Learner-centered Instructional Design and Development: Two Examples of Success

A presentation prepared for the APRU 4th DLI Conference, Singapore: November 30th to December 2nd 2003

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Meta-Study of Distance Education Completion Rates

- Distance students learn as much as conventional students
- Correspondence students are much more likely to drop out before completing their courses
- Dropout rates range from 19 to 90%
- An overall rate of 40%
- Studies of this magnitude have yet to be conducted for technology-based distance learning
- Limited research to date suggests interactivity and novelty may contribute to higher completion rates


Trends 2003: Progress towards the European Higher Education Area

- New focus on learners’ needs
- A paradigmatic shift from teaching to learning
- The needs and aspirations of the students should constitute the driving principle in the higher education

European University Association – July 2003
A Comparison of Perspectives

Domain-Centered Design for Computer-Mediated Learning

- Prerequisite knowledge
- Focus of design work is on content to be developed
- The content of the discipline

Gifford and Enyedy (1999)

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Learner-Centered Design for Computer-Mediated Learning

- Who are the learners? And what do they need to know?
- Focus of design work is on learners’ needs
- How will learners benefit from learning?

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Basic Principles of LCD

- **Learnability**
  - The initial difficulty in learning how to use an a computer-mediated learning environment

- **Usability**
  - Ease of use over time

- **Understandability**
  - Meeting the content needs of the learner in order to ensure that information-seeking requirements, performance goals, and level of familiarity with topics encountered are accommodated

  
  Reeves (1999)

  “Promote a shared understanding of intentions and permit coordinated action... for the mutual benefit of learners and their teachers.”

  Goodyear (1999)

LCD Principles Applied to Instructional Design (ID)

- Designing computer-mediated learning environments as information fields

  - An information field (Reeves, 1999):
    - Reduces complexity
    - Focuses on reducing cognitive load
    - Supports learners within a cognitive framework

  “To design is ... to add value and meaning to illuminate, to simplify, to clarify.”

  Paul Rand

Information Field Design (IFD)

- Distribution of Cognitive Load

  Human User
  - Tool-centered
  - User-centered
  - Learner-centered

  Designed Object

  Reeves (1999)

  University of Saskatchewan - Extension Division
IFD Applied to Interface Design

- Cognitive framework that systematically connects a virtual learning environment to the learners
  - Familiarity with delivery platform
  - Help screens that are informative and appropriate for specific problems
  - Intuitive navigation
  - Flexible – interface can cope with unexpected choices
  - Metaphors – Do they translate?
  - Semantic density – Is it right?

LCD – After the Interface...

Taking a learner-centered stance “forces designers to conceptualize the development process from the learners’ perspective rather than that of the content.”

Sims (2001)

LCD inside ADDIE – I

- Demographics
- Comfort with and access to technology
- Learning styles and preferences
- Comfort with the language of instruction
- Competing responsibilities
- Academic self-concept
- Achievement expectancies
- Perceptions of authority

Learner-centered Task Analysis

- Again, what do your learners already know?
- What do they need to know?
- How big is the gap?
- How are you going to connect your learners’ prior knowledge to new knowledge?
- How are you going to chunk the information that exists inside the gap?
- What tools are provided to learners so that they can monitor and improve their learning?
- How will you demonstrate the benefit of successful learning to them?


“Instructional designers must interact with the people for whom they design.”
Thomas, Mitchell, & Joseph (2002)

“End users—the ‘consumers’ of the instructional ‘product’ should contribute directly to the project’s design and development.”


In an e-learning environment, “you have to interact with students on an individual level.”
Barclay (2001)

Learners “don’t care how much you know until they know how much you care.”
Weston & Amundsen (2001)

Foster an environment that allows learners “to learn from course materials, the instructor, and each other.”
Collins & Berge (1996)
A Comparison of Two Success Stories

- COL - Writing Effectively for UNHCR – English version
  - Project Sponsor: Commonwealth of Learning
  - Instructional Designer: Dr. David Murphy
  - Writer: Maree Bentley
    - My role: One of several course tutors

- U of S - Designing Materials for Individualized Instruction
  - Project Sponsor: University of Saskatchewan
  - Primary Instructional Designer: Dr. Richard Schwier
  - Student-Assistant Designers: Ruth and Thelma Cey
  - Writer: Dr. Richard Schwier
  - Instructor: Dr. Richard Schwier
    - My role: Instructional Designer-
      “Trouble-maker”

Define Success...for the COL UNHCR Course

ODLAA (2001) Award for Excellence in Development and Delivery of Distance Education and Open Learning Programs to the Commonwealth of Learning

“Writing Effectively for UNHCR demonstrates a commitment to excellence that is amply reflected in the final product. The overall high quality represents the convergence of a range of attributes, the most notable of these being:

- An in-depth understanding of the target group and its needs
- Sound background research
- Attention to the appropriateness of learning strategies and media.

