

ISIS

Individualized Support In Sequencing

OpenUniversiteitNederland

Hans Hummel, Bert van den Berg, Adriana Berlanga,
Hendrik Drachsler, Rob Nadolski,
Fac. Psychologie (Jannes Eshuis, Wim Waterink,
Nanda Boers)

PIP, 22 maart 2007



Lovely statue of Isis-Fortuna, bringer of luck and good navigation through seas and through life. Want to travel? Put this statue on your altar. \$40 (<http://isisadmin.freeyellow.com>)

PIP, 22 maart 2007

ISIS project aims

- Develop models and formal descriptions to represent (both formal and informal) *learning goals* (or competences), and *learning paths* (or competence development programmes)
- Build and test *navigation services* that provide users with qualitative and individualized support when finding and sequencing their most suitable learning paths

Duration

- Start date: January 1, 2006
- End date: December 31, 2007

Relations

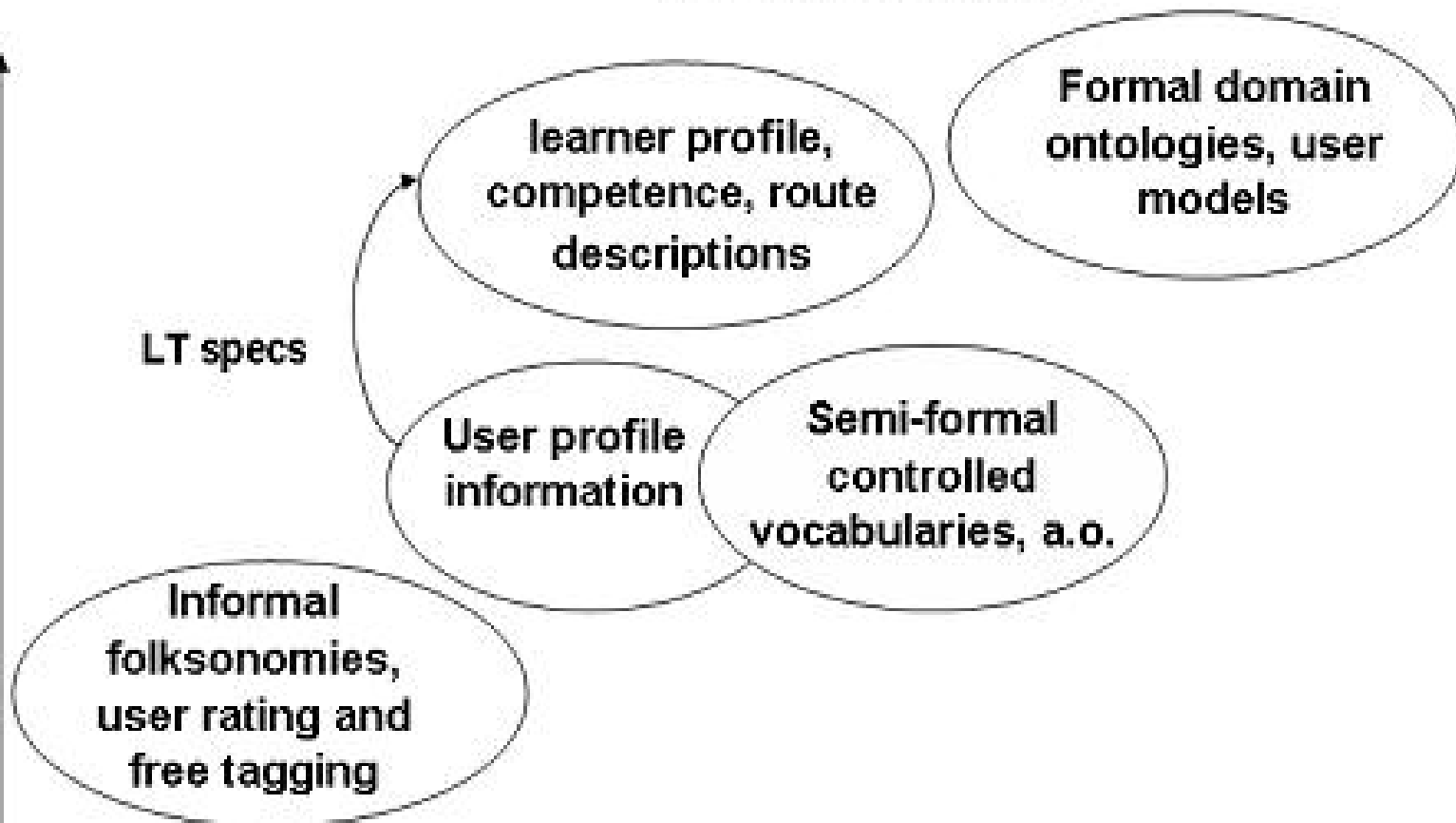
- TenCompetence
- Faculty of Psychology

Rationale

- Alignment of users and activities to improve educational provision ...
- By providing Personalised Recommender Systems that advice best next activities
- By combining information- and social-based recommendation techniques
- By adding (semantic) competence and path descriptions.

Information-based approaches
(based on metadata)

