THE OO FILES: PROVIDING ONLINE FORMATIVE FEEDBACK ON CONTRACT LAW LEARNING IN A NARRATIVE SETTING

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ABSTRACT

Feedback, both formative and summative, enables students to reflect on their understandings and to restructure their thinking to develop their capabilities. It can also encourage positive motivation and help boost self-esteem. Online multiple choice questions can be an efficient and effective means of providing timely formative feedback. At the same time, locating learning in a narrative environment can facilitate engaging and effective learning experiences. Narratives can help learners to navigate through information and support cognitive and imaginative engagement. This article will discuss *The OO Files,* an online suite of modules containing multiple choice questions situated in the narrative of a fictional law firm. It notes student responses to the program and discusses lessons that may be learnt from its development which may be of assistance to academics considering the development of similar programs for their courses.

I. INTRODUCTION

Feedback is an essential element in informing the learning process and student progress.[1] Research has shown that feedback is one of the most powerful influences on student achievement.[2] Feedback, both formative and summative, enables students to reflect on their understandings and to restructure their thinking to develop their capabilities. It can also encourage positive motivation and help boost self-esteem.[3] However, it is important for such feedback to be timely. As Ramsden observed 'students find timely feedback more useful than delayed comment'.[4]

Multiple choice questions have attracted wide support as 'an excellent opportunity to offer feedback in an efficient form'.[5] However multiple choice questions are not without their critics. Some of that criticism seems to be based on the suggestion that they encourage only surface learning[6] while others claim that they are less intellectually rigorous than essay questions and less realistic than other learning activities in their relationship to legal practice.[7]

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1 Paul Ramsden, *Learning to Teach in Higher Education* (Routledge Falmer, 2003), 187; D Boud, 'Sustainable Assessment: Rethinking assessment for the Learning Society' (2000) 22 *Studies in Continuing Education* 151, 155.

2 John Hattie, 'Identifying the Salient Facets of a Model of Student Learning: A Synthesis of Meta Analyses' (1987) 11 *International Journal of Educational Research* 187.

3 David Nicol and Debra Macfarlane-Dick, 'Rethinking Formative Assessment in HE: A Theoretical Model and Seven Principles of Good Feedback Practice' (2006) 31(2) *Studies in Higher Education* 199, 201.

4 Ramsden, n 1, 187.

5 Ramsden, n 1, 188. See also, for example, John Biggs and Catherine Tang, *Teaching for Quality Learning at University: What the Student Does* (Open University Press, 208), 204; John Selby, Patricia Blazey and Michael Quilter, 'The Relevance of Multiple Choice Assessment in Large Cohort Business Law Units' (2008) 1(1-2) *Journal of the Australasian Law Teachers Association* 203; Greg Allen, 'The Use of Multiple-Choice Questions as a Form of Formative Assessment on an Undergraduate Law Module' (2008) 42(2) *The Law Teacher* 180.

6 See, for example, Selby et al, n 5, 207; Allen, n 5, 182.

7 Susan Case and Beth Donahue, 'Developing High-Quality Multiple-Choice Questions for Assessment in Legal Education' (2008) 59(3) *Journal of Legal Education* 372, 372.

Locating learning in a narrative environment can facilitate engaging and effective learning experiences. They can help learners to navigate information and promote imaginative engagement. Narratives can help learners gain an appreciation of the relevance of the material they are studying to real world practice. *The OO Files* are a suite of modules containing multiple choice questions situated in the narrative of a fictional law firm, which provides formative feedback on understanding of contract law. This paper will describe *The OO Files* and briefly detail student reaction to the program. It will then canvass a range of lessons that may be learnt from the program's development which may be assist other academics to consider the development of similar programs for their courses.

