

Resubmission: Taking OWL to Athens: Semantic Web Technology takes Ancient Greek History to Students

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Abstract

The HermesWiki project is a semantic wiki application on Ancient Greek History. As an e-learning platform, it aims at providing students effective access to concise and reliable domain knowledge, that is especially important for exam preparation. In this paper, we show how semantic technologies introduce new methods of learning by supporting teachers in the creation of contents and students in the personalized identification of required knowledge. Therefore, we give an overview of the project and characterize the semi-formalized content. Additionally, we present several use cases and describe the semantic web techniques that are used to support the application. Furthermore, we report on the user experiences regarding the usefulness and applicability of semantic technologies in this context.

1 Introduction

Students today are used to collect a large amount of required knowledge from the internet. While the number of available webpages is huge for almost any given topic, the quality of these pages is quite heterogeneous. Additionally, it is very difficult for students, especially undergraduate students, to extract the essential knowledge from extensive webpages. Therefore, students can significantly benefit from a reliable and concise knowledge base, that combines the advantages of traditional text books with the advantages of internet-based knowledge platforms, like accessibility, integration of multimedia resources, and the ability to update the contents easily. However, the creation of such a web application still is a tedious task, as texts and resources must be created, collected, and adapted to the context. Additionally, with the growing amount of content it again gets more difficult for students to find exactly the resources they require. In this paper, we describe how semantic technologies help to alleviate both problems in an e-learning project in the domain of Ancient Greek History, the HermesWiki.

The HermesWiki is a semantic wiki, developed to give students of history an introductory domain overview. As a full featured wiki system, HermesWiki allows for an effective collaborative composition of content. Furthermore, semantic technologies provide advanced functionality that generates additional value to the learning environment: Formalized paragraphs and semantic annotations of the main text enable the contributors to easily generate additional content tailored to different tasks, such as tables of events, maps, or a quiz. Further, students have access to

different forms of knowledge like narrative elements, ancient source texts, geo data, chronologic information and images. They can use semantic navigation to easily find the concepts they are looking for, filter the presented content by its relevancy on demand, and query the systems knowledge using an intuitive user interface. Figure 1 shows the essay about *Tyrannis*. It includes a short list of the most important events generated from the ontology, an introductory section, that explains the context of this essay, a text description of the respective topic, an overview of ancient historical sources, and a formalized set of relevant events.

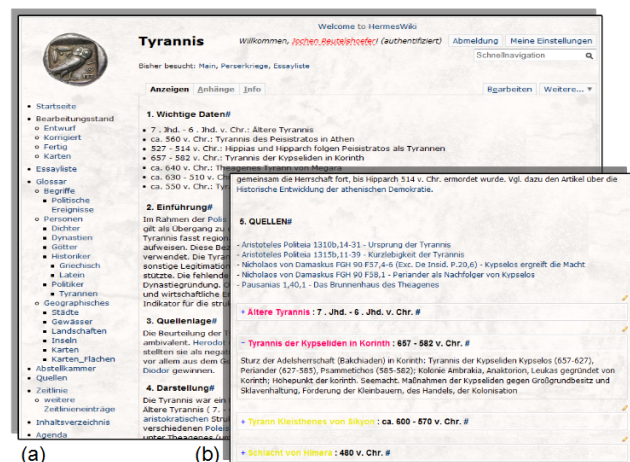


Figure 1: The top (a) and bottom (b) of the wiki page containing the essay about *Tyrannis* taken from the HermesWiki. (Screenshots of the system, in German language)

2 Resubmission

This is a resubmission of work that has originally been submitted to the 7th Extended Semantic Web Conference (ESWC2010) [Reutelshoefer *et al.*, 2010].

References

[Reutelshoefer *et al.*, 2010] Jochen Reutelshoefer, Florian Lemmerich, Joachim Baumeister, Jorit Wintjes, and Lorenz Haas. Taking OWL to Athens – Semantic Web Technology takes Ancient Greek History to Students. In *ESWC'10: Proceedings of the 7th Extended Semantic Web Conference*. Springer, 2010.