Preparing accessible teaching resources for online delivery and through a PDA or Smart Phone
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Increasingly educational institutes, particularly Universities and TAFE deliver components of courses and full courses online. These courses are generally delivered through learning management systems such as WebCT or Blackboard. Unfortunately as developments in online learning have occurred consideration of the needs of people with a disability has generally lagged.

This manual aims to provide guidance for the user to prepare online resources for people with a disability. In this manual there is information and advice for;

1) Preparing videos
2) Adding captions to videos
3) Translating English into Auslan for use in the videos
4) Using PDA devices and Smart phones for delivery of course information

Many people believe that captions are for people who are Deaf or hard of hearing. This is far from the case. Captions in fact have benefits for a wide range of people.

“Captioning benefits are not limited to people who are deaf or hard of hearing. In loud, crowded venues as well as hushed, quite settings, captioned video allows sighted visitors to read what they cannot hear. Captions also benefit new readers and people who are learning English as a second language”.

It is also thought that captions can benefit some individuals who have learning disabilities and literacy difficulties. Often associating the written word with the spoken word enhances comprehension and vocabulary development.

With this manual you will find a CD attached. The CD provides examples of a learning program that has been developed. The videos used in this program are far from perfect. The faults have been left so that the user can understand some of the issues and difficulties in making the videos. In this way we aim to provide the user with a greater understanding.

Importantly the manual aims to show that preparing accessible learning resources in video, audio and text based formats is not rocket science. It is a fun and largely inexpensive process that can be mastered by almost anyone.

Finally the learning resources that are demonstrated in this manual can be and are delivered using a handheld phone device such as a PDA or a Smart Phone. This is an innovative process with many benefits that we hope become clear as the reader uses this manual.
Cost Factors

All videos seen on the CD were shot with a handheld digital camera that costs under $1000, captioning has been added using film editing software that cost under $200. Audio has been added with a $60 Logitec headset. Finally film editing can be done using Windows Movie Maker that comes with Microsoft XP.

Developing learning resources as described in this manual is relatively cheap and the resources can be used again and again cutting long term costs in the provision of education, training and more importantly support for people with disabilities.

Learning Management Systems

Examples of learning management systems include Blackboard, WebCT and Moodle. Through learning management systems it is possible to develop information in text, audio and video. These learning materials can then be read, listened to or watched on a desktop computer or laptop.

Universities and TAFE institutes have been utilising learning management systems for a number of years. Group discussions occur using audio facilities, assignments are submitted, assessments carried out online and so on.

A recent development by a company in Melbourne known as i-learn in partnership with Goal Training and Development has seen the delivery of course information and instruction via a PDA or Smart phone.

Basically it involves the development of course information and instruction using text, audio and video. This is then formatted into a program that is uploaded to a learning management system. Course information and instruction can then be downloaded to handheld PDA or Smartphone devices that have the Windows Mobile 5 and above operating system.

Disability Access Through Online Delivery

The Australian Disability Clearing House on Education and Training (ADCET) notes that online learning can provide a number of benefits to students with disabilities.

Developments in online learning can present opportunities for a more inclusive education for students with disabilities. Online learning facilitates real flexibility in the time and place for learning.

› Independence is increased through the availability of online learning resources.
› There is less reliance on the assistance of helpers such as library staff or note takers.
› The ability to submit work electronically can release the students from the costs in time and resources in obtaining physical access.
› Communication can be improved through devices such as chat rooms, discussion groups and email that can enable students to participate without prejudice or embarrassment.


Examples of Devices Include:

Smartphones:
› imate Smartphones
› HTC Touchphones
› O2 Smartphones
› HP iPaQ 6000 Series

PDAs:
› Hewlett Packard iPaq PDAs – 2400 Series
› Jas Jams
It also notes that there can be several disadvantages:

*However the same developments that provide opportunities can also pose further barriers to those with disabilities.*

- Web based learning materials tend to be heavily text based, and some students may have difficulty reading or comprehending text or distinguishing colours.
- Many have difficulty with organisation, structure or memory, they may find material poorly structured or complex and difficult to navigate, or the interface may be inconsistent.
- Students with mobility problems, limited motor control or vision impairment may not be able to use a keyboard or mouse.
- The increasing use of multimedia can be beneficial in providing an enriched environment, but it can also be a barrier to those who cannot see or hear audio, video, animations etc.
- The growth in overseas students and students learning off-campus means that there are growing numbers who may not be fluent in the language of instruction.


