



9th BILETA Conference The Changing Legal Information Environment

**11th & 12th April 1994
Scarman House
University of Warwick
Coventry**

META-CASE: A Hypertext Based Tutorial

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Keywords: Computer Assisted Education - Hypertext - Reading - Cases -Pedagogic Strategy - META-CASE

Abstract: Legal education necessitates the study of vast amounts of information from several sources e.g. norms, jurisprudence and doctrine. One of the most common mistakes made in the process of legal training and education in law is the studying of each area separately, without examining the relationships existing between each area. Thus, didactic material (like educative software) should be oriented to integrate each of these sources, under a central element META-CASE is a prototype of an educative software used in the field of Legal Succession. The pedagogic strategy in META-CASE is the hypertext reading of legal cases.

Introduction

In the development of an educative software, one should define the following basic elements: topic to be treated, pedagogic moments, and pedagogic strategy. [Zambrano, 1992]

With regard to the topic being treated by the educative software, the author should select those which can be developed easiest by a computer system, so that it will be natural to select those topics with a precise and well-defined structure and organization.

There are three stages along the traditional teaching-learning process: exposition or presentation, practice, and evaluation. In C.A.E., these stages are the pedagogic moments, and are named as first approach moment, presentation, and consolidation.

The pedagogic strategy is basically how the presentation or exposition of the topic will be performed in the educative software. At this stage, one should make good use of computational resources. The most common pedagogic strategies are Simulation, Games, and Analytic Reading [Zambrano, 1992]. The leading authors in the area of educative software must try to find, or even "create", the pedagogic strategy most suited to the topic selected. In META-CASE, we used the hypertext reading of legal cases as the pedagogic strategy.

Hypertext reading of legal cases as a pedagogic strategy

The word reading has a variety of meanings, depending on the context in which it is used. Thus, there is no single, formal definition, classification and model of reading. For instance, people can read texts, images, objects, gestures, faces, scenes, landscapes, etc. Some researchers [Puente, 1991] [Antonini and Pino, 1991] [Smith, 1983] [Iserbin, 1982] [Soto, 1981] [Bellenger, 1979] mention the following definitions, classifications and models:

a) Definitions:

Reading,

- is a cognitive process that can be compared with thinking,
- helps people solve their problems and contrast ideas,
- has to deal with the interpretation of symbols and meanings, and
- implies the development of skills that will be used to process and organize the information obtained from the material read.

b) Types:

- Reading can be explorative, critical, interpretative, corrective, sensual, mental, lineal, creative, etc.

c) Models:

- Bottom-up: the process of reading implies the reconstruction of the "meaning", beginning with the passing of the visual stimulus, that is, with the recognition and decodification of inferior units (such as words and letters), before reaching the superior ones (such as phrases and sentences).
- Top-down: the reader does not need to use every stimulus from the text (letters, words, phrases), because the process of reading begins with the stating of the reader's hypothesis. In this model, prior knowledge of the reader is very important.
- Interactive: this model is a combination of the previous models because it gives importance to the keys in the text, and to the prior knowledge of the reader; in other words, the extraction of the text meaning can be activated both by the keywords contained in the text, and by the prior knowledge or experience of the reader. In this sense, hypertext reading can be considered as an interactive model of reading.

A hypertext system is a network of information nodes connected by means of relational links. Nodes can contain text, graphics, audio, video, as well as source code or other forms of data [Smith and Weiss, 1988], so that a hypertext can also be considered as a kind of electronic document [Nelson, 1960]. But this electronic document will have its own special form of reading: hypertext reading. This kind of reading constitutes the starting point of hypertext.

Conventional paper documents are a long linear sequence of words that has been divided into lines and pages. Consequently the reading process is also linear. Sometimes, the reader will find cross references to other documents (for example the classical "see also's"), but if the reader wants to follow these pointers, he/she must find by him/herself the new document. In a hypertext document, nodes provides links to related nodes, so the reader can activate those cross references instantly.

