

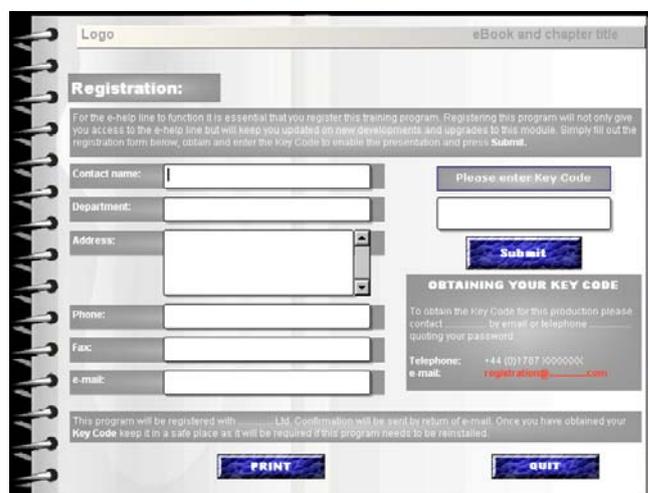
e-Learning for the emergency services

By Len Watson

The acquisition of knowledge and research is vital to the future development of training and operational procedures. It is very apparent that internet computer technology (ICT) is under-utilised in emergency service training departments and minimal advances have been made in this quarter, but the medium to long term view offers a broad and exciting expansion. At present, Information collection and e-links for research and sharing of information are almost non-existent. It can be argued that most fire services have WEB sites but, almost without exception, they have no links to information centres or collection of information facilities pertinent to operational performance and training. Even within service Intranets these facilities are limited to age-old-concepts and are designed to encompass pre-existent form filling and report writing. Standard Operating Procedures, Operational notes etc are generally available as unsecured text and Adobe portable document files (pdf). Although pdf files are now being introduced, the facilities available within Adobe Professional for comment, feedback and the collection and sharing of information have not.

Utilising ICT for preparedness training is being looked at but traditionally this is likely to take some time before any real movement takes place. That is, unless the emergency services embrace, not just the technology but a visionary new approach that will change the method of training encapsulation and delivery, validation and accreditation. For the most part the software is available but the necessary skill level to build cutting edge electronic programs is outside the remit of the do-it-yourself training instructor. Applications that can offer programmers the interface to build cutting edge programs:-

- Password protected secure publications with reader feed-back facility
- Interactive presentations as teaching aids
- Student centred eLearning, eAssessment, accreditation and remote monitoring of student performance
- Structured information collection, analysis, audit and continual review
- A research facility for secure reporting, comment and data wizard analysis
- Project and personal development with active and interactive programs
- A professional help-line facility



Key-code or password protection, student registration and access to a professional help-line

Creation of programs and securing content.

The choice of electronic packaging invariably depends on the content and nature of the publication and, of course, the degree of security required. Microsoft Powerpoint has become a favourite with trainers, mainly because it's readily available and offers a simple to use platform. Unfortunately, the platform is memory hungry, cannot be made secure and is very limited in its application. As a saved .pps file, any embedded files and objects are saved separately and, as such, will fail to function if loaded to a different hard drive. The production is untidy and when saved to CD, all hyperlinks will need to be pointed to the appropriate hard drive that holds the information. This now becomes the IT managers problem. It is time consuming and as such

has a cost implication and requires PowerPoint for each workstation. Additionally, with each upgrade of PowerPoint your training programs may also need to be upgraded.

Other and much more beneficial platforms (Adobe Professional, Macromedia, Opus etc) are available which allow programs to be published in a variety of ways:-

- Executable (exe)
 - Install.exe
 - Program.exe
- Embedding
 - Sound and audio (Wave, snd, aif, midi, cda...Etc)
 - Video (mpeg, avi, wmv, wmf...etc)
 - Adobe Flash (swf, fvc)
 - Animations (Ani, flc, iff, mng, cgm, gif...etc)
 - *iO* Streaming
 - **C++** and string (Variables for programming)
- Scorm and Twaite certification



Menu hyperlinks and page control panel

Unavoidably, these platforms require a higher skill level by the programmer which removes DIY from the equation but, in comparison, can offer the best overall solution for the purpose intended. It can be argued that to remove the fire service instructor from the packaging process is a good thing as this will dramatically improve product design and quicken the process, reducing instructor down time and allowing courses to be run back to back. Theory and course work can be delivered by your internal intranet or, better still, via the Internet. Consider, the cost implication may not be what you think, especially where the classroom can be student-linked or where training becomes workstation based.

