Using an Action Maze to Develop Problem-Solving Skills in Family Law

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Abstract

An action maze is a computer-based tool to develop problem-solving skills. It adds value to the student experience through engaging the higher-level faculties of analysis, selection of the relevant law, and its application to the facts, in order to provide the best possible advice to the client.

This maze aims to be an alternative to the largely didactic delivery of an undergraduate family law module by providing a dynamic medium for student-led blended learning.

The maze was piloted with students in April 2009 and this presentation includes a reflection on the results from the pilot study.
Introduction
An action maze (sometimes referred to as a decision maze) is a computer-based tool for developing problem-solving skills. It comprises a nested set of individual scenarios, with decision points associated with each (see Figure 1). The maze enables undergraduate family law students to make a number of different decisions and to explore the consequences of their choices. The project aimed to take the use of action mazes in law to the next level through making full use of multimedia technology. It seeks to provide an authentic learning experience for those studying law, although its application clearly extends to other disciplines.

The family law action maze is based, like the life of the fictional client it features, on the choices individuals make in response to prevailing circumstances and, consequently, the advice a solicitor (the student) gives in response to those circumstances.

![Figure 1: Elements of the action maze structure](image)

At each turn students are presented with a series of options setting out the advice they might give to the client. Each issue (e.g. a dispute over distribution of property on divorce) eventually reaches a conclusion, which may promote or harm the client’s interest. At certain key points students will also be given the option of viewing video of a client interview, listening to calls from opposing solicitors or reading letters or e-mails.

There is little documented evidence that action mazes have been used in teaching law (a noted exception is Yeatman, 2004) but numerous examples are to be found in the field of medicine and allied health professions (e.g. Waller, 2006; Wyllie & Waights, 2008). There is
also an early example of paper-based mazes being used in English language teaching (Rinvolucrì, 1980).

In pedagogic terms the strength of a maze is that it requires students to use the higher level faculties of analysis, selection of the relevant law, and its application to the facts, in order to provide the best possible advice to the client. In a modest way it also seeks to address what Laurillard (2002) identifies when she suggests that:

“Traditional modes of assessment of knowledge are seen as inadequate because they fail to assess students’ capability in the authentic activities of their discipline.”

(Laurillard, 2002, p. 204)

**Developing the Maze**

One of the first issues we needed to resolve was the specification and design of the software to construct the maze. After careful evaluation of a similar maze designed for the University of Hertfordshire using a commercial product called Quandary (see www.halfbakedsoftware.com/quandary.php), the project group (Andrew Gilbert, Julian Priddle and Philippa Priddle) felt that a fully-featured simulation with high quality multimedia resources demanded a build from scratch. A project specification was developed by Philippa and Julian Priddle (summarised below) and a demonstrator was built and demonstrated for the ALSS learning and teaching event in December 2008. The maze is built using a small selection of HTML template files that can be re-used for other implementations of the action maze (as specified in the project).

The substance of the maze is divided into four parts and students’ progress is sequential in that they must pass through each part before going on to the next one. The four parts broadly mirror the structure of the family law module: initial advice regarding the breakdown of the marriage; follow-up advice on divorce; advice on domestic violence; and financial and property advice.

Writing the scenario included preparing a number of scripts for use in the video clips of the client interviews and telephone conversations with the client and opposing solicitors. An Anglia Ruskin drama student was recruited to play the role of the client and a member of the law school staff played the solicitor. Video and audio recording took place in the University’s TV studio to ensure that the clips were of professional quality.

**Architecture**

The overarching brief for the software was that it provided the agreed functionality in terms of architecture and media and that it would be capable of adaptation for other users.

The maze has been constructed to run within a web browser, and is capable of being either freestanding or embedded within a virtual learning environment (VLE) (for evaluation purposes). Within the scope of the project, the action maze did not include any serverside functionality, such as recording user activity.

