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Muntjewerff, A.J.

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CASE reading, structuring and analyzing decisions by judges

Antonius J. Muntjewerff

1. INTRODUCTION

The legal system (Muntjewerff 2002a, Muntjewerff 2002b) aims at designing and developing effective learning environments and instructional models for acquiring legal knowledge and applying it to actual cases. This paper describes two instructional environments: HYPATIA (Muntjewerff 2000, Muntjewerff and Groenewoud 1999) and PROSA (Muntjewerff 2008) (Muntjewerff 2008). A short description of the approach is followed by an analysis of the learning task, the difficulties law students experience and the remedies proposed on the basis of both the task analysis and the stated difficulties. This is followed by a description of architecture, functionality, platform and implementation of CASE and a description of a session with CASE and future work.

2. PRINCIPLED AND STRUCTURED DESIGN APPROACH

The HYPATIA project (Muntjewerff 2000, Muntjewerff 2002b) aims at designing and developing new instructional models for law students to learn the law. Law students experience difficulties with finding, reading and comprehending these decisions. CASE (Case Analysis and Structuring Environment) is an instructional environment developed to support students in finding, reading, structuring and analyzing decisions by judges. CASE presents the student an environment in which he can practice finding, reading, structuring and analyzing a decision in order to determine in what way this decision adds to the body of applicable legal rules. CASE can be used by law teachers to store selected decisions by judges and to add key words and by law students to search, structure and analyze decisions by judges.

Keywords: Instructional Design, Coaching Systems, Legal Problem Solving

3. ANALYSIS

What is structuring and analyzing a decision? In order to answer this question and to design an environment to support law students in finding, reading, structuring and analyzing decisions to decide and understand the meaning of a decision, it is necessary to analyze the task.

The HYPATIA design approach starts with reengineering explicit models of legal knowledge and legal reasoning. In the (pre-)construction process, two components are distinguished:

1. A theoretical component of exploration, conceptualization and specification of legal knowledge and legal reasoning resulting in explicit models of legal knowledge and legal reasoning. Two perspectives are taken within this approach: a legal

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All of this means that the student has to reconstruct the process and the product which involves keeping track of intermediate results. To support the student in performing these tasks, the following remedies are proposed;

- Provide a link to the metadata editor (see figure 1).

The next step is the preparation of the decision for use. The prepare tool offers an interface that mimics the regular editing interface: the editor needs to place pieces of text in the correct position within the solution framework (see figure 2).

6. SESSION WITH CASE

As mentioned above, CASE distinguishes four types of users: administrators, editors, teachers and students. User rights are distributed in an incremental fashion in CASE, this means that a teacher has access to both student- and teaching facilities, an editor has access to editing-, teaching- and student facilities, and the administrator user has rights to do everything the other users can, plus adding, removing and changing users, and removing cases from the database. This section describes a typical process from preparation to analysis of a case. After login, the editor is presented with a menu containing multiple options. After selecting the option to prepare a case, the decision to add it to the CASE database is confirmed by the editor's menu (see figure 2).

Figure 1: Metadata editor

The metadata editor interface is used to add or change metadata of a decision and, more importantly, to add new keywords or remove existing ones. After completing this procedure, the decision can be searched for using the search interface. The search engine allows for both Boolean keyword- and free text search in combination with metadata fields such as: date, name, court etc. The principal concept in CASE is that a precedent can be seen as an ordered set of text fragments, each of which can be labelled according to their place in the solution template. The student can select a text fragment and place it in the correct position within the solution framework. Text fragments can be as short as a single sentence, but more often, they are as long as a paragraph. The text fragments are stored in a database along with metadata such as the reference to their position in the solution. Although a text fragment as described in the basic building block, these fragments can form one or more sub-fragments (such as single words) which can also be selected by the student. For instance, the text fragment "This is realized by presenting the student with both the full text of the decision and a framework which visualizes the elements in a decision necessary to reconstruct the decision in order to determine the legal significance of the decision. There are no applications available that support low students in structuring and analyzing a decision, exiting the Continental legal system. For the Anglo-American legal system, the CASO application is available (Alten 1985). In CASO the student is trained to construct arguments with cases.

4. ARCHITECTURE AND MODULAR DESIGN

The aim of the CASE project is to realize an environment in which low students are supported in structuring and analyzing a decision. This means that both the decisions at hand have to be presented to the student, as well as in the framework for analysis. The student must be able to select text fragments from the decision and paste these within the correct cell in the relevant table in the framework. Since finding cases is also part of the training of low students, search facilities have to be available in the environment. The functionality of searching for a decision is implemented in the first module. The functionality of structuring and analyzing a decision is implemented in the second module. Other basic requirements are maintenance and access. It should be possible to make changes to the system and its current without major costs and efforts. Later on in the course and content should be easily transferable and customisable. It must be possible to add and delete content without causing problems elsewhere in the system. Transparency of the architecture and tools are therefore design goals, as is the capability to maintain.