II. *THE OO FILES*

The OO Files are an optional component of a learning and teaching approach that was adopted for the two one semester Contract Law subjects (*Contracts A* and *Contracts B*) in the undergraduate law program at the Queensland University of Technology Faculty of Law in their current form in 2011, although they have a longer history dating as far back as 1990. That learning and teaching approach was designed to encourage independent student learning and to maximise the time spent by students in trying to understanding the course material rather than passively receiving course material by way of traditional lectures. The program includes video podcasts (which provide overviews of topics and explain difficult concepts, often through the use of animated diagrams[8]); workbooks which summarise relevant principles of law with case and legislative authorities, provide prescribed readings and contain questions which are graduated in difficulty and reflect Bloom's taxonomy;[9] and weekly small group tutorials. The assessment regimes in the two subjects are also similar and include inter alia: a mid-semester online multiple choice quiz, and an end of semester open book examinations. The mid-semester multiple choice quiz includes a number of short problem questions of the same type that feature in *The OO Files*.

The OO Files are a suite of eight modules: six that focus on specific parts of the Contract Law course (formation, limits on enforcement, content, discharge, remedies and vitiation) and one at the end of each of the subjects which comprise topics drawn from across the semester and which are intended to assist examination preparation. The modules utilise Adobe *Quizmaker* software and are accessed via a Blackboard LMS (see Figure 1 below).

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8   Des Butler '*The Contracts Vignettes*: Cost-Effective Podcasting Producing Quality Learning Outcomes in First Year Contract Law', Australasian Law Teachers Association Conference, Perth, 23-26 September 2007.
9   Des Butler and Leanne Wiseman, 'The Use of Workbooks in Teaching and Learning Contract Law', Australasian Law Teachers Association Conference, Hobart, 29 September-2 October 1994.

Figure 1: image maps in Blackboard with hotspots which launch *Quizmaker* modules when clicked

The program comprises a total of 180 short fact scenario questions which follow the same format of allowing unlimited attempts and providing both detailed feedback on correct responses (including relevant case and legislative authorities) and feedback on incorrect responses (which explains why the response is incorrect and/or redirects the student's attention to that part of the question that will yield the correct answer).

The eight modules are linked by a common theme of the student assisting the senior partner of a fictional law firm, Oscar Odin of Odin's Lawyers.[10] Each module focuses on the dealings of a different client of Oscar Odin (from whose initials the name of the program derives). These clients include a construction company, a billionaire industrialist, an innkeeper, a football stadium and a rock band. This enabled 'story arcs' of topics to be covered within modules; that is, storylines that developed over a number of questions. It also enabled variations of single scenarios to be explored across series of questions.

Each of the questions is illustrated by an image created using Linden Lab's *Second Life* virtual environment (see Figure 2 below). In addition, a feature called 'Oscar's Tips', a page of advice which appears at the end of each of the modules: points out connections between different topics, highlights common errors to avoid and gives general study tips.

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10 This hypothetical law firm appears in other multimedia programs developed by the author for use at the QUT Faculty of Law: see, for example, Des Butler, 'Contextualising the Learning of Legal Ethics through the Use of *Second Life* Machinima' (2010) 20 *Legal Education Review* 87. The use of the hypothetical law firm provides continuity in a broader narrative that runs through these programs.

Figure 2: the Adobe *Quizmaker* interface, featuring a short fact scenario question illustrated by a *Second Life* image

III. STUDENT RESPONSE

A formal survey of student reaction to *The OO Files* was conducted for quality assurance purposes at the end of semester 2 in 2011. The survey was rendered in two ways: by way of paper instrument completed in class by internal students, and a Survey Monkey survey completed online by external students. Identical questions appeared in both versions of the survey and consisted of both Likert scale questions and open ended questions. The survey was completed by 263 students, which represented a response rate of 40% of the total cohort.

The survey found that 89% of the respondents regarded the program as a useful review tool for the mid-semester multiple choice quiz. Of these nearly 50% strongly agreed that the program had helped their preparations. Only 2% (5 respondents) disagreed with the proposition while 9% (25 respondents) neither agreed nor disagreed. The survey was conducted at a time after students had received their marks for the mid-semester multiple choice quiz, so it might be speculated that this may have had an influence on some of the results.

