JSP 822

Part 5: Chapter 7

Defence Training Support Manual 7

Methods & Media Selection Tool User Manual

Training Education Skills & Resettlement
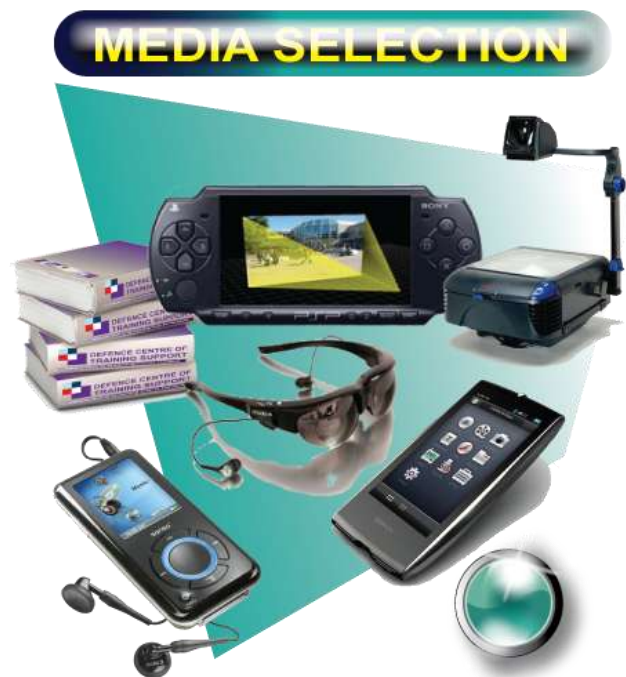
Methods and Media Selection Tool Manual

Version 1.0

Produced by the Defence Centre of Training Support

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Introduction

1.   The Methods and Media Selection Tool (MMST) has been developed to support decision making when optimising learning.   The tool comprises several models developed in V·I·S·A© (Visual Interactive Sensitivity Analysis) by SIMUL8©Corporation. The MMST should be part of a wider process designed to guide analysis of the most effective and efficient solutions for Defence training and education.

2.   The MMST is accompanied by an e-Learning package which explains fully the process used and the advantages and disadvantages of each method and media. It has been designed mainly as a reference tool and will be updated regularly. It is advisable to complete at least the first module before using the MMST.

3.   There are 2 ways of accessing the MMST V·I·S·A© Tool; either by installing the software on to your pc or by opening the models via the web (currently requires a direct internet connection – **not through the DII/RLI gateway**).   Links to the web version are available at Annex D and instructions for standalone installation are at Annex A. There is also an excel version of the MMST available on the DCTS Learning Technologies (LT) website on the Defence Intranet.
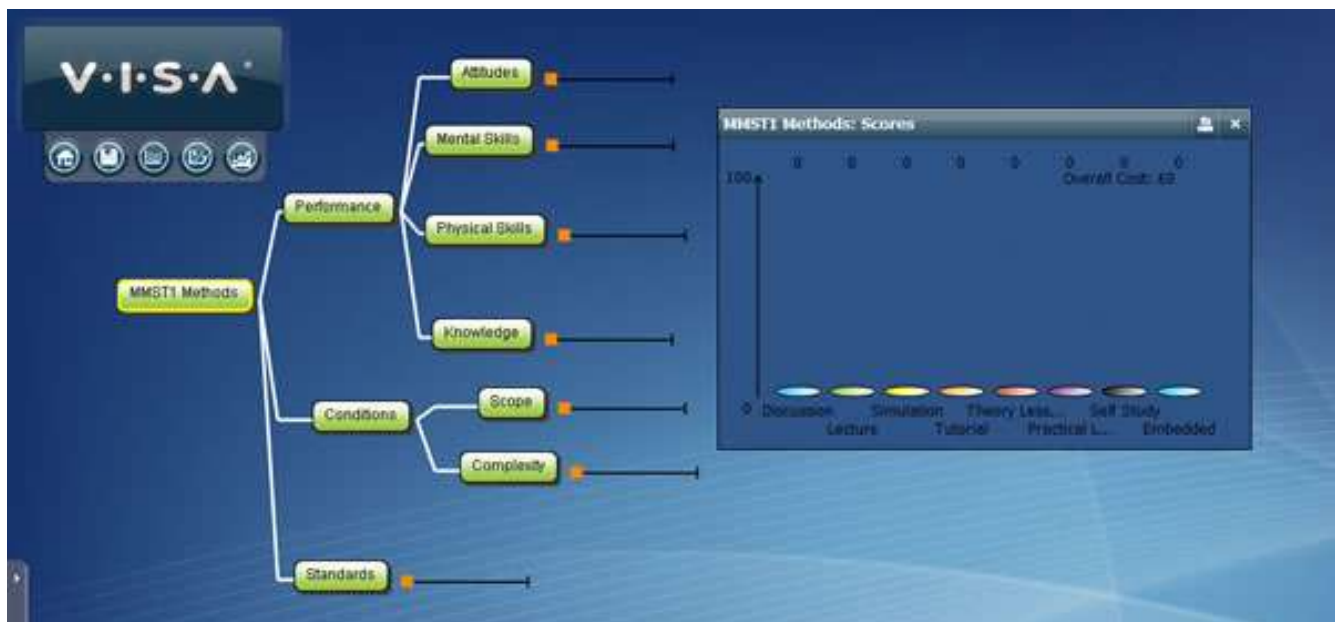

Using the Methods Selection Tool

4.   When you open MMST1 Methods you will have the Methods Selection Stage of the MMST (see screenshot above). In the e-Learning package available on the DLP there is a short

application at the end of the second module which shows how to use the tool, however a short overview is below:

5.   Several criteria are used which are grouped into areas (such as performance and conditions). There are also separate leaf criteria (such as Attitudes and Mental Skills) which have sliders that can be moved from left to right. As you move the sliders the chart shows the recommended mix of methods for your training or education.

6.   Begin with the Performance branch by hovering over each leaf criteria (for example *Attitudes* in the sub-branch *Performance*). You will see a statement related to the criteria (e.g. "The learning involves developing attitudes and behaviours"). Move the slider to the right to represent what % of the learning includes objectives related to attitudes. If the learning is only about attitudes move the slider fully to the right, whereas if attitudes are totally irrelevant leave the slider where it is, fully to the left. Note: You should not have several criteria in the model set at 100%. Instead discuss which are most important and reduce the weightings for criteria which have less influence.

7.   Continue through all the sliders and instantly you will see the output on the chart showing the most appropriate mix of methods for your learning.