Top down



LT specs

Bottom up

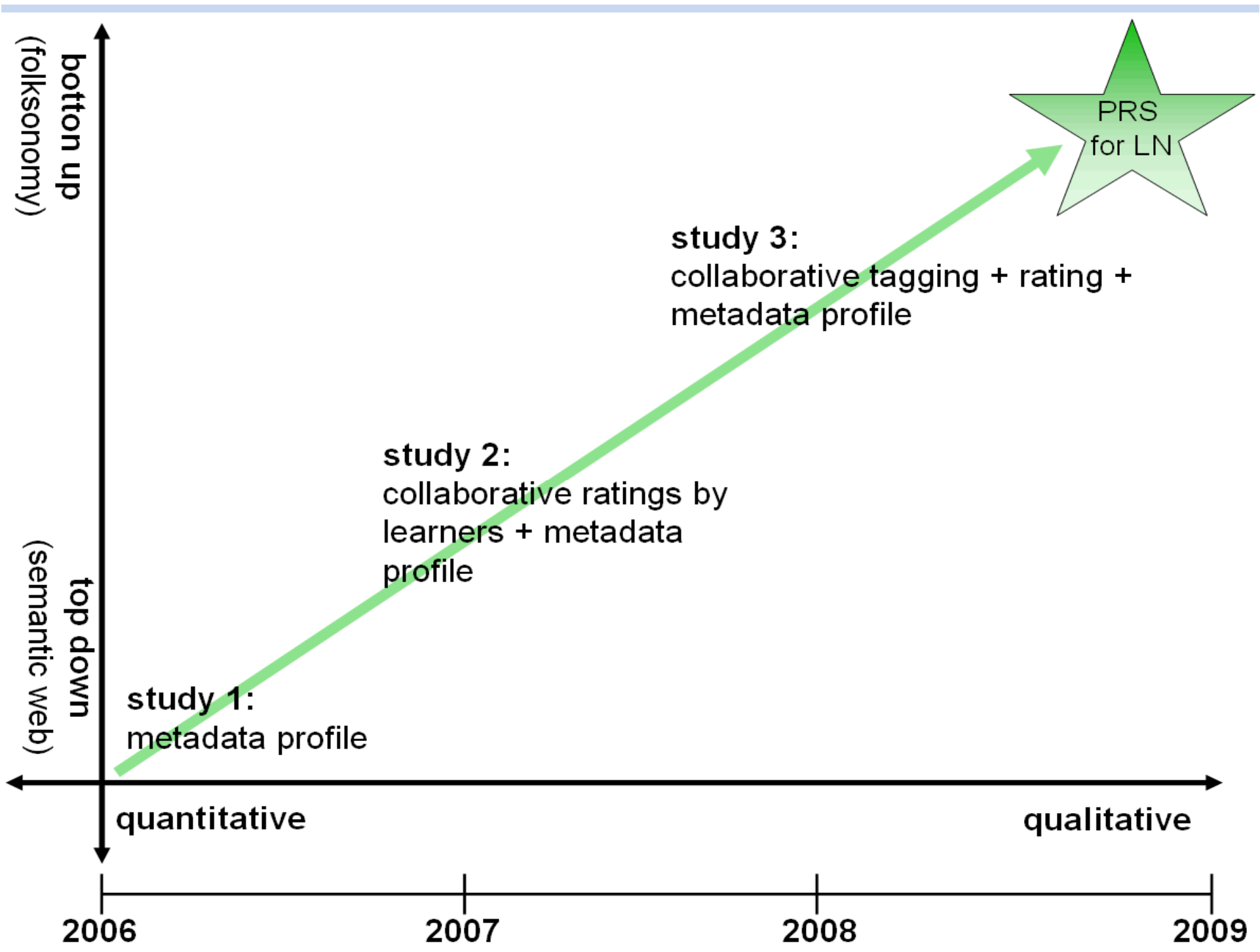
Social-based approaches