Each scenario offers two, three or four options, plus a generic ‘bale out’ option that can be enabled in some or all cases. The links between files is ‘hard-wired’ to allow users to retrace their steps through the maze. In cases where a scenario can be reached by more than one route, duplicate files were provided in order to preserve the route. This also means that the same outcome can occur at different ‘levels’ within the maze.
We calculated initially that if the action maze is constructed using two options in each scenario, with five decisions along each path, there are 32 potential paths to final outcomes (which may or may not be unique), with a total of 63 scenario files. Making the same calculation for three options in each scenario gives 243 potential paths to final outcomes and 364 scenario files. The final version resulted in over 500 files being created, although significant numbers of them are duplications.

Each scenario file is built using a template file, which contains the full functionality needed for the scenarios. This includes the following features: an introductory text narrative, displayed on the scenario page; supporting documents (open in a new window or tab to read on-screen or print); links to external websites (open in a new window or tab); audio files, for instance simulating a telephone conversation; and video files, for instance simulating a client interview (see Figure 2).

The template file was constructed using XHTML 1.1 and CSS to conform to Anglia Ruskin’s web design standards. It was also designed to conform to our University’s accessibility standards. This was also true of the multimedia files.

**Figure 2: The opening scenario file**

**Evaluation**

The maze was piloted with two cohorts of law students (one from the Cambridge campus and the other from Chelmsford) in April/May 2009. For practical reasons it only proved possible to engage 11 students (of the cohort of around 50) in a focus group. It was recognised that the evaluation would be fairly impressionistic and based on the subjective responses of the students.
Picking out some of the key results from the evaluation, 10 of the 11 students felt it helped them to develop their problem-solving skills; all agreed or strongly agreed that they ‘enjoyed learning by working through the Action Maze’; 10 agreed or strongly agreed that they ‘found the Action Maze was easy to use’, with one student disagreeing. (This student’s concern has been considered and addressed in the amended version of the maze.)

Some of the qualitative responses are of particular interest (a sample is produced below) and have informed the subsequent redevelopment of parts of the maze. Many of the comments below also validate the starting premise that active learning through the maze enhances the student experience.

**Question:** How did it help develop problem-solving skills?

**Responses:**

“This is very helpful in giving an order to work out problem questions.”

“It enabled me to put legal rules and issues into a practical context.”

“You can see the result of your decisions. You can check different routes.”

**Question:** How did it compare with problem-solving using a traditional text-based problem question?

**Responses:**

“Better in one way, but the tutorials are lively. I needed those tutorials to be able to apply my knowledge to this.”

“It’s more interactive than doing a traditional problem question. Keeps my attention focused. I am more interested because it is like a real-life scenario.”

“Can see the reaction of the client. You’re in the driving seat. Helps me as a practical learner.”

“Because it’s interactive there is a chance to go back and see what different decisions affect the outcome.”

“It’s definitely more interactive but I prefer normal tutorials as I prefer discussion and clarification with issues.”

From this limited evaluation we conclude tentatively that the maze is an appropriate use of the technology in the context of an undergraduate family law module, and that most students found it engaging and more three-dimensional than the traditional approach. However, it seems that a more sophisticated evaluation would need to be carried out before we could be clear on the extent to which the maze has helped to develop students’ problem-solving skills.

**Dissemination**

The project was presented as a poster at the Learning in Law Annual Conference (LILAC at Warwick University on 23 and 24 January, 2009. (LILAC is organised by the Higher
Education Academy's UK Centre for Legal Education and is one of the main learning and teaching conferences for law in the UK.)

The pilot version of the action maze was demonstrated and discussed in a workshop presentation at the International Problem-based Learning (PBL) Symposium at Republic Polytechnic in Singapore on 12 June, 2009. This was a useful session, which drew out some constructive comments from participants with experience of using action mazes in law and other disciplines.

Next Steps
The maze has undergone further testing and development following the student evaluation of the pilot. The ‘final’ version of the maze will be completed shortly, ahead of its deployment in the family law module in semester 2 of academic year 2009-10, and we plan to carry out further evaluation of the maze at such time.

References


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