8.   **KEY POINT: The MMST works best if you have a consensus from a cross-section of personnel such as SMEs, Instructors, Trainers, and Designers, ideally with a learning specialist acting as facilitator for the workshop.**

9.   Once you have moved all the sliders based on the learning requirement being analysed you should have a chart of the output similar to below:
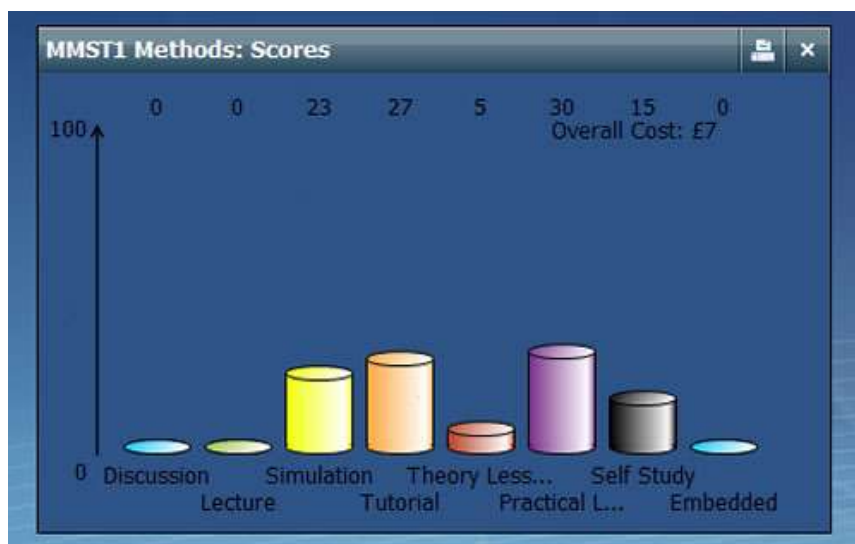
10.   In this learning requirement the tool is recommending 30% Practical Lesson, 27% Tutorial, 23% Simulation, 15% Self Study and 5% Theory Lesson. The overall cost is mainly based on Instructors required and initial set up costs are not included but can be added to the final business case or investment appraisal.

11.   **KEY POINT: The overall cost is per student per hour**. E.g. The cost of one weeks course (40 hrs) for 10 students at an overall cost of £7 per student per hour, using the mix of methods in the figure above would be 40 x 10 X 7 = £2800. Please note that these figures will be based on the average group sizes for each method and the average capitation rates for instructors. You may need to increase or decrease the *per student per hour rate* if the learning requirement involves non standard instructors or group sizes. For example if only Officers provide instruction on the course, increase the *per student per hour rate* by an appropriate amount.

Saving or Printing the Report

12.   Once all the sliders have been set the model can be saved via the side menu and save as. If you wish to print a report or save as a pdf follow these instructions:

    a.   Open the menu side bar and click on summary report near the bottom of the list.

    b.   A new window opens for you to type in the title of the learning that is being analysed.

    c.   Click next and type in a short description for the learning. You may wish to include a reference number or code that identifies the training or education.

13.   Click next to view the *Current Profile* for the learning. If this is a new learning requirement complete this form as if the learning was to be delivered using traditional methods. i.e. how similar training (or education) was delivered in the past. You will need to ensure that the total of the percentages is 100. Below is an example:

14.   Click the next button to generate the report which will include the decision tree (with the slider placements). Next are 2 charts, one with the current profile and the other is the MMST suggested profile. The report should look like the below:

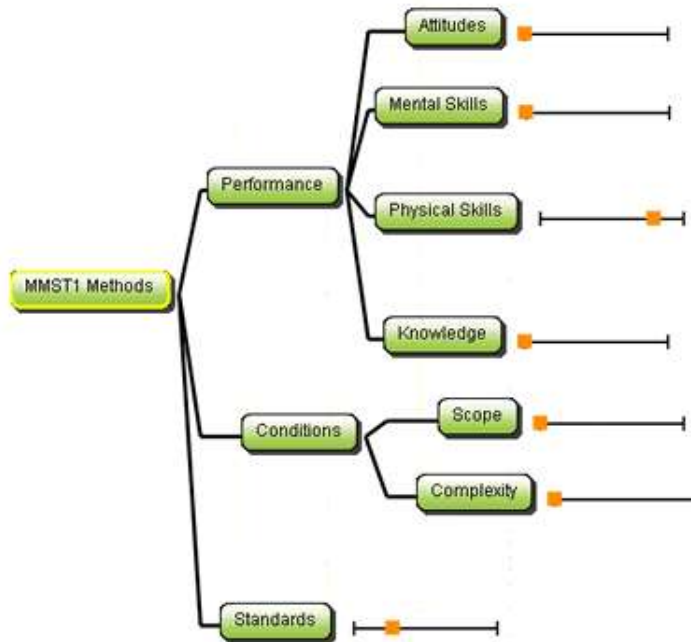15. The report opens in the browser and records the positioning of the sliders as well as the Title and Description. It can be printed by clicking on the print button in the top right corner of the window (see arrow in above figure).

16. This will open the print dialogue computer on your pc which will be similar to the below:
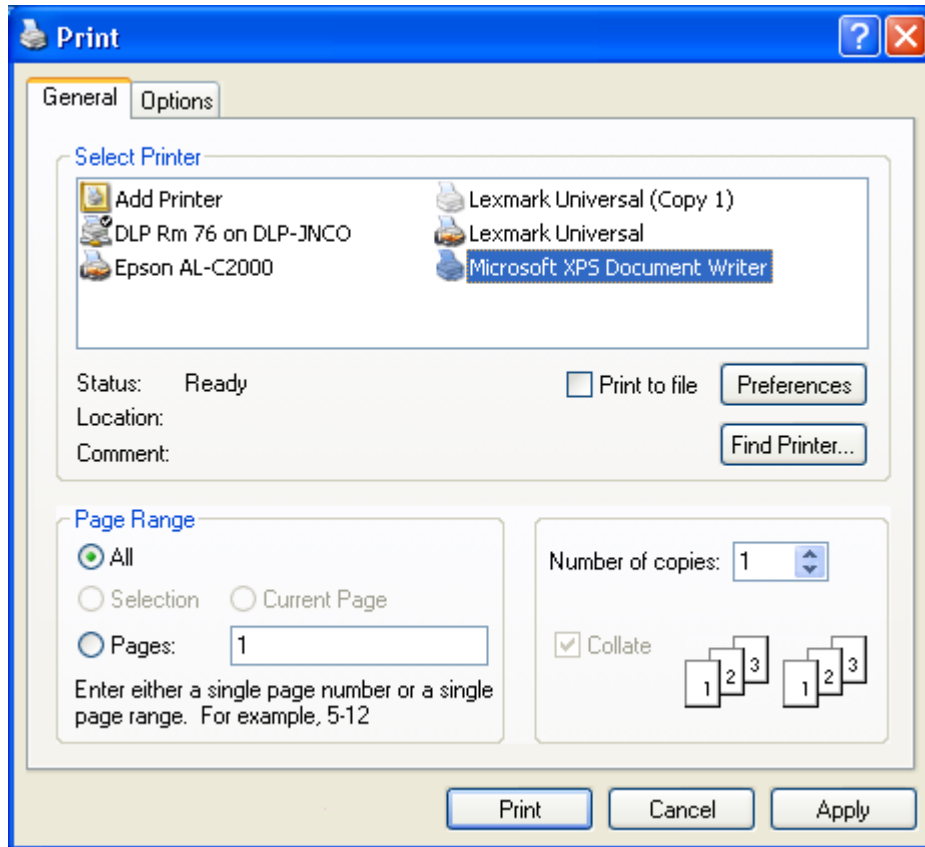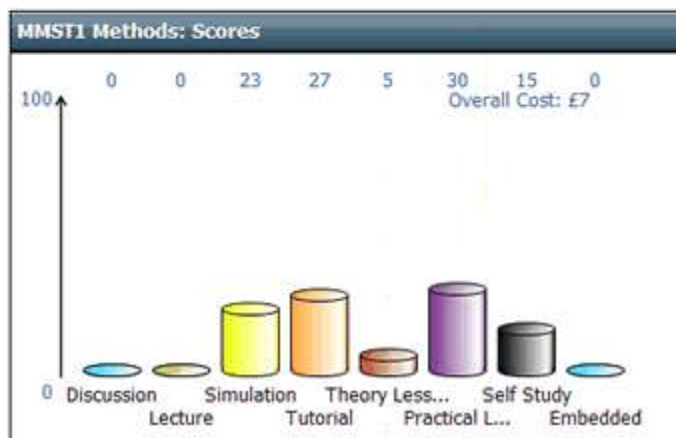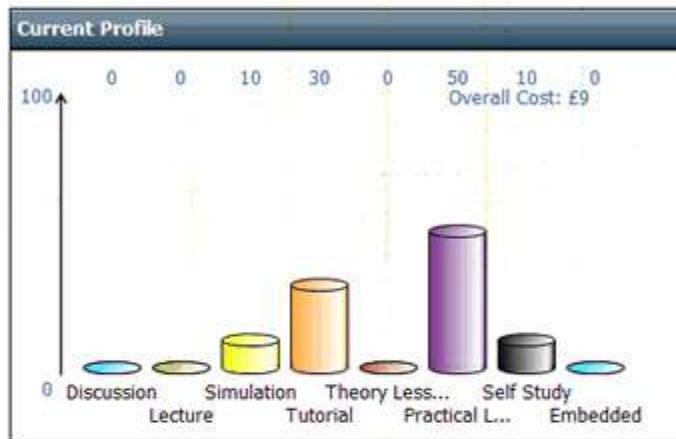
17.   For most MMST reports you will probably find that landscape is more suitable in which case you will need to change the preferences. If you wish to print a paper copy just highlight the default printer and click print. If you wish to save an electronic version click the document writer icon (highlighted in above figure). This is the Microsoft Document Writer, however, Adobe also offer similar software which will produce a pdf.