The system has functions for adding decisions, adding key words to decisions and preparing decisions for analysis. System functionalities are attributed to a user on the basis of her status: administrator, editor, teacher or student. The database module holds the decisions and allows for search and retrieval of cases and also allows teachers to prepare cases for use in the analysis module. Students can test the database module to locate cases on the basis of key words and/or full text search to find specific decisions. When the student wants to analyze and construct a decision she can select one of the reported decisions. The decision and the analyzing framework are thus made available to the student. The student can start structuring the decision by selecting text fragments in the decisions and pasting them in the correct part of the frame.

5. PLATFORM AND IMPLEMENTATION

CASE is implemented using a web-based server-side application model. The user interacts with the system using a standard web browser, such as Netscape Navigator, Apple Safari or MS Internet Explorer. CASE is developed using Open Source Software, MySQL (4.1.14) and PHP (4.3.2) and JavaScript. The MySQL database backend contains a number of tables, the most prominent ones being a text-fragment table, a solution table and a table storing the student's activities. A small number of simple functions are implemented using client-side JavaScript. CASE offers extensive support for administrative, editing-, browsing-, tracking- and educational tools. Using the same portal, administrators can add, remove and change users and cases; editors can add key words to cases and prepare the solution framework of a case for use; teachers can use the interface to track the results of students, previewing the solution framework and browsing and searching the database, and students can browse and search the database, and test their analysis skills.

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The editor's menu gives access to the edit decision screen. Here the editor can change the metadata of a decision and, more importantly, to add new keywords or remove existing ones. After completing this procedure, the decision can be searched for using the search interface.

The next step is the preparation of the decision for use. The prepare tool offers an interface that mimics the regular structuring and analysis interface: the editor needs to place pieces of text in the correct position within the solution framework (see figure 2).

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The next step is the preparation of the decision for use. The prepare tool offers an interface that mimics the regular structuring and analysis interface: the editor needs to place pieces of text in the correct position within the solution framework (see figure 2).
Where the regular interface checks whether the correct text is in the correct position by consulting the database, the prepare tool writes the action of the editor to the database. Note that the editor does not have to add feedback to the database. Feedback is provided to the student in a case-independent way. When the teacher only wants part of the text fragment to be part of the solution, the editor can simply mark these smaller parts. This results in a text fragment with colored coded subfragments that can be placed in the solution table (e.g. Mr. Funke in figure 3). After the editor has finished the above steps, the decision is ready for use by both teachers and students. The teacher is not allowed to change the information or the solution framework of a decision. However, he can add students to the CASE user database, and preview the correct answers (the prepared solution framework) for each decision. More importantly, the teacher has access to a student tracking facility to analyze student behavior. This way the teacher can determine whether a student came to his or her end-result by simply trying every option, or by purposefully placing fragments in the solution framework.

Students can search the decision database using the search interface (see figure 3). This interface allows for metadata search (e.g. publication date, publication place, court type, court location) but also supports Boolean keyword search and Boolean full text search. The student can also browse through all decisions in the database. The search result page offers support for associative search because key words and other attributes of the cases found are shown. The student can click on any of these to start a search on this attribute. Thus, for example, searching on all decisions with the same keyword of one of the decisions that were found by the original search is done by simply clicking on that keyword in the results page. From the same page, the student can print a decision or open it for structuring and analysis.

The structuring and analysis interface, shown in figure 4, is divided into three frames. The left frame shows all text fragments of the decision at hand. The top right frame contains the tables of the solution framework. The bottom right frame provides feedback to the student's actions. A text fragment is placed in a cell of the solution framework by selecting the cell, then selecting the fragment to fill this cell. Once placed, the application will check the combination of cell and fragment and provide a feedback message from the database in the feedback frame. Text fragments can be removed from a cell by clicking the ‘x’-button in the table. Once the student has placed all correct fragments in a specific table, she is notified of this through the feedback frame.

### 7. SUMMARY AND FUTURE WORK

Learning the law involves reading, structuring and analyzing decisions to be able to indicate the legal significance of the decision. Law students experience difficulties especially with determining what the decision adds to the body of applicable rules in the legal system. Within the current curriculum there is not enough time to read and analyze decisions in the presence of a teacher who may provide immediate feedback. Law students are also not presented with models that may guide them in the process of reading and analyzing decisions. In learning the law it is essential to know how to structure and analyze a decision.

CASE was designed to present the law student with an instructional environment in which he is able to analyze a decision in such a way that the structure is made explicit and the legal meaning can be extracted. CASE is implemented as a web-based server-side application model using open source software. CASE is easy to maintain and re-use and can be made available in different languages. At the moment we are working with a CASE 2.0 version in which some administrative functionalities have been improved. The claim that law students are supported by CASE in structuring and analyzing a decision in such a way that they are able to grasp the legal significance of the decision should be tested in depth. A first small test with first year law students showed that it is necessary to extend CASE with a knowledge model (Muntjewerff, 2012b).

### 8. ACKNOWLEDGEMENTS

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[1] Antoinette J. Muntjewerff is Assistant Professor of General Legal Theory at the Faculty of Law at the University of Amsterdam. She has a Masters in Social Science, a Masters in Law and a PhD in Computer Science & Law. She studied Computer Science (more specifically Artificial Intelligence). muntjewerff@uva.nl