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Developing critical thinking skills for industry trainees in the health and community support sector

Dr Nicky Murray, Manager Research and Intelligence, Careerforce
Dr Chris Hendry, Evaluator, NZ Institute of Community Health Care

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AKO AOTEAROA
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te toi pukenga

The New Zealand Institute of Community Health Care

Nurse Maude

Authors and Project Collaborators

Evaluation Team:

Dr Chris Hendry, NZ Institute of Community Health Care chris.hendry@nzichc.org.nz
Gill Coe, Researcher, NZ Institute of Community Health Care Gill.coe@nzichc.org.nz

Workshop Development and Facilitation Team

Dr Nicky Murray, Research Manager, Careerforce,
Penney Kemp, Education Programme Manager, Nursing and Education team
Cushla Wilson, Learning Engagement Advisor Careerforce

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Ako Aotearoa National Centre for Tertiary Teaching Excellence
PO Box 756
Wellington 6140

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- Gill Coe

Disclaimer

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Executive summary

Careerforce, Nurse Maude and the NZ Institute of Community Health Care were sponsored by Ako Aotearoa to develop and evaluate a pilot programme designed to enable health service-based workplace trainers to teach critical thinking skills. Following an extensive review of literature on the application of critical thinking skills in the health care environment, a series of workshops was designed to support workplace trainers to develop these skills in support workers.

The project sought to answer the following research questions:

1. *What are the key critical thinking skills required in the core learning assessment components of the National Certificate in Health, Disability, and Aged Support (Core Competencies) (Level 3)?*
2. *What are the key components of a professional development curriculum required to support workplace educators to deliver the critical thinking skill development required?*
3. *What impact does this professional development in critical thinking skill development have on workplace educators?*

What we did

This project provided targeted professional development to workplace educators in the health and community support sector to enable them to strengthen and deepen the critical thinking skills of their learners.

Why we did it

Changing demographics and increasing longevity have led to more complex care being provided in the community. Critical thinking skills are crucial for support workers to move from a task-based focus to the ability to deliver person-centred support. If support workers are to deal effectively with complex change, increased demands and greater accountability, they must become skilled in higher level thinking and reasoning abilities.

How we did it

Following a literature review on the application of critical thinking skills, a series of four workshops was designed to support workplace educators to develop these skills in support workers. The four workshops stepped participants through a range of critical thinking skills and provided strategies, lesson plans and material to enable them to deliver tailored and contextualised critical thinking skill development and support to their learners. Key aspects of the workshops were:

- Providing a safe and confidential environment for the workshops.
- Using scenario-based learning.
- Making use of the concept map technique.
- Using reflective journals/exemplars to demonstrate the application of these techniques in the workplace.

What we found

The nine participants valued the opportunity for this professional development, as well as the array of resources developed to support their learners. The workshops provided a means to 'test' the resources, and will enable Careerforce to design and package a final product that will be fit-for-purpose for both the health and community support sector and anyone else who wishes to enhance the critical thinking skills of their learners/employees.

Implications for teaching and learning

Key points:

- The curriculum and resources were developed in partnership between the ITO and an employer, and were informed by a comprehensive literature review. This gave the workshops pedagogical soundness and industry authenticity.
- The team teaching model allowed for the complementary strengths of the facilitators to be fully utilised.
- The workshops were timed to fit in with the busy schedules of the workplace trainers, and the social interaction that took place over the meal breaks cemented trust and respect for fellow participants.

Recommendations

Factors to consider when developing this type of professional development model:

- Work with a well-respected industry partner to ensure authenticity and credibility.
- Allow plenty of time and support for curriculum and resource development – the front end development of the project is intensive and can't be rushed.
- Put in place a strong evaluative component from the outset of the project – the evaluation is integral to the initiative, not in addition to.
- Take account of the nature of the learners you wish to engage with and 'take the learning opportunity to them' wherever possible.

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Introduction

Careerforce, Nurse Maude and the NZ Institute of Community Health Care were sponsored by Ako Aotearoa to develop and evaluate a pilot programme designed to enable health service-based workplace trainers to teach critical thinking skills. Following an extensive review of literature on the application of critical thinking skills in the health care environment, a series of workshops was designed to support workplace trainers to develop these skills in support workers.

This innovation was designed to provide professional development for workplace educators who deliver learning and assessment to support workers in the health setting. The workshops were designed to step participants through a range of critical thinking skills and provide strategies, lesson plans and material to enable them to deliver tailored and contextualised critical thinking skill development and support to their trainees.

In order for workplace educators to support trainees to value and fully utilise their tacit knowledge base, they need to deliver targeted and appropriate critical thinking skill development, that is '*Learning that is facilitated by encouraging active inquiry, guiding learners to question their tacit knowledge and coaching them in the construction of that knowledge to make links to their practice (Kemp, 2007)'.*

The project sought to answer the following research questions:

4. What are the key critical thinking skills required in the core learning and assessment components of the National Certificate in Health, Disability, and Aged Support (Core Competencies) (Level 3)?

5. What are the key components of a professional development curriculum required to support workplace educators to deliver the critical thinking skill development required?

6. What impact does this professional development in critical thinking skill development have on workplace educators?

The workshops were developed through a partnership between a Nurse Maude Educator with experience in teaching critical thinking skills and a Careerforce trainer with expertise in adult literacy. The experimental nature of these workshops did not just cover the workshop content, but the number and length of the workshops, the time of day they were held for this particular service type and the variety of backgrounds of the participants.

The evaluation of this initiative took place in parallel with the design and implementation of the workshops. The evaluators informed the development of the workshops through an extensive review of literature, some of which is included in this report. The shape and content of the workshops were also critiqued by the evaluators against findings from the literature. Pre and post workshop feedback from participants also formed part of the evaluation, as did retrospective feedback from the workshop developers who facilitated the workshops.

This report provides an overview and evaluation of an initiative designed to train trainers to develop critical thinking skills among support workers in health care settings.

Background

New Zealand's health and disability sector is characterised by a diverse workforce made up of many occupations. Part of the Government's strategy for health is that this diversity will enable health services to provide a range of services that will meet the increasing complexity

of needs that are being driven by an ageing population. Health care organisations have made dramatic advances and transformations during the last few decades, resulting in the rapid growth of technology and knowledge. As a result, some of the changes facing those working at the coal face of health care today include:

- increased technological knowledge required on the job
- consumer demand for quality care
- escalating healthcare costs and pressure to manage these
- decreased length of stay in hospital
- an ageing population with greater longevity and complex disease processes leading to increased patient acuity.

In tandem with this, is the lack of availability of trained health care personnel to meet this demand. A Department of Labour study (2009b) found that the demand for labour in health and disability services will grow by between 40 and 69 percent by the year 2021 (depending on the scenario used). The same study estimates that around 48,200 paid carers will be needed in 2036 to care for older disabled New Zealanders requiring high levels of care and support; a trebling of current numbers. If present trends continue, there may only be 21,400 aged care workers available at this time, leaving a huge shortfall and giving rise to serious concerns around workforce supply. (Human Rights Commission, 2012)

A 2010 NZ Aged Care Association (NZACA) survey reported an overall turnover rate of 26 percent for all staff in residential aged care facilities. The survey reported a very high turnover rate of 56 percent for caregivers. A New Zealand Medical Journal report considered that addressing high staff turnover requires "a career structure for healthcare assistants within the industry associated with training, increased involvement with care planning for residents, increased involvement in therapeutic care for older residents, and flexibility of working times for workers with families" (Human Rights Commission, 2012: 10). A survey conducted by the New Zealand Home Health Association (NZHHA), from the providers' point of view, suggested that the ability to work autonomously and possessing person-centred values are the two most important abilities required of support workers (Haggie, 2011).

Many of the people working in this industry have not completed high school qualifications and even fewer have attended a tertiary education institute. Careerforce's 2013 workforce report identified 25% of carers as having no qualification and only 11% having a bachelor degree or higher. If health care staff are to deal effectively with complex change, increased demands and greater accountability, it follows they must become skilled in higher level thinking and reasoning abilities.

Review of literature

The main aims of this review of the literature were to:

- examine the dimensions of critical thinking as they apply to the role of support workers within the current health care environment,
- identify the potential application of these strategies to enhance critical thinking skills in this workforce,
- inform the development of workshops for trainers to enable the development of these skills among the support worker workforce,
- inform the evaluation of this initiative.

An electronic search of information was undertaken including:

- Google.com web searches
- EBSCO data base search
- Search on the education-related databases

- Hard copy brochures, reports and associated material that were made available to the authors by the project team and colleagues.

An initial review of information from these sources was developed into a draft report and reviewed by project team members until this final version was produced.

Much of the earlier literature on critical thinking in the health field comes from nursing, and it is particularly focused around the challenges faced transferring and applying knowledge from theory to practice. Historically nursing was learned within an apprentice model. In the 1980s, nursing education was transferred to learning institutions such as polytechnics and universities. The upside was the higher level and quality of learning environments; the down side related to the difficulty experienced when the new nurses and students then had to apply their learning from the artificial learning environment to the workplace. There were workplaces where the majority of nurses had been 'trained' in the apprenticeship model, so were less understanding of the needs of this new 'breed' of nurses. Medicine still has a heavy emphasis on apprentice-based learning, particularly in their last 2-3 years of training.

Recognition of the value of critical thinking skills in the increasingly complex health care environment is now taking place for the non-regulated workforce. In this light, both educators and managers in these settings, particularly the community and aged care sectors, need to have an understanding of critical thinking concepts and methods if their trainers and support workers are to be made safe to apply these techniques in the workplace.

What is critical thinking?

It has long been recognised that thinking in practice differs from that in a structured situation because the complexities of 'real world' problems do not present themselves in structured formats. Reflective thinking is considered to enhance our ability to critically analyse situations and uncover the hidden realities. This process creates meaning out of experience. Critical thinking can basically be described as a thinking process focused not on the achievement of answers, but on the achievement of an understanding of the context of the situation (Forneris & McAlpine, 2007) and from there, synthesizing options for the most appropriate response.

More formally, Brunt describes critical thinking as '*purposeful thinking and reflective reasoning where practitioners examine ideas, assumptions, principles, conclusions, beliefs and actions in the context of their practice'* (2005:255). Brookfield (1987) proposes that critical thinking involves more than cognitive skills. He claims that emotions are paramount to the critical thinking process because assumptions shape perceptions, understandings and interpretations. Brookfield explains that a critical thinker is continually questioning assumptions of right and wrong. This is because critical thinking is not static but a constantly evolving process and that context is crucial to this process.