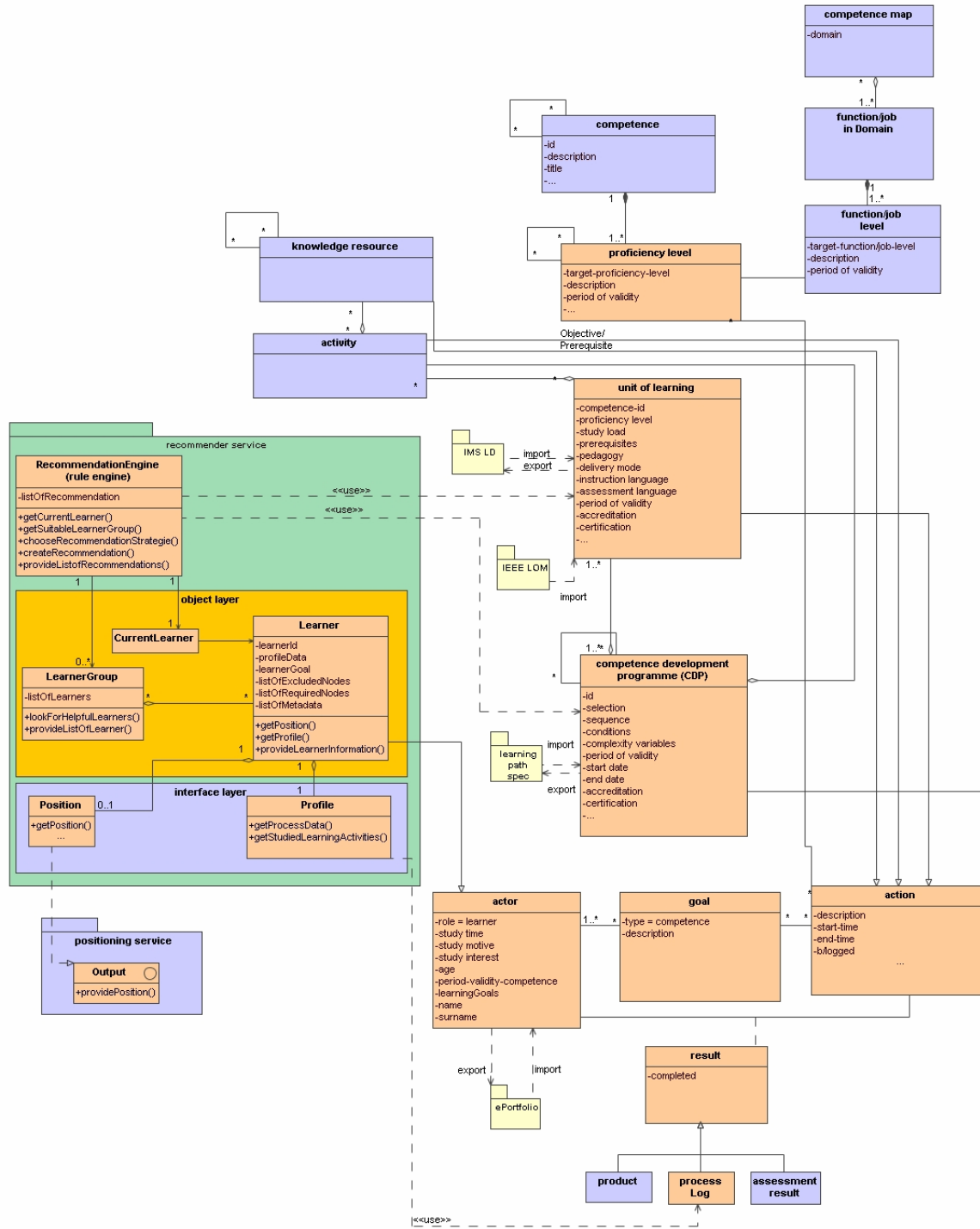
(based on collaborative filtering)

