps transfer concepts, shape mental models
- Personalize
  - Relate directly to users' environment to help facilitate experiential learning & take into account sociological/emotional factors
- "Psych out" problems
  - Create situations which accelerate problem-solving skills

Personify

- Explain features/functions as if they were individuals or entities
- Give them "human" characteristics to make them more easily understandable
- Relate technology as activities, not just abstract "things"

Personalize

- Find out what users' environment is like
- Use real examples from day-to-day work and living
- Connect it to real people and events from the users' world

Psych out problems

- Observe user in her/his environment
- Identify possible problem areas
- Anticipate solutions to problems
- (And remember, if you had a problem with it, other people may encounter the same!)

Example: Betty Browser & Sam Server

- Describe the interaction between browsers and servers as a relationship between two entities; one makes requests, the other fills them...
- By focusing on activities, participants are less likely to get bogged down in details (unless that is your objective!)
- Participants are more likely to remember activities to which they can relate
- Describing an activity helps allow participants to experience vicariously

Personifying Browser/Server

- Making the system seem human-like helps to generalize the concepts for understanding
- Generalized concepts are more likely to link to internal mental models
- Individual components (browser and server) are seen in terms of their relationship, not as isolated pieces of some abstract technology

Personalizing Browser/Server by using examples from users' environment:

"Let's say the server is like Pat in your administration department, and you send Pat a request to get an order filled."

"What if Chris, the department head, uses a text-based browser instead of a graphic one?"

"Remember, sometimes the server has so many demands it can't fill them all. Kind of like your software support team in the home office...."

Psyching Out Browser/Server

Depending on the level of comfort and/or competence of users, it can be helpful to identify common server problems

If different environments or setups are used (text vs. graphic browser, or modem vs. T1 line, etc.), try to contrast them

Propose solutions in general terms—don't just give them a fish, get them thinking about making their own fishing poles!

PPP is not a panacea...

You have to know what it is you're teaching

Understand how to get that across to users

Rely on your experience or hard work to put it all together in a training session

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