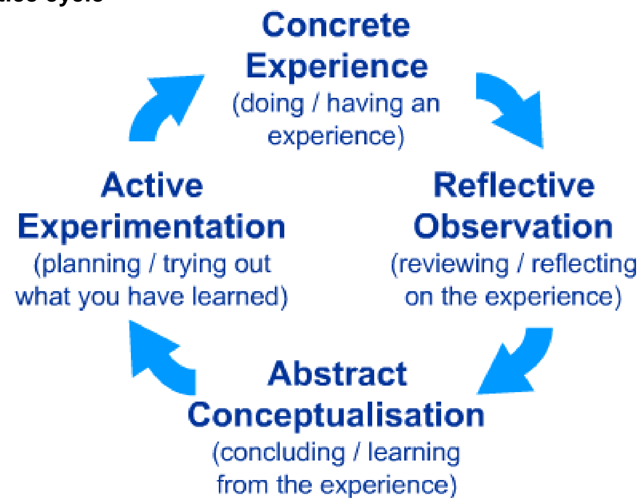
Key to this approach is an understanding of the knowledge base that is essential to the judgement and decision-making that occurs before, during and after the required tasks are performed. This tacit knowledge is derived from 'experience in practice' and requires a background of knowledge as a context for understanding (Anderson, 1982[1], cited in Kemp, 2007). In order for workplace educators to support trainees to value and fully utilise their tacit knowledge base, they need to deliver targeted and appropriate critical thinking skill development, that is, learning that is facilitated by encouraging active inquiry, guiding learners to question their tacit knowledge and coaching them in the construction of that knowledge to make links to their practice (Kemp, 2007).

[1] Anderson, J.R. (1982) Acquisition of cognitive skill. *Psychological Review* 89(4)

The role of reflection in critical thinking

Forneris & McAlpine (2007) described a process of reflection that leads nurses to critically analyse their practice and transform their focus of care. A group of paediatric nurses used a reflective practice cycle (see Figure 1) to reflect on their experience in caring for children. Using the group setting to work through the process, they shared their experience with each other. Moving through to the abstract conceptualisation stage, it became obvious to them that the child could not be cared for in isolation; that the family was critically important to the child's treatment and recovery. The result was a collective decision to refocus their care to a family-centred one where they included family members in the child's hospital journey.

Figure 1. Reflective practice cycle



http://www.ldu.leeds.ac.uk/ldu/sddu_multimedia/images/kolb_cycle.gif

The more formalised description of the reflective practice cycle in Figure 1 summarises the key steps in the process. Subconsciously we are doing this all the time as we navigate our daily lives and learn from our experiences. However, in order to feel confident about our actions and/or a solution to a problem that impacts on others, particularly involving clients/patients and colleagues within the workplace, it is safer (and more constructive) to use a conscious, stepped process such as that described above. The use of this process also allows the decision maker to logically justify and describe the process used to arrive at their solution and actions.

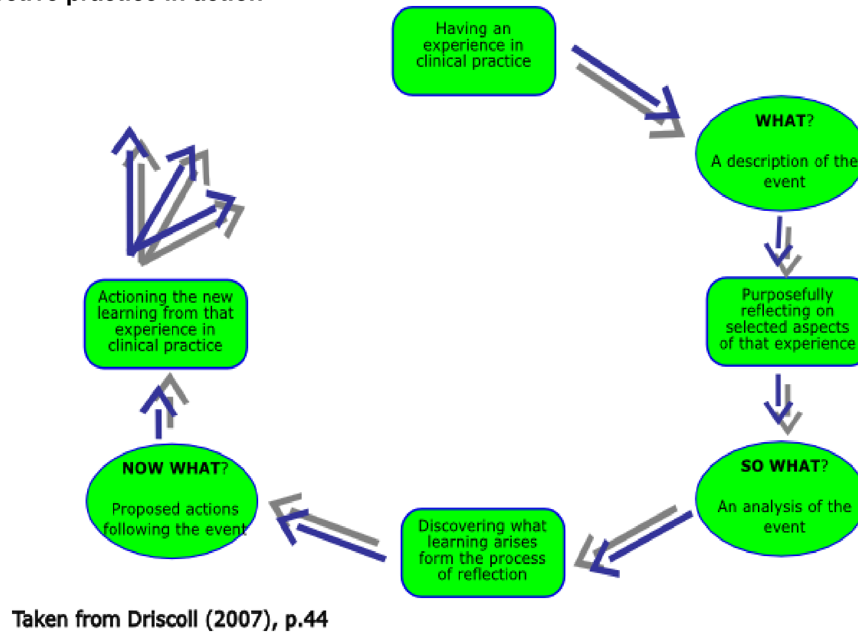
How can critical thinking skills be developed?

Malcolm Knowles (1980) premised adults learn best when they are able to draw on real life experiences as a resource for learning, particularly through discussion and problem -solving of real life situations. If knowledge is taught in context, learners will reflect. Reflection acts as an important prompt to learning during complex problem-solving situations. It provides learners with an opportunity to step back and think about how they actually solve problems and how a particular set of problem-solving strategies is appropriated for achieving their goal.

Modelling within a group setting or individual coaching is identified in the literature (Forneris & McAlpine, 2007) as necessary to initially formalise the steps in the critical thinking process. As part of a formalised evaluation of critical thinking as a health care workplace tool, they used a group process that firstly asked participants to recall over the previous week, what experience(s) had resulted in a feeling of accomplishment and what had resulted in a feeling of discouragement or frustration. Using guided questions, they were asked to describe the experience(s) in story/narrative format. Some specific (safe for the participant) stories were shared with the group and the facilitator modelled the critical thinking process with the

participants to demonstrate the steps in the process. Figure 2 (below) provides more detail about the questioning and reflection that take place during the process.

Figure 2. Reflective practice in action

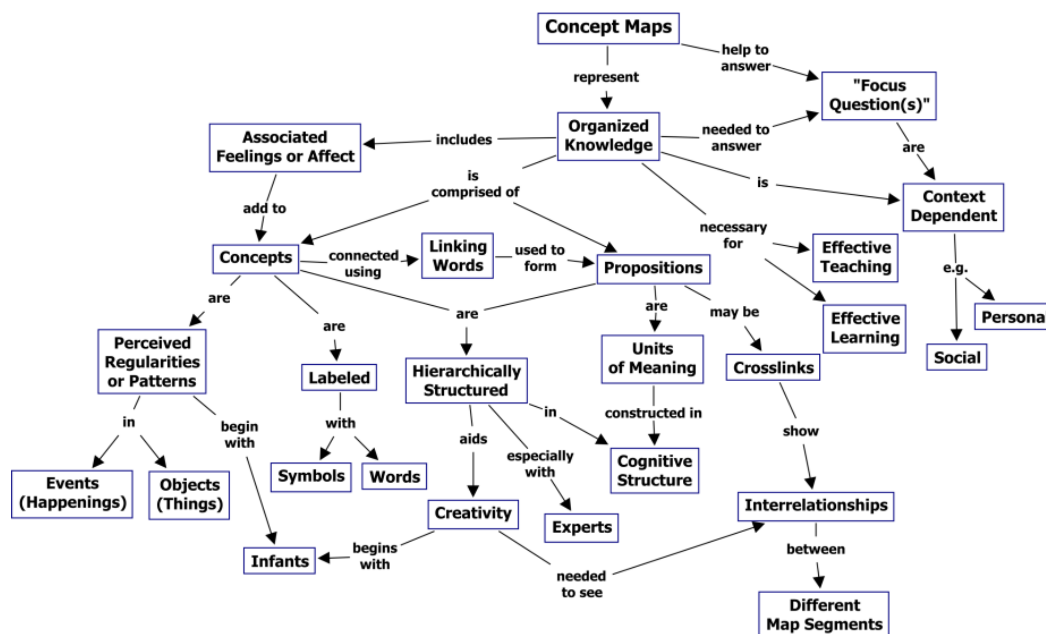


http://www.nottingham.ac.uk/nmp/sonet/rlos/placs/critical_reflection/images/driscoll_diagram.png

Concept mapping as an aid to developing critical thinking

Concept maps are graphical tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. Words on the line, referred to as linking words or linking phrases, specify the relationship between the two concepts. Propositions are statements about some object or event in the universe, either naturally occurring or constructed. Propositions contain two or more concepts connected using linking words or phrases to form a meaningful statement. Sometimes these are called semantic units, or units of meaning. Figure 3 (below) shows an example of a concept map that describes the structure of concept maps and illustrates the above characteristics.

Figure 3. A concept map structure



http://cmap.ihmc.us/publications/researchpapers/theorycmaps/theoryunderlyingconceptmaps.htm

The concept mapping technique has been used successfully in nursing education to develop critical thinking skills in students (Hicks-Moore & Pastirik, 2006; Clayton, 2006; Maneval et al., 2007). The main advantage has been identified as enhancing clinical preparedness among nursing students by enabling identification of linkages between client problems and being able to view them holistically within the context of their lived environment. The process was also found to increase awareness among participants of the components of critical thinking. Kemp (2007) found that increasing workplace educators' knowledge of teaching concept mapping enabled them to show trainees how to:

- Make connections between new and prior knowledge.
- Construct and integrate knowledge critically in order to generate stronger links between what has been learned and how the learning can translate into safe patient care (p.4).

Support for the learner during the process

Given the personal nature and individualised responses people have to situations, based on their own prior knowledge and experience, such reflective learning processes need to be nurtured in a safe environment. The issues of confidentiality of the sharing experience and skilful management of the process by the facilitator are among the strategies that should be put in place to minimise risk of humiliation, shame and embarrassment that could be experienced by participants.

The trainers providing guidance in the booklet *Walking for all: sharing successful supportive strategies* (Gee & Scott-Multani, 2014) emphasise the need to build a positive relationship between the educator and students by establishing a sense of trust, respect, openness and concern for the well-being of the learners. Traits and actions of the trainer that are reported as enhancing learning include:

- Learn a little about the learner.
- Be a supportive listener.

- Work with the whole group to encourage them to support each other during the process.
- Speak their language/reduce jargon and have fun.
- Include individual sessions and be discrete about the information shared.
- Share yourself, demonstrate reflection.

It is useful to understand the environment that most trainers and hence their learners come from. Health workplaces place heavy emphasis on 'rules-based' thinking with reliance on the use of protocols and procedures to guide practice. For less enlightened managers, this reliance is reinforced by the audit and compliance processes. These workplaces are also very driven by time bounded rituals and processes, such as fluid and meal times, rest times and, for home based workers, time allocations and tasks related to specific visits. The context of support workers' every day work environment and associated power differentials needs to be considered when exposing them to decision making techniques that may challenge work place norms.

To mitigate risk, it is suggested that a process of communication with the workplace, particularly managers and team leaders, about the workshops, the techniques and potential/planned outcomes would be useful.

What influences the effectiveness of critical thinking in the healthcare workplace?

Forneris and McAlpine (2007) in their evaluation of a critical thinking skill development initiative for new graduate nurses identified the following as impacting on the nurses' confidence to apply and respond to decisions generated out of a critical thinking process. They were:

- Anxiety generated out of being in a new environment, particularly one socialised not to value the knowledge and experience of new comers. Also anxiety about being a novice.
- Lack of trust in their own knowledge base to challenge actions made by those 'more experienced' or senior.
- Power differentials. The hierarchy of influence in the workplace can impact on the confidence of those at the lower end of the hierarchy to voice their concerns/ideas/suggestions.
- An emphasis on a 'rules-orientated' environment rather than a more contextual style of thinking.

However, they did find that as the learner's confidence in critical reflection and incorporation of this into every day practice improved their confidence in articulating an opinion also increased. However, they were basing their research on registered nurses, not support workers.