Interpreting the Charts in the Report

18.   The 2 charts below show the current mix of methods for a Personal Weapon Handling Course and the suggested mix from the MMST

Charts:

Current Profile

		0	0	10	30	0	50	10	0

100

Overall Cost: £9

0   Discussion   Simulation   Theory Less...   Self Study
            Lecture   Tutorial   Practical L...   Embedded

MMST1 Methods: Scores

		0	0	23	27	5	30	15	0

100

Overall Cost: £7

0   Discussion   Simulation   Theory Less...   Self Study
            Lecture   Tutorial   Practical L...   Embedded

19.   In this example the tool is recommending less practical lessons and more simulation. This is mainly because of the importance of drill and practice for this subject and the fact that simulation allows for many repeated attempts (often without an instructor) until proficient.   Overall costs *per student per hour* are reduced however, as stated previously; set up costs may be higher.

Using The Media Selection Tool

20.   After using the MMST Stage 1 (Methods Selection) as described in the previous section, you will have a profile of the methods deemed most appropriate for your learning. In the example above (Weapon Handling Training) the MMST1 recommended 23% simulation. We now analyse this further by using the MMST Stage 2 which is Media Selection.

21.   Use the links at Annex D to this manual to access the various MMST Stage 2 tools which will analyse appropriate media. These links are also available near the start of the DLP MMST e-Learning (Module 3 - Media Selection).

22.   In this example the MMST Stage 2 Simulation link loads the screenshot below:

23.   As with the methods selection (MMST Stage 1 - described previously) hover over each leaf criterion to see the statement which applies and move the slider accordingly. The output is given in the scores chart and represents the recommended mix of media for this training or education requirement.

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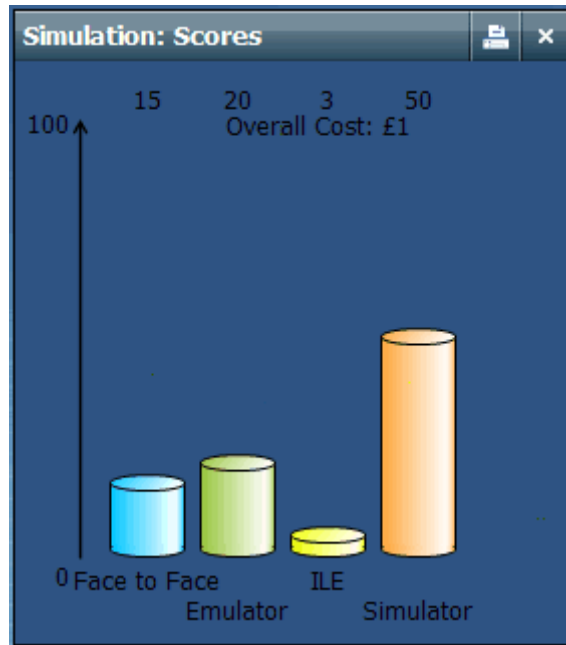
24.   Hover over each item to see a definition for each media. Also if you want more detailed information, access the MMST e-Learning via the DLP or the Methods and Media section of the Learning Technologies Handbook.

25.   Once satisfied with the slider placements print or save a report in the same way as described in the Methods Selection section.

26.   KEY POINT: Unlike the methods selection where it is likely that a variety (or blend) of methods will be appropriate, it may only be realistic to implement one or two media. In this case it is advisable to look at the highest scoring media first and then work down.

27.   For more information on the MMST, or to suggest how the MMST can be improved, please contact the DCTS Learning Technologies Research and Development Team or leave a post in the relevant section of the DLP Forum (Learning Technologies).

Setting Up V·I·S·A on your PC

1.   Administrator rights will be required to set up V·I·S·A on a standalone PC. Local Information Systems Services should be able to advise. PCs such as laptops that are not connected to a network may be most suitable.

2.   Open and extract the MMST V·I·S·A Zip Folder and you should see the files as shown below
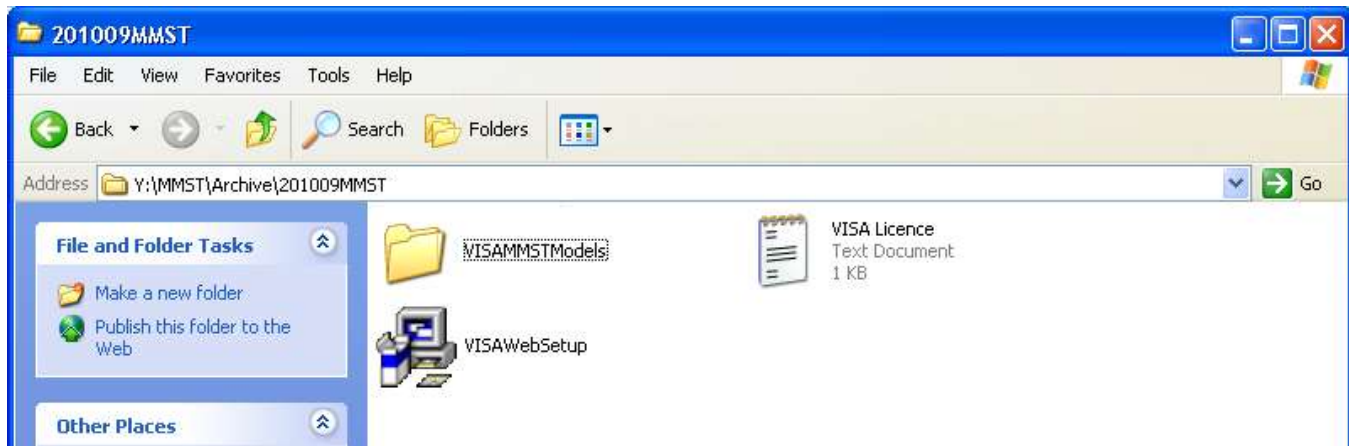
3.   Click on the VisaWebSetup icon to start the installation and then click run in the new window