Executable stand-alone productions can be made to encapsulate all directories and files into a single **.exe** file. This file type can be equipped with auto-run and an install.exe facility that can upload to any drive and install shortcuts direct to the start up menu and desktop. Executable files can also be made to run from CD only or whichever method is chosen for publication. Programs can be password protected or given key-code security.

These types of programs are secure in every way and do not allow any changes or alterations to be made by the end user. They can be built to incorporate an Intranet, Internet or WEB linked facility for feed-back, discussion, reporting etc,. The install.exe can also be utilised as an over-write facility making the installing of upgrades, add-ons and plug-ins a simple matter.

As more and more programs become available, subject matter can be grouped and published within a 'creamer' as a single install.exe directory. Then to activate the desktop icon will launch the 'creamer' giving access to all programs within the directory. Not only will this reduce desktop clutter, it will tidy the installation of all programs into a single directory.

Electronic storage, access and security

Server storage for programs, collection of information and storage of feedback has to be structured into existing facilities. Even where eLearning programs are configured to run from CD/DVD only, where feed-back and research plug-ins are part of these programs, the links will

need to be pointed to the appropriate IP/URL address, directory and folder, otherwise these facilities will not function.

The greatest advantage offered by eSystems has to be the accessibility and sharing of information and the interaction and exchange that this allows. Workstations that are segregated from intranet systems and/or the Internet, have totally missed the concept and the vision of eLearning, information collection and interaction. Of course security is paramount but IT managers worth their salts can set the necessary security levels and controls and still cater for freedom of information to allow this interaction to flourish.

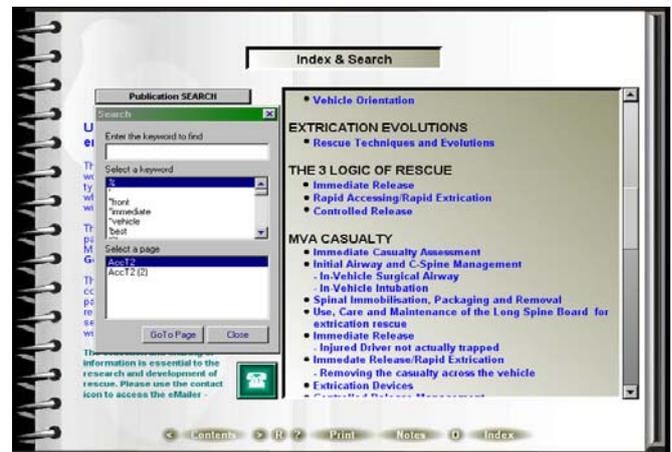
The installation of programs and the set up of directories and files need to be standardised. Accessibility should be available to all and easily followed 'User Guides' should be built-in. Programs should cater for ease of upgrades and be suitably compressed so as not to undermine storage capability.

Program Engines

The platform a training program is built on is important. The program engine should be flexible offering a menu giving access to all sections. The larger program should have additional pages, windows and sub-sections so that information sheets can be opened in conjunction with the main program.

Program Engines should include:-

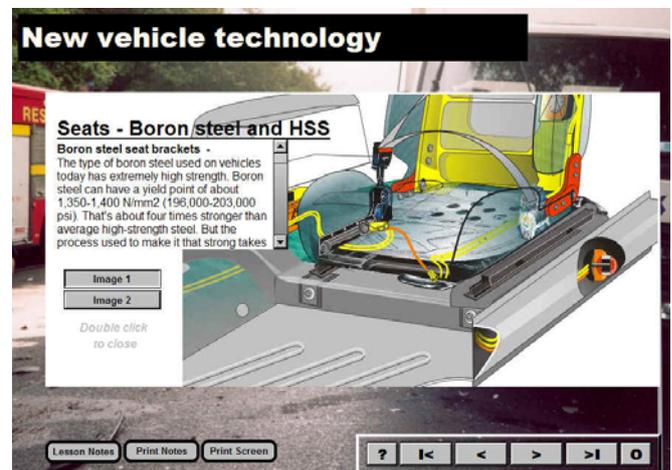
- Flexibility in its design
- User friendly operation with in-built user guide
- Main menu and sub-menu options
- In-built comprehensive active index and publication search engine
- Individual page control panel
- Summary assessment capability
- Help line/feedback facility
- Useful links and reference sites



