Learning Networks for Lifelong Learning

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Content

Model and Simulation of a LN: preventing dropout by using indirect social interaction (see handout)
Learning Networks for Lifelong Learning

A learning network is a group of persons who create, share, support and study learning resources ('units of learning') in a specific knowledge domain.
LN Graph with a learner track
Patterns of Collective Tracks Emerge
use case

Learning Network

- create (sub-)LN
- search AN
- get/access AN
- study AN
- CRU AN
- feedback
- communicate collaborate
- perform support activities
- CRU learning dossier
- training
- enrollment
- plan learning route
- (dis-)aggregate
- CRU UOL
- run UOL
- log tracks
- monitor emergent properties
- CRU learning resource
- manage, change & apply policies
- LN objective & values
- membership access & role change policies
- terms of use
- information promotion
- manage & apply usability
- learner positioning
- analyse usage patterns
- reward
- standards & quality
Three Core Issues in a Learning Network

1. How to **make & use** pedagogical well designed, interoperable and reusable units of learning in the LN?

2. How to **position** learners in a LN?

3. How to help learners to **navigate** in the LN?
Navigation questions within LNs

I want to know something more about topic X, is there an adequate unit of learning available?
Netlogo Simulation of a LN

- Multi-agent simulation environment for research
- See Draft publication in handouts
Learners + Units of Learning in a LN
One of the Experiments with the Simulation

- Problem: what is the effect of indirect navigational feedback on study success (number of students that attained objective)?

- $2^4$ factorial design:
  - pheromone (feedback) strength (0 or 100%)
  - matching error (0 or 100%)
  - disturbance in learner environment (0 or 100%)
  - quality of the unit of learning (0-100% or 100%)

- N=12 replications in every condition

- Every replication runs 260 simulation weeks (5 years). In total 49920 week cycles (runs about 10 hours on fast computer)
Interaction Pher * Matching-error
best versus worst case

no matching error, 100% quality and no disturbance ($F = 0.7816$)

100% matching error, 0% quality and 100% disturbance ($F < .0001$)
Outcome

- Overall influence Pheromones: 9% increase in proportion of students who attained their objective
- Matching-errors are compensated by pheromones
- Some quality variance is compensated by pheromones
Publication

• see: http://dspace.ou.nl

Title:

Increasing Learner Retention Using Indirect Social Interaction in a Simulated Learning Network