QOLIVET On-line Training Course

Module 3: Creating Inclusive Environments

Module Description	This module explores important strategies that can be applied by organisations to ensure the accessibility of premises, materials and methods for a wider range of needs and the role that mainstream and assistive technologies can play in enhancing QoL outcomes for persons with disabilities.

Introduction:

Regardless of whether you are working in a community care, specialised or mainstream VET organisation, there are a number of questions which you can ask to give you a sense of the extent to which your organisation has adopted values, processes and procedures that prioritise an inclusive environment. Consider the questions below and reflect on the extent to which each applies to your organisation. It could be that your organization has fully taken on board each of the actions, or it may be still in a process of rolling them out. In other cases, there may be one or two questions that may give you food for thought and which could be useful for your organisation to adopt.

Does your organisation:

- Ensure that inclusive learning approaches are applied?
- Apply the principles of universal design for learning (UDL) to developing opportunities, materials and environments?
- Seek to remove or reduce physical and psychosocial barriers to participation?
- Offer awareness training to staff and the community to eliminate negative attitudes and reduce stigma?
- Make appropriate assistive technologies and accommodations readily available to those who can benefit from them?
- Provide staff with training on how to apply a range of flexible approaches to supporting learning?

In systems where QoL impact is valued as an intended outcome and measured as a key performance indicator, the above strategies are likely to result in more responsive and higher-quality interventions and supports at all stages of the pathway to inclusion.

This module explores some of the above questions in greater detail.

M3LO1	Describe the principles and practices of Universal Design (UD) and Universal Design for Learning (UDL)
1.1	Define and explain the principle of Universal Design
1.2	Link UD approach to a rights-based service provision model
1.3	Apply the principles of Universal Design and Universal Design for Learning to create accessible environments and experiences

Universal Design is a founding principle of inclusion

There is little doubt that the relationship between front-line staff and participants in a VET or health and social care provider is the focal point at which participants experience the values and principles of an organisation. The skills, knowledge and attitudes of such staff transform what could be

aspirational policies and statements about ethos and culture into daily experiences for the participant.

Nevertheless, it is not sufficient for an organisation to depend solely on its staff to implement a rights-based approach. There are a number of strategies they can deploy to make these relationships more positive and constructive. An important foundation in this regard is the creation of an accessible and user-friendly service context. Universal Design (UD) is the most direct way of achieving this. A UD approach involves constructing psychosocial and physical environments that are understood, accessible and usable by the greatest number of people taking into account the individual differences that can result from age, size, ability or impairment. It differs from accessibility, which is about providing basic access and usability of facilities, products and services for persons with disabilities, in that UD aspires to create contexts in which independence and social participation are possible for all people through a continuous improvement process.

The key to UD is to consider individual differences at the outset. The types of differences that most often need to be catered for in UD include:

- Seeing & hearing
- Voice, speech & language
- Movement, mobility and strength
- Size & reach
- Abstract thinking & understanding
- Language & Communication
- Emotional reactivity
- Sensitivity to distractors.

The UD Pyramid
UD is often presented as a pyramid of options that are available to a person who needs to use a space, service or product (See Figure 1).

At the base of the pyramid is a space, product or service that has been designed to make it usable and accessible to as wide a diversity of individual differences as possible. The second level of the pyramid is the creative use of smart technologies to enhance accessibility for those with additional needs. The third level is about making customised aids or assistive technologies available to individuals who need them so that they can use the space, product or service independently. The fourth level of the pyramid is offering personal assistance for those who need this to act independently.

Universal Design for Learning (UDL) can enable a person at any stage of the pathway to inclusion
The UD approach can be used to transform learning experiences. Universal Design for Learning (UDL) applies specifically to the design and delivery of education and training in both health and social care and VET services. There are three really useful UDL guidelines.

1. **Provide Multiple Means of Representation**, such as written text, video, audio, illustrations, concept maps, apps and icons
2. **Provide Multiple Means for Action and Expression**, including oral speech, written text, multiple choice, actioning and drawing
3. **Provide Multiple Means for Engagement**, including setting personal learning goals, providing for various levels of learning, using rewarding feedback mechanisms, facilitating self-assessment, controlling for distractions and offering concentration aids.