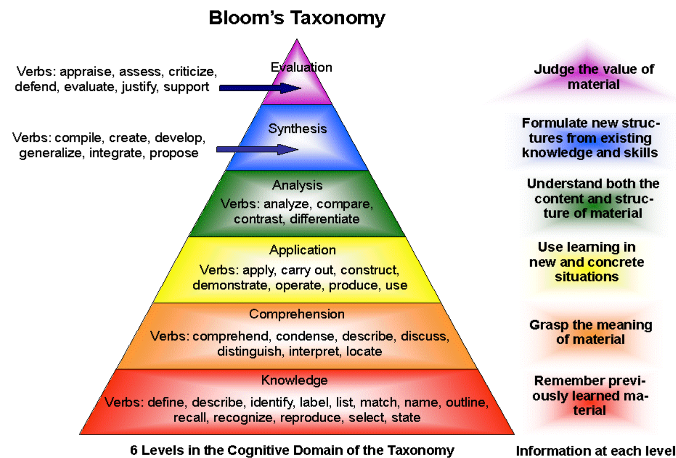
With the majority of nurses working in the aged care sector having registered in the 1970s and 80s (NCNZ, 2014), they would likely have experienced a traditional 'nursing curricula' designed to disempower students, make them fearful and obedient thinkers, with a focus on content saturation and facts to be memorised, not reflection on practice, analysis and critical thinking.

It will be hard to find critical thinking 'role models' in the aged care sector, where a significant number of workshops attendees will likely be from; hence the importance of focusing on transferring these skills to the trainers, who can then model the process to support workers.

Application of critical learning for support workers within their work setting

In terms of understanding the potential for trainers and support workers to achieve critical thinking skills, it is useful to refer to Bloom's Cognitive Domain Taxonomy illustrated in Figure 4 below and note that, based on the various descriptions, critical thinkers would operate in the top two domains. Given that most of the critical thinking literature seems to focus on the experience and learning of the health professional (mainly the nurse) who will have experienced a pre-workplace tertiary level qualification, the expectations of the support workers as critical thinkers within the health care workplace needs to be considered.

Figure 4. Bloom's taxonomy of knowledge



http://educatingmatters.files.wordpress.com/2012/04/blooms.gif

Would problem-based learning provide a springboard for the acquisition of critical thinking skills by support workers? Modelling the process with those who are training support workers would seem a useful place to start. These skills would need to be developed within the context of the complex and regulated environment of the modern health care setting, acknowledging the constraints of policies and procedures that need to guide their decision making. This is particularly relevant in situations where they do not have a higher level practitioner colleague to consult with.

Central to understanding critical thinking is recognition that critical thinking is not a method to be learned, but rather a process; a way of thinking that includes both the cognitive and affective domains of reasoning. Boyd and Fales (1983) propose the idea of *reflective learning* as a concept closely related to that of critical thinking. Brookfield (1987) takes this concept a step further suggesting the reflective dimension of critical thinking requires us to evaluate the assumptions underlying our beliefs and behaviours (Brookfield, 1987). 'Reflection is an important human activity in which people recapture their experience, think about it, mull it over and evaluate it. It is this working with experience that is important in learning.'

It could be useful for the steps of critical thinking to be role-played or worked through using a scenario-based approach in order for trainers and support workers to understand the components of critical thinking and the subsequent application in the workplace.

A Critical Thinking Mindset Self-rating Form (below) does provide an opportunity to consider the attributes of critical thinking. This form is used to assess the students' journey towards use of critical thinking in their everyday life. It is also designed to make them think about how they currently think (Facione, 2014).

Figure 5. Critical Thinking Mindset Self-Rating Form Facione (2014)

Can I *name any specific instances over the past two days* when I:

1. Was courageous enough to ask tough questions about some of my longest held and most cherished beliefs?
2. Backed away from questions that might undercut some of my longest held and most cherished beliefs?
3. Showed tolerance toward the beliefs, ideas, or opinions of someone with whom I disagreed?
4. Tried to find information to build up my side of an argument but not the other side?
5. Tried to think ahead and anticipate the consequences of various options?
6. Laughed at what other people said and made fun of their beliefs, values, opinion, or points of views?
7. Made a serious effort to be analytical about the foreseeable outcomes of my decisions?
8. Manipulated information to suit my own purposes?
9. Encouraged peers not to dismiss out of hand the opinions and ideas other people offered?
10. Acted with disregard for the possible adverse consequences of my choices?
11. Organized for myself a thoughtfully systematic approach to a question or issue?
12. Jumped in and tried to solve a problem without first thinking about how to approach it?
13. Approached a challenging problem with confidence that I could think it through?
14. Instead of working through a question for myself, took the easy way out and asked someone else for the answer?
15. Read a report, newspaper, or book chapter or watched the world news or a documentary just to learn something new?
16. Put zero effort into learning something new until I saw the immediate utility in doing so?
17. Showed how strong I was by being willing to honestly reconsider a decision?
18. Showed how strong I was by refusing to change my mind?
19. Attended to variations in circumstances, contexts, and situations in coming to a decision?
20. Refused to reconsider my position on an issue in light of differences in context, situations, or circumstances?

If you have described yourself honestly, this self-rating form can offer a rough estimate of what you think your overall disposition toward critical thinking has been in the past two days.

Give yourself 5 points for every “Yes” on odd numbered items and for every “No” on even numbered items.

If your total is 70 or above, you are rating your disposition toward critical thinking over the past two days, as generally positive. Scores of 50 or lower indicate a self-rating that is averse or hostile toward critical thinking over the past two days. Scores between 50 and 70 show that you would rate yourself as displaying an ambivalent or mixed overall disposition toward critical thinking over the past two days.

Interpret results on this tool cautiously. At best this tool offers only a rough approximation with regard to a brief moment in time. Other tools are more refined, such as the *California Critical Thinking Disposition Inventory*, which gives results for each of the seven critical thinking habits of mind.

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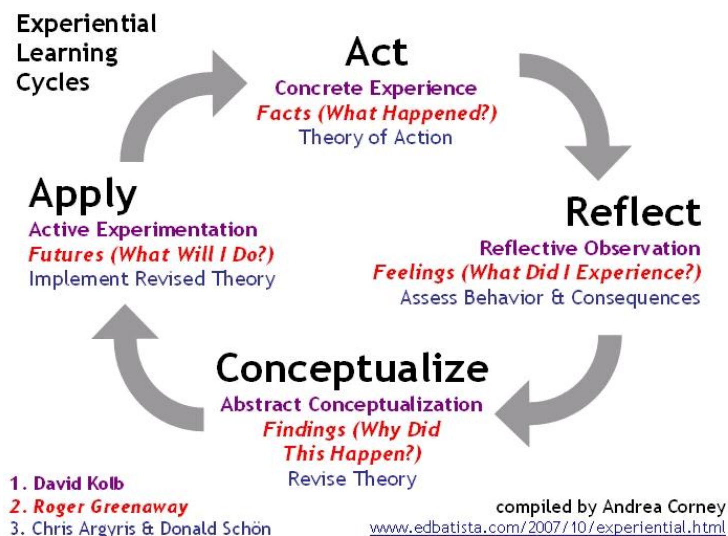
Some of the above questions could be used as a pre-training questionnaire to identify how comfortable the trainers would feel being exposed to a more confrontational/upfront training technique. They could also be used post-training to identify any changes in behaviour.

Experiential learning

In an attempt to wrap together application of these tools in a way that would make sense to workplace trainers and support workers, the experiential learning cycle (Kolb, 1984), provides a useful model. Kolb described two different ways of grasping experience: Concrete Experience and Abstract Conceptualization. He also identified two ways of

transforming experience: Reflective Observation and Active Experimentation. These four modes of learning are often portrayed as a cycle.

Figure 6. Experiential learning cycle



http://edbatista.typepad.com/edbatista/images/2007/10/Experiential_Learning_Cycles_696.jpg

According to Kolb, concrete experience provides the information that serves as a basis for reflection. From these reflections, we assimilate the information and form abstract concepts. We then use these concepts to develop new theories about the world, which we then actively test. Through the testing of our ideas, we once again gather information through experience, cycling back to the beginning of the process. The process does not necessarily begin with experience, however. Instead, each person must choose which learning mode will work best based upon the specific situation http://psychology.about.com/od/educationalpsychology/a/experiential-learning.htm

Increasingly there is a shift in the focus of health service delivery to a person-centred restorative model. This requires the support worker (as it will the trainer) to acknowledge the unique needs of the client (and support worker) in order to tailor the care (or teaching) in a way that will most likely meet their needs (Human Rights Commission, 2012).

For example, a group of support workers will likely have different characteristics, such as the:

- Overseas registered nurse unable to obtain registration in New Zealand.
- Older registered nurse choosing to work as a support worker and not renew their practicing certificate.
- Middle-aged woman returning to the workforce with no formal and few school qualifications.
- University student working part time as a support worker.

A standard approach to training for each trainee will not necessarily be effective. The trainer will need to critically think about their experience of training individuals with a similar profile before, remember what worked best last time, then sound out the approach with the current support worker, adapt their approach/methods/tools, use the planned approach and seek feedback from the support worker on the effectiveness.

Ideally the same process would be used by the support worker when providing person-centred care. The trainer would have consciously modelled the process with the support

worker and then worked through, with the support worker, some potential scenarios and sought feedback on their application of the model.

The support worker's understanding of the restorative model could be explored using the experiential learning model, by using a case study to elicit the traditional way of 'caring' for that person. Then after clarification of what the restorative model is, using critical thinking skill development activities, the case studies could be revisited to see if they would make any changes to their initial response. To further test this in practice, reflection could be used as a tool to adapt the care to meet the needs, thus formalising the process and assessing their understanding of the process.

To develop critical thinking skills in both trainers and support workers, a variety of appropriate case study scenarios could be developed that require application of knowledge related to various unit standards. Trainers and support workers should also be coached on how to keep reflective journals (particularly around confidentiality). They could be used to reflect on their application of a more person centred approach to care.

How did the literature inform the workshops?

Reflecting on the literature available on critical thinking and the processes required to develop these skills, it may be more appropriate to focus on how trainers develop these skills. Already noted is that critical thinking involves a complex set of processes, particularly for learners for whom the formal learning setting has been difficult previously. Therefore scaffolding the field between what a learner can do by him/herself and what can be achieved with the support of a knowledgeable instructor who utilises a problem-solving focus that connects learning with prior experience and context, is vital (Vygotsky, 1978). Trainers can then model the process with their learners without exposing them to the intricacies of the theoretical and conceptual techniques required to develop the skills and knowledge required. Hughes (2008) suggests that critical thinking skills may be developed with narrative examples from practice to help learners recognise commonly occurring patterns and situations. This is based on the premise that when teaching is too far removed from everyday situations there is difficulty drawing on experience and utilising reflection to develop problem-solving skills.

Situated learning is an approach developed by Jean Lave and Etienne Wenger in the early 1990s, which is based on the premise learners are more inclined to learn by actively participating in the learning experiences. Situated learning essentially is a matter of creating meaning from the real activities of daily living.

Learners develop knowledge from the real life experiences they bring to the learning situation. The success of situated learning experiences relies on connecting prior knowledge with the context and people and being involved in activity. Adults are relevancy-orientated and learning experiences must have meaning (Knowles 1980). Situated learning environments place learners in authentic learning situations where they are actively involved in an activity while using problem-solving skills and reflecting on previous knowledge and assumptions.