Some of the advantages in the use of the hypertext approach to the development of educational software are mentioned above [Landow, 1992] [Mayes, Kibby, and Watson, 1988] [Carbonell, 1970]:

- Organising knowledge is a fundamental problem for C.A.E. Hypertext organises the knowledge into such forms as semantic networks, so that hypertext systems are information bases containing semantically-structured information.
- Hypertext systems help the learner to perform sharper or more active reading, because it allows him/her to browse, explore, and navigate through the information.
- Hypertext systems give the learner control over both the processing of the immediate material and the meta-processes involved in learning how to learn. The quality of learning will be better under learner-control, because it will then inevitably be more compatible with the learner's

pre-existing schemata of learning skills. This characteristic is directly related with the andragogic postulates.

Hypertext documents suggest integration. So the question arises - 'What should be integrated and how should that integration take effect in a hypertext document?' These are important matters when considering development of this type of system. That was the main problem we faced with META-CASE. Hypertext reading is the pedagogic strategy but, what are we going to hypertext-read, and how will all the elements of the electronic document be integrated?

Some of the Electronic Publications of the Legal Information Institute at Cornell Law School such as the U.S. Copyright Act, U.S. Patent Act and others, use the Act as the central element of integration [Legal Information Institute, 1993]. In META-CASE, legal cases are the central element of integration. From cases derive questions, and lawyers use doctrines, norms and jurisprudences, in order to solve these questions.

Making use of hypertext, we can develop a system where all the sources of legal information will be in nodes connected with each other, so that the learner, for instance, will be able to solve a doubt associated with a case by reviewing related doctrines, jurisprudence, and norms. Obviously, the party defining what should be in the nodes and what should be the relationship among them must be a law expert in order to achieve the ultimate purpose of the system.

META-CASE (a Microsoft Windows 3.1 help file) is an example of educational software for law students that uses the hypertext approach. A discussion of this follows:

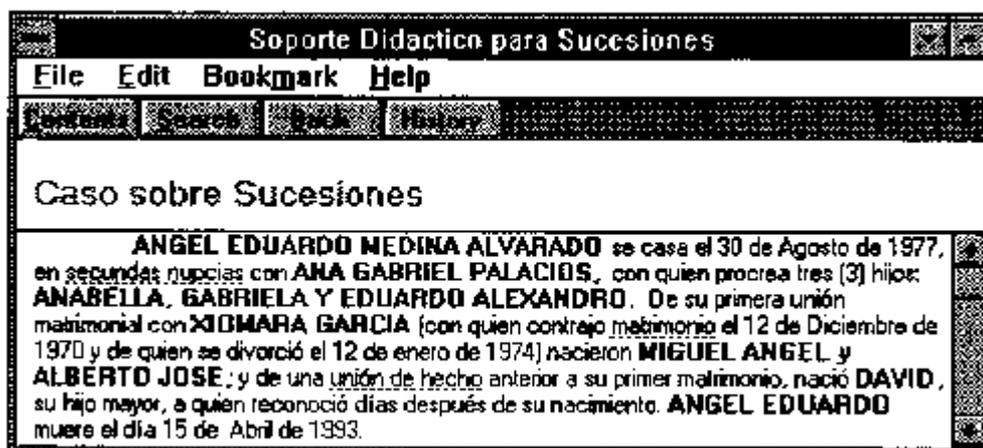
The META-CASE system

META-CASE is a prototype of an educative software dealing with the Law of Succession. We have developed both the exposition and practice parts of the educative software. Structurally, META-CASE is composed of four elements: legal cases, norms, jurisprudence and doctrine.