A full Index complete with an in-built search engine is possible and a control panel on every page will allow complete and instant navigation of the whole production. The scope for offering detailed explanation, further information and internet access to reference material is far beyond current capability. The possibilities are virtually limitless.

Objects can be imbedded with appropriate controls to suit -

- Text boxes
- Scroll bars
- Audio
- Slide shows
- Video
- Overlays and layering
- Active schematics
- Animations
- Time lines and movement controls
- Gaming
- Special effects and Transitions
- Enlarge/zoom

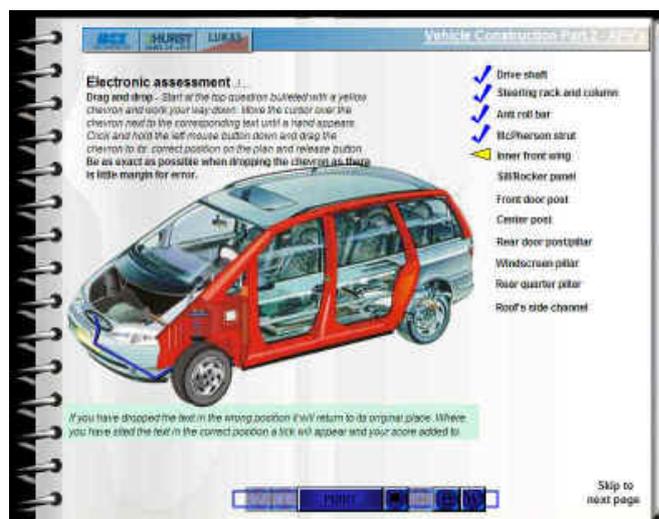
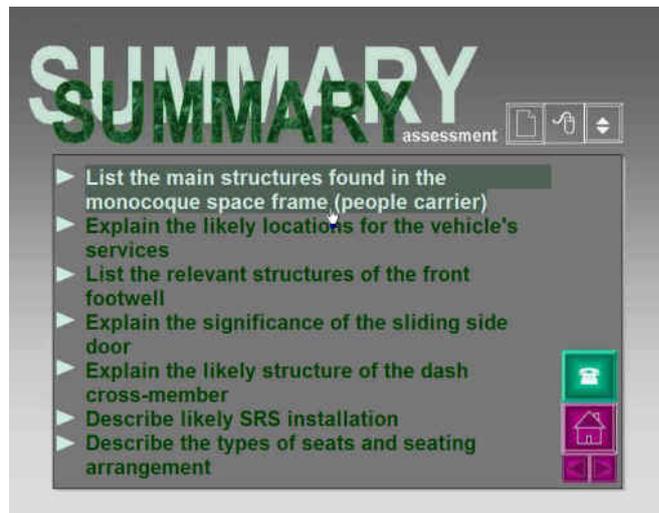


explanatory scroll text boxes with active hyperlinks to layered illustrations and buttons for 'look up notes, Print notes, print screen'