Even the process of concept mapping may prove a challenge for trainers unfamiliar with the technique. Transitioning from a trainer to a facilitator role may constitute a giant leap for some more traditionally-educated trainers. The literature would seem to support a process for implementing critical thinking-focused workshops that:

1. Utilise a pre-training questionnaire to identify how close participants are to this style of thinking and decision making in the workplace/training environment (Facione, 2014).
2. Provide a safe and confidential environment for the workshops (Gee & Scott-Maltani, 2014).
3. Use a scenario process to assess the thinking styles of the trainers (Park et al., 2011).
4. Provide a simple explanation of the critical thinking process using the scenario outcome to demonstrate the steps (or absence of steps) (http://www.nottingham.ac.uk/nmp/sonet/rlos/placs/critical_reflection/images/driscoll_diagram.png
5. Make use of the concept map technique (Hsu, 2004; Hicks-Moore and Pastrick, 2006; Clayton 2006) to reinforce their current knowledge level and relate it to the context.
6. Use reflective journals/exemplars to demonstrate the application of these techniques in the workplace with support workers (Mihaila-Lica, 2012).

Critical thinking workshop brief

This innovation was designed to provide professional development for workplace educators who deliver learning and assessment to support workers in the health sector. A workshop process was to be developed in order to step participants through a range of critical thinking skills and provide strategies, lesson plans and material to enable them to deliver tailored and contextualised critical thinking skill development and support to their trainees.

A collaborative approach to the development of each workshop was used by the two facilitators, Penney Kemp and Cushla Wilson. This process utilized each of their distinct bodies of knowledge incorporating the philosophy that learner-oriented teaching promotes learning that is both purposeful and enduring. This involved knowing who the learners were, what kinds of knowledge and experience they would bring to the group, and what they would want to achieve so that the facilitators could tailor a curriculum that fitted their needs and yet left enough room to accommodate topics that emerged from group discovery.

Through ensuring that learning goals in each workshop would likely meet the group's needs, they were able to provide the scaffolding needed to build connections between what they already knew and the new understandings that may be needed to teach critical thinking skills. They wove in tools such as case studies, role-play, phenomenology and other active learning activities to stimulate intellectual camaraderie, argumentation, and cooperative problem-solving as strategies to help develop critical thinking skills.

Critical thinking workshops framework and content

A series of four workshops was held in March and April 2015 to model the application of critical thinking skills to the core learning and assessment components of the National Certificate in Health, Disability, and Aged Support (Core Competencies) for workplace trainers. The expectation being that these trainers become equipped to train support workers to develop and use critical thinking skills in their workplaces.

Workshop timing

After much discussion among the innovation team and with colleagues, a decision was made to divide the training content into four workshops, each held late in the day; 3.30pm –

7.30pm (to accommodate participants' workplace requirements and travel) and two weeks apart. The reasoning being that by splitting the workshops there would be more time for reflection and trialling the new skills in the workplace between sessions

Workshop content

Workshop 1: Making Connections

This workshop introduced "Jack" and used case studies to portray his health condition and home-based care needs. A range of strategies were used to build the learners' enquiry into subject areas, identify and question their current knowledge, and use learning techniques to build new knowledge.

These strategies include:

- brainstorming – in particular structured and star busting forms of brainstorms,
- 3 x critical reading techniques – skimming & scanning, comment codes, three-level thinking guides,
- concept mapping,
- using writing frames,
- using visual mnemonics to focus the learner on "the big picture" in client care.

This workshop supported the learning for *US 23387 Demonstrate knowledge of the ageing process and its effects on individual support needs* and *US 27104 Apply the Code of Rights when supporting people in an aged care, health, or disability context*.

Workshop 2: Reflecting on Challenges

This workshop explored a theoretical framework for understanding what makes a critical thinker. Activities that exampled the affective (emotional), cognitive and behavioural components of critical thinking were undertaken. Participants were introduced to "Mavis" and "Vince" who presented challenging behaviours for their support workers. They looked at strategies for building learner's self-awareness when working in complex environments. These included:

- role play – they were presented with "the ideal support worker" and "the support worker from hell",
- ESP (environment/staff/patients) – a module that covers the fundamentals of effective communication and draws on participants' responses to the two support workers role-played above was then introduced,
- writing reflective journals - the theory of reflective writing in developing critical thinking habits and in promoting the writer's own health and wellbeing was covered.

This workshop supported the learning for *US 23388 Provide support to a person whose behaviour presents challenges in a health or disability setting*, and *US 27104 Apply the Code of Rights when supporting people in an aged care, health, or disability context*.

Workshop 3: Watching for Change

This workshop centred on "Peggy", a 92 year old diabetic living at home and receiving support. The case study outlined changes in Peggy's health and functional status.

A module on locus of control encouraged learners to reflect on how they respond to change and inconsistency in their work routines.

A critical reading strategy was employed to extract vital information that exposed the changing and increasingly complex status in Peggy's condition. This strategy is known as reciprocal teaching of reading where learners take on roles; the predictor, the clarifier, the questioner, and the summariser.

Then participants role-storm (form of brainstorming) appropriate responses to Peggy's changed health and functional status. Learners took on the role of different stakeholders in Peggy's care and presented ideas from those perspectives.

This workshop supported the learning for *US 27459 Observe, evaluate, and report the impacts of changes in clients' health or functional status as a health assistant*, and *US 27104 Apply the Code of Rights when supporting people in an aged care, health, or disability context.*

Workshop 4: Exploring Culture
This workshop centred on "Mrs A", a 76 year-old Muslim woman recovering from a mild stroke. She also had Type 2 Diabetes. To explore her specific support needs they used:

- *Questioning Dice* as a critical reading strategy. Participants took turns throwing two large dice. One has the question starters: What, Who, When, Where, Why, and How on the six sides. The other has modal verbs on each side, for example: must, would, can, will, might, should. After group-reading the case study, learners took turns at throwing the dice to create questions about the text exploring the implications of caring for Mrs A and supporting her cultural preferences.
- *Word-Definition Barrier* (matching activity) to explore how culture is defined (e.g. ethnicity, race, nationality, kinship, language, cultural preferences etc.).
- *Concept mapped* the connections between ethnicity, nationality and religion.
- Journal Entry – using a *writing frame*, learners wrote about their own culture, defining it, listing its features and reflecting on how they would feel if someone minimised or ignored what was important in this culture.
- *Brainstorm* – Exploring the concept of "organisational" and "work" cultures, the Code of Rights and the values activity from Workshop 1, participants define the "Culture of Support Workers". Using the same journal entry writing frame they then listed this culture's features and reflect on how they would feel if someone minimised or ignored what is important in this culture.

This workshop supported the learning for *US 26970 / HW28 Provide support to people from different cultures in a health or wellbeing setting*, and *US 27104 Apply the Code of Rights when supporting people in an aged care, health, or disability context*.

All of the workshops were held in a multimedia enabled Careerforce seminar room in Christchurch. Each of the workshops was co-facilitated by Penney Kemp (Nurse Maude Education Programme Manager) and Cushla Wilson (Careerforce Adult Literacy Facilitator).

Critical thinking workshop evaluation

The New Zealand Institute of Community Health Care (NZICHC) led the evaluation component of the project, which focused mainly on the development and impact of the workshops on the participants and their application of these tools in the workplace. The evaluation included formative, process and summative phases, the findings of each are presented and discussed in this section of the report.

Evaluation Objectives.

The evaluation process included the following:

- A **review of literature and reports** to identify the most effective mechanisms for teaching critical thinking skills to support workers in the health care setting.
- Develop and apply a **suite of evaluation tools** to inform, guide and measure the impact of the workshops.
- Provide **evidence on the impact of the workshops** on the workplace trainers attending the workshops including exemplars of application of the training in the workplace.
- **Develop recommendations** for teaching critical thinking skills to support workers as they would apply in the health care setting.

Analytical approach

The evaluation used a mixed methods approach in three main phases of the innovation project including:

Formative evaluation information:

- Desk-top review of relevant literature, reports and other relevant documents to inform the workshop approach and content.
- Discussion and sharing of information to inform workshop design, process and planned outcomes.
- Pre-workshop assessment of participants' attitudes towards and experience in critical thinking.
- E-survey to profile the participant and their experience pre-workshop.

Process evaluation information:

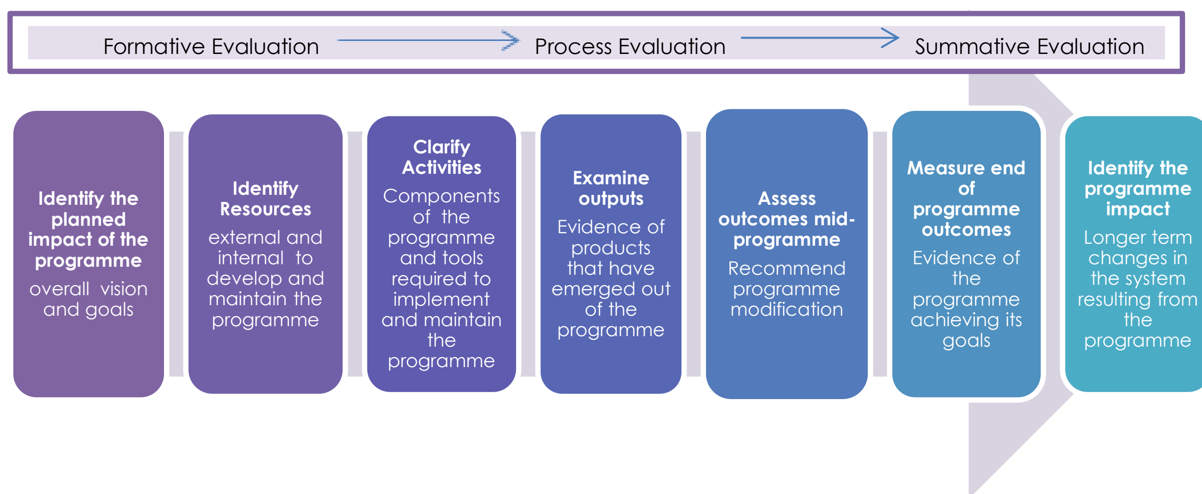
- Copies of each post workshop evaluation.
- Samples of learning and application in the workplace using a reflective process.

Outcome evaluation:

- A compilation of the post workshop evaluation questionnaires.
- Post workshop assessment of participants' attitudes towards and experience in critical thinking.
- Focus group interview with participants.
- Overview of participant's application of critical thinking skills in the workplace.
- Interview with the workshop facilitators post workshop.

Study Design

The figure below illustrates the activities relating to the three phases of the evaluation process. This was modelled loosely on the Programme Logic Approach.



Evaluation findings

Nine workplace trainer participants started the workshops. One participant became unwell after the first workshop; one resigned after the first two workshops; two attended only Workshops 3 and 4. In total there were nine people at each workshop, but these were not consistently the same people. In total there were 11 respondents to the pre-workshop questions.