Open and Distance Learning Association of Australia (ODLAA)
Define Success for the COL UNHCR Course

- 2003 - Award of Excellence in International Collaboration, Writing Effectively for UNHCR - Canadian Association of Distance Education (CADE)

- Project is relevant and contributes to the practice of open and distance education.
- Project goals honor each participating partner’s values and objectives.
- Implementation demonstrates respect of partner’s values and objectives.
- Project goals are sensitive to cultural diversity and transcultural issues.
- Benefits are demonstrated in terms of ideas exchange and development of new approaches to learning and communication in open and distance education.
- Evidence of the project’s sustainability is provided.

Writing Effectively for UNHCR—A Few Statistics

Enrolment in the English version of the course
2000 - 300 UNHCR staff in over 70 countries
2000 to 2002 total - 707 participants

Range of successful completion rates across all cohorts: 74% to 84%

Consistently high ratings by participants of course materials, relevance & level of difficulty of assignments, as well as quality of tutor support

High degree of satisfaction reported by course tutors

Sample of participant feedback

Chart provided by the Commonwealth of Learning
LCD in Writing Effectively for UHHCR

Learner Profiles
- Employees often stationed in remote, isolated field offices
- Often, low-bandwidth access to email; sometimes, no access to the WWW
- Significantly demanding workloads
- Duties subject to sudden change
- Learning goals are work-related
- Wide range of existing skills in written English
- Wide range of educational backgrounds

LCD Features
- Low-tech approach
- Limits to file sizes, WWW resources available, but optional
- Flexible learner-defined schedules
- Extensions available
- Dual track – learner choice
- Assignments are work-related
- Up to three submissions
- "Just-in-time" coaching for learners
- Detailed, frequent feedback from learners
- Feedback from tutors and discussions among tutors

Define Success...for the U of S

A pilot version of Designing Materials for Individualized Instruction was shown at the Gwenna Moss Teaching and Learning Centre’s Summer 2002 professional seminar on Best-practices in Technology Enhanced Learning.
- The Educational Communications Department at the University of Saskatchewan has adopted this model as a standard for delivery of Web-based courses.
- Other departments have expressed interest in its design approach.

Designing Materials for Individualized Instruction: A Few Statistics...

2002 Enrolment
- 13 graduate students
- 92% completion rate
- 92% success rate

Consistently high ratings of course materials:
- Audio/video lectures
- PowerPoint slides
- Print materials

High degree of overall student satisfaction with design & delivery choices

Very high (100%) satisfaction rates on instructor support & feedback on assignments
LCD at the U of S: Designing Materials for Individualized Instruction

- **Learner Profiles**
  - Professional educators: 67%
  - Full-time graduate students: 13%
  - Rural – Primarily Distance Only: 50%
  - Urban – Primarily In-class Attendance: 50%
  - Ad hoc Mixed Option – Distance/In-class: 33%
  - ~100% access to high bandwidth connections to the WWW
  - Learner needs: Skill in designing instruction – career goal
  - Varied backgrounds in graduate-level study – 75% < 9 credit units

- **LCD Features**
  - Flexible attendance
  - Relatively high tech
  - Applied project – relevant to learners’ career goals
  - Iterative student-based course evaluations and updates
  - Student-designer involvement in course development
  - Self-monitoring tools
  - “Just-in-time” coaching
  - Rich resource base of both Web-based and print materials

How are these LCD examples different?

- **Writing Effectively**
  - Low tech
  - No f2f contact
  - No expected access to the WWW
  - Flexible assignment schedule
  - Student-design involvement limited to frequent, detailed course evaluation
  - Widely varied initial knowledge & skill level of students
  - Little or no opportunity for collaboration
  - No computer conferencing

- **Designing Materials**
  - Relatively high tech
  - Optional f2f contact
  - Flexible attendance, but fixed assignment dates
  - High program entry expectations / homogeneous skills
  - Participatory student-design involvement
  - Multiple opportunities for computer conferencing and collaboration

How are these LCD examples alike?

- Interfaces and instructional features were designed to fit the learners’ needs.
- Content was analyzed to bring to the fore learning strategies that matched learner profiles, as well as instructional goals.
- At the end of the day...
  - Learners were successful.
  - Instructors & designers felt that their efforts had been rewarded.
Thanks so much for your time...


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