The ADCET website provides some excellent information and guidelines for developing online learning materials. It is highly recommended that developers consult the website for accessibility information.

This Manual has a particular focus on the development of video based materials that can be delivered through a PDA or Smartphone. There are several relatively inexpensive ways to make these videos accessible for people with disabilities.

There are a number of strategies and advantages. Examples include:

1) Auslan Interpreting – Auslan interpreting is an expensive and ongoing cost. The recording of videos that provide access to information through Auslan helps to reduce this cost. Such videos can be used repeatedly which lessens the need to book Auslan interpreters for all aspects of any given course. This is particularly useful for small training organisations that can not sustain the ongoing cost of interpreting. There is a section in this manual that provides information to assist in the translation of information to Auslan.

2) Delivery of course information through a PDA or Smartphone enables students to continue learning while they are completing on-the-job training. Information about a wide range of things can be delivered to a PDA or Smartphone. At present time information related to hospitality has been developed to include things as simple as making a coffee with a coffee machine, storage information, hygiene and so on. Each day the student receives an update which they can watch, listen to or read depending on their preferred mode of communication.
3) Learning programs for PDA and Smartphones can be developed to deliver a variety of formats including visual, text or audio. The student simply clicks on the icon of their choice for their preferred mode of instruction.

4) Captions can inexpensively be added to videos and read easily on a PDA or Smartphone. This can be done in-house and relatively quickly. These captions can be used for any video that is developed for a learning management system whether through a PC, laptop or hand held device. Videos for delivery in this way are generally of no more than two to three minutes long. Captioning is as simple as typing the caption in a box that is part of film editing computer software and dragging the caption to the desired place on the screen. Tips for adding captions can be found in the captioning section.

Information developed for PDA or Smartphone delivery does not have to be delivered only on a PDA or Smartphone. It can easily be adapted for use on any learning management system. It is advisable to contact your institute’s learning Management Administrator to ascertain the possibilities.

PDA and Smartphone Resources

For private and small training companies that wish to develop such information i-learn offers a cheap and easy to use service. i-learn will provide support and assistance to any learning institute large or small, public or private at an agreed cost.

i-learn Australia can provide the web-based Content Management System authoring tools for developers at a one off administration fee of $60.

This allows developers to include text, audio, videos, static images and assessments on a number of formatted platforms of their choice. Learning materials can be developed in-house or with assistance from i-learn at an agreed cost.

The licence fee is payable when this content is downloaded on to a mobile device. The licence fee for downloading unlimited content through the i-learn Server is $6 per month ( incl GST ) per device for 12 months .

The i-learn content synchronising allows an unlimited number of devices to connect and receive updates. The upgrading of content is an automatic process managed between the device and the i-learn server. No user input is required.

The content can be downloaded directly to a PDA or Smartphone device by one of the following methods:

1. The Smartphones' internet access
2. Synchronising by USB to a PC
3. Synchronising via WIFI

Content can be accessed 24/7. Contact Information for i-learn can be found at the back of this manual.
Video editing for PDA and Online Presentation

Making videos for online learning through a learning management system can be done in two ways:

1) A production company can be used at great cost.
2) It can be done in-house and relatively inexpensively.

If videos are produced well, with adequate lighting, and good sound they can be used repeatedly. This reduces delivery costs of learning material and ensures consistency of delivery.

The examples of the videos on the CD provided with this manual were produced using hand held Canon and Sony digital cameras that retail for under a thousand dollars. It is recommended, for ease of editing that the user use a camera equipped for use with a mini dvd.

There is no real set way to make such videos and with most things competency comes with practice but this information is a useful guide.

