INSTRUCTIONAL DESIGN DRIVEN INNOVATIONS IN CAPACITY DEVELOPMENT

ADDRESSING THE CAPACITY NEEDS OF (TODAY AND) TOMORROW’S RESEARCHERS TO MEET THE CHALLENGES AND OPPORTUNITIES OF FUTURE SCIENCE.

Iddo Dror,
Head of Capacity Development, ILRI
Chair, CGIAR Capacity Development Community of Practice
What is Instructional Design?

In short, instructional design is the systematic process by which instructional materials are designed, developed, and delivered.

Note on terminology: The terms instructional design, instructional technology, educational technology, curriculum design, and instructional systems design (ISD), are often used interchangeably.
In other words...

• An organization has a mission

• People working for / with organization must perform certain tasks to achieve it

• Sometimes individuals lack skills, knowledge or attitudes to effectively perform tasks

• Instructional designers apply systematic approach to helping learners acquire and retain new skills, knowledge and attitudes
Or for the more visually inclined...
Who does it?

In theory...

Corporate trainers

Instructional designers

For-profit educators

Content developers

Librarians

Teachers

Professors

Distance educators
Who does it?

In practice...
What does it do?
Instructional Designers

An instructional designer works with subject matter experts, trainers and e-Learning developers to create:

- Logically sequenced curriculum that introduce skills and concepts in an accessible, step-by-step manner
- Activities that offer relevant practice
- Assessments that truly gauge learners’ mastery of subject
- Insightful, memorable anecdotes and case studies
- An engaging experience for learners delivered through the most appropriate methods / channels
What is this based on?
Mumbo-jumbo, pseudoscience piece of fluff... or?

As a field, instructional design is historically and traditionally rooted in cognitive and behavioral psychology, though recently Constructivism (learning theory) has influenced thinking in the field.

50+ Theories of Learning
wwwinstructionaldesign.org/theories/

- ACT (Anderson)
- Adult Learning Theory (Cross)
- Aigo-Heuristic Theory (Landa)
- Andragogy (Knowles)
- Anchored Instruction
- (Bransford-CTGV)
- Aptitude-Treatment Interaction (Cronbach & Snow)
- Attribution Theory (Weiner)
- Cognitive Dissonance (Festinger)
- Cognitive Flexibility (Spiro)
- Cognitive Load Theory (Sweller)
- Component Display (Merrill)
- Conditions of Learning (Gagne)
- Connectionism (Thornclike)
- Constructivist Theory (Bruner)
- Contiguity Theory (Guthrie)
- Conversation Theory (Pask)
- Criterion Referenced Instruction (Mager)
- Double Loop Learning (Argyris)
- Drive Reduction Theory (Hull)
- Dual Coding Theory (Pavio)
- Elaboration Theory (Regeluth)
- Experiential Learning (Rogers)
- Functional Context (Sticht)
- Genetic Epistemology (Piaget)
- Gestalt Theory (Wertheimer)
- GOMS (Card, Moran & Newell)
- GPS (Newell & Simon)
Do you have an example ‘closer to home’?

Why yes...

Thank you for asking :)
Placing Instructional Design in the broader CGIAR context:

• Capacity development is recognized as a crucial and strategic enabler in the journey from research outputs to development outcomes.

• The CGIAR CapDev Framework takes a broad, holistic approach, with nine elements defined, of which one on: “Design and delivery of innovative learning materials and approaches”.

• This includes:
  – Content development
  – Adult learning theory and instructional design
  – Harnessing technology for CapDev initiatives
The ‘FEAST’ example

Instructional design and blended Learning to extend the reach of a research product for impact at scale:
Reflections from the FEAST tool

Iddo Dror (ILRI) and Emil Heidkamp (Sonata Learning)
FEAST e-Learning Materials Launch
Addis Ababa, 22 May 2015

Full presentation available from: http://www.slideshare.net/ILRI/feast-elaunch-iddoemilmay2015
The Goal and Approach

• The goal was to improve the classroom experience and extend the reach of the training program while lessening the logistical burden on ILRI scientists.

• ToR developed and a instructional design firm contracted to help execute the work, as little instructional design capacity at ILRI at the time.

• From the start, it was clear that a blended learning approach combining classroom training with online learning was the most appropriate solution.
What we focused on...

**Research Skills**
Class participants will learn to collect better data by:
- Applying proven techniques for leading productive focus group discussions
- Developing interview skills to gather more complete data from farmers
- Using the interview / discussion guides included in the FEAST Tool

**Report Writing Skills**
Course features activities to help learners:
- Recognize good writing / well-organized reports
- Present findings with appropriate supporting data, graphs, etc.
- Clearly explain recommendations for livestock feed interventions and why they should work in local context

**Computer & Data Analysis Skills**
Participants will receive hands-on practice using the FEAST Data Template to:
- Track and analyze data collected from farmers
- Calculate key metrics for feed availability, animal nutrition, farmer income & economic factors
- Produce graphs to support findings & recommendations in reports

**Instructional Design Matters!**
Instructional Design enabled the project to:
- Revise and expand classroom instruction
- Adapt course for online delivery
- Develop hands-on classroom and eLearning activities
- Design new FEAST forms and reference guides
- Work carried out in partnership with Sonata Learning, a firm specialized in learning development.
What the end result looks like

### Instructional design and appropriate learning technologies - outcomes
- Began with analyzing desired mission outcomes
- Aligned learning objectives with mission
- Redesigned classroom materials applying adult learning theory
- Over 400 slides, 12 lessons, standardized lesson plans / scripts

### Redesigned Forms & Job Aids
- Redesigned data collection forms to include tips for facilitators, recommended follow-up questions and overview of FEAST process for reference in the field

### Improved materials: Presentations, FGD guide and Questionnaire

#### Self-Guided e-Learning Course
- 12 lessons
- 60 videos (3+ hours)
- 5 interactive scenarios related to key skills
- Over 200 review and assessment questions
  - Multiple selection
  - Drag / drop
  - Hotspot
  - Word bank

#### Improved materials: Presentations, FGD guide and Questionnaire

#### Blended Experience
- Use of e-Learning in classroom
- Rich interactive activities
- Standard video presentations for software tutorials
- Computer-based assessments and results tracking
Why should we care?

How is this relevant to “Keeping science relevant and future--focused”

• To ‘walk the R4D talk’ we need our science to entice and fulfill diverse audiences

• A pathway “from research to impact” needs a focus on behavioral change - instructional design can play a big part in making this happen.

• Many researchers will need to learn (at least the basics) of this field to remain relevant in a future of ‘on demand’ learning environments

• More investments are needed in ‘experts / facilitators’ at the organizational levels.
Thank you for your attention!

Questions?

For more info contact i.dror@cgiar.org