The survey also found that 95% of respondents agreed or strongly agreed (with 53% strongly agreeing), that the program would be a useful review tool for the open book end of the semester exam. Only 1 respondent disagreed with this proposition, while 5% (12 students) neither agreed nor disagreed. Since the survey was of *Contracts B* students and was conducted in semester 2, these students had already had the experience of undertaking the end of semester open book examination in *Contracts A* (which is a prerequisite to *Contracts B*). The 95% of respondents agreeing or strongly agreeing therefore may have seen greater value in the program as a learning tool than simply a preparation for the multiple-choice quizzes which contain some short fact scenario problems of a similar type to those in the program.

An explanation may be suggested by the 95% of respondents who agreed or strongly agreed with the proposition that 'The OO Files assisted my understanding of contract law'. No respondents disagreed with this proposition while 4% (10 respondents) did not agree or

disagree. This high positive response may be due to the fact that feedback is provided to both correct and incorrect responses. A representative comment was:

> The thorough explanation for both correct and incorrect answers was extremely helpful; rather than a simple 'Wrong, try again' that other online tests seem to have, the more detailed response allows for a better learning experience and less guess work.

A large number of respondents reported that they found the feedback on the incorrect responses just as valuable as that for correct responses. A typical observation was as follows:

> I like the fact that explanations are given when a wrong answer is selected – in fact, I liked it so much that I would do one quiz properly then go back and do it again and select the wrong answers so I could see the explanation for why the correct answer was the most appropriate one on the facts.

It has been observed that students today commonly want the flexibility of accessing their study materials in their own time and in their own way.[11] This flexibility enables them to juggle the competing time commitments of their work, study and social lives that are a common experience for many modern students.[12] Another feature of *The OO Files* that attracted favourable comment from a large number of respondents was the flexibility provided by the program in being able to access it at a time and in a place of their convenience, and that it could be undertaken at their own pace in a non-threatening environment. Various comments to this effect are reflected in the following:

> The OO Files are an invaluable source of linking the theory to practical scenarios. They are self-paced and it was very useful to me to be able to use these at my own choice of time and to use as much time as I required, making notes along the way and looking up notes.

So far as these respondents were concerned therefore, *The OO Files* program was a valuable aid to their learning, aiding their general understanding of the course material and a learning tool that was well suited to their needs in terms of flexibility. However the limitations of the survey instrument should be acknowledged. For example, these responses viewed against demographics such as age group, gender and mode of study would have illuminating. Nevertheless, even with these limitations the results are suggestive of a learning tool that can be a valuable addition to a learning and teaching approach.

IV. Lessons For Academics

The author's experience with development of *The OO Files* yields a number of lessons outlined below, which may be useful for academics contemplating the development of similar formative exercises for their courses.

A. *Use of Narrative*

The eight modules in *The OO Files* each focus on a different client and include 'story arcs' – that is storylines that develop across several different but connected fact scenarios. For example, one of the storylines within the module dealing with vitiation of contracts, which focuses on the various dealings of a rock band, involves the band: first being unpaid at one club, auditioning at a new club and then promoting and performing at that new club. This storyline develops across a series of questions. In other cases a fact scenario (such as the billionaire industrialist purchasing a yacht) may be followed by questions containing variations of the same facts (prefixed by, for

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11 Oliver McGarr, 'A Review of Podcasting in Higher Education: Its Influence on the Traditional Lecture' (2009) 25(3) *Australasian Journal of Educational Technology* 309.

12 Marie-Pierre Moreau and Carole Leathwood, 'Balancing Paid Work and Studies: Working (-Class) Students and Higher Education' (2006) 31(1) *Studies in Higher Education* 23; John Tarrant, 'Teaching Time-Savvy Law Students' (2006) 13 *James Cook University Law Review* 64.

example: 'Suppose instead …'), thereby allowing students to explore different nuances of the law that may be raised by the one fact scenario.