Limitations of the evaluation

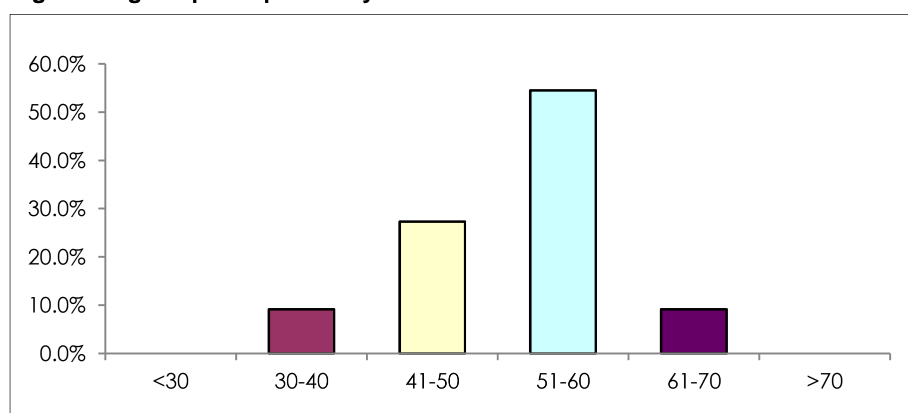
Because of the small size of the sample group and lack of representativeness of the participants as workplace trainers in the health sector, the findings presented in the evaluation only relate to those involved in the actual workshops and are not necessarily able to be generalised. However, the strength of some findings of this evaluation could be used to guide future planning and adaptation of these workshops for future use.

Formative Evaluation findings

Description of the Participants

Most of the participants were over 40 years of age and the majority (six) in the 51-60 years age group.

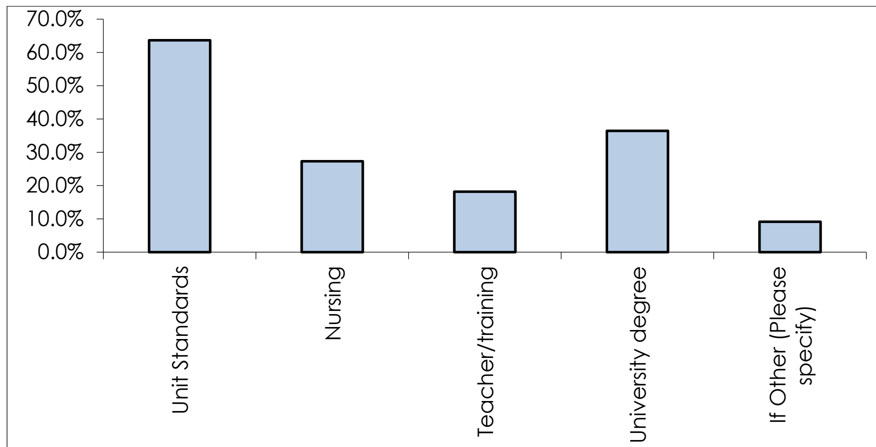
Figure 7 Age of participants in years



Ten of the participants identified as NZ European, with one identifying as “other European”.

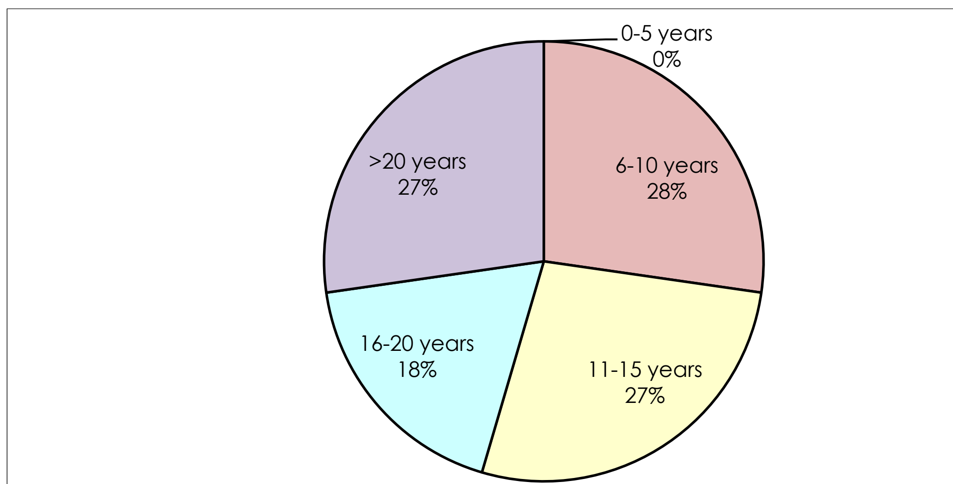
This question allowed respondents to answer more than one category. Seven had unit standards, three had nursing training, five had a University degree, and two had done teacher/training.

Figure 8. Qualifications of participants in years



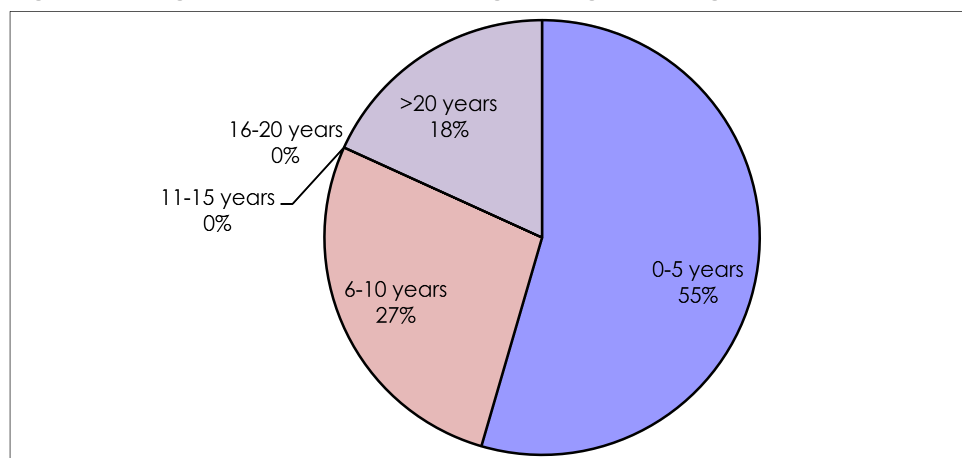
There was a fairly even spread with regard to length of time in the health sector, with none having less than five years in the health sector and three having had more than 20 years in the health setting.

Figure 9. Length of time in the health sector



The participants generally had fewer years in the area of teaching/training/assessing on average, with the majority (six) having had less than 6 years.

Figure 10. Length of experience in teaching/training/assessing



Training for their current role
Respondents were able to select more than one response. The majority had completed a qualification in teaching/training, with six having attended training workshops. Fiverespondents had been mentored in the workplace. When asked when they had last done any training for themselves, the majority (eight) had done training in 2015, with two in 2014 and one in 2008.

Place of employment

There were seven respondents who worked in home-based community organisations, three in residential care and one in “community participation”. All respondents felt their organisations would be open to them putting in place any new methods learned at the workshops.

There was a wide variety of roles held by the respondents; three team leaders, two advanced support workers, a quality co-ordinator, self-employed training co-ordinator, diversional therapist, HR, community support facilitator.

All except one respondent had other trainers in their organisation.

Most were able to offer training/assessing for less than 10 hours a week, two between 11 and 20 hours and one (a self-employed trainer) works full-time.

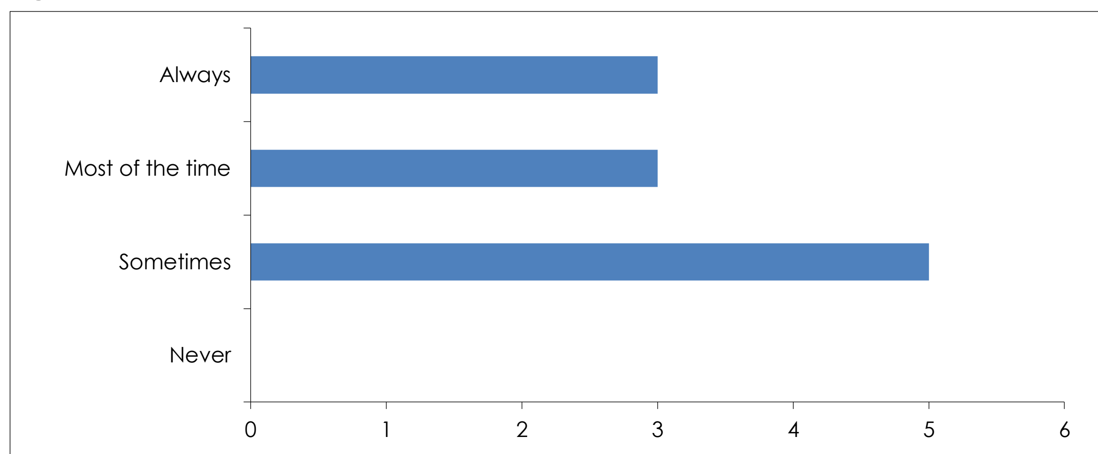
When asked how many trainees they had trained/assessed on average over the past six months, the majority had trained less than 10.

Participants in their training role

The majority of participants indicated they were keen to make changes to their methods and the majority also rated themselves between 7 and 10 out of 10 in confidence within their role.

There was a more mixed response to the use of personal reflection as a tool. Five used it sometimes, three most of the time and three always.

Figure 11. Use of personal reflection as a tool



Three people had heard of the experiential learning cycle, four had not and four weren't sure.

The majority rated themselves above 7 out of 10 in confidence with the use of case studies and scenarios as teaching tools. Almost all of the participants (9 out of 11) felt they would use critical thinking tools in their training.

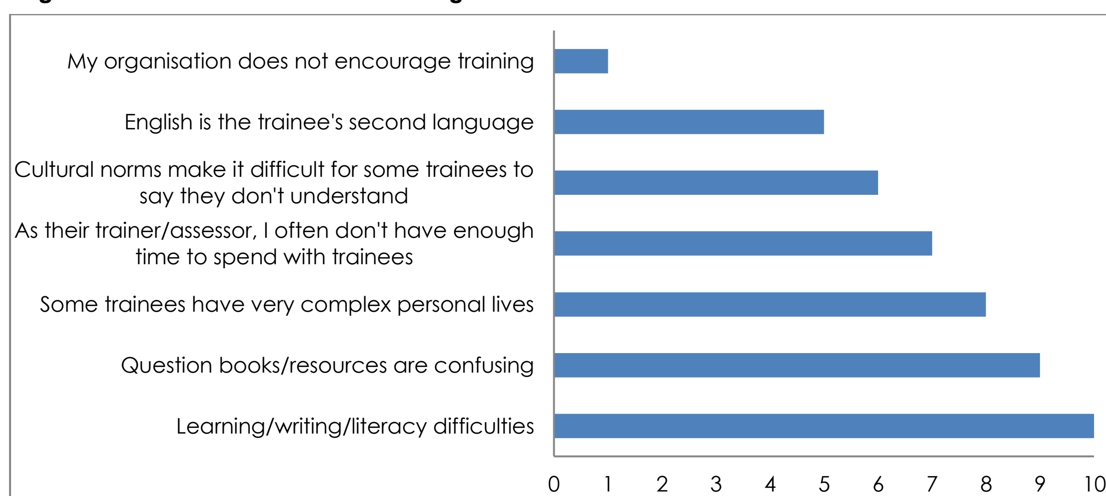
The tools/methods used

Nearly all the respondents train one-to-one (face-to-face) (10 out of 11), with group sessions as well as resource books being used by eight of the respondents. Three respondents were using scenarios/case studies.

Barriers to trainees' learning

The largest barriers to training are that trainees have learning/writing/literacy difficulties, very complex personal lives and the question books/resources are confusing. Many respondents also didn't have enough time to spend with trainees. English as a second language and cultural norms that make it difficult for some trainees to say they don't understand were identified as barriers for five respondents.