4.   Continue by clicking next until you are asked for a license number which is in the text file (VISA License – shown in above screenshot or you may have been given a license number by DCTS Learning Technologies). On the next window you will be asked where you wish to install VISA. This has to be within program files to work correctly (should be the default option). Continue through the pages until V·I·S·A   is installed.
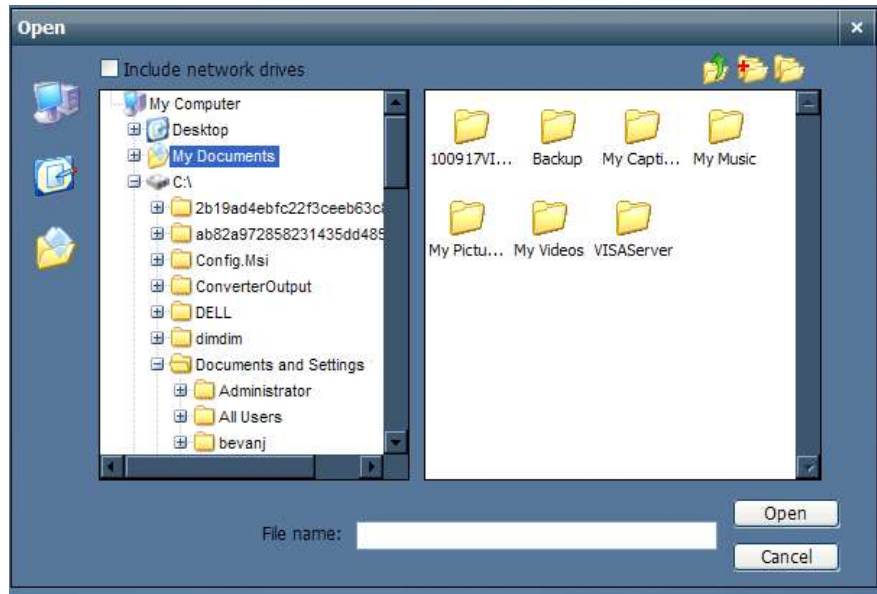
Opening the MMST models

5.   Once V·I·S·A is installed, access it via Start/Programmes or create a shortcut. The following screen will open (It is advisable to use Internet Explorer as your browser for all the functionality to work correctly).
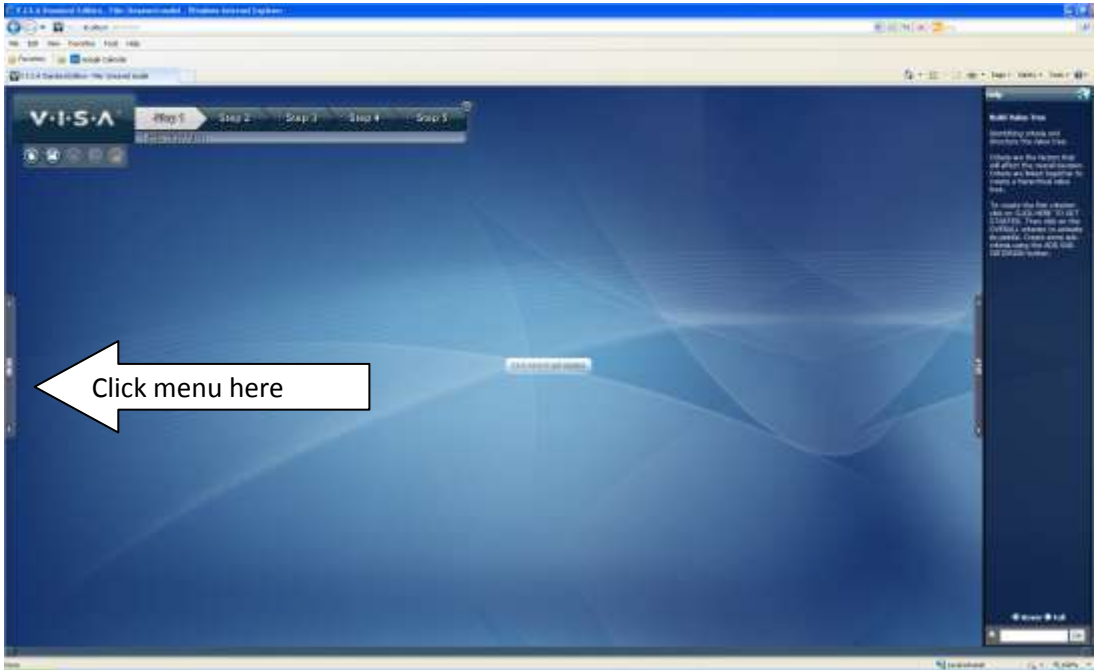
6.   Click on the menu tab on the left of the screen to open the menu side bar as shown below:
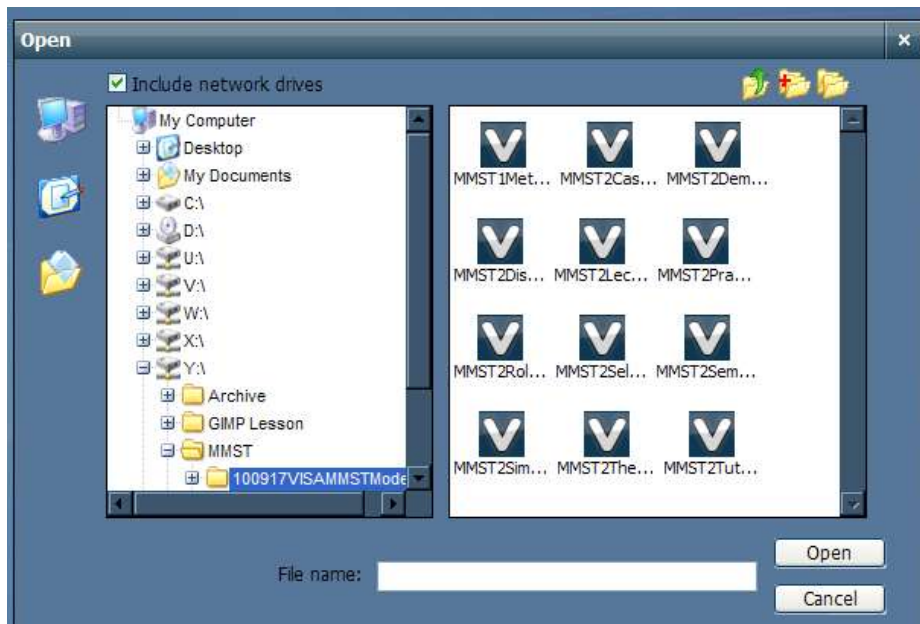

