BrainBank– Building Conceptual Topic Maps E-portfolios for Meaningful Learning

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When it comes to lifelong learning and e-learning, we are steadily moving towards distributed and self-organized networks where multiple content providers offer parts and pieces, not complete vertical systems. This spurs development of new methods and techniques to position learners in these networks. Positioning requires that characteristics of the learner are mapped onto characteristics of learning materials and curricula. We describe BrainBank Learning, a web application for construction of individual topic maps as a mean for learning, and discuss the potential of such knowledge maps for automated computer- supported positioning. We also present current work on developing, evaluating and utilizing topic maps-based applications to support meaningful learning and deeper understanding.
Web-based learning has in general become more popular in education and business training. A lot of computer-aided learning software exist to aid learning, web applications as well as offline systems. The tools vary from customized learning applications to edutainment and simple communication systems. However, abundant digital resources and tools do not necessarily solve any problems if they by the end of the day contribute to increase the chaotic pressure of information on the learners. The main problems related to using educational hypertext for learners are cognitive overload, disorientation and distraction, poor narrative flow, and poor conceptual flow (Jacobson et al. 1996).
Educational practices are changing from being predominantly teacher-led to largely student-centered. But how can the students themselves be able to assess their position relative to a future learning environments consisting of a diverse set of learning activities from which learners somehow may take their pick? The learner's history and goals define an entry position relative to the learning activities. A different entry position is likely to result in a different partition of the set of available activities in activities to skip and to complete. Different entry points will thus result in different paths through the set of relevant learning activities. Computer supported positioning in learning networks could contribute to the formidable set of hurdles that arises in such a scenario. In fact, it assumes answers on a substantial number of the research questions that were recently proposed for intelligent information systems (Cherniavsky & Soloway 2002). We focus on how the learner's history can be recorded and stored in electronic portfolios.