New Employee Technical Orientation (NETO)

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In partnership with the IT Learning Group, Cisco Systems, Inc.
Introduction

Site Description

• Cisco Systems, Inc.
  • 30,000 employees worldwide
  • Networking company

• Employees
  • Contractors, vendors, acquisitions, full-time employees

• Expectations of employees
  • Rapid assimilation with New Hire Orientation
  • Productive team member
  • Efficient use of technology
Needs Analysis

Users
• New employees to Cisco

Observation Study
• Compared novices to experts and TRC analysts
• Determined breakdowns in novice thinking and use of networked tools
• Found need for novices to acquire strategic knowledge
Needs Analysis

Content Analysis
- Compiled comprehensive topics list
- Categorized and ranked topics
- Finalized topics

Web-based Resources
- Multimedia tutorials
- VoD
- Websites
  - TRC/ITS Library
  - Survival Guide for the Computing Environment
New employees at Cisco Systems are expected to learn and utilize specific technologies to improve workflow and enhance teamwork.
Types of offerings

- Instructor led
- Web-based
  - Examples: Multimedia tutorials, VoD

Characteristics of instruction

- Information pointing
- Knowledge application disconnects
- Linear learning pathways
Ideologies to Ground Learning
- Elliot Eisner – Religious Orthodoxy
- John Dewey – Learning continuum

Curriculum Design Strategy
- Wiggins and McTighe – Backwards design
User Testing Findings

Round 1
• Scenarios were unclear
• Users were unfamiliar with some vocabulary
• Pre-test could be a self-assessment

Round 2
• Scenarios needed more clarity and detail
• Needs to be a shortcut to the punch line
• Change tone and expectations of self-assessment
• Users needed additional forms of interaction

Round 3
• Individual user feedback needs to be responsive
• Opportunities for user to add own ideas
• Framing needed to change expectation of training
**Key features**

- Asynchronous web delivery
- Modular training
- User control over
  - Where to begin
  - Where to end
  - Rate of progression
  - Degree of assistance and feedback
- Information Mapping (Horn, Clark)
  - Chunking information
**NETO Prototype**

**Pedagogy**
- Introductory framework shifts expectation of learning experience
- Self-assessment drives motivation and empathy for learning need
- Scenario driven
- Scaffolding with framing questions
- Comparison to “expert” solutions
Introductory framework shifts expectation of learning experience

Andragogy (Knowles)
• Adults need to know why they need to learn something
• Adults learn best when the topic is of immediate value
Self-assessment drives motivation and empathy for learning need

Self-Efficacy (Bandura)
- Users learn by observing others
- Learners assess their own capabilities to make choices about their decisions

Self-Regulation (Shin)
- User taking control of learning; being an active participant in learning process
- Strategic knowledge, self-efficacy, ownership, mastery orientation, self-reflection
Scenarios

Andragogy (Knowles)
• Adults approach learning as problem-solving

Anchored Instruction (Bransford and CTGV)
• Learning and teaching activities should be designed around an “anchor”, a case study or problem situation

Problem-based learning (Schank)
• Using events, cases, problems or scenarios to situate learning.
Comparison to “expert” solutions
Scaffolding with framing questions

Cognitive Apprenticeship (Collins, Brown, and Holum)
• Identify the processes involved in doing the task
• Situate tasks in authentic contexts
• Vary the diversity of the situations
Remaining Issues and Questions

**Learner**

- Shift the attitude and expectation of the learner
  - Encouraging mindfulness, reflection
- Transfer question
- Motivate by quantifying time saved

**Learning Environment**

- Disconnect between learning conditions and content
  - Solitary activity teach about group dynamics and responsibility

**Limitations in Technology**

- Ways to interact and problems that can be posed
- Non-responsive feedback
Suggestions for Next Iteration

**Modifications on Existing Prototype**
- Inclusion of Video
  - More detail possible in scenarios
  - Opportunity for learners to engage in more active cognitive process
- Revise introduction – stronger message to shift “training” mindset
- Transfer questions
- Additional scenarios

**Delivery and Implementation**
- Consider incorporating group learning activity
- Re-evaluate tradeoffs of technology
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