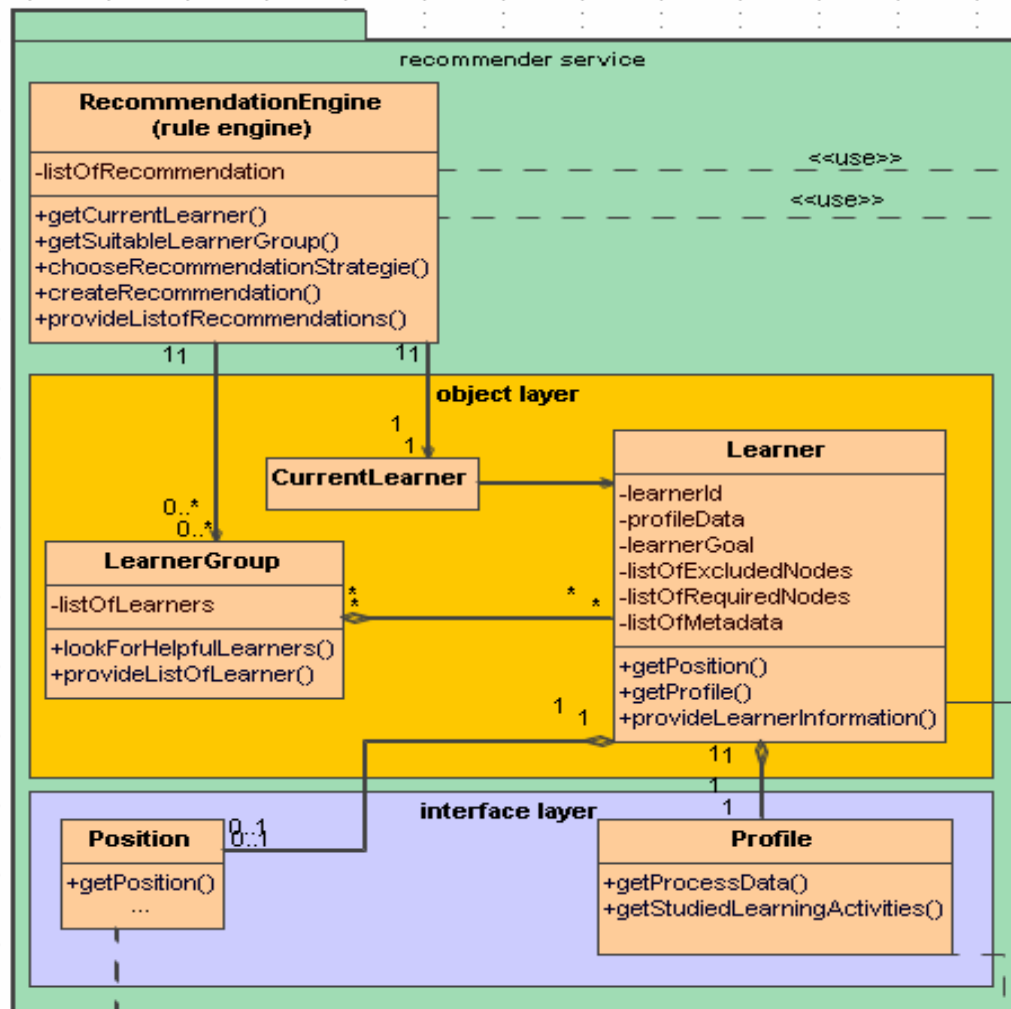


Informal learning

Formal learning







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Assumptions

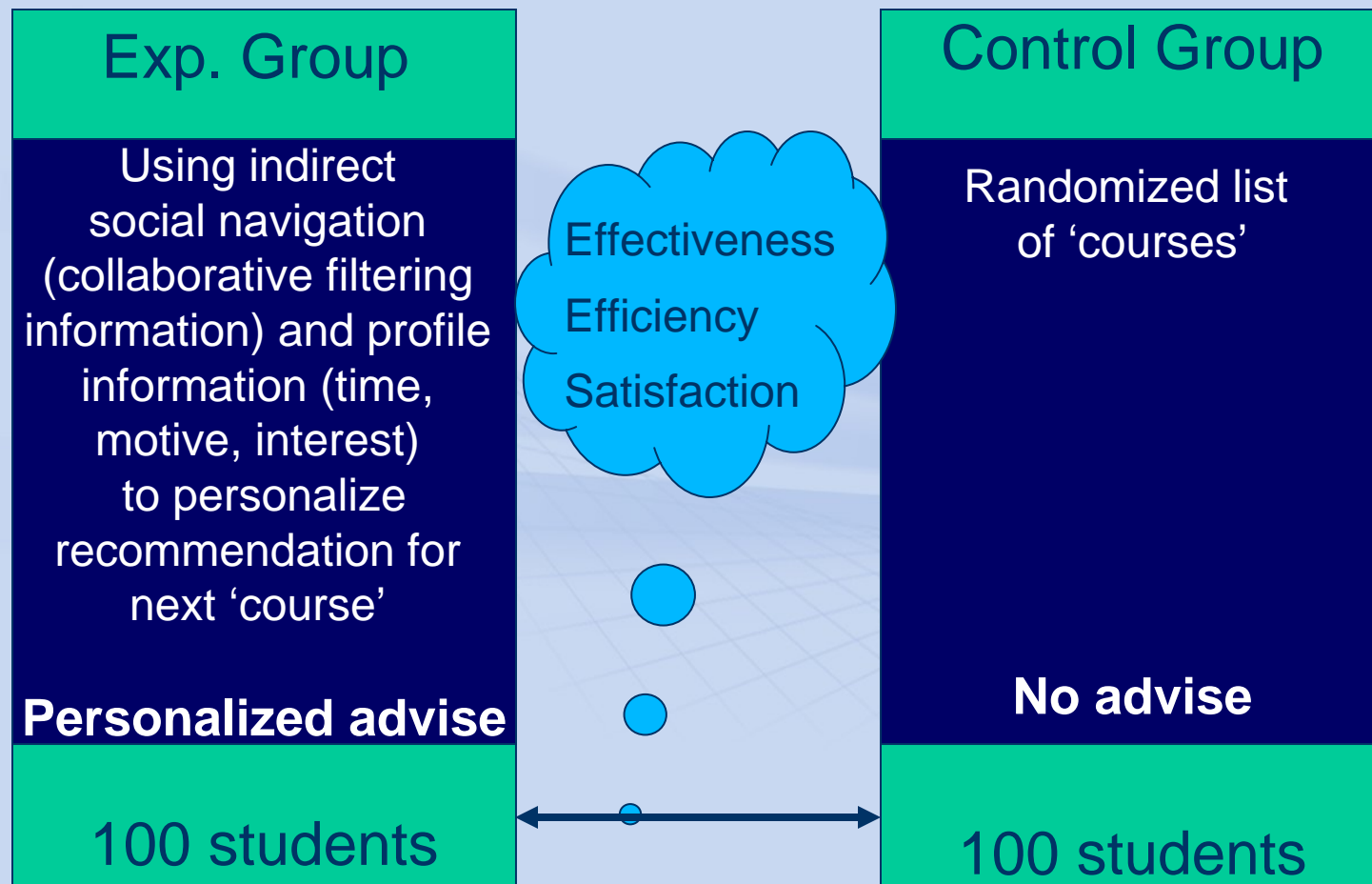
Efficiency and Effectiveness:

- Effectiveness: Students with PRS will be more satisfied with learning, will participate more, will get closer to completion, will get higher progress test and exam results
- Efficiency: Students with PRS will achieve the same test results and completions in less time

Variety:

- Students with PRS will persevere more to finish one course at a time, because they study content personalized to their profile
- For students with PRS, the learning path will have more variety.

Experimental design first pilot (PIP)



Overview Courses

You already completed:

Veranderingen in de loop van het leven
Taal
Waarneming
Motivatie en emotie
Aandacht en bewustzijn
Onthouden en vergeten
Conditionering en leren
Denken
Algemene Informatie
De biologie van het gedrag
Gewaarwording
Toegepaste Psychologie

Courses you are enrolled into:

You are not enrolled into any course.