It is possible to represent the UDL approach using a pyramid similar to the UD one, in which:

1. At the base of the pyramid are learning materials, resources, methodologies and approaches that are designed to be compatible with as wide a diversity of individual differences as possible
2. At the second level of the pyramid are techniques and adaptations suitable for a narrower band of learners with similar needs
3. At the third level, there are individual accommodations for learners with more significant needs
4. At the top level, learners are provided with personal assistance to help them engage more easily with learning tasks.

Taking account of a wide diversity of individual differences

The most direct approach to building the base of the UDL pyramid is to follow the guidelines developed by CAST (originally the Center for Applied Special Technology)[1]. The CAST UDL Guidelines are presented in Figure 1, and you can find useful guidance on the CAST website by following the link https://udlguidelines.cast.org/.

The UDL guidelines provide advice and guidance to staff about ways to support participants to:

- **Access** learning materials and content
- **Build** knowledge and skills
- **Internalise** what has been learnt to develop competence

The structure of the guidelines reflects the three overarching principles of UDL:

1. The 'why' of learning – Engagement
   a. Recruiting Interest – Access
   b. Sustaining Effort & Persistence – Build
   c. Self-Regulation – Internalise
2. The 'what' of learning - Representation
   a. Perception – Access
   b. Language & Symbols – Build
   c. Comprehension – Internalise
3. The 'how' of learning - Action and Expression
   a. Physical Action – Access
   b. Expression & Communication – Build
   c. Executive Functions – Internalise

M3LO2	Describe the role that technology can play in increasing inclusion and enhancing QoL
2.1 Explain how accessible and universally designed technologies can enhance QoL 2.2 Describe how to get the best out of assistive technologies	

Is it possible to achieve a good QoL without technology?

When thinking about access and universal design, it is essential to keep in mind that access to the digital world is as necessary as access to the physical environment. Information and communication technologies (ICT) have the potential to open up a world of positive and constructive opportunities beyond those available in the local community.

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[1] CAST (2018). *Universal Design for Learning Guidelines version 2.2.* https://udlguidelines.cast.org/

The contribution of ICT to quality of life (QoL) for persons with disabilities is multi-dimensional. Accessible and universally designed software and apps make a wealth of online resources available in all areas relevant to enhanced QoL. In addition, augmented and assistive technologies can enable people with a variety of impairments to be more independent and participate more fully in all spheres of life. The accessibility of assistive technologies in terms of hardware and software is a key factor in its effectiveness.

You only have to reflect upon the impact of ICT on your own life to get a sense of how being denied access to it can impact a person's QoL.

Below you are asked to answer three questions about you and ICT.

- The first question is about your use of different ICT tools.
- The second asks you to reflect on how challenging it would be, if you were unable to use ICT for a variety of life activities.
- The third question asks you to rate the extent to which you believe ICT has reduced or enhanced your QoL in each of the areas of the QOLIVET model.

1. How frequently do you use the ICT tools listed below?	Never	Now & Then	At least once a week	At least once a day	Many times, each day
Smart Phone					
Laptop Computer					
Desktop Computer					
Camera					
Smart TV					
Wi-Fi/Internet					
Social Media					
Audio or Video Streaming					
Search Engines					
Artificial Intelligence					
Internet Radio					
Videogaming					
Automatic Teller Machines (ATM)					
Smart Watch/Fitbit					
Other					

2. To what extent would each of the activities listed below be impacted, if you were denied access to ICT?	Not a problem	A minor irritation	A moderate annoyance	A major inconvenience	A severe disruption
Proving your identity					
Accessing essential services					
Communicating/Keeping contact					
Budgeting/Keeping accounts					
Banking					
Shopping					

2. To what extent would each of the activities listed below be impacted, if you were denied access to ICT?	Not a problem	A minor irritation	A moderate annoyance	A major inconvenience	A severe disruption
Customer service					
Searching for information					
Getting advice or guidance					
Keeping up to date with news					
Reading					
Listening to music or speech					
Entertainment/Gaming					
Watching Sports					
Hobbies					
Cooking					
Work					
Travel arrangements					
Finding your way around					