1. Preparation

Story board and script

The most important thing to remember when preparing for filming is the development of an accurate story board. A good story board should consist of a multilevel numbering system and provide an image of the scene action along with a brief description of the scene requirements. The story board also allows you to keep track of what's been shot and what is remaining to be shot.

This becomes especially important when you are shooting all your signing videos in one location and your live action shots or stills in separate locations. The storyboard also allows you to co-ordinate the entire editing process without tearing your hair out.

Give your storyboard a name. For example: ‘Storing food in the freezer’. Divide each part of the story board into appropriate sections. You can do this simply by drawing squares on a piece of paper. Make these squares big enough to write in the dialogue.

Once the story board is completed the various sections should be numbered. When filming write the section number that you are filming on the Clapper Board. Eg ‘Storing Food in the Freezer – Part 1 – Take 1’.

Remember for the purpose of developing these resources it is advisable to keep the dialogue and action short and sharp. This makes it easier for the actor to remember the lines.
**Clapper Board**

The clapper board is an absolute necessity. You can use anything you like such as a small chalk board or a small white board with a non-permanent marker. Make sure you write each shot number and the take on it.

Before filming simply place the clapper board up in front of the camera and focus it on what is written on the clapper board. If a mistake is made in filming simply keep filming from where the tape is up to but add the words ‘Take 2’ to the clapper board. In this way when editing the film editor is able to identify the completed scene.

**Lighting**

It’s very important to use some sort of additional lighting when indoors. A cheap flood light or spot light will do. It does not have to be anything fancy, just enough to help illuminate the subject and remove any shadows. Be particularly aware of the shadows when filming the Signing. Shadows can make it difficult to understand what the signer is saying.

**Filming process**

Before filming each shot the clapper board should be held up in front of the camera and filmed for at least 6 seconds. Alternatively if your camera has a still shot function, take a still of the clapper board. This helps to mark each shot and ensure that when editing each video you will be able to locate each shot accurately.

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**Equipment**

There are a few key items which are required when filming videos of any sort and having them with you will make the entire process that much easier.

- Clapper board
- Camera
- Tripod
- Battery charger
- Story board multiple copies
- Pen
- Lights if available
  (You can purchase Halogen lighting relatively cheaply or hire lighting)

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2. Capturing and Editing the Video

Capturing video is the process of transferring the images from your camcorder to your PC for editing.

**Recommended Software**

To capture video you can use Windows Movie Maker or any other editing program like Adobe Premier. Corel Ulead Video Editing 11 has been utilised to add captions.

You may need to convert files to an appropriate format for editing on your PC. For example to edit using Windows Movie Maker it is necessary to convert files to Windows MV format. Some film editing software is equipped with converters. You can purchase media converters online relatively cheaply. For more information on video converting go to the following sites:

- [www.avsmedia.com](http://www.avsmedia.com)
- [www.topshareware.com/005006-1-1.htm](http://www.topshareware.com/005006-1-1.htm)
Once all the filming has been completed you will use your video editing software to download the footage to your PC.

It is advised that each shot be captured and saved separately and named appropriately for greater flexibility and tracking during the editing process.

Use a system like ‘vid_1.0’ to coincide with the scene and shot numbers e.g. Vid (Video) 1.0(Scene 1) 1.0 (Shot 1 take one) or sign (sign language) 1.0 (Scene 1) 1.0 (Shot 1 take one).

Don't worry about being too precise when capturing video. You should ensure you get the clapper board details and the complete shot up to the start of the next shot.

You can fine tune the video segment in your editing programme. This is simply a matter of dragging the clips that you desire to the timeline on the film editing program. You then remove the parts of the scene that you do not want by adjusting the size of the clip. For example if there is two seconds of film that is not required, (this might be the film of the clapper board, click onto the start of the film and drag until the clapper board is removed. It really is as simple as that.

**Editing**

Once the video has been captured and stored on the PC, you should set up one project file for each movie you intend to produce.

Then import all the video clips that are required for the scene and arrange shots on the timeline as required.

Adjust the clips start and end point to remove the clapper board marks and to remove any overrun or unneeded video. Remember to remove the audio component of the shots if it is not required. This will help to produce smaller files. This is particularly important if filming occurred where background noise was prominent.