7.   Click Open to see the following window:

8.   If all drives are not available click the include network drives box near the top left of the window.

9.   Navigate to the original folder from where you installed V·I·S·A and find the file called VISAMMSTModels (it may have a date in front of the name for version control). Open the folder to view the MMST models as shown below):

10.   Hover the mouse over each file to see its name in full. The first model required is the MMST1Methods file which you will need to double click on. V·I·S·A will then load the model and you are ready to begin the Methods Selection. The window you see after loading is complete should be similar to the screenshot below:
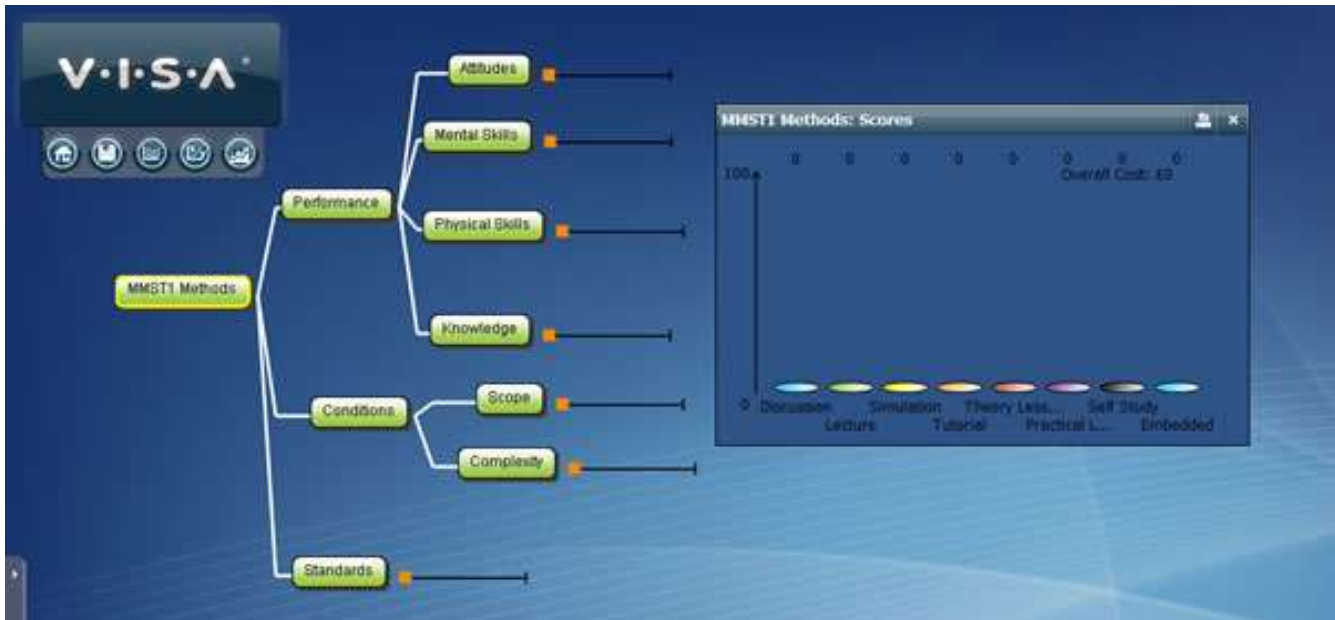
11.   You will now be able to use the tool as described in the main section of this manual.

Methods and Media Definitions

Methods

1.   Discussion A group activity usually led by the trainer in which the participants examine suggestions, attitudes, ideas and solutions to problems.

2.   Lecture A talk or presentation usually supported by visual aids in which information about practices, procedures and policies are described and explained to the audience.

3.   Simulation A means of reproducing, in a specially created environment, a representation of the real working conditions to enable a trainee to acquire and practice with minimal risk some of the sills, knowledge and attitudes required in their job.

4.   Tutorial Structured training which is conducted on a one to one or small group basis. Coaching and mentoring can be categorised within this method.

5.   Embedded Training that is provided by capabilities built into or added onto operational systems, sub systems or equipment.

6.   Theory Lesson Ideal for teaching facts and mental skills. The structure of the lesson allows for a high level of interaction between trainer and learners through question and answer, practice and the giving of feedback.

7.   Practical Lesson A procedure or skill is described and demonstrated to the students who perform the skill under supervision.

8.   Self Study This normally takes the form of prescribed reading, project work, case study, set assignments or correspondence courses. Can be completed online including e-learning.

Criteria

1.   Attitudes The learning involves developing attitudes and behaviours.

2.   Mental Skills Such as problem solving and calculations.

3.   Physical Skills Such as operating equipment.

4.   Knowledge Data, information, concepts, procedures, facts and figure.

5.   **Scope** Wide range of varying tasks, equipment and procedures.

6.   **Standards** High standards are expected in terms of accuracy, quality and safety.

7.   **Complexity** Learning is highly complex. Learners often struggle to achieve competency e.g. multi-tasking, mental capacity.

Media

1.   **Augmented Reality** A combination of a person's real world view and a computer generated virtual scene that augments the world with additional information.

2.   **Face to Face** Learning where the tutors and learners are physically in the same place e.g. classroom, workshop, and live exercises.

3.   **Computer Based Training (CBT)** The use of a computer as an interactive device with an embedded training strategy in which there are specific programmed responses that seek to aid learning. The computer primarily acts as a tutor/instructor and the trainee interacts directly with the computer.

4.   **Emulator** A simulator which is constrained to respond in a predetermined manner. Such computer- based devices may be used in CBT or Computer Assisted Instruction (CAI) modes. They do not have to be high fidelity representations of the real equipment.

5.   **Electronic Performance Support System (EPSS)**   An electronic device which provides information, software tools and procedural knowledge, already available within the organisation, to an employee at their moment of need, in order to enhance their performance of the task in hand.

6.   **Forum**   An online website where users can create and reply to text based discussion threads asynchronously (not in real time).

7.   **Interactive Electronic Technical Manual (IETM)** An electronic instruction manual, a book on a computer that describes how to operate or maintain a product.

8.   **M-Learning** Electronic learning that can be accessed at anytime and anywhere. Content is loaded on portable devices.

9.   **Immersive Learning Environment (ILE)** 3D virtual environment where one learner controls a single avatar which interacts with other computer generated avatars, environments and resources.

10. **Simulator** A device which presents trainees with a representation of the important features of the real situation and reproduces, as far as possible, operational conditions which enable them to practise directly, safely and economically, tasks which cannot be practised on the job itself, e.g. a flight simulator.

11. **Tele-Conferencing** Conference over the telephone involving more than 2 people.

12. **Virtual World** An interactive simulated environment accessed by multiple users through an online interface.

13. **Virtual Learning Environment (VLE)** A portal through which learners can access online courses and interact with tutors and peers via blogs, forums, messaging and chat rooms e.g. Moodle.

14. **Vodcast** Online video accessed over the internet.

15. **Webinar** Short for Web-based seminar, a webinar is a presentation, lecture, workshop or seminar that is transmitted over the Web.

16. **Web Docs** A repository of online training resources for learners that could include Wikis, manuals, charts etc.