3. What difference has ICT had on your QoL in each of the domains & dimensions listed?	Reduced my QoL						Enhanced my QoL				
	-5	-4	-3	-2	-1	0	1	2	3	4	5
Individual Empowerment											
Personal Development											
Self-Determination											
Social Participation/Active Inclusion											
Interpersonal Relationships											
Rights & Citizenship											
Employability											
Community Participation											
Wellbeing											
Emotional Wellbeing											
Physical Wellbeing											
Material Wellbeing											

Given that ICT has become so integrated into the way the world works, it should be evident that not being able to use it can exclude a person from many essential and enjoyable life activities. This is referred to as digital exclusion, and it is the consequence of unequal access or capacity to use ICT. Lack of access to ICT, whether it arises from inadequate digital literacy, physical or digital barriers to use, or affordability, can significantly limit a person's life activities and restrict their capacity to fully participate in society. Older persons and people with a range of impairments are particularly vulnerable to digital exclusion.

The inclusion of persons with disabilities in the development process from the outset in terms of the concept and requirements, and in the design phase, has the potential to enhance the accessibility and usability of technology options. Two important benefits of this would be the production of new technologies that are aligned with a very broad spectrum of needs and increased employment opportunities for persons with disabilities in the technology sector.

Maximising access to mainstream and smart technologies

Service providers in the VET and health & social care sectors have a responsibility to ensure that they provide universally designed and accessible technologies to their participants. There are a variety of sources which can provide guidance on the degree to which a product or application could pose accessibility challenges for diverse functional limitations.

Physical and Sensory Accessibility:

Input devices or mechanisms

- Adapted keyboards
- Alternative Mouse
- Voice recognition
- Pre-set Menus
- Eye gaze technology

Output devices or mechanisms:

- Screen text
- Voice
- Icons
- Braille
- Printer

Cognitive Accessibility[2]:

- Plain Language
- Icon driven
- Predictability
- Low memory load
- Simple help features
- Multi-channel communication
- More accessible instructions

Application Features:

- Images
- Links
- Navigation
- Form fields
- Lists
- Tables
- Text content
- Paragraph properties
- Video & multimedia
- Page structure.
- Headers
- Language

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[2] https://www.boia.org/blog/what-is-cognitive-accessibility

- Colour Contrast

The Web Content Accessibility Guidelines (WCAG) provide an easily understood rating of the extent to which websites will be usable by the widest proportion of participants[3]. The approach applies 78 criteria to assess the accessibility of an application. Three broad categories are assigned on this basis.

1. Level A – Basic accessibility
2. Level AA – Strong accessibility
3. Level AAA – Excellent accessibility

In addition, VET and health & social care providers need to ensure that their frontline staff are familiar with the accessibility features that are routinely built into apps and software. These include closed captioning, text-to-speech, speech recognition, magnification, colour contrast, predictive text, accessible text structures, shortcut keys, and an onscreen keyboard.

The contribution of specialised and assistive technologies to participation
Beyond the access that is created through universally designed devices and applications, specifically designed assistive technologies (ATs) make a critical contribution to enhancing the participation of people with reduced functioning. The purpose of AT is to enable a person to carry out functional activities that they would normally find difficult or impossible. It is not about rehabilitation or cure.

AT devices are among the most widely prescribed solutions for persons with disabilities. The key areas of functioning and activity to which they are most frequently applied are:

- Vision
- Hearing
- Speech communication
- Learning and cognition
- Mobility and seating
- Motor control
- Daily Living
- Environmental control
- Transport
- Technology access[4]

It is important to recognise that AT solutions can range from:

- Low-tech options, such as adjustable tables, walking frames, wheelchairs or magnifier bars,
- Mid-tech options such as switches, talking calculators, motorised devices or digital recorders, and,
- High-tech options, such as speech recognition, augmentative and assistive communication devices, personal organisers, or exoskeletons.

Advances in ICT have impacted very positively on the availability and cost of high-tech AT. New apps are being produced at an increasing rate. While this is good news for persons with disabilities, it makes selecting the most effective AT more challenging. This is evident in the fact that about one-third of devices end up being abandoned by the user.