Also make any colour adjustments during the editing process if your software has this feature.

Once the video sequence is compiled, export it as an ‘.avi’ file. Import the .avi file into After-effects to add subtitles, crop the video or enlarge it as required to ensure the action and signing elements are as clear as possible. Which file you save it in is dependent on the learning management program being used.

As with anything film editing is a skill that is accomplished with practice. Film editing is not complicated. It is really as simple as clicking and dragging or cutting and pasting to the timeline in a way that is used everyday to format computer documents. Practice and experimenting is the best way to develop proficiency and it is fun.
Optimization

Windows Media Encoder can be used for optimisation. This is available free from the Microsoft site: www.microsoft.com/windows/windowsmedia/forpros/encoder/default.mspx

In lay-man’s terms optimisation is to provide media at its smallest possible file size whilst trying to maintain the best possible quality. This is sometimes known as compression. Many film editing programs are able to optimise files. Be careful because they can sometimes affect the clarity of the video. Check the final product rigorously.

Windows Media Encoder does an excellent job and is very easy to use and customise the output.

To optimise a video file for PDA simply use the convert file wizard and follow the prompts for Pocket PC. The default settings are fine and achieve good results.

For full screen video you will need to alter the default projects settings, select the properties button at the top of the project window, select the video size tab and change the width and height settings at the bottom of the screen to width 320, height 240.

These are the dimensions of the largest PDA screen.

It is possible to also optimise the completed films on Windows Movie Maker for use on a Pocket PC. Simply click on Save Video and follow the prompts. Movie Maker will ask you which file size you wish to save the video in. If it is to be used for a Pocket PC simply click on Pocket PC when prompted. When saving in this way check the quality of the video as it can sometimes lose quality.
Adding Captioning

Adding captioning can be time consuming but it is a relatively simple job. It is important to realise that not all film editing software is suitable for captioning. Some film editing software such as Windows Movie Maker allows the user to add captioning but the captioning is fixed at one place on the screen. What this means is that it can sometimes obscure the video.

It is important to use film editing software that allows the user to place the captions. The captions are best placed towards the bottom of the screen. This is so they do not obscure the video.

It is also important that the captions have a backdrop. Without a backdrop captions often become hard to read. White or yellow captions are easiest to read with a black background. The black can be made transparent enabling the user to see the video but also read the captions easily.

Arial font is generally recommended. The font size should be between 18 and 20. The user should check and test for readability, especially if using a PDA or Smartphone device. If the captioning is too small it will be hard to read.

Each frame should have no more than one or two sentences of captioning. No more than 12 to 14 words per frame. On the CD click on the session titled Disposing of Broken Glass. Click on to the hearing impaired icon. On the first frame of this video you will see there is three to four lines of captioning. This is far too many. The reader will note that the captioning obscures parts of the signing. This should also be avoided. The captioning as presented in the first video, Freezer Temperature and Cleanliness, is ideal.

To add captions to videos it is as simple as clicking on the appropriate icon in the software, typing the caption and then saving it to the film editing timeline. It is then just a matter of clicking on to the end of the caption and dragging the end to the desired place on the timeline. In this way captions are shown for a desired length of time. Ensure that the captions are shown long enough for the user to read them. If this is not done the captions will flash on and off quickly before the user can complete reading them.

The process to add captions varies – With Corel Ulead vVdeo Editing 11 the process is:

1) Listen to the video that you want to caption, if an Auslan signer is used watch then frame with someone that is proficient in Auslan. You should aim to caption a maximum of 14 words for each caption insert and no more than two lines. Write down on paper what is heard or seen.

2) Click on title.

3) Type in the text you have recorded to paper. Left click the mouse and you will see the caption appear on the timeline.

4) You can adjust the size of the caption box and drag it to the desired place on the screen simply by clicking and dragging.

5) Adjust the caption on the timeline so that it is synchronised with the film.

6) Add backdrop to captions by clicking on the icon titled text backdrop.