Figure 12. Barriers to trainee's learning



Pre-workshop critical thinking self-assessment tool results.

A pre-assessment of critical thinking skills among participants prior to the workshop was carried out. This included a questionnaire where participants were asked to rate their response to a series of statements. The 'appropriate' response to these statements was not discussed at all during the workshops. At the end of the last workshop the questionnaire was again completed by the participants enabling a pre and post workshop comparison of participant's 'comfort' with critical thinking. The results from these questionnaires will be presented in the summative evaluation findings, where the pre and post workshop results will be compared.

In summary, 13 individuals attended some or all of the workshops. In total 11 responded to the participant profile information. The majority (6) were over 50 years of age, most had qualifications such as a university degree and/or teacher or nursing training, almost half had been in the health sector for more than 10 years and 45% had more than 10 years' experience in teaching/training/assessing.

Roles held by the participants included; three team leaders, two advanced support workers, a quality co-ordinator, self-employed training co-ordinator, diversional therapist, HR, community support facilitator.

Six identified their regular use of reflection as a tool, all taught one to one and a further eight used group session. Three used case study/scenario based learning.

Process evaluation findings

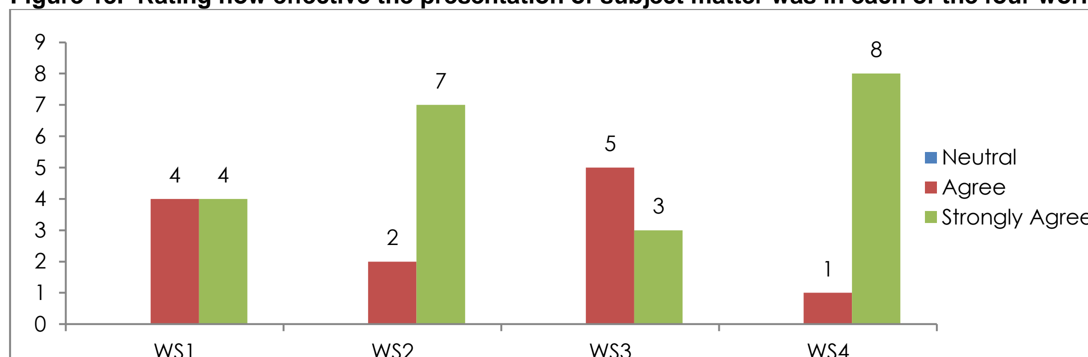
The process evaluation included a **post workshop questionnaire** rating the value of each workshop and a **reflective exemplar** describing tools and activities tried in the workplace prior to completion of the set of four workshops.

Post workshop questionnaire feedback from participants.

After each workshop, the participants were asked to complete a course evaluation form. Eight participants completed forms for workshops 1 and 3 and nine for workshops 2 and 4. The following graphs present a summary of findings for all 4 workshops. (WS1 = workshop one and so on).

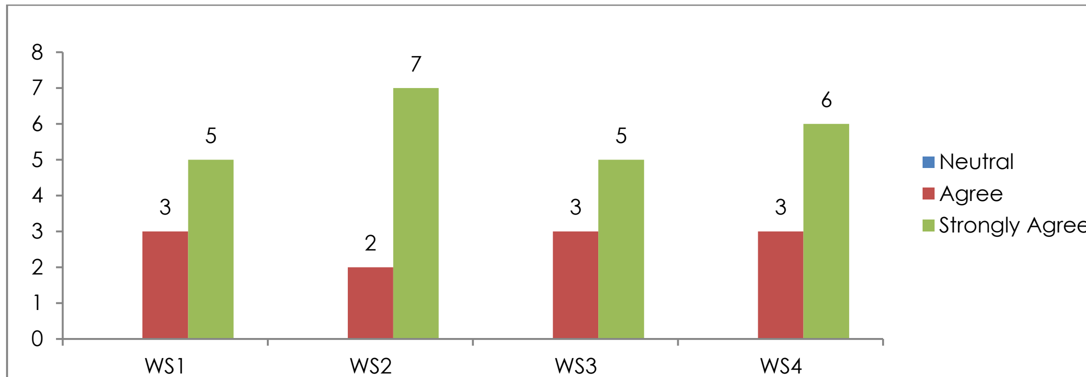
The graph below indicates that workshop two ("Reflecting on Challenges" including role play and reflection) and workshop four ('Exploring culture' including questioning dice, concept mapping and brainstorming), were the most appreciated by the participants.

Figure 13. Rating how effective the presentation of subject matter was in each of the four workshop



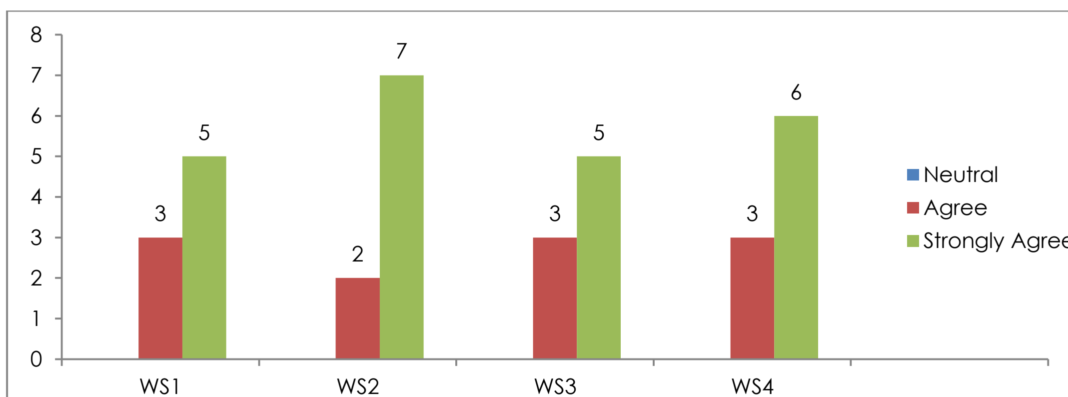
The graph below indicates that the participants rated the knowledge of the facilitators consistently highly for each workshop.

Figure 14. Rating of how knowledgeable the facilitators were in each of the four workshops



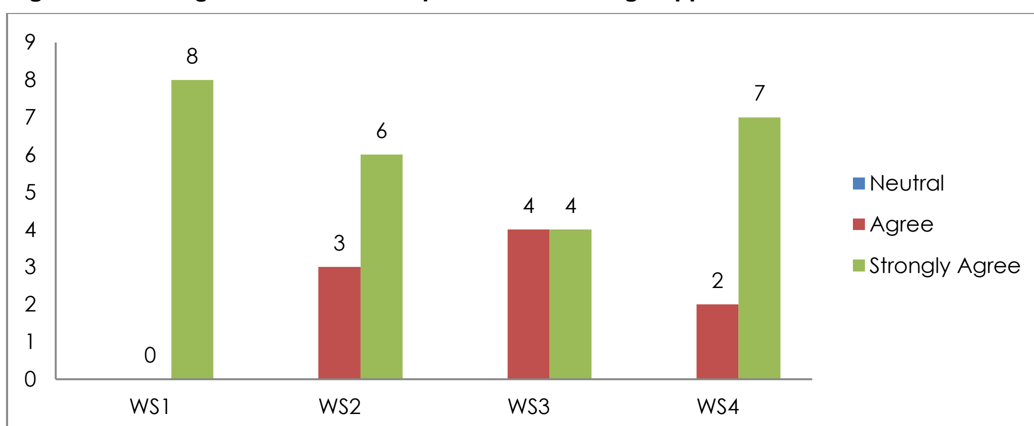
The graph below indicates that the participants rated consistently highly the facilitators' responsiveness to questions highly for each workshop.

Figure 15. Rating of the facilitators' responsiveness to questions in each of the four workshops



The graph below indicates that the participants consistently rated highly the facilitators' provision of enough time for discussion for each workshop, except workshop 3. This workshop entitled "Waiting for Change" involved participants 'experiencing' potentially distressing situations that the client may find themselves in. This may demonstrate that participants of a workshop of this nature may need more time to debrief.

Figure 16. Rating of the facilitators' provision of enough opportunities for discussion

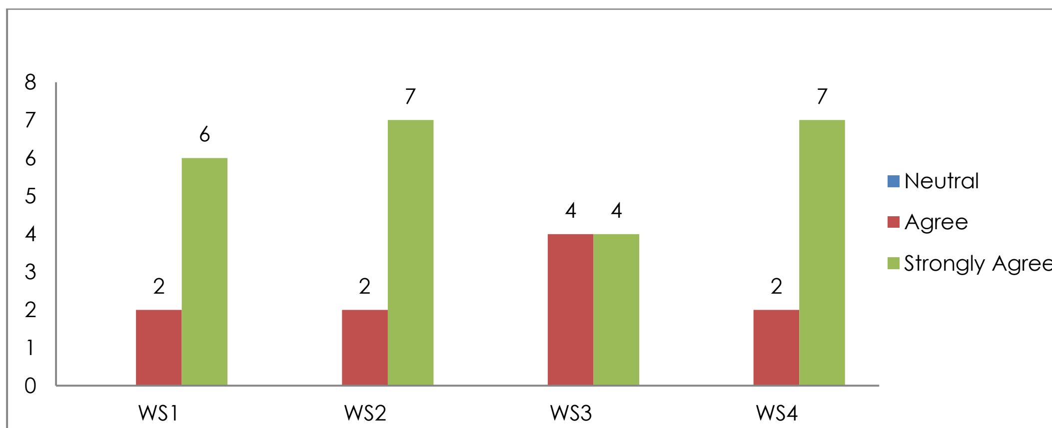


Again, the graph below illustrates that there was a high rating for each of the workshops, with the last workshop, where participants were given a memory stick with all of the workshop tools loaded, scoring exceptionally highly.

Figure 17. Rating of the usefulness of the written materials

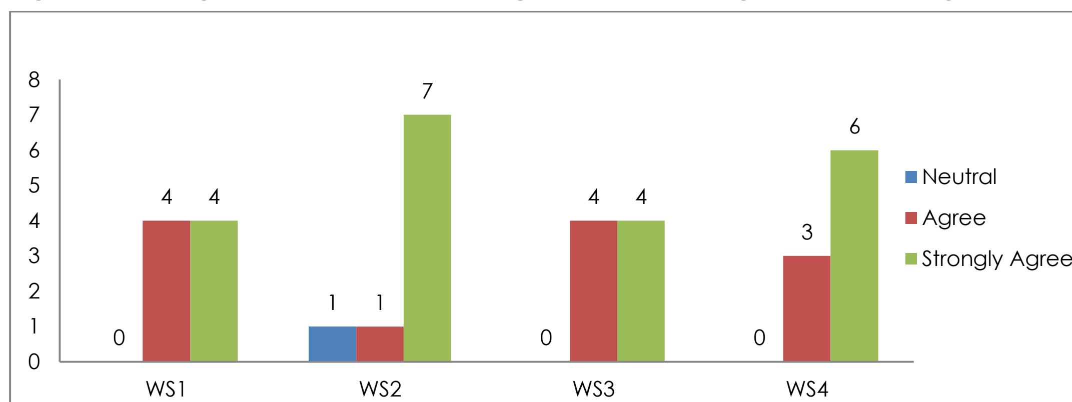
The graph below illustrates a high rating for all of the workshops, with workshop 3 scoring lower than the others. Again this may be associated with the experience that participants were exposed to in the role play of an elderly woman in her own home when her locus of control was challenged by care givers.