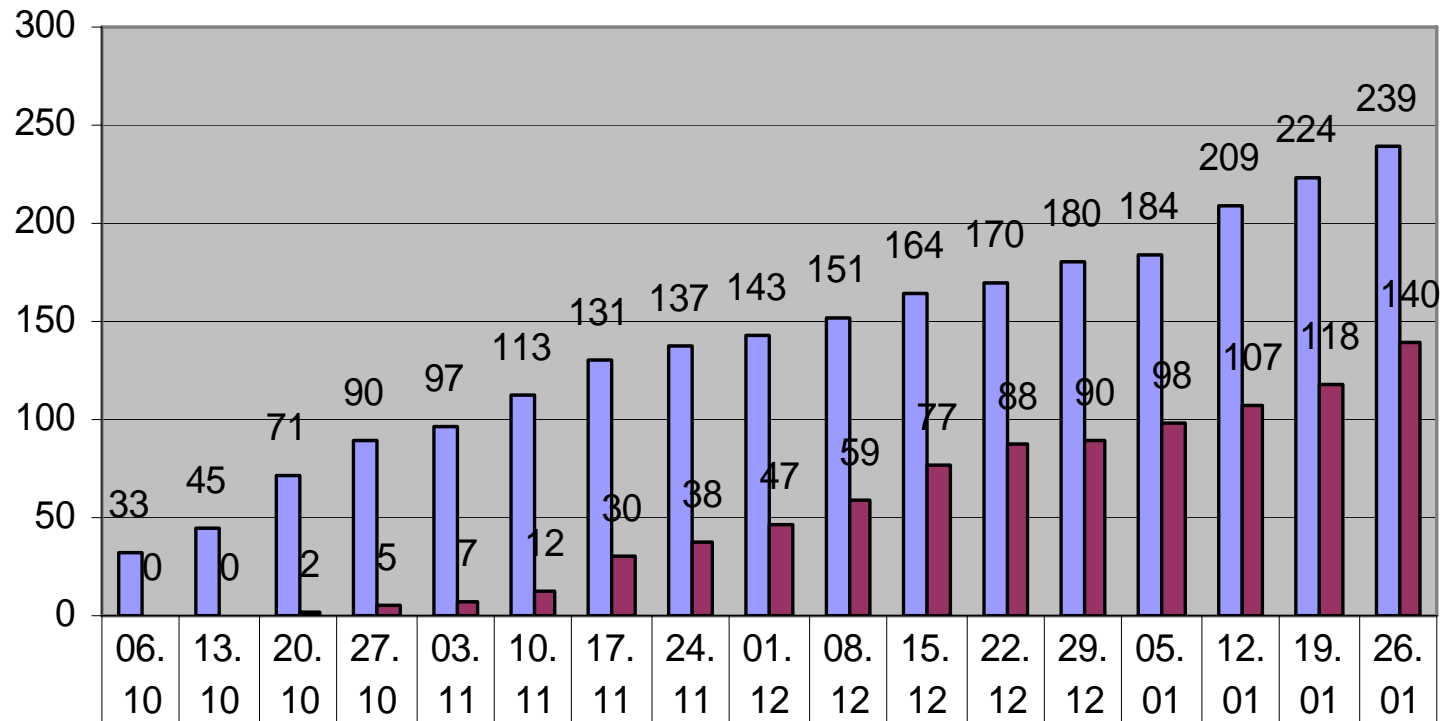
You still need to complete:

Persoonlijkheid
Intelligentie
Sociale Psychologie
Gedrag en gezondheid
Therapieën
Psychopathologie

Op basis van een studie interesse in **omgeving** (zoals u heeft aangegeven in uw persoonlijk profiel), adviseren wij u met de volgende taak in Moodle verder te gaan en af te ronden:

titel taak	opties:
Sociale Psychologie	[uitleg bij advies]
	[aanpassen profiel]