7) Change colour and transparency of the backdrop by clicking on the Border/Shadow/Transparency icon. Choose the preferred colour of backdrop and the level of transparency.
Translating to Auslan

Information researched and developed by Cathy Clarke – Coordinator of the Centre of Excellence for Deaf and Hard of Hearing Students, North Melbourne Institute of TAFE.

Background:

Deaf and hard of hearing people need to access digital and other media through a visual means. This will require video editors to consider adding either English closed or open captions under each screen shot providing access to viewers with hearing loss. The inclusion of captions assumes that all viewers can read and comprehend English fluently, which is not always the case.

For one section of viewers who are deaf and use Auslan (Australian Sign Language), English is usually their second language and they often experience challenges watching videos with English captions. Over the last few years, it has become possible to make videos and include a translation into Auslan. Such videos can be seen at [www.ddaedustandards.info/index.php](http://www.ddaedustandards.info/index.php) – a website that has translated sections of the Disability Standards in Education into Auslan for Australia’s Deaf community. In addition, in the UK, large corporations such as British Telecom are recognizing the value of having the written information on their websites translated into video clips in British Sign Language (BSL) for deaf people who require access to services [www.btplc.com/age_disability/bsl2007/btsign.asp?com.bea.event.type=linkclick&oLName=link.searchresults&oLDesc=KB_1055](http://www.btplc.com/age_disability/bsl2007/btsign.asp?com.bea.event.type=linkclick&oLName=link.searchresults&oLDesc=KB_1055).

At the national conference of the Australian Sign Language Interpreters Association (ASLIA) in Sydney in September 2007, it became clear that the translation of videos or English text into Auslan is an emerging and exciting development in the Auslan interpreting field. Papers by Leneham and Conlon, 2007, outlined the challenges faced by people undertaking such work and the importance of conveying not only the translation from first to second language but underlying messages, nuances and cultural norms should also be translated between two languages. In other language translations (ie. French to English), the translators have many years of experience and training in skilled translation and we are seeing the some similarities in the skills required for Auslan/English translators. In future years, more and more opportunities abound for both deaf and hearing people who are suitably qualified to undertake such work. However as is area is so new, it is difficult to provide clear and concise guidelines and it is vital that not just anyone who has some understanding of either Auslan or English is able to do such work.

What is Auslan:

Australian Sign Language is the national language of the Australian Deaf Community and it derives from British Sign Language (BSL), which came to Australia with convicts and early settlers who were Deaf. The language has evolved over 200 years and whilst there are still some similarities to BSL, it is now a rich and vibrant visual, spatial language in its own right. Auslan is distinctly different from other national sign languages around the world. (Johnston. T, 1989).

Auslan was recognised by the Australian Federal Government as one of Australia’s community languages in 1997 (Dawkins White Paper, 1997). It is a distinct language with its own sophisticated rules and grammar. Contemporary research is allowing us to more fully understand the complexities of the language, but what is important to note here is that it is not simply a visual rendering of English.
Types of Translation:

There are several types of translation that can be done between Auslan and English for: video, audio, signed or written mediums. They are:

1. Signed ST (video) – Spoken TT (audio)
2. Spoken ST (audio) – Signed TT (video)
3. Spoken ST (video) – Signed TT (video)
4. Written ST – Signed TT (live)
5. Written ST – Signed TT (video)
6. Signed ST (video) – Written TT

**NB:** ST – Source Translation; TT – Target Translation

Reference: Leneham M, 2007

For the purposes of this project, the translation methodologies we are using are translation types 2, 5 and 6 as outlined above. The processes involved include:

1. Edited segment is delivered to lead translator
2. Lead translator delivers to segment translator
3. Segment translator develops draft translation
4. Lead translator reviews draft translation
5. Deaf producer reviews final translation
6. Voice-over is added to segment
7. Open/closed captions are added in response to Voice Over

Reference: Leneham M, 2007

The lead translator and the segment translator should be qualified in both Auslan/English and English/Auslan translating; at this stage there is no training course for people to develop these skills. Currently, many of these people have been self-taught and may be either professional Auslan interpreters or Deaf people who have a background in theatre, sign singing or English text/signed Auslan translation and are considered to be bi-lingual in both Auslan and English.