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[3] Inclusion and Accessibility Labs. https://ialabs.ie/what-is-the-difference-between-wcag-a-aa-and-aaa/
[4] https://mn.gov/admin/at/getting-started/understanding-at/types/

A number of factors could be causing this high level of abandonment. Firstly, many AT devices or apps may be ineffective because they are designed and developed with minimal user involvement. Secondly, while resources are available for purchasing AT, little attention is paid to training people on how to use them most effectively. Thirdly, the person is often not consulted on the type of AT that they would prefer. Finally, and most importantly, insufficient effort is invested in matching the person to the most suitable technology for them.

Matching an individual with the appropriate AT is not only about how a device or app addresses the person's functional needs but also about the extent to which it fits with the person's aspirations, self-concepts, abilities, and the context within which they wish to use it.

The Matching Person with Technology (MPT) uses a biopsychosocial approach which explores three domains which can have an impact on suitability and use[5]:

- **The Person** in terms of strengths, abilities, personality, preferences, and level of function, e.g., mobility, hand function, or cognitive function
- **The Environment** in terms of the factors that are standing in the way of the persons engaging in desired activities and events. This can include the extent to which the people with whom the person interacts are comfortable with the technology and have the skills to support the person
- **The Technology** in terms of the person's familiarity with technology use, how easy it is for the person to use, their satisfaction with the effectiveness of the technology, the level of independence they achieve, and the extent to which it enhances their QoL.

Front-line staff working in VET or health & social care service are ideally placed to observe any challenges or barriers to participation that a person faces. While they may not be aware of the possible solutions that are available, they can play an important role in identifying and clearly specifying the access challenges faced by a participant with whom they work. This can form the basis for a more effective match of that participant with the AT that suits them best.

M3LO3	Use QoL impact indicators to improve service outcomes
3.1 Use QoL outcome indicators as part of a continuous improvement process 3.2 Assess QoL outcomes of services	

Measurement as a catalyst in the development of inclusive organisations
At this stage of the course, many of the most important components required to create inclusive learning opportunities have been described. At a fundamental level, they can be characterised as skilled and responsive staff working in an inclusive organisation. Underpinning this description are the professional skills and attitudes addressed in Module 2, and the organisational policies and strategies described in this Module. However, there is another component which is required in order to ensure that processes and practises actually make an actual difference to participants in terms of their QoL. Without measurement, it is unlikely that staff and organisations can be confident that the methods, mechanism, support and interventions they apply are achieving their intended outcomes.

Measurement provides the evidence upon which actions to enhance the interventions that are making a positive difference to the QoL of participants and for changing those that are not working as well as intended, i.e., for a continuous improvement strategy. Continuous improvement requires

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[5] https://sites.google.com/view/matchingpersontechnology/home

that staff and leadership in an organisation actively engage in repeated cycles of Plan-Do-Check-Act. This involves:

- Plan: Establish policies, processes and practices that support the principles of inclusive learning and enhanced QoL
- Do: Implement a series of actions intended to enhance inclusivity, accessibility and improve the QoL of participants
- Check: Measure the extent to which the action plan has made a positive difference to participants in the quality of their lives
- Act: Build on the areas that are working well and come up with ways to address the areas that need improvement.

The role of measurement in planning

The QoL framework explored in Module 1 provides a basis for planning. By reviewing current strategies with reference to the three domains of QoL – Individual Empowerment, Social Participation & Active Inclusion, and Wellbeing, the leaders of an organisation can generate a plan and strategy to increase the impact of a service or a program on QoL. This needs to be incorporated into staff development and training activities to ensure that managers and frontline staff are properly equipped to implement the plan and strategy. The resources required to support the plan and strategy need to be identified and put in place.

It is about moving the service from where it is now to where it ought to be. The plan and strategy must be informed by evidence. Current research and thinking in the field and the opinions of experts and staff are clearly important sources of evidence. The other essential source of evidence is the perceptions and opinions of the people who are using the service or attending the program and, where relevant, their families or significant others. This is where measurement plays a central role. Carrying out a survey of the views of participants and/or their representatives can provide strong evidence to inform strategic development and action planning. In addition to this subjective measure of perception, it would be important to include objective indicators. The evidence gathered at the planning stage can also be used as a baseline against which progress can be judged at the check phase of the cycle.