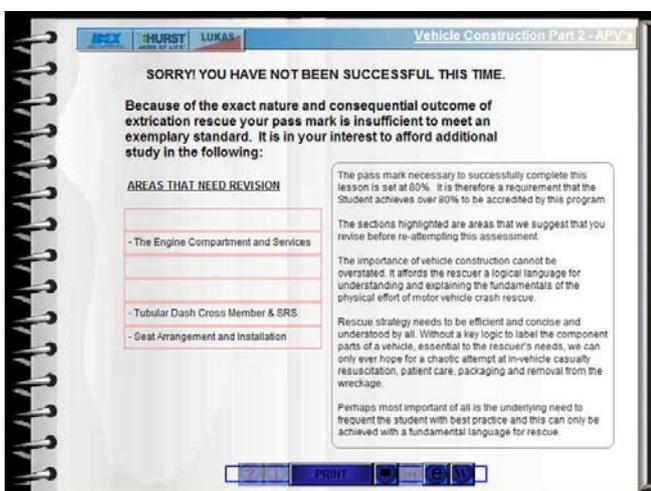
Instructors' presentation programs cannot be considered complete without a summary page for validation that allows immediate access to any area of the program to be revisited. All lesson points can be questioned at the validation stage where candidates can be hot-seated and lesson adsorption measured and, where necessary, the presentation revisited at the exact point.

Student centred eLearning programs can be equipped with electronic self-assessment capability; hyperlinks and variables that include:-

- Drag and drop
- Interaction
 - Selection
 - Activation
 - Yes/no
- Multi choice
- Text boxes linked to set variables that identify and measure input precisely -
 - Equal to
 - Same as
 - Contains
 - More than
 - Less than ... etc.
- Frequently asked Q & A
- Help line/feedback facility



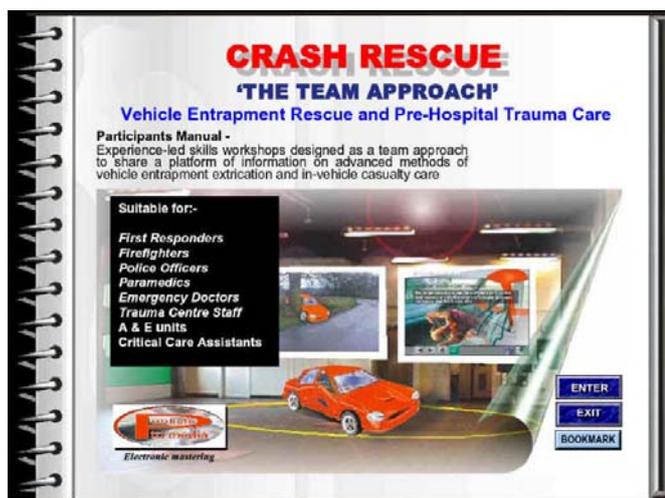
Functional accreditation can offer scoring and percentage grading or, where students fails to meet the desired standard, it can be programmed to redirect them to the areas that need revision. On reaching the set standard a certificate can be printed and, with additional scripting, results can be automatically relayed to the line managers workstation via Intranet or Internet link.



Training programs of this ilk already exist and have been developed for many businesses and training facilitators around the world. [resQmed](#) Limited offers a wide range of eTraining programs for [motor vehicle crash rescue preparedness](#) and [health & safety](#). Most of the criteria

mentioned in this article, including high-end graphics and schematics are incorporated in these presentations. The remote student centred eLearning programs supplied alongside these presentations are very versatile and offer the only realistic method for fast, wide scale implementation, accreditation and certification.

The 'MVC extrication pathfinder' by [resQmed](http://resqmed.com) is an extensive information centre designed for use at the roadside. Built on an 800 X 600 platform suitable for touch-screen tablet computer application, this program gives instant access to risk control measures, evolution options and risk critical information. On viewing this program it is instantly apparent from the volume of information and the dynamic risk management options available, that firefighters cannot be expected to carry this information around in their head. Much thought has been given to the design of the program's engine, which even caters for multi tasking where more than one vehicle type is involved. It also allows plug-ins and upgrades to be uploaded as often as required without any fuss.



High-end graphics offer a much clearer understanding of subject matter and can be used to illustrate, illuminate and animate presentations and workshops.



Toughbook and tablet applications – easy recognition icons within a control panel, text and buttons can be hyperlinked to give instant access to vital information.

There is no doubt that computer based training and information technology will help meet the new challenges facing rescue teams and afford the interactivity and sharing of information that is so essential for both team and personal development. Just as important, is the matter of data collection, problem solving and hazard identification, and the necessary applications and programs to move things forward. ■

Comment:

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