The lead translator should also be familiar with the underlying messages and aims of the overall film production whereas the segment translator may only have responsibility for a particular segment out of the production. It is vital that the lead and segment translators collaborate to ensure the best possible translation can be achieved from the source language (ie. English) to the target language (ie. Auslan).

Once the segment translator has developed a draft translation for the particular segment (from the source to target languages) this is then reviewed by the lead translator in conjunction with the film producer, who ideally should be deaf to ensure cultural appropriation and connotations. The deaf producer gives the final approval for the translation.

Once the translation has been finalised and filmed (ie. as the target language ie Auslan), a voice over is added to the segment and finally closed or open captions are added for people with hearing loss who do not use Auslan (in the source language – English).

The development of digital media has made it possible for anyone who has access to the right equipment and software to produce media that is relatively cheap and can reach wide numbers of people through mediums such as ‘YouTube’ etc.

Some useful tips to consider when filming Auslan signers include:

- Use a darker background preferably a dark blue, this assist with contrast.
- Ensure the signer wears a dark upper top with no patterns. This helps to clearly see what the signer is signing.
- Spend some time on lighting to eliminate shadows as much as possible.
- Translate any dialogue as much as possible to plain English and eliminate jargon.
- Jargon can not always be eliminated. Where there is no relevant sign for the jargon, finger spell it and add a caption to represent the English word at the bottom of the screen.
Contacts for assistance with Auslan translation.

Given the complexities of the required skill sets required for translating and the lack of formal qualifications available for practitioners, then to ensure high quality translation and to ensure end users are able to fully experience the end product, the following organizations should be contacted to either conduct the translation or provide advice on the process of translating such products:

Please do not attempt Auslan translations without seeking advice from individuals and organisations who are proficient in the Auslan. Some useful contacts are listed below.

The Australian Theatre of the Deaf
Voice: (02) 9310 1255
TTY: (02) 9310 1205
Fax: (02) 9318 2835
Email info@atod.org.au

Australian Association of the Deaf
Voice: (07) 3357 8266
TTY: (07) 3357 8277
Email: aad@aad.org.au

The Centre of Excellence for Students who are Deaf and Hard of Hearing
TTY: +61 3 9269 8354
Fax: +61 3 9269 8315
Email: coe@nmit.vic.edu.au

Australian Sign Language Interpreters Association
There are branches around Australia. It is highly recommended that you contact them for assistance with Auslan translation. Contacts for States and territories can be found at their website: http://aslia.com.au/o/component?option=com_contact/itemid,3/

For a more comprehensive guide to adding captions and Auslan please contact Gary Kerridge on NDCO@ballarat.edu.au

Deaf Societies and State Deafness Associations are also useful points of contact.

VicDeaf
TTY: (03) 9473 1199
Voice: (03) 9473 1111
Fax: (03) 9473 1122
Email: info@vicdeaf.com.au

Victorian Council of Deaf People
TTY: (03) 9521 2466
For Voice, contact National Relay Service 133677 and then quote 03 9521 2466
Fax: (03) 9525 2595
Email: info@vcod.com.au

Western Australian Deaf Society
Voice: (08) 9441 2677
TTY: (08) 9441 2655
Email: wadeaf@wadeaf.org.au

DeafSA
Voice: (08) 8223 3335
TTY: (08) 8223 6530
Fax: (08) 8232 2217
Email: deafsa@deafsa.org.au

Queensland Deaf Services
Voice: 07 3892 8500
TTY: 07 3892 8501
Fax: 07 3392 8511
Email: dsq@deafsq.org.au

Queensland Association of the Deaf
TTY: (07) 3848 7769
Fax: (07) 3848 9029
Email: qad_inc@hotmail.com
Website: www.qad.org.au

Tasmanian Deaf Society
Voice: (03) 6249 5144
TTY: (03) 6249 1174
Fax: (03) 6249 8818
Email: reception@tasdeaf.org.au

Deafness Association of the Northern Territory
Voice: (08) 8945 2016
TTY: (08) 8945 2016
Fax: (08) 8945 1880
Email: dant@octa4.net.au

Deaf Society of NSW
Voice: 1800 893 855
TTY: 1800 893 885
Fax: 1800 898 333
Email: info@deafsocociety.com
Assessments

The CD sample provides an example as to how assessments can be carried out using a Smartphone or PDA. The example provided is a simple true and false format. As this project came to an end the developers were still exploring how the assessment could carried out in a secure way using the devices.

