Language Technologies for Placement & Formative Feedback

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Problem Description & Target

• In learning networks and informal learning contexts extensive descriptions about the learning activities are often missing.

• At the same time existing procedures to adapt course offerings on the basis of the prior knowledge of learners are time-intensive and expensive (In UK & the Netherlands: APL=Accreditation of Prior Learning).

• Our project target: Explore alternative methods to provide learners with information about their current relation to learning activities (=placement) and for formative feedback.

• Our idea: Use of advanced language technology to approximate prior knowledge of learners on the basis of their writings (e.g. in an eportfolio).
Method: Latent Semantic Analysis

Latent Semantic Analysis (LSA) has been proven as a useful technique in several educational scenarios like automated essay scoring or peer tutor Selection.

We have tested and evaluated the application of LSA for prior knowledge approximation.
Experimental Design I

Corpus 1
- **H-Set**: Homogenous Set of documents
- **N-Set**: Heterogeneous Set of documents
- Correlations within the H-Set and Correlations between the H-Set and the N-Set
- Variation of stopword lists (0%, 30%, 50%)
- Variation of singular values
- Two different query sets

Corpus 2
- **H-Set**: Homogenous Set of documents
- **N-Set**: Heterogeneous Set of documents
- Correlations within the H-Set and Correlations between the H-Set and the N-Set
- Variation of stopword lists (0%, 30%, 50%)
- Variation of singular values
- Two different query sets
Experimental Design II

Human Raters/Domain Experts

Rater 1
35 student documents ×
18 chapters =
630 ratings on Likert scale

Rater 2
35 student documents ×
18 chapters =
630 ratings on Likert scale

Interrater Reliability/Time

Latent Semantic Analysis

Several Analysis with different parameters
- Cosine values
- Dimensionality variation
- Stopword list variation

Correlation to human experts
Prototypes & Current Work

Semi-Automatic Concept Map Generation

Semantic Weblog Monitoring Framework (SWeMoF)