It has been suggested that such constructive learning is best achieved through use of authentic learning experiences which are based on real world problems and case studies.[13] An authentic setting for learning can be created by a carefully crafted narrative. A narrative may help learners to 'create meaning, reduce cognitive load involved in navigating through information, and support cognitive and imaginative engagement'.[14] As Ferguson et al observed:

> An appropriate story told in an appropriate setting not only conveys important information, but provides contextual cues that facilitate recall of that information in situations in which it is likely to be applicable.[15]

Narratives have significant potential for enhancing student learning, potentially reinforcing learning objectives and ingraining subject matter. They are able to 'draw students into plots and settings, thereby opening perceptual, emotional and motivational opportunities for learning.'[16]

In the survey, a total of 68% of respondents (180 respondents) agreed or strongly agreed that the client storylines were a valuable aspect of *The OO Files*, compared with 5% (twelve respondents) who disagreed and 27% (71 respondents) who neither agreed nor disagreed. Most of those who agreed or strongly agreed were of the view that the storylines made the program engaging and made the scenarios more realistic. One respondent stated:

> Following a client through a number of story lines really added to my enjoyment of the OO Files, I felt it helped me get an understanding of the variety of issues an attorney can encounter with a client during their professional relationship.

The storylines helped some students to access and remember the material by building on familiar facts. Their comments would appear to support the suggestion in the literature that storylines are able to provide contextual cues. As one remarked:

> Story lines were easy to follow, particularly when it was the same 'band' or company being referred to and information could be recalled. Less hard to recall information about a situation when you are already familiar with it, and less confusing (sic).

Other respondent comments reflected the proposition that storylines facilitate cognitive processing and imaginative engagement. A typical response in this vein was:

> [The client storylines were valuable] because they give real world examples. It can become a bit difficult at times studying abstract legal principles. Once I had completed some of the OO files, I then went back and reread some key cases in a different light as I had an example to apply it to. I identified the ratio and then had something to apply it against (that is the factual circumstances created in the OO files).

While 27% of the respondents indicated that they neither agreed nor disagreed that the storylines were a valuable aspect of the program, no clear reasons emerged for this not insignificant neutral

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13 Thomas Reeves and James Okey, 'Alternative Assessment for Constructivist Learning Environments', in Brent Wilson (ed), *Constructivist Learning Environments; Case Studies in Instructional Design* (Educational Technology Publications, 1996), 192.

14 Trena Paulus, Brian Horvitz and Min Shi, '"Isn't It Just Like Our Situation?" Engagement and Learning in an Online Story-Based Environment' (2006) 54(4) *Educational Technology Research & Development* 355, 356, citing Bride Mallon and Brian Webb, 'Structure, Causality, Visibility and Interaction: Propositions for Evaluating Engagement in Narrative Multimedia' (2002) 53 *International Journal of Human–Computer Studies* 269.

15 William Ferguson et al, 'ASK Systems: An Approach to the Realization of Story-Based Teachers' (1992) 2(1) *Journal of the Learning Sciences* 95, 99.

16 Jonathan Rowe, Scott McQuiggan and James Lester, 'Narrative Presence in Intelligent Learning Environments', (Paper presented at AAAI Symposium on Intelligent Narrative Technologies, Vancouver, 22–26 July 2007), 1, citing Jeanne Ormrod, *Human Learning* (Pearson, 4th ed, 2004) <http://www.aaai.org/Papers/Symposia/Fall/2007/FS-07-05/FS07-05-021.pdf>.

response. Such diverse response to narratives as indicated by this limited study may therefore be worthy of further study.

B. *Use of Images*

Each of the questions in *The OO Files* is illustrated by an image created in Linden Lab's *Second Life* virtual world. There were a number of reasons for doing so. First, it was hypothesised that the use of images in support of the narratives would be inclusive of a range of student learning styles, providing students with the opportunity to visualise ideas and concepts.[17] Secondly, it was thought that the images would make the look of the program more appealing and attractive. Thirdly, the images can serve as a navigation aid since they can help a user who is reviewing the questions to quickly locate a particular point in a module.

In the survey a total of 54% agreed or strongly agreed that the images were valuable, compared with only 9% who did not value the images, while 37% of the respondents were uncommitted. Of those who agreed or strongly agreed with the proposition there was strong support for the first two reasons.[18] Many visual learners identified themselves as such and expressed their appreciation of the images. One such comment was as follows:

> Kinesthetic and visual learners appreciate interactive and graphic problem questions such as this.