Types of Methods and Media

1.   A wide variety of emerging technologies are now available which compliment traditional methods and media used for training and education. However, it is not always clear which technologies are most suitable for different types of training and education. Over the last few years there has been considerable development within the concept of Blended Learning.

2.   The JSP 822 Glossary defines Blended Learning as:

"*A blended learning solution combines educational and training methods, media and environments to increase learning effectiveness and efficiency to meet specific training and education needs. These solutions can then be considered and prioritised within practical constraints such as cost, time, political and legal*"

3.   The Methods and Media Selection Tool (MMST) has been designed to assist instructors with "Blending Learning" and a suite of tools including e-Learning, manuals and a decision making tool are available on the DLP. It has been developed to meet the following requirements:

- Includes all current and new emerging technologies.
- Also encompasses traditional learning methods.
- Flexible.
- Easy and fast to use.
- Easy to update.
- Reflects MOD guidance.
- Produces documentary evidence to support decisions.

4.   Benefits of using the MMST to support decisions on methods and media will include:

- The most effective methods and media are selected.
- The most cost efficient solutions can be considered.
- Students experience more engaging learning.
- Prioritisation for funding is clearer.

5.   The MMST first stage is to find which methods of delivery for the learning would be most appropriate. An example of a method of delivering learning is giving a lecture. This section will describe in detail the different methods, their advantages and disadvantages and examples of how they can be applied.

6.　　Once the most appropriate methods for the training have been found, there will be choices of various types of media that can be used.　For example, if discussion is seen as an appropriate method, the media choices could include:

- Residential classroom.
- Virtual classroom (includes real time video and/or audio).
- Chat room (instant text messaging).
- Online forum.

7.　　Throughout the Methods and Media Selection Process there may be constraints that limit the options available. These should be considered at all times so as to avoid nugatory effort. Examples of constraints are given below:

- **Financial**: budget limitations may reduce the options available - for example a bespoke solution by a commercial e-Learning development company will be much more expensive than an in-house solution.

- **Time constraints**: if a solution is required quickly, Commercial Off The Shelf (COTS) packages may be the only option.

- **Accreditation and Security issues**: mobile platforms such as mobile phones and iPod Touches have rigorous security criteria that need to be overcome and could limit functionality and delay implementation.

- **Environment**: limitations to the learning environment, including the availability of PCs will constrain options.

METHODS SELECTION

8.　　In this section the 8 different methods of delivering learning will be explained. These are defined in JSP 822. For each method, its advantages, disadvantages and examples of media applications are highlighted.

Method and Definition	Advantages	Disadvantages	Possible Media
Discussion: "A group activity usually led by the trainer in which the participants examine suggestions, attitudes, ideas and solutions to problems."	☐ Maintains interest. ☐ Relaxed atmosphere for learning. ☐ High level of student participation and development of opinions. ☐ Shares experience. ☐ Mature, co-operative way of learning. ☐ Increases trainee commitment. ☐ Experience and knowledge of trainees can be drawn out. ☐ Good for attitudinal training. ☐ Best employed in support of other methods and to reinforce main points drawn out of other sessions.	☐ Requires control by a skilled instructor. ☐ Small groups only. (Under 12). ☐ Requires high level of skilled communication. ☐ Time consuming if not properly structured. ☐ Need homogenous group for effective discussion. ☐ Additional syndicate rooms required. ☐ Required learning outcomes not guaranteed.	☐ Classroom. ☐ Telephone Conference. ☐ Video Conference. ☐ Webinar. ☐ Online Forum.
Lecture: "A talk or presentation usually supported by visual aids in which information about practices, procedures and policies are described and explained to the audience."	☐ Presents facts rapidly. ☐ High concentration of information. ☐ Large audience. ☐ Easy to plan. ☐ Trainer has complete control over content and sequence in which the material is presented. ☐ Suitable for knowledge based training.	☐ Mostly one-way communication. ☐ Little student feedback. ☐ Audience impassive. ☐ Inflexible. ☐ Poses problems for skill teaching. ☐ Skill demand on presenter high. ☐ Student retention is likely to be very low.	☐ Classroom. ☐ Lecture Theatre. ☐ Video Conference. ☐ Webinar.

Method and Definition	Advantages	Disadvantages	Possible Media
Simulation: "A means of reproducing, in a specially created environment, a representation of the real working conditions to enable a trainee to acquire and practice with minimal risk some of the skills, knowledge and attitudes required in their job."	☐ Trainees can practice in a realistic and safe environment. ☐ Can be cheaper than the real thing. ☐ Good for procedural training, multi tasking and attitudinal training. ☐ Can reduce need for On the Job Training (OJT). ☐ Risk-free environment.	☐ Can be very expensive. ☐ Requires careful planning. ☐ Requires scenarios to be developed. ☐ Requires good briefing and debriefing skills to be employed by instructors	☐ Real World. ☐ High End Sim. ☐ Emulator. ☐ Part Task Trainer. ☐ 3D World. ☐ Serious Game.
Tutorial: "Structured training which is conducted on a one to one or small group basis. Coaching and mentoring can be categorised within this method."	☐ Small group, or even 1:1, high level of learning. ☐ Suitable for complex learning skills. ☐ Easy to determine 'gaps' in knowledge. ☐ Stimulates active participation. ☐ Permits instructor to adapt the instruction as required. ☐ Constant feedback for student. ☐ Long term relationship built between instructor and student	☐ Costly in terms of time and manpower. ☐ Requires highly competent and knowledgeable instructors. ☐ Requires the trainee and instructor to be compatible.	☐ Classroom. ☐ Video. ☐ Teleconference. ☐ Webinar. ☐ Chat Room. ☐ Teleconference. ☐ Forum. ☐ Webcam. ☐ 3D World.

Method and Definition	Advantages	Disadvantages	Possible Media
Embedded: "Training that is provided by capabilities built into or added onto operational systems, sub systems or equipment."	☐ Just in Time training at the point of need. ☐ Reduces training costs, time and skill fade. ☐ Can be simple to develop such as laminated checklists. ☐ Includes using technology such as augmented reality. ☐ Allows training on actual equipment. ☐ Suitable for complex equipment.	☐ Learning is difficult to monitor. ☐ Technological solutions can be expensive to develop. ☐ Not suitable for training where skills and knowledge need to be memorised.	☐ Laminated checklists. ☐ Posters ☐ Augmented Reality. ☐ Mobile devices.
Theory Lesson: "Ideal for teaching facts and mental skills. The structure of the lesson allows for a high level of interaction between trainer and learners through question and answer, practice and the giving of feedback"	☐ Flexible: for all classroom topics. ☐ Trainees can participate. ☐ Permits control over content and sequence. ☐ Encourages trainee involvement. ☐ Trainee achievement easy to monitor. ☐ Learning and retention are stimulated by active class participation. ☐ Can be incorporated with most other methods.	☐ Success depends upon good instructional techniques. ☐ Requires detailed preparation to ensure correct procedures are shown. ☐ Requires equipment and aids. ☐ For effective student participation the size of class must be limited. ☐ A class size of between ten and thirty is ideal.	☐ Classroom. ☐ Video. ☐ Teleconference. ☐ Webinar. ☐ Webcam. ☐ Vodcast. ☐ Lecture Hall. ☐ Visualiser. ☐ Augmented Reality ☐ 3D World. ☐ Question Polling. ☐ Smart Board. ☐ Whiteboard.