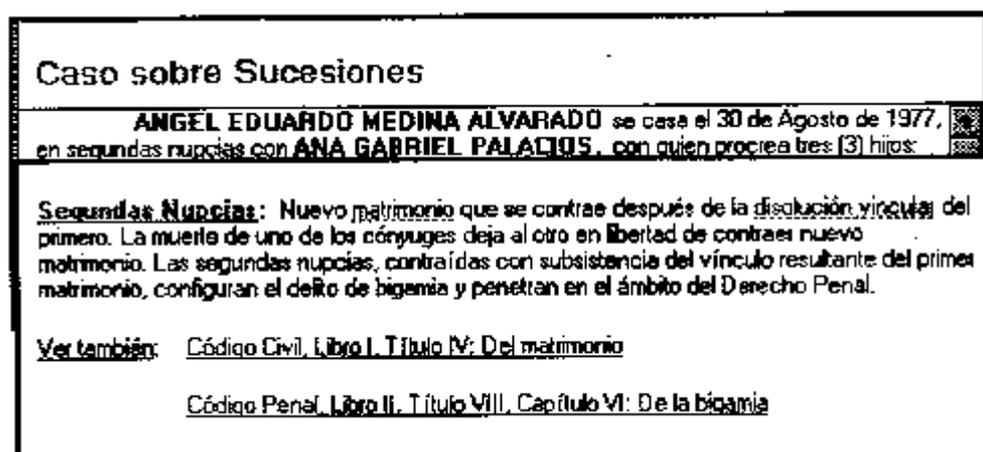
Each law case has been taken from real life and has a certain pedagogic value. From each case, law experts have extracted three basic elements: description or facts about the specific case, questions or doubts derived from the case, and variations applied to the cases (the typical "what if" situation).

When META-CASE is executed, it displays an introductory screen which explains the objective of the system. Then, it displays an index of cases. When the user selects a specific case, it displays relevant facts, and the user can retrieve a full explanation of the most common questions derived from cases being examined. Figure 1 shows a typical window on the system which contains a description of the case.

Figure 1



In this example, the text has some highlighted keywords that link to expanded explanations about the specific word. For instance, if the user wants to a detailed explanation about "segundas nupcias" (second marriages), he/she has to activate that link by clicking on the highlighted words "segundas nupcias". The system will then display the pop-up screen shown in Figure2.



This example pop-up screen shows further highlighted keywords, so that the user can continue navigating through the nodes of networks.

Norms, jurisprudence and doctrines are associated with questions and doubts within cases. In fact, these sources of information are used in order to justify and assert the answer to the original question or doubt. For instance in Figure 2, the phrase "Código Civil, Libro I, Título IV: Del matrimonio" links to the Civil Act, Book I, Title IV: Regarding matrimony. Then, each article in the Civil Act links to its respective jurisprudence and doctrine.

When users have read the full explanation to their questions or doubts, and have, in addition, gone through all the network of norms, jurisprudence and doctrine in order to extend and compliment their knowledge, there is one more action to take: to examine some possible variations that can be introduced in the case. This is the classic situation where someone asks: What if X fact is modified to Y fact? or what if X fact is introduced into the case, or eliminated from the case? Besides the list of questions and doubts, META-CASE offers a list of variations. Obviously, each variation will transform the old case into a new one, so the user will operate as described latterly and will select new questions and doubts from the new case, and so on.

Because of its nature, the development of a hypertext system requires a good deal of manpower. Thus, the development should be in a collaborative environment. This means authors should be able

to independently incorporate or modify the data in a hypertext document. In META-CASE, we did not consider this matter because we were more concerned that we use the correct pedagogic strategy. But, if the plan was to develop a larger system, we fully recommend the use of a hypertext editor. Allowing the user to create or define new links, could be an interesting experience.

Another interesting enhancement is to incorporate simulation systems to the hypertext document. For instance, we are developing an expert system containing certain chapters of the Civil Act. We will link this expert system to the hypertext document, so that the user will be able to run the expert system and see how legal rules are applied.

Conclusion

One of the most crucial points in the development of educative software is having to select the appropriate pedagogic strategy. We feel that the hypertext reading of cases is one of the most suitable for legal topics. Hypertext systems can help students develop more active reading. Studying cases from different points of view serves to develop the critical thinking of students, and using different sources of information to justify their reasoning, is a skill that should be improved.

The use of associative links is a very common strategy to augment reading comprehension, and the hypertext model is based on the use of this characteristic. Any other strategy to supplement reading comprehension should be useful for legal education because this is an area where knowledge is acquired by reading. Thus, investigations in C.A.E. and Law should be pursued in this manner.

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