Many of these students regarded the images as bringing the characters in the storylines alive. As one respondent stated:

> It made the problems more realistic and helped me to view the law from a new perspective also helped me to empathise with the clients.

Another observed to a similar effect:

> Law is about people … the imagery gives the exercise character, context and a reminder that people are involved.

There was also support for the images as making the program an interesting, attractive and engaging learning environment. A typical comment to this effect was:

> The images helped because it helped me feel attached to the characters. On a purely aesthetic note – they make the module seem like something fun to do and not just more endless text (which we get enough of in this degree).

Having fun when studying has been recognised as both a motivator for being engaged and a powerful stimulus for effective learning.[19] A similar comment reflected the view expressed by several respondents that the images reinforced the contextual cues provided by the narratives:

> The images helped to make the scenarios interesting and helped [me] to remember key concepts.

Most of the students who either disagreed or were neutral regarding the images being a valuable aspect of the program, identified themselves as text-preference learners and indicated that they tended to concentrate on the text of the problems. These students indicated that they either did not pay any attention to the images or that they did not think that the images added any value to the program. Research has also shown that for a complex mix of personal and societal ideologies around play and learning, a small proportion of students will resist game-based design

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17 Nicholas Burbules, 'Technology in Education: Who, Where, When, What & Why?' (1999) 1 *International Journal of Educational Technology* 1 <http://www.ed.uiuc.edu/ijet/v1n1/v1n1feature.html>.

18 The absence of support for the third reason may be due to this being the first time *Quizmaker* was used in the QUT Law Faculty. The use of the images as a useful navigation tool was not promoted in its first offering and may not have been feature fully appreciated by most students.

19 See for example, Jerome Bruner, *The Process of Education* (Harvard University Press, 1960), 14.

in learning activities.[20] Some students may have regarded the addition of *Second Life* images in this light, and that may also account for some of the neutral and/or the small percentage of negative responses to the question of whether the images added value to the program. A deficiency of the survey as a research tool was that it did not, for example, ask students to self-identify their preferred learning style. A comparison of the results of such a question with those seeing value in the images, may have been insightful.

Second Life images were used in *The OO Files* because of the author's familiarity with the virtual world, which he has used in other computer programs he has developed.[21] However, *Second Life* need not be the source of relevant imagery. Other sources may be accessed for images, including collections that are available at no cost.[22]

C. *Cost*

The relatively low government funding for Australian law schools has been recognised as a significant impediment to innovation in the development of curricula and resources.[23] The software utilised by *The OO Files* – the Adobe *Quizmaker* – is proprietary software that may be licensed for a fee.[24] At the time of writing, that fee was $600 for a single licence. *Quizmaker* allows the creation of twenty different types of questions including: multiple choice (single and multiple response), fill in the blank, drag and drop, short answer, essay response, Likert Scale and ranking exercises.

However *Quizmaker* is not the only software available that is capable of achieving similar results. Indeed *Quizmaker* is not the first software used to host *The OO Files*. Until 2011 the program utilised *Hot Potatoes* software. The *Hot Potatoes* suite of programs was produced by developers at the University of Victoria, British Columbia. *Hot Potatoes* is now freeware[25] and allows users to create interactive: multiple-choice (single and multiple response), short-answer, jumbled-sentence, crossword, matching/ordering and gap-fill exercises for access via the internet.

In addition, a learning management system ('LMS') like Blackboard or Moodle typically includes its own quiz features which offer similar ranges of question types and functionality. However the appearance of the end product may not be as attractive and engaging as that which may be achieved using a program like *Quizmaker*. Nevertheless, the availability of these LMS features and the freeware programs like *Hot Potatoes* means that cost alone need not be seen as a barrier to the creation of such programs.

D. *Technical Proficiency*

Another commonly cited barrier to academics developing computer-based innovators is a lack of technical proficiency.[26] Prensky postulated a divide between 'digital natives' and 'digital

20 James Gee, *What Video Games Have to Teach Us about Learning and Literacy* (Palgrave Macmillan, 2004); Jennifer deWinter et al, 'Computer Games across the Curriculum: A Critical Review of an Emerging Techno-Pedagogy' (2010) *Currents in Electronic Literacy* <http://currents.cwrl.utexas.edu/2010/dewinter_et_al_computer-games-across-the-curriculum>.