The role of measurement in implementation

During the implementation phase, it is essential to monitor the extent to which the methods, mechanisms, support and interventions are making a difference at the individual level. The best way this can be achieved is to integrate the domains of QoL into the person-centred needs and strengths and planning process. This is described in more detail in Module 4.

The role of measurement in checking progress

It is essential to evaluate the progress made towards the objectives of the plan and strategy at regular intervals. This could be every quarter, every six months or every year. The most effective approach to this is to repeat the measurements that were taken at the outset and to compare current performance on these indicators with the baseline established at the planning stage. After a number of PDCA cycles, the organisation will be able to view the progress made in terms of trends over a number of time periods. QoL measures can be included as key performance indicators on a dashboard that provides leaders, managers and staff with feedback on the effectiveness of the actions they are implementing.

Assessing QoL Impact

Clearly, it is essential that the subjective QoL measurement tool being used provides a valid indication of the perceptions of participants. An invalid tool is much like a faulty compass on a voyage. At the very least, a measurement tool must be based on a clearly defined QoL model or framework. There are a number of other questions that you can ask about the measure being used, which will give you a good indication of its suitability.

- Does it vary the way that participants respond to account for *response bias*? This is where a person tends to favour a particular answer regardless of the question asked. This can be solved by alternating between positive and negative questions or changing the order in which possible responses are displayed e.g., in a 6-point scale, the left-hand item can either be 'totally agree' or 'totally disagree'.
- Does the tool address the tendency to *revert to the mean*? This is where a participant frequently selects the middle option, e.g., 'neither agree nor disagree'. This can be addressed by using a 4-point or 6-point scale which has no middle option.
- Do the administration procedures address the impact of *social desirability*? This is where the person answering the questions wishes to please the person administering the tool. This can be addressed by making sure that the person doing the administration is not directly involved with the participant or a significant other.
- Are there procedures to pick up on *acquiescence*? This is where a participant wants to be positive regardless of the question. This can be identified by including some training items that are clearly not true. If a participant responds positively to these, it is clear that they need to be reassured that the results are anonymous and what they think is valued.
- Does the tool take into account *response shift*? This is where are person's internal standard changes over time to the extent that they expect better outcomes or they tolerate worsened conditions. When a test is being administered before and after an intervention, the response shift can result in a person rating a question less positively the second time because they expect more from the service even though their situation has improved objectively. This can be addressed by using questions that only need one administration. For example, rather than asking the participant to rate their level of self-determination, you can ask, 'Did the service you received enhance your self-determination?'
- Does the tool take into account that positive or negative ratings may have nothing to do with the service delivered but are the result of *intervening variables*? This is where a person is going through a challenging time in life or where things are going really well for them, and this influences the rating they assign. This is another challenge for tools that need to be administered before and after an intervention. It can be resolved by framing the questions in terms of the impact of the service rather than asking them to rate their QoL.
- Can the results of the tools be used to identify specific *areas for improvement*? This is where the average rating of a group of participants can be used to focus on aspects of the service that participants do not believe are meeting their QoL needs. This is an issue for tools that are based on statistical norms, in which individual questions cannot be analysed. A tool that compares the average rating of participants to the expected impact of a service reflected in the views of the staff can highlight areas where the service is exceeding or falling below expectations.
- Can the tool be used to *document change*? This is where a difference between ratings over time reflects actual changes in the impact of a service. This is something that tools based on statistical norms do not do very well because any items that change over the short term need to be removed to improve the stability of the tool. Using a tool that compares ratings

to a criterion, such as 'expected impact', is a more effective approach to documenting change.

Figure 1: The Universal Design Pyramid

Provision of Personal
Assistance

Access to Customised Assistive
Technologies

Availability of Smart User-Friendly and Accessible
Technologies

Universally Designed
Space, Product or Service
Taking in account a wide diversity of individual differences