Figure 18. Rating of each workshop meeting participants' expectations



The popularity of workshops tw2o and 4 are illustrated in the graph below with both gaining the strongest agreement from participants that they gained new knowledge.

Figure 19. Rating of each workshop enabling the participant to gain new knowledge



The graph below indicates that each of the workshops provided tools and activities the participants planned to use in the workplace.

Figure 20. Response for each workshop to the question 'I plan to apply my learning to the work I do'

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Overall, the feedback to all workshops was in the "agree"/"strongly agree" categories, with only one participant after workshop two responding "neutral" to "I gained new knowledge and skills".

The questions with the most "strongly agree" responses were "the facilitators responded to questions" and "I plan to apply my learning to the work I do". The questions with the most "agree" responses were "the subject matter was presented effectively" and "I gained new knowledge and skills".

Workshops 1 and 3 had the most mixed results for the majority of the questions, with more "agree" responses than for the other workshops.

When asked what they liked best about each session, participants particularly enjoyed the opportunity to be with others, the time for open discussion and sharing knowledge, the tutors and the teaching techniques, such as role playing, debating and brain/power storming.

There were few responses for what could have been improved for each session. One participant noted that the discussion and examples were "very much based in community support – this does not always apply to residential care". Another felt the history lesson was too long. Another was concerned that the timing of the workshop made it a long day.

Reflective exemplars

Each participant was provided with a template to complete that was based on Kolb's experiential learning cycle. The template was distributed and explained in workshops two and three and each participant was invited to complete the template and return it at the next workshop.

In total there were **10 workplace exemplars** completed, with one participant completing two. The exemplars included descriptions of processes implemented to:

- Trial the use of a Mind Map.
- Reduce harm and falls in the community.
- Creating more accountability within the participant's team.
- Decision making; Fors and Against.
- Introduce the patient assessment and documentation acronym of SOAP (2 participants).
- Structure plan development.
- Develop a Case Study relating to Personal Care.
- Explore the Co-ordinator staff workload – how can we do things differently?
- Manage complaints and incidents reviews.

Tools of choice and their adaptation

The following tools were adapted for the workplace setting:

- Reflection in decision making processes.
- Use of SOAP to assess the risk of falls.
- Use the example of being positive with a client refusing a treatment by asking all of the things good about a treatment and all the bad. Agreement was gained because the good outweighed the bad.
- Developed a poster with a case study on it and asked staff to work out the process needed to shower the person.
- Worked as a team to work out why some things did not work so well (reflection).
- Applied the IDEA learning feedback for staff as a group experience.

Why they chose the tool

There was a heavy emphasis on the use of tools that enabled team work, team decision making and inclusiveness in the workplace. Examples given were:

- Needed a strategy to raise awareness of assessment of falls risk.
- Using a story on a poster enabled more staff to be involved in finding a solution. Some don't speak up.
- Needed to develop a way to include more staff input in decision making.
- Have limited resources so these were so helpful.
- Trainees could more easily relate pictures to words that interpret the oral teaching.
- SOAP can develop multiple skills in staff including writing, observation when verifying and assessing.

How the new techniques worked.

Many felt the techniques worked well. They appreciated having tools to have a more structured approach to problem-solving. Brain storming and role play were more commonly mentioned as mechanisms to involve the group/team in coming up with answers in a methodical way. They focused heavily on problem-solving strategies. Reflection was also a tool positively impacting on workplace planning and decision making.

How the participants planned to change or adapt the techniques for use in the future.
They demonstrated a desire to sustain the activities in the workplace through such activities as:

- Keeping the mind maps up for others to add to.
- Encouraging frequent teaching for shorter periods.
- Creating a learning culture, use techniques frequently,
- Keeping the groups small.
- Valuing the concepts of shared learning and reflective decision making.

Knowledge and tools most valued by participants

The ideas for developing structure associated with training, communicating and decision-making were valued, as were tools that encourage staff to become engaged in decision making and learning. Concept mapping and visual learning through some of the literacy tools and role play activities were also identified as valuable.

Overall the exemplars reinforced the value of demonstrating tools in the workshops that enabled the trainers to:

- Structure training and use ‘teachable moments’.
- Try experiential learning and reflective practice in the workplace.
- Value group learning and decision making opportunities.

In summary between eight and nine post-workshop evaluations were received for each workshop. Overall the workshops scored very highly. Workshops 2 and 4 received the highest level of satisfaction in response to each of the questions. Facilitators’ involvement of the participants in the workshops was consistently scored highly, including the facilitators’ responsiveness to questions and opportunities for discussion. The usefulness of the workshop content also scored highly, particularly providing opportunities to gain new knowledge and apply learnings in their workplace setting.

Workshop 3 consistently scored lower than the others. This workshop exposed participants to the personal experience (through role play) of being an elderly woman living at home whose condition had deteriorated and decisions needed to be made about on-going care requirements. It may have been that the participants were applying their reflective skills more as a result of the previous two workshops and had contextualised this woman’s ‘experience’ to their previous workplace experiences.

Ten workplace exemplars were received from the participants throughout the workshops indicating each had applied the learning in their workplaces and not all associated with training. The most popular were the case study as an assessment and planning tool, using the SOAP acronym and brain storming in relation to decision making. They felt that the tools provided more structure for workplace activities such as meetings and planning. The tools had a positive impact on enabling more inclusiveness in the workplace and a methodical approach to planning.

Summative evaluation findings

The summative evaluation included the post workshop critical thinking skills assessment, a focus group with participants to reflect on the workshop experience and key informant interviews with the workshop facilitators.

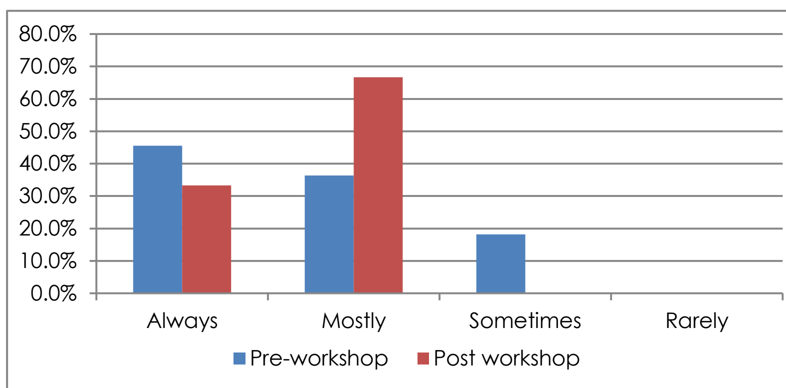
Pre and post workshop critical thinking skills self-assessment.

The pre and post workshop critical thinking self-assessment questionnaire was based on Facione’s (2014) self-rating form (presented in the literature review earlier). Rather than using all 20 questions, those most likely to relate to the trainer’s workplace role were chosen

and shortened to make less complex. In total there was a nine-week gap between the pre and post self-assessment questionnaire. The participants did not keep or have access to a copy of the questionnaire within this time, therefore, it was considered less likely they remembered how they responded in the pre-workshop self-assessment. Each of the 8 following graphs has the question in the label.

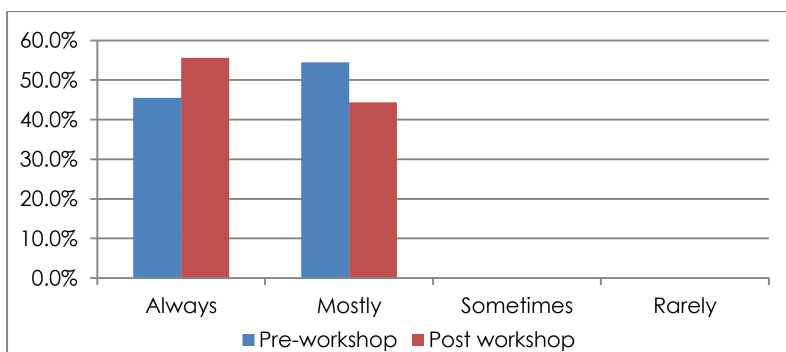
The graph below illustrates a shift post workshop of 18% up to ‘always’ or ‘mostly’ “…show understanding toward the beliefs, ideas, or opinions of people with whom I disagree”. This is interpreted as a greater openness to critical thinking.

Figure 21. Response to question “I show understanding toward the beliefs, ideas, or opinions of people with whom I disagree”



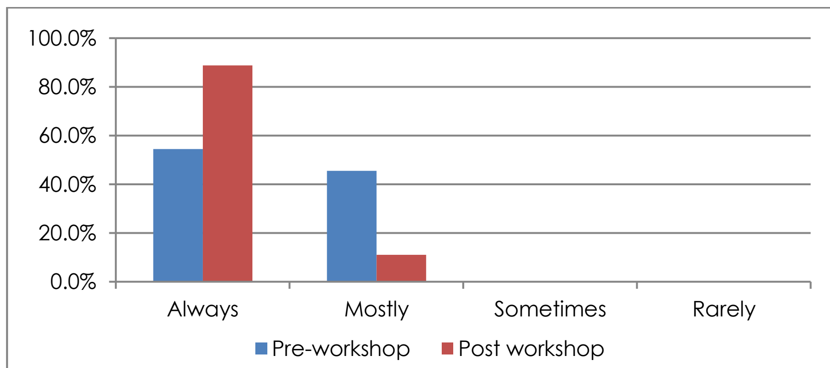
The graph below illustrates a shift post workshop of 10% up to ‘always’ from ‘mostly’ “…try to think ahead and anticipate the impact(s) of various options”. While the participant numbers are small, it does indicate a small shift towards a greater openness to critical thinking.

Figure 22. Response to question “I try to think ahead and anticipate the impact(s) of various options”



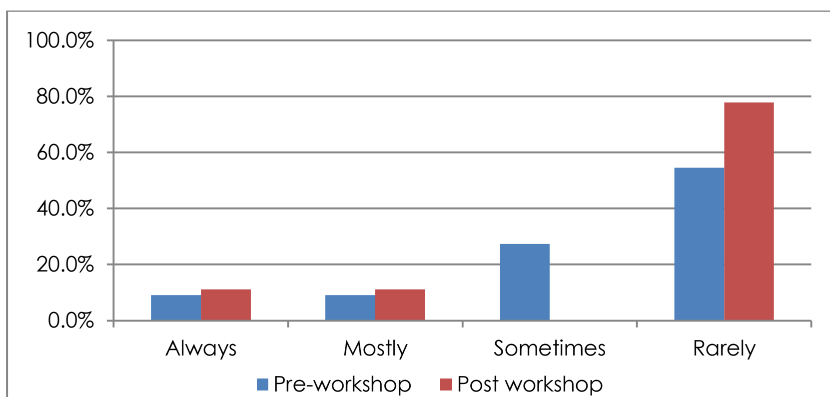
The graph below illustrates a shift post workshop of 34.4% up to ‘always’ from ‘mostly’ “…make a serious effort to reflect and think about the potential outcomes of my decisions”. This represents a more dramatic post workshop shift in openness to critical thinking.