Method and Definition	Advantages	Disadvantages	Possible Media
Practical Lesson: "A procedure or skill is described and demonstrated to the students who perform the skill under supervision. "	☐ Close approximation to operational situation, reducing OJT. ☐ Builds confidence with equipment. ☐ Enables skill evaluation. ☐ Reduces damage and waste. ☐ Promotes safety.	☐ Requires tools and equipment which can be expensive. ☐ Requires skilled instructors. ☐ Requires large blocks of time.	☐ Classroom. ☐ Workshop. ☐ GFE. ☐ EPSS. ☐ IETM.
Self Study: "This normally takes the form of prescribed reading, project work, case study, set assignments or correspondence courses. Can be completed online including e-learning."	☐ Encourages self-disciplined approach to work. ☐ Can be arranged out of hours. ☐ Trainees work at own pace.	☐ Difficult to monitor. ☐ Is not suitable for all students, especially those who have not studied on their own before or who have learning difficulties. ☐ No immediate feedback ☐ Requires self discipline on student's part.	☐ Paper based. ☐ Serious Game. ☐ Vodcast. ☐ E-Learning (CBT). ☐ Mobile Learning. ☐ Podcast. ☐ Web Quest.

MEDIA SELECTION

9.   From the Methods Selection stage you should now have a clear idea of which methods will be most suitable for your training or education requirement. For example you may have a result for your course that includes: 10% Discussion, 50% Theory Lesson, 30% Self Study and 10% Case Study. In the Media Selection stage you will explore appropriate media for each of the methods from the previous stage.

Media	Advantages	Disadvantages	Examples
Augmented Reality: "A combination of a person's real world view and a computer generated virtual scene that augments the world with additional information."	☐ Can negate the requirement for a tutor. ☐ Allows complex equipment to be supported electronically. ☐ Can be used at point of need. ☐ Material may be reusable as a job support aid	☐ Cost of hardware, software and development. ☐ Currently immature technology. ☐ Long development time.	☐ Head Up Display. ☐ 3D Models via web cams.
Face to Face: "Learning where the tutors and learners are physically in the same place e.g. classroom, workshop or live exercise."	☐ Allows non verbal communication such as recognising body language ☐ Negates the need for technology infrastructure and training on how to use it. ☐ Enables the tutor to observe the learners actions in detail.	☐ Requires physical rooms. ☐ Costs include: utilities, tutor capitation rates, and travel and subsistence for learners. ☐ Learning is not normally recorded or distributed Requires preparation by the tutors. ☐ Difficult to monitor and assure standards are maintained.	☐ Classroom teaching. ☐ Workshop practical. ☐ Coaching a skill such as marksmanship.

Media	Advantages	Disadvantages	Examples
Computer Based Training (CBT): "The use of a computer as an interactive device with an embedded training strategy in which there are specific programmed responses that seek to aid learning. The computer primarily acts as a tutor/instructor and the trainee interacts directly with the computer."	☐ Individualised tuition. ☐ Student centred and self paced. ☐ Guaranteed learning transfer. ☐ Maximum trainee involvement in responding to stimuli presented on the screen. ☐ Consistent quality of instruction. ☐ Student retention of material can be high. ☐ Lots of COTs solutions available. ☐ Good for students with low motivation. ☐ Suitable for mixed ability groups. ☐ Suitable for teaching procedures and knowledge based learning outcomes. ☐ Ideally suited to stable course content. ☐ Immediate feedback to students. ☐ Suited to procedural and knowledge based training ☐ Can be used for attitudinal training if scenario based and media rich.	☐ Requires careful analysis and design. ☐ Can become dated very quickly. ☐ If trainees reading ability is limited, then it may not be feasible to use simple CBT. ☐ Long development time. ☐ Assumes student population is computer literate. ☐ Possible aversion or fear of learning through this media. Not suitable for physical skills training. ☐ Costs increase with complexity. ☐ Lack of human interaction. ☐ If linked to platform equipment may require to be updated in accordance with incremental acquisition programme. ☐ May lose face validity if "running " slower than latest models.	☐ Basic Page Turner. ☐ Rich media files.

Media	Advantages	Disadvantages	Examples
Emulator: "A simulator which is constrained to respond in a predetermined manner. Such computer- based devices may be used in CBT or Computer Assisted Instruction (CAI) modes. They do not have to be high fidelity representations of the real equipment."	☐ Allows students to experience and gain idea of actual situation. ☐ Environment and teaching situation controlled. ☐ Can be less expensive than a simulator. ☐ Emulator trained personnel perform well on transfer to operational equipment. ☐ Can provide cues associated with forced feedback mechanisms. ☐ Best results are obtained if students use real equipment shortly after emulation training.	☐ Can be expensive. ☐ Requires intelligent tutor to brief, monitor, and debrief for learning transfer to occur. ☐ Incremental acquisition may require several updates of software. ☐ Operators trained on emulators may not be initially as fast as operators trained directly on the equipment. ☐ Usually requires some training on GFE after emulation.	☐ Flash Instrument Trainer.
Electronic Performance Support System Media (EPSS): "An electronic device which provides information, software tools and procedural knowledge, already available within the organisation, to an employee at their moment of need, in order to enhance their performance of the task in hand."	☐ Reference material available as a result of Def Stan 00/60. ☐ Provides reference and learning material at point of need. ☐ Job aid, which also facilitates learning while doing, with high probability of learning transfer.	☐ Cost. ☐ Hardware specification must support EPSSs. ☐ CBT material requires careful analysis and design. ☐ Not suitable for initial training.	☐ PDAs. ☐ PSPs. ☐ Netbooks.

Media	Advantages	Disadvantages	Examples
Forum: *"An online website where users can create and reply to text based discussion threads asynchronously (not in real time)"*	☐ Discussions are captured for others to review and partake ☐ Easy to set up ☐ Easy to learn how to use ☐ Allows sharing of a variety of media such as docs and graphics	☐ Needs to be monitored ☐ Can spread bad practice if not controlled ☐ Requires a certain knowledge of IT and the web ☐ Users may need to be motivated to post on the forum	☐ Bulletin Boards. ☐ FAQs.
Interactive Electronic Technical Manual (IETM): "An electronic instruction manual, a book on a computer that describes how to operate or maintain a product."	☐ Material available as a result of Def Stan 00/60. ☐ Provides reference material at point of need. ☐ Job aid rather than training solution. ☐ Locate information quickly ☐ Less storage space	☐ Hardware specification must support IETMs. ☐ No guarantee of learning transfer. ☐ Preference is to read from paper based products. ☐ No set standards, or format.	☐ eBooks .
Mobile Learning (M-Learning): *"Electronic learning that can be accessed at anytime and anywhere. Content is loaded on portable devices"*	☐ Provide learning for people who do not have access to PCs. ☐ Can be accessed at anytime and anywhere. ☐ Can be tracked by a learning content management system. ☐ Easy to build mobile content. ☐ Most people are familiar with mobile devices. Computer literacy not required.	☐ Very limited amount of space (real estate) available for each screen view ☐ Developers have to learn new instructional design skills. ☐ Content needs to be built for specific devices. E.g. for apple i-Touch (although some mobile software is device "agnostic") ☐ Security and accreditation needs to be gained from the mod for mobile content and use.	☐ Nintendo DS ☐ i-Pads. ☐ PSPs. ☐ Mobile Phones.