21 Des Butler, '*Second Life* Machinima Enhancing the Learning of Law: Lessons from Successful Endeavours' (2012) 28(3) *Australasian Journal of Educational Technology* 383.

22 Images may be obtained for no cost using Creative Commons Search (<http://search.creativecommons.org/>) or sites such as Stock Xchng (<http://www.sxc.hu/>).

23 Law Council of Australia, *Review of Australian Higher Education Discussion Paper* (2008) 6 <http://www.deewr.gov.au/HigherEducation/Review/Documents/Submissions2008/209LegalEducationCommitteeLawCouncilofAustralia.pdf>.

24 The program is available from <http://www.articulate.com/products/quizmaker.php>.

25 The program is available for download from <http://hotpot.uvic.ca/>.

26 Andrew Middleton and Richard Mather, 'Machinima Interventions: Innovative Approaches to Immersive Virtual World Curriculum Integration' (2008) 16(3) *ALT-J, Research in Learning Technology* 207, 207-8.

immigrants', although he has now suggested that as more people become immersed in modern day digital culture a better description for describing how effectively people use technologies is the concept of a difference in 'digital wisdom'.[27] There are still many academics today for whom the extent of their technical proficiency is represented by only the basic functions of Microsoft *Word,* Microsoft *PowerPoint* and a LMS like Blackboard or Moodle.

The modules in *The OO Files* are created in three steps. The content, the questions, answer options and feedback, were created using a table in *Word* (see Figure 3 below). Word tables are an efficient and organised approach to content creation. They also require no more than basic skills in using Word.
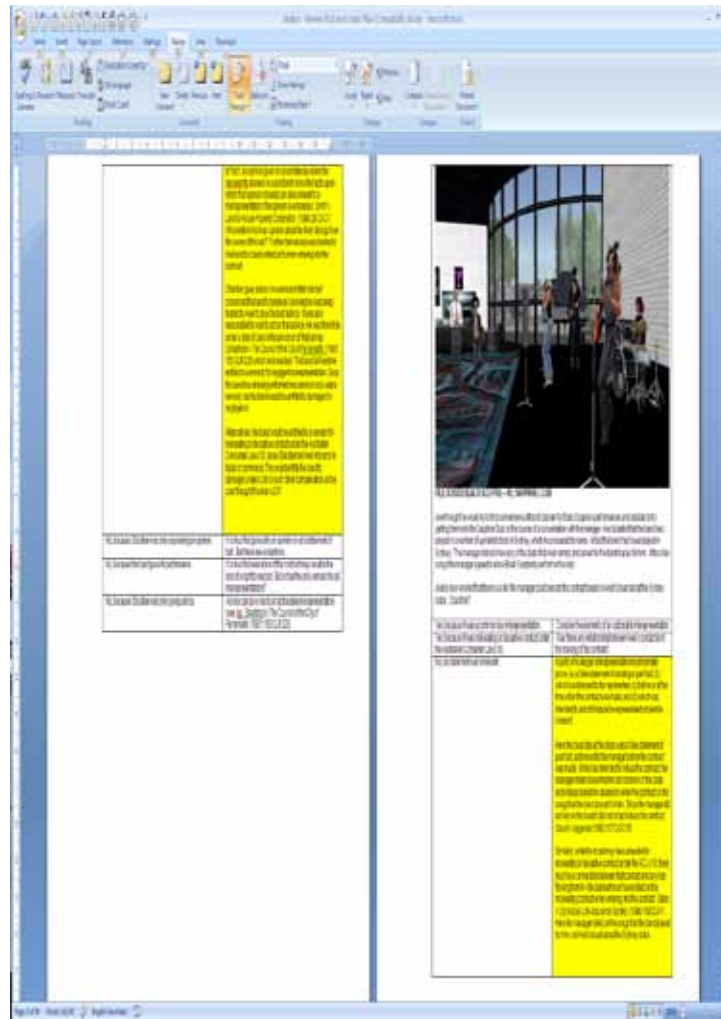

