CROKODIL – a Platform Supporting the Collaborative Management of Web Resources for Learning Purposes

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ABSTRACT

CROKODIL is an ongoing project at the Darmstadt University of Technology. The aim of the project is to implement a platform for collaborative knowledge acquisition based on web resources. In this paper, we analyze according to a social search model, how CROKODIL provides support for all stages of the search process which is an important and integrated part in today's learning process.

Categories and Subject Descriptors

K.3.1 [**Computer Uses in Education**]: Collaborative learning.

General Terms

Human Factors.

Keywords

1. INTRODUCTION

These days, it is almost impossible to imagine learning without searching in Google, checking up a topic in Wikipedia, or looking for something in a forum or blog. Searching for learning resources on the Internet has become such an integrated part of today's learning process that it is nearly taken for granted. According to an evaluation of search behavior and a resulting social search model [2], social interactions play an important role in all stages of search: before, during and after search. Therefore, this form of learning with resources found on the Web, is not an individual activity but rather a collaborative one and deserves more technical and pedagogical support. CROKODIL is an online collaborative learning platform providing a holistic solution offering diverse forms of support during all three phases of the search process.

During all phases, CROKODIL offers learners the means to communicate with others on the platform via a chat or by sending messages. Learners are encouraged to build friendship relations and to work collaboratively in groups.

Initially, in the before search stage, it is important for the learner to define activities or goals needed to attain the knowledge required to solve a certain task [1]. This didactical concept of constructing an activity structure helps the learners to better reflect and plan their learning process, thereby explicitly preparing for and improving the search process. CROKODIL supports this stage by offering the learner the means to create such an activity tree via a plugin [1] in the web browser.

Thereafter, during the research or searching phase, the learner now looks for adequate resources on the internet for these activities. CROKODIL supports the learner here via the aforementioned plugin which allows snippets of the web resource to be stored and attached to activities. These resources can also be semantically tagged [1] with key words and tag types describing the resource. The underlying backend structure storing the users, resources and tags is based on a semantic network structure, called knowledge network [1]. This representation offers the advantage of being able to browse through the network and perform semantic searches along the relations between the elements of the network [1]. A future planned enhancement will be the relevance ranking of these resources to support the effective retrieval of important and relevant resources.

Learners are able through all phases to view the resources collected by other learners as well as the other users' tags. To enhance this form of collaborative learning, CROKODIL provides recommendations suggesting related or interesting resources from fellow learners on the platform. Tag recommendations are also offered to unify the tagging concepts and choices of tags. Automated tag type identification [1] is also planned as a future feature in the platform.

Finally, after search, the learner commences the learning phase, where the resources stored in the above steps are retrieved. An important pedagogical step for the learners is reflecting on their learning experiences. In CROKODIL, learners can document their learning experiences by writing posts attached to the activities in the activity tree. These posts are shared with others on the platform, who can also post their feedback.

Future project goals are planned to offer recommendations based on the relevance ranking of resources in a social context. Such filtering, ranking and matching algorithms will therefore be implemented taking into consideration the social network structure of the platform. A usability evaluation is also planned to evaluate the acceptance and quality of the platform.

2. REFERENCES

[1] Böhnstedt, D., Scholl, P., Rensing, C., Steinmetz, R. 2010. Enhancing an Environment for Knowledge Acquisition based on Web Resources by Automatic Tag Type Identification. In: *Proc. of International Conference. on Computer-aided Learning* (ICL 2010), p. 380-389.

[2] Evans, B. M. and Chi, E. H. 2009. An elaborated model of social search. *Information Processing and Management*, (2009), doi:10.1016/j.ipm.2009.10.012.