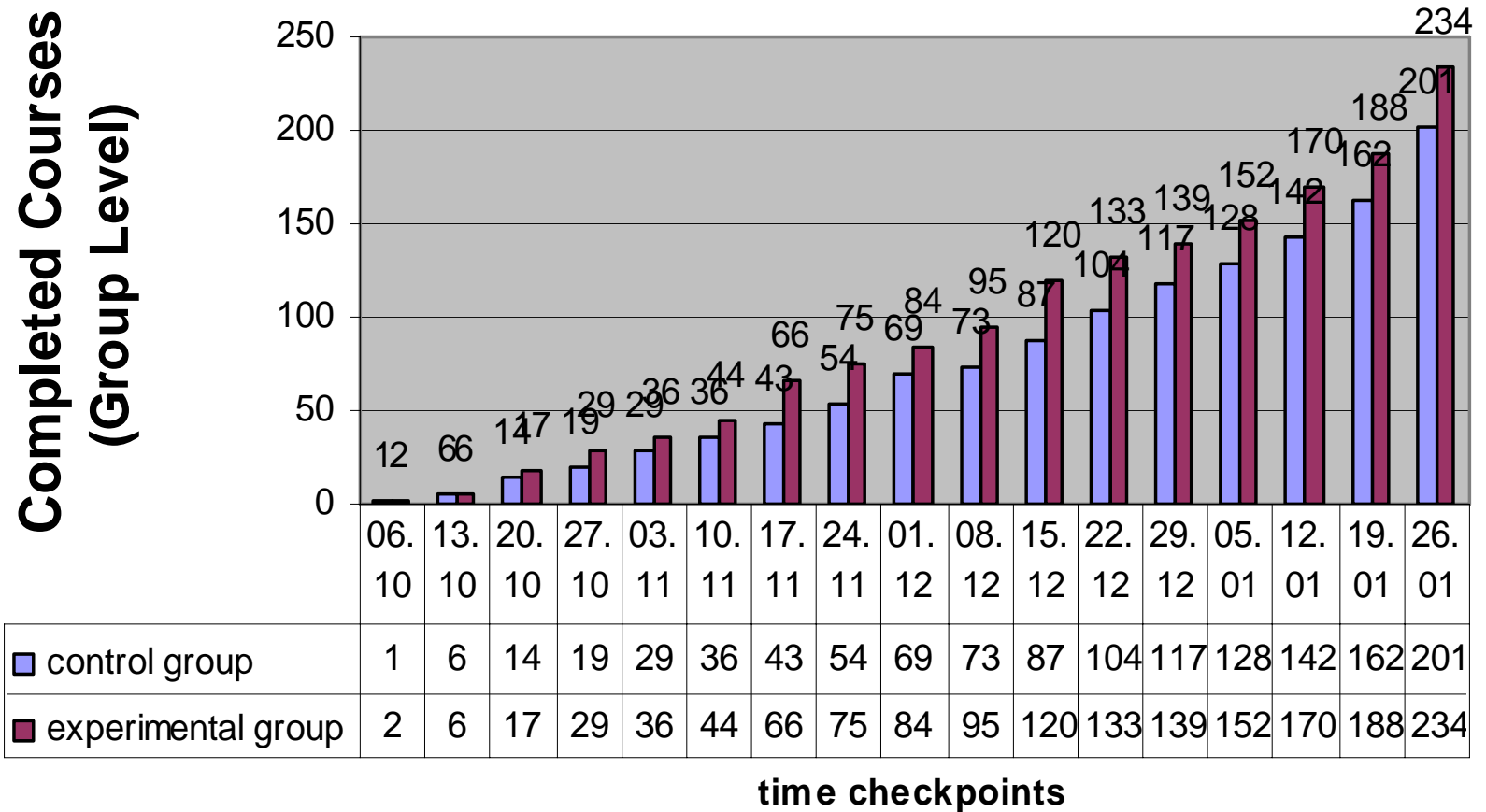
Usage of Recommendation Technique



■ ontology	33	45	71	90	97	113	131	137	143	151	164	170	180	184	209	224	239
■ collaborative filtering	0	0	2	5	7	12	30	38	47	59	77	88	90	98	107	118	140

time checkpoints

The experimental Group finish more Courses.



Links

<http://moodle.psychologie.ou.nl/moodle/>
(demo + de&MO\$)

<http://dspace.ou.nl/handle/1820/830>
(draft article on combined approach)

Further research

- To have a *playground* for testing of emerging effects of a LN without any limitation we want to setup a simulation.
- Advantages of a simulation:
 - add complexity (e.g. 5000 learner, 1000 LA)
 - get experience with user driven data (ratings)
 - evaluate learner and LA attributes for a PRS
 - get experience with emergence effects and how learner could benefit from them.

Simulation Framework - *Netlogo*

Description

A programmable modeling environment for simulating natural and social phenomena.