Media	Advantages	Disadvantages	Examples
Immersive Learning Environment (ILE): "3D virtual environment where one learner controls a single avatar which interacts with other computer generated avatars, environments and resources. Also called Serious Games."	☐ Provides a 3D environment in which learners can explore. ☐ Similar to modern computer games and therefore engaging. ☐ Good for familiarisation training within new environments such as operational bases.	☐ Expensive and time consuming to develop. ☐ Requires new design skills which are very different to standard CBT design. ☐ Not all learners will become engaged.	☐ VBS Worlds by Caspian Learning. ☐ Virtual DCTS by Playgen (on the DLP).

Media	Advantages	Disadvantages	Examples
Simulator: *"A device which presents trainees with a representation of the important features of the real situation and reproduces, as far as possible, operational conditions which enable them to practise directly, safely and economically, tasks which cannot be practised on the job itself, e.g. a flight simulator."*	☐ Allows students to experience actual situation. ☐ Environment and teaching situation controlled. ☐ May be the only possible training medium due to danger of real environment. ☐ May be networked for federated systems. ☐ Ability to replicate most fidelity requirements. ☐ Good for attitudinal training. ☐ Can improve unit collective performance wherever people need to practise expensive or dangerous activities under realistic conditions. ☐ Actively involve the learners in making decisions, playing roles and adopting attitudes. Simulators allow instructors to progress from simple to complex scenarios. ☐ The operation of certain equipment or scenarios may lead to environmental damage and could therefore be constrained in time and realism. In such cases the only way in which practise may be allowed is by simulators.	☐ Can be expensive. ☐ Requires instructor to brief, monitor, and debrief for learning transfer to occur. ☐ Assessments tend to be subjective, relying on the experience of the instructor. ☐ Must be well designed to ensure maximum benefits both intellectually and emotionally. ☐ Requires careful project management to ensure that only required learning outcomes are provided. ☐ Requirements likely to be over specified. ☐ New software must be developed each time a change is made to operational equipment.	Flt Simulator. Small Arms Trainers.

Media	Advantages	Disadvantages	Examples
Teleconferencing: "Conference over the telephone involving more than 2 people."	□ Synchronous audio comms. □ Only requires a telephone line - no PCs or Internet required. □ Well established with capabilities at most units □ Optional recording available.	□ Some extra equipment may be required □ Telephone provider will charge extra for conferencing services □ No visual implies unable to read body language. □ Needs to be carefully facilitated to ensure all contribute and people are not talking simultaneously □ Unlike chat room records, content in recorded teleconferences must be searched by a human rather than a fast search engine	
Virtual World: "An interactive simulated environment accessed by multiple users through an online interface."	□ Allows participants to collaborate remotely in an environment representing the real situation. □ Personal representation through life like models (avatars). □ Real time audio or text chat available. □ Ideal for team training □ Events can be recorded for "After Action Review" from any participants perspective.	□ Costly to develop initially. □ Bandwidth intensive if high fidelity required.	□ Second Life. □ VBS2. □ Virtual DCTS.

Media	Advantages	Disadvantages	Examples
Virtual Learning Environment (VLE): "A portal through which learners can access online courses and interact with tutors and peers via blogs, forums, messaging and chat rooms."	☐ Learning can be delivered at anytime to almost any IT accessible place. ☐ Learning material can take a variety of forms e.g. text, graphics, audio and video. ☐ Learning material can be updated easily student-student and student-tutor interactions can be stimulated. ☐ Problem-based learning can be easily incorporated and automated feedback can be provided. ☐ VLEs can allow for a learner-centred delivery strategy that can take into account different learning styles.	☐ Access can be slow and expensive depending on the users internet connection speed. ☐ A VLE can become a "dumping ground" for material not designed for online delivery. ☐ Learning material can become outdated if not regularly updated. ☐ Online support must be planned carefully to avoid tutor overload. ☐ Both students and tutors may need training on the administration and running of the VLE ☐ Increased learning expectations, students often expect a VLE to become more sophisticated and provide new features which could put a strain on administrators.	☐ Moodle.
Vodcast: "Online video accessed over the internet."	☐ Easy to produce: eg. most new mobile phones are capable of producing video suitable for Vodcasts. ☐ Easy to distribute via the web and update. ☐ Easily accessed. ☐ Can be downloadable to a portable device. ☐ Can be streaming with controls to skip sections	☐ Normally low quality video means full screen not advisable. ☐ Increases bandwidth ☐ Passive with no interaction for student. ☐ Internet required.	☐ You Tube.

Media	Advantages	Disadvantages	Examples
Webinar: *"Short for Web-based seminar, a webinar is a presentation, lecture, workshop or seminar that is transmitted over the Web."*	☐ Transmitted over the Web to provide highly interactive Synchronous learning. ☐ Sessions can be recorded and the learners can replay back the session in their own time (Asynchronous) ☐ Instructor and students can be seen via webcams, communicate via the use of a phone or VOIP and utilise a text chat function. ☐ Easily upload PowerPoint slides to deliver a lesson, presentation or lecture. ☐ Learners can be directed to break out areas to work in smaller groups. ☐ Up to 1000 personnel can login and listen in to a webinar session at any given time. ☐ No T&S outlay as the students are either at their place of work or home.	☐ Cost: Companies charge a monthly subscription fee which is dependent on the amount of sessions a training organization wishes to run per month. ☐ There are additional charges for using VOIP or telephone calls which is either levied against the training provider or students. ☐ Technical issues cannot be easily rectified as the students can be anywhere in the world. ☐ You need to have at least 2 people running a session. One person presenting whilst the other is monitoring the text chat area and answering any questions raised as well as dealing with any technical issues. ☐ Hard to gauge if students are actually listening.	☐ Go To Webinar. ☐ Webex. ☐ Adobe Acrobat Connect Pro.

Media	Advantages	Disadvantages	Examples
Web Docs: "A repository of online training resources for learners that could include Wikis, manuals, graphics, charts etc..."	☐ Fast searching. ☐ Useful where referencing is required within large repositories of knowledge. ☐ Allows hyper linking between documents. ☐ Can be accessed by smart mobile devices.	☐ Learners need to be literate and used to reading. ☐ Requires regular maintenance and updating to ensure links not broken.	☐ DLP Wiki. ☐ Content Management Systems such as Joomla and DotNet Nuke.

Links to Web Version of MMST

Please allow a few seconds for the tool to load. Also depending on your local firewall settings you may have to use a direct internet connection to access.

MMST Stage 1 – Methods Selection:

1.   MMST Stage 1 Methods Selection

MMST Stage 2 – Media Selection:

2.   MMST Stage 2 Discussion

3.   MMST Stage 2 Embedded

4.   MMST Stage 2 Lecture

5.   MMST Stage 2 Practical

6.   MMST Stage 2 Self Study

7.   MMST Stage 2 Simulation

8.   MMST Stage 2 Theory Lesson

9.   MMST Stage 2 Tutorial

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