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
Washington D.C. February 27, 1996

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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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