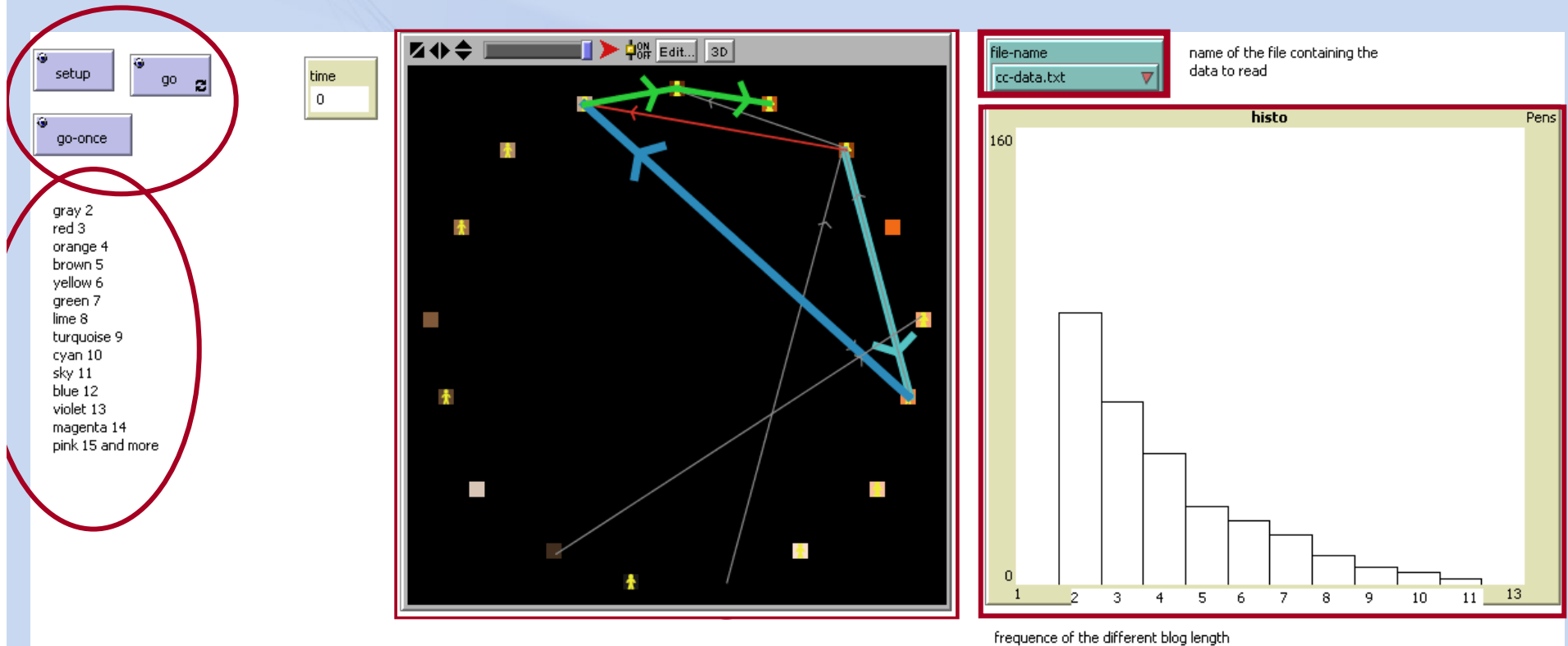
Author

Uri Wilensky in 1999, Continuous developed at the CCL, Northwestern's University, USA

Purpose

- Modeling complex systems which are developing over time.
- Explore emerged effects through the connection between the micro-level behavior of individuals and the macro-level patterns from the interaction of many individuals.
- Core elements “*turtles*” moving over a grid of “*patches*” (both are programmable agents)

PIP Experiment Analysis



Further Simulation

The screenshot displays a simulation interface with several components:

- Left Panel:** Contains a 'time' field set to 3. Below it, a panel with three input fields: 'number-current-LNUs' (50), 'number-graduated-LNUs' (0), and 'total-LNUs' (50). This panel is circled in red.
- Center:** A network diagram on a black background showing nodes (green squares) and connections (pink lines). Some nodes have small green arrows pointing upwards.
- Top Right:** A status bar for 'nb-LNUs' showing a value of 49.
- Middle Right:** A control panel with four input fields: 'blog-traffic' (0.0), 'nb-recommendations' (0.0), 'first-LA' (0.0), and 'second-LA' (0.0).
- Bottom Right:** A control panel with several options: 'highlight' (checked), 'only-collaborative-filtering?' (On/Off), 'interest?' (On/Off), 'option-interest' (Aandacht en bewustzijn), 'motivation?' (On/Off), 'option-motivation' (ext), 'study-time?' (On/Off), and 'option-study-time' (1).

Dank u wel voor de interesse.

PIP, 22 maart 2007