Collaborative Learning-Work

Pacific Telecommunication Council Conference

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The views expressed in this presentation are those of the presenter and are not those of Digital Equipment Corporation.

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Abstract

Many of us have already accepted the concept that life long learning is a regular job responsible. I would like to propose the idea that for many learning is the "work." As we engage,for example, in creating solutions to novel problems, designing new software packages, or telling someone about a new trend discovered from marketing date, we are essentially engaging in learning and more and more frequently we are learning-working in collaboration with others. This form of work requires new job definitions and tools for support.
In this presentation, I first develop the concept of learning-work. In terms of a basic communication model, I explain how,through collaborative team effort, individuals pool their individual knowledge, learn from each other, and express that learning in the form of a product such as a system design, market research strategy, software code or any other product. In essence, the job of many professionals is learning and communication of what they have learned to others. This is a new conceptualization of work and learning.

Collaborative learning-work involves utilization of induction, synthesis, and dialog more often than deduction, analysis, and one way information transmission.

Many facets of learning-work can be augmented in an electronic environment. In the second part of the presentation, I discuss computer support tools for collaborative learning-work. Within the framework of collaboration, I discuss features of software that can aid the learning-worker in both the intra-personal and interpersonal processes performed as part of learning-work. I discuss recent software developments in order to highlight specific features which might be used to facilitate collaborative learning-work. I focus both on intra-personal support tools such as personal construct display systems, hyperinformation systems, simulation creation tools,and then I focus on groupware for local and wide area networking environments.

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Introduction

Groups at different sites are learn-working together to design new products.

There is a migration to new forms of telework.

- group rather than individual focus
- induction, synthesis and dialog rather than deduction analysis and one-way transmission
- not co-located with peers, management, or factory

Learning is work and work is learning.

Increasing global competition demands new forms of work.

"In today's global competition, we see successful organizations, large or small, as more distributed and less hierarchical. Information needs to be placed in the hands of the individual,and be available simultaneously across the enterprise....By providing solutions at the user level and interconnecting systems in a multivendor environment-from workstations through departmental systems to globally distributed transaction processing networks-we help our customers become more competitive than ever before." Kenneth H. Olsen, President, Digital Equipment Corp.

Overview of Presentation

In this presentation, I will discuss the following:

- Trends influencing changes in work
- The concept of collaborative learning-work
- Key features of human interaction and person-machine interaction

The changing nature of work

- The processes are changing-the human value added is not in muscle power but learning ability
- The technology-telecommunications and computers- to support work is changing
- Jobs require more collaboration-as knowledge becomes more specialized, solutions require interdependent experts
- Nature and function of management is changing

Collaborative learning-work

The concept

- Definition of CLW- processes, methodologies, and environments
  - Interdependent individuals
  - Accountable to each other
  - Shared mission
- Goal of CLW-creation of mutual knowledge structure
  - Derived from group consensus
  - Involves symbolic interaction
  - Product is message, "artifact" of group knowledge
- Requires Purposeful Communication
  - Context
  - Intra-personal
  - Interpersonal
  - Feedback

Human Interaction

- Creating the human context
  - Need for context building
  - Trust and trustworthy messages
- Intra-personal interaction
  - Encouraging forumulation of ideas
  - Encouraging representation of ideas
- Interpersonal interaction (Dr. Mildred Shaw):
  - Relationship of points of view
  - Differing terminology for the same construct
  - Extending one's own construct systems
  - Sharing useful constructs with others
  - Facilitating areas of disagreement or agreement
- Feedback
  - Shared responsibility
  - Feedback about group process

Person-machine Interaction

- Context, e.g. MIT Project Athena Multi-media workstation
  - Windowed workstation environment
  - Distributed network
  - Two-way audio and video communication
  - Multivendor open connect standards
- Intra-personal Support software
  - Personal Construct-Dr. Mildred Shaw
  - Hypertext, e.g. Apple Hypercard (TM)
  - Agenda(TM), Lotus Development Corp.
  - Graphic interface for drawing pictures
- Interpersonal Support software -groupware
  - "Software that will enable people to collaborate across barriers of space and time...Louis Richman, FORTUNE, June 1987.

Meeting facilitation tools-GIBIS at MCC

Hypermedia system-Intermedia at Brown University

- Feedback

  Consensus, voting and rating scales, E.I.E.S.(TM) New Jersey Institute of Technology
  Annotation software, e.g.For Comment(TM), Broderbund Software

Conclusion

A collaborative learning-work environment is one promising response to the demands of global competition in the new age of connectivity. In this new age, the human value- added is in the ability to learn-work quickly and constantly in the face of rapid change.

Summary of key concepts

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