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TEL context

Spectrum of Learning

Formal
You go where the bus goes.

Informal
You go where you choose.

Formal learning

- are learning offers from educational institutions.
- is imbedded into a curriculum or syllabus framework.
- is highly structured.
- leads to a specific accreditation.
- involves domain experts to guarantee quality.

Figure by: Cross, J. (2006)
Formal learning = structured

Generic layers within a simplified architecture of an educational AEH (Karampiperis & Sampson, 2005)
Informal learning

- content is provide from different sources.
- happens outside formal educational settings (e.g. related to work or leisure time.
- is less structured (in terms of learning goals, study time or learning support).
- does not lead to a certain accreditation.

Figure by: Cross, J. (2006)
Informal learning = emergence
Context variables

Formal learning
- Curriculum (Closed-Corpus)
- Teacher directed
- Predefined learning resources, learning goals
- Maintenance

Informal learning
- Learning resources from different providers (Open-Corpus)
- More self-directed learning goals
- Responsible for own learning pace / path
- Lack of maintenance
Recommendation approaches

Formal and Informal Learning

Learning settings, environmental conditions and the task greatly affect the design of recommender systems in TEL.
Formal recommendation approach

Adaptive Sequencing (top-down)

Learning Goal Layer

Conceptual Layer

Content Layer
Informal recommendation approach

Hierarchical clustering (bottom-up)

Clustering Layer n

Clustering Layer 1..n

Content Layer
Research question

How can we get the best out of both worlds?
A solution for formal learning

Peer Reviews

For more pearls of wisdom from your peers, read reviews! Each review contains the reviewer's personal rating, grade, term and year the class was taken, the lecturer who taught the class, as well as the reviewer's comments. This information allows you to read the reviewer's comments with perspective. In addition, you can selectively read the comments that pertain to your lecturer or see the most-agreed with comments.
A solution for informal learning

• 100 user (hopefully some more after today 😊)
• 20000 Web 2.0 items (increasing every hour)
• 700 ratings in the data base
• 10000 tags in the data base
Version 1.0

DUINE Prediction Engine

Database of Items

User Interface

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STELLAR - Alpine rendez-vous workshop on context-aware recommendation 2009, Garmisch-Partenkirchen, DE

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How does it work?

Cold-Start = Tag-based recommendation

Collaborative Filtering with ratings
Learner profile

Delicious username: 
Flickr username: 
Blog Rss feed of blog: 
Slideshare username: 
Youtube username: 
Twitter username: 

It is mandatory to specify at least one Web 2.0 service.
If you specify more than one Web 2.0 service we can predict better recommendations for you.

Interest A: technology enhanced learning
Knowledge Level A: 0 1 2 3 4 5

Please specify three main interests and your knowledge level in the particular interest.

0 = Beginner 5 = Expert

Interest B: language learning
Knowledge Level B: language learning

Interest C: 
Knowledge Level C: 0 1 2 3 4 5

How can we match the context of learners?
Conclusions

Fed by bottom-up approach

How to combine?

Fed by top-down approach

Delicious username: 
Flickr username: 
Blog Rss feed of blog: 
Slideshare username: 
Youtube username: 
Twitter username: 

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Future R&D

**End-user Level**
- More Web 2.0 services
- Widget / Portlet interface
- Administration interface

**Researcher Level**
- Data sets for TEL (Including resources and learner data)
- New recommendation approaches (tag-based algorithms, hybrid approaches)
- Combine top-down and bottom-up approaches
Many thanks for your interest!

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