Figure 3: Word table showing the fact scenario, question options and feedback

The second step involves entering and positioning the content in *Quizmaker. Quizmaker* has two modes of interface. 'Form View' is the template workspace that resembles the Word table used for creating the content, and provides the template boxes into which content (the questions, answer options and feedback) is entered. 'Slide View' may then be selected. 'Slide View' is a screen akin to a PowerPoint slide, and serves as a WYSIWYG (What You See Is What You Get) system. This view provides toolbar menus and buttons that have a close resemblance to those provided by PowerPoint. As such it enables a wide variety of tools for manipulation of objects and text on the screen. These include: font size, colour and style, highlighting, justification

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27 M Prensky, 'H. Sapiens Digital: From Digital Immigrants and Digital Natives to Digital Wisdom' (2009) 5(3). *Innovate*, article 1, 1 <http://innovateonline.info/>.

as well as dot point and numbered lists. Users may insert images, shapes and/or video files (swf, flv or mp4 formats only), and resize and position them on the screen in the same fashion as composing a PowerPoint slide. The third step involves the click of a button to package all content into a standalone packaged module that can be uploaded into Blackboard or other LMS in the same way that an item like PowerPoint slides can be uploaded. Accordingly, an academic who is familiar with the basic functions of Word, PowerPoint and Blackboard or other LMS, has the necessary technical proficiency to create online modules like *The OO Files* using *Quizmaker.*

The process for creating modules using the freeware *Hot Potatoes* program is similar. Content is copied from Word tables into a similar template interface that comprises of boxes into which the questions, answers options and feedback are entered. However unlike *Quizmaker, Hot Potatoes* has no similar WYSIWYG system. It also uses HTML and JavaScript programming but does not necessarily require knowledge in either language. Clicking various function buttons in the template inserts the necessary HTML scripts into a master file. However basic HTML scripting is required to change font style (for example inserting text between <B> and in order to bold text) or to change the colour of text. Users are able to customise the colours of the interface by separate colour palettes for different elements on the screen, such as the exercise background, the navigation bar and text. Images or video files are not inserted in the same way as they are inserted into *Quizmaker* modules, but rather are linked either by stipulating the URL in the case of an image on the internet, or specifying the location of the file on a hard drive (for use when the viewer is on the same drive). Packaging the module is achieved by simply clicking an 'export to web' button. This produces a single HTM file which again may be uploaded to a LMS in the same way as any other file (for example, by the 'add content' button for Blackboard pages). Accordingly, *Hot Potatoes* requires some additional skill that are not needed for *Quizmaker,* but they are skills that can be quickly and intuitively acquired.

Blackboard and other LMS quiz features can also be used with skills that can be quickly and intuitively acquired. These systems have the advantage of ease of uploading of media and formatting of text which can be performed using the range of buttons provided by the in-built step-by-step 'wizards'. However they lack the freeform positioning and sizing capabilities of the WYSIWYG 'Slide View' in *Quizmaker.* Accordingly lack of technical proficiency should not be a barrier to the creation of programs like *The OO Files*.

E. *Time Commitment*

Academics are increasingly time challenged due to increasing class sizes and often competing commitments in the form of assessment, research and administration. Creating a program like *The OO Files* can be a time consuming endeavour and writing multiple choice questions may be daunting for those who are new to the task. There is a plethora of literature concerning effective multiple choice writing.[28] Questions need to be carefully crafted to remove any ambiguity or prolixity, distractors need to be plausible with sensible options, and feedback needs to be designed on both correct and incorrect responses. All of these steps can take a long time to complete.