Ideally the student would be able to receive the learning information, watch, listen and read what is provided according to their preference and then complete the assessment which would automatically be sent to the assessor. Time constraints did not allow completion this part of the trial.

However there are several means for online assessments that are currently used by learning management systems which include:

1) Audio link ups with the assessor through the computer.
2) Submitting written work online through the learning management system.
3) True/false and multiple choice questions.

*i-learn* – who developed the CD sample, and *Goal Training and Development* are available to provide advice and support to any individual and organisation that wish to explore this area in more detail. The contacts for these two organisations can be found at the end of this booklet.

The learning materials presented in the CD version were trialled on ten students by *Goal Training and Development*. These students had learning difficulties, hearing impairments or were from Non English speaking backgrounds.

*Goal Training and Development* found:

- All participants were able to easily learn how to navigate the content with a five minute induction period.
- All found the videos easy to view and comprehend.
- Participants who were completing on the job training commented that they would prefer to receive learning information through the PDA or Smartphone. Either as a learning tool and so that they could refer to the information when needed.
- 9 out of 10 participants were able to complete the True and False assessment to a satisfactory pass level.

Participants offered a number of comments for improvements in the presentation of the information that included the following:

1) When adding audio instructions, speak slower and more clearly. The speaker had a tendency to speak to fast.
2) More emphasis on the lighting to avoid shadows for the signer.
3) Limit captions to two lines and ensure the captions remain long enough for the user to read easily.
4) Use a darker background behind the signer.

Pleasingly, the participants found the information easy to access and motivating to use.

The CD Sample

The CD sample that has been developed for this booklet was developed by *i-learn*. It has been specially designed and formulated to demonstrate how the information is presented on a PDA or Smartphone device.

The user may note that when viewing the videos there is some blurring. This will vary from computer to computer. However, the videos when viewed on a PDA or Smartphone device are clear and crisp.

The learning sessions presented on the CD are short and sharp. They have been presented in several formats that include:

- Text
- Audio only
- Audio with Video
- Auslan signing with captioning.

It is possible to also add captions to the Audio with Video section. In this instance we chose to add captions to the Auslan section so as to create a section specific for people who are Deaf or hearing impaired.

The watcher will note that there are three icons. The icons are self explanatory. The watcher clicks on the icon that they prefer. What this medium provides is access in several formats.
Potentially learning materials designed in this way can offer access to:
1) People who are Deaf and hearing Impaired.
2) People who have learning and literacy issues.
3) People who are vision impaired.
4) People for who English is their second language.

The format used does not have to be used only for PDA and Smartphone delivery. It can be used for any online learning that is provided through a learning management system. The benefits of this format are many:

1) Access is provided instantly for a wide range of people.
2) It lessens the need to organise access from program to program.
3) It provides access for Auslan users thereby reducing stress and demand on Auslan interpreters. In Australia this resource is severely overstretched.
4) It provides a means for small private training providers to make parts of their training and courses accessible. For a reasonably small outlay it can reduce ongoing support needs for people with a disability that small training and education providers find difficult to meet.

The applications for this mode of delivery are far reaching. Potentially this mode of delivery can be and are currently used for:

1) Orientation training. (Guided tours can be developed).
2) Aspects of first aid training.
3) Ready access to training manuals lessening the need for printing.
4) Simple instruction in a range of areas eg cutting food, removing a wheel from a car, cleaning techniques, anatomy and so on.

For more information contact

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The scope and aim of this project was developed in partnership with the Regional Disability Liaison Officer, Western Region of Victoria, The Disability Project Worker based at the Australian Council of Private Education and Training Providers and the Centre of Excellence for Students who are Deaf and Hard of Hearing. The Project has been supported and managed by the University of Ballarat.

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