However, *The OO Files* did not reach its current size of 180 questions in its first iteration. The program has a long history dating back to 1990 when it first began as a single module of 27 questions and was delivered on a 5¼ inch floppy drive. That program was subsequently expanded, first to three modules containing approximately 60 questions in 2000 when it was converted to use *Hot Potatoes* and first made available online, and again when it was converted

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28 See, for example, Jennifer Murdock, 'Basic tips for writing effective multiple choice questions (MCQ's): A compilation of the most useful advice' <http://homes.chass.utoronto.ca/~murdockj/teaching/MCQ_basic_tips.pdf>; Monash University, 'General advice on writing multiple choice questions' and the various articles and websites cited therein <http://arts.monash.edu.au/philosophy/peer-instruction/using/mcq-advice.php>; University of Leeds, *Integrating technology into assessment* <http://www.sddu.leeds.ac.uk/online_resources/assessment/objective/objective_design.htm>.

to its current size using *Quizmaker* in 2011. The latest expansion was facilitated by time saving efficiencies achieved by the process of creating content in tables in Word (as noted above) and copied over to template boxes. Further, the use of story arcs and variations on the same fact scenarios can be a useful technique enabling the development of multiple questions with consequent time efficiencies in the creative process.

The development of a program with as many questions as *The OO Files* therefore need not be a one-off endeavour but can instead be a project spread over a period of time with new questions continually being added. In this way the necessary time commitment can be effectively managed by an academic in the context of their other workload. Indeed the current iteration of *The OO Files* is unlikely to be its last. The most common comment made by students – which in most cases was indeed the only comment – was that only way that *The OO Files* program could be improved was by adding even more questions.

F. *Sustainability*

While a program like *The OO Files* represents a significant investment in time, it can also have a significant return in terms of sustainability. With one caveat, quizzes created using *Quizmaker*, *Hot Potatoes* and LMS quiz features are all easy to update, add to or vary by academics sitting at their desktops without the need for specialist technical assistance. This means that if, for example, there is a change in the law it is a relatively simple matter for the online quiz to be amended accordingly. As a consequence, computer programs like *The OO Files* can have longevity spanning many years – at the type of writing the core of *The OO Files* has now been used by students for 23 years. When viewed in terms of the hundreds of students that use the resource every year, the time invested in its development may be considered time well spent.

The one caveat relates to the *Hot Potatoes* program. As noted, packaging a *Hot Potatoes* module produces a single HTM file. Unlike packaging a *Quizmaker* module, it does not actually import media files. Instead it includes in the master HTM file links to the URLs for the image or video files, for quizzes available over the internet. Accordingly, these links need to be maintained. If they are broken the images or videos will not appear in the *Hot Potatoes* module. In as much as most academics will not have access to their school's computer mainframes, technical support is likely to be needed for uploading or changing image or video files used in *Hot Potatoes* modules. Further, if there is a change in the server hosting such files all links in the modules will need to be up-dated. The withdrawal of such technical support was one reason why *The OO Files* program was converted from *Hot Potatoes* to *Quizmaker*.

V. CONCLUSION

Two of the main criticisms of using multiple choice questions as a means to providing formative feedback are: that they are remote from legal practice and that they encourage a surface approach to learning. However the approach taken in *The OO Files* situating the multiple choice questions within a continuing narrative, including story arcs and multiple questions based on the same story-line, can enable students to obtain an appreciation of the relationship of the material they are studying to real world practice, provide contextual cues for the application of the law and enable nuances of the law to be explored beyond a mere surface level. Further, as a component of a broader learning and teaching approach a program like the *OO Files* can serve a valuable role in efficiently providing consistent and timely feedback at a time and in a place that is convenient for the student. They are a learning exercise that can be undertaken by students at their own pace and in a non-threatening environment. As one student described *The OO Files:*

> Good, informative, entertaining, sometimes funny. They help explain situations in a practical way, sharpen thinking and recognition of the 'symptoms'.

The positive reaction of the cohort of students in the limited survey reported here suggests that there is value in the approach which is worth further exploration. In the meantime, the

development of *The OO Files* over more than 20 years, yields a number of valuable lessons for academics interested in developing similar resources for their courses. Among those lessons it can be seen that common concerns regarding cost and lack of technical proficiency need not be insuperable barriers. While the time involved in such a development is not to be underestimated, it is a burden that can be managed and one which in any event should be regarded as a valuable investment when viewed in terms of the sustainable, engaging and challenging learning environment that a properly designed program is capable of delivering for generations of students.