Figure 23. Response to question "I make a serious effort to reflect and think about the potential outcomes of my decisions"



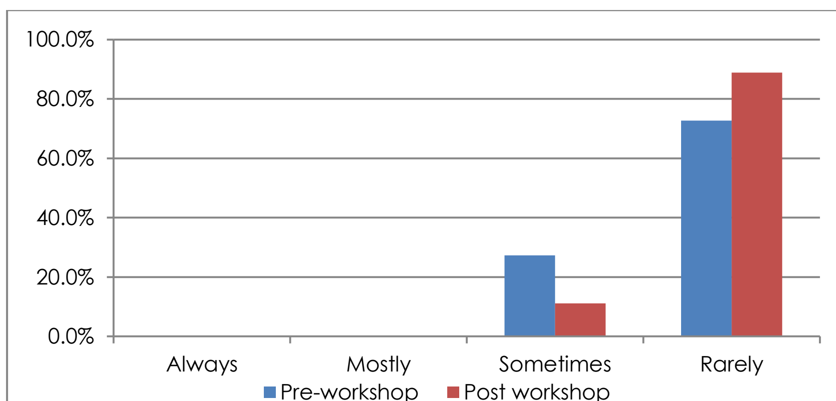
The graph below illustrates a shift post-workshop of 23% to 'rarely' "…encourage others not to listen to the opinions and ideas other people offer". This represents a post-workshop shift in openness to critical thinking. The slight increase in 'always' and 'mostly' may be the result of participants misreading the question.

Figure 24. Response to question "I encourage others not to listen to the opinions and ideas other people offer"



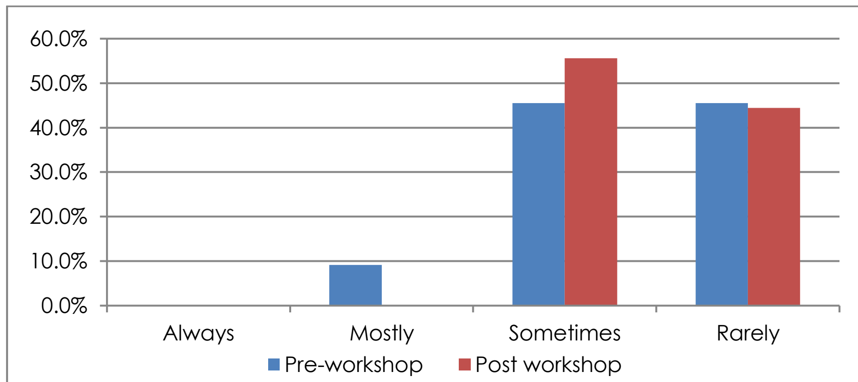
The graph below illustrates a shift post workshop of 16% to 'rarely' "…act without thinking of the possible consequences of my choices". This represents a post workshop shift in openness to critical thinking.

Figure 25. Response to question "I act without thinking of the possible consequences of my choices"



The graph below is interesting, because it illustrates a shift post workshop of 10% to 'sometimes' from 'rarely' "…jump in and try to solve a problem without first thinking about how to approach it". This may indicate that the participants became more aware of their lack of critical thinking skills in the past as a result of the workshops raising the awareness of needing to take a more structured approach to problem-solving.

Figure 26. Response to question "I jump in and try to solve a problem without first thinking about how to approach it"



Similar to the graph above, the graph in Figure 27 below could illustrate a greater self-awareness of their own responses, as it demonstrates a shift post workshop of 23% to 'rarely' to 'sometimes' "…have strong opinions and find it hard to change".

Figure 27. Response to question "I have strong opinions and find it hard to change"

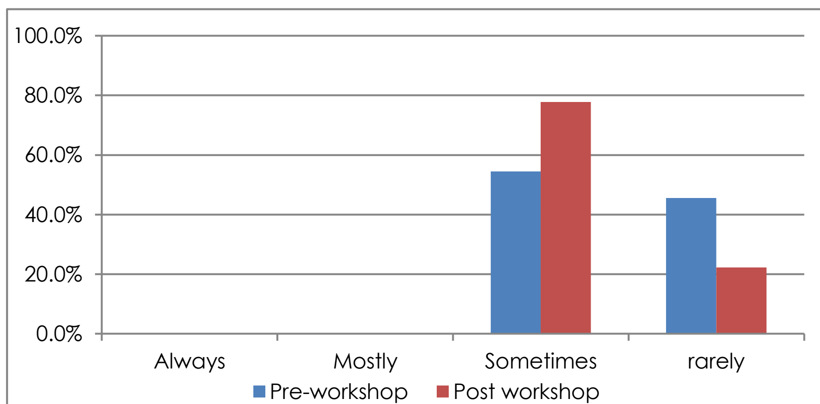
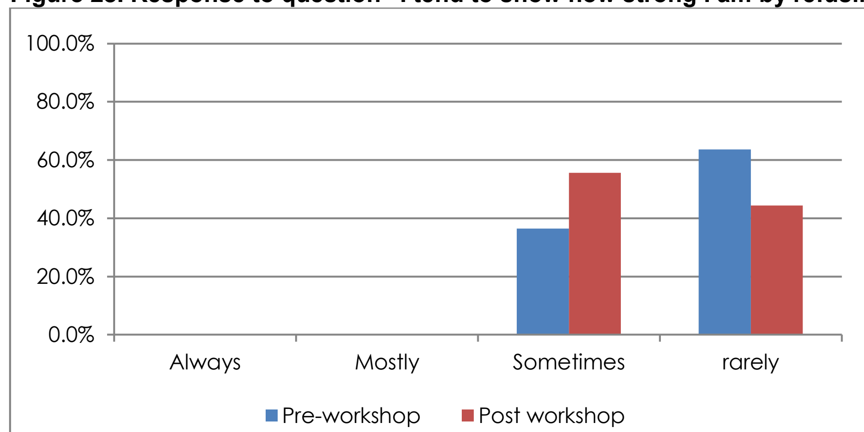


Figure 28 below also illustrates a post workshop shift of 19% from 'rarely' to 'sometimes' "…have strong opinions and find it hard to change". These last three questions required reflection on their personal responses. The workshops may have provided them with more insight into their prior behaviours that they did not have pre-workshop.

Figure 28. Response to question "I tend to show how strong I am by refusing to change my mind"



Participant focus group results

The focus group with workshop participants took place at the end of the final workshop and the nine participants at the workshop took part.

The workshop was conducted by the evaluators after the final workshop had been completed and the facilitators left the seminar room. The method of stimulating feedback included a series of five questions that were individually displayed in a power point slide. After each question participants were asked to first put onto a 'post it note' their immediate first thoughts. After 3-5 minutes the question was opened up to group discussion. The results are presented in order of the questions asked.

What attracted participants to attend the workshops

The workshops were advertised as a pilot series focusing on teaching critical thinking skills. Most respondents initially stated their desire for new ideas, to improve teaching skills and an opportunity to be exposed to new tools and methods. Other comments included seeking a different perspective to learning and needing time out to reflect on their role as a trainer. Some were curious about 'critical thinking'. 'I wanted to improve my current skills and learn new ways of teaching the same topic. I wanted to work outside the square with an open mind.'

Participant's description of critical thinking skills

Many described critical thinking as 'thinking outside the box'. It introduced them to a more structured and stepped approach to teaching and learning. They also described it as analytical and reflective, fostering the concept of needing to look and listen more. It was also identified as a fun way to learn and getting people to think more. 'It gave me permission to look at different ways of teaching'.

The value gained from teaching critical thinking skills to healthcare workers

Most feedback related to getting staff to think for themselves and problem solve. It was identified as valuable because the tools and techniques used would make 'support workers feel like they are included and it doesn't leave anyone out'.

Skills and tools that participants would find most valuable in workplace training

Role play, case studies using SOAP and games were identified as the most useful. The tools provided trainers with the 'ability to adapt workbooks to suit trainees but retain the detail of what needs to be taught and learned'. Comment was also made that the level of interactivity between facilitators and participants through the variety of tools used, made the group feel more relaxed with each other and they were happy to be involved in 'debate' over issues.

There was also comment on a role play scenario in workshop 3 that involved 'coercion'. Participants did not like the personal experience of vulnerability in role play.

What changes they would make to the tools for their settings
Many had already, or were planning to, introduce tools within their setting. They felt they could be used to give structure to meetings through enabling more people to participate and generate more energy. Some felt they were good for RNs, but support workers had less work time for training and would need to come in on their own time. The time and interest in training were identified as barriers to making change.

How valuable they viewed the workshops
Overall they were judged as very valuable and many comments above were echoed in response to this question.

Changes they would recommend for the workshops in future
They felt it would be too intense to have eight hour sessions or two day workshops. Ideally they preferred four sessions a fortnight apart. They liked the group of 8-10 in the workshop. The exemplar framework could have been made easier. Evening made it a long day, but with the food gap in the middle of each workshop it provided time for informal discussion.

The participants were also asked if the name 'critical thinking skills workshop' would be hard for others to judge the value. Alternative descriptions of the four workshop series were given by the participants. They were:

- Training outside the square.
- Creative learning approaches.
- Engage your trainees: Stretching you and your trainees/staff.
- Critical Thinking development for all levels.
- Critical Thinking Tool Box.

Overall, the participants were enthusiastic about the structure and content of the workshops and made very positive comments on the skills and knowledge of the two facilitators. On completion of the workshop series they had been presented with an electronic copy of all the resources which they were ecstatic about. The final workshop had a very positive feel about it when the evaluators conducted their focus group. The group were enthusiastic about having colleagues attend the workshop series too.

Key informant interviews with workshop facilitators.

The two workshop facilitators were interviewed separately using structured questions similar to those asked in the participants' focus group. One facilitator is a Registered Nurse, with many years' experience as an educator in a community-based health service that employs more than 900 support workers. The other facilitator has extensive experience in teaching adult literacy.

While the facilitators were both interviewed separately, their responses are merged under the heading of each question.

Attraction for the facilitators in teaching critical thinking skills
The challenge of developing up a workshop series that has the potential to become a generic resource for workplace trainers was a key attraction. For one facilitator who was currently using many of the tools in training, it was an opportunity to receive peer review and strengthen some tools from an adult literacy perspective.

Description of critical thinking skills required by support workers
Responses included, that support workers need to understand the environment in which they are working. Trainees should be able to ask "Why am I doing this?" and "Why have I been allocated tasks?" "They need to be able to think and track something, e.g. change in a client. What do I do? ".

Tools and techniques modelled in the workshops that trainers are most likely to use
The workshops were viewed as an opportunity for trainers to move away from the 'chalk and talk' model of teaching. Interactive tools such as role play and games including word definitions and matching were given as likely to be used by the participants. The fact that the workshops were classroom-based may have inhibited transition to the workplace for some. The facilitators did discuss with participants the need to contextualise the tools.

Features of the workshop most valuable for the participants
The interactive components such as role play and debate were identified as most valuable. The USB stick containing all the tools for participants was also identified as valuable.

Changes the facilitators would make for future workshops
In future, the facilitators would more overtly link the tools and techniques to the specific Unit standards. The potential to link case studies to unit standards exists more explicitly. Exploring practical ways of applying the tools in real life settings more often would be useful for the trainers. Otherwise they were happy with the workshops as they provided the opportunity for flexibility and contextualising in future, particularly if they knew more about the participants.

Other mediums that critical thinking skills could be taught in
The facilitators felt that these workshops were best run as interactive face-to-face in group or individual settings. However, the principles and frameworks provided within the workshops could be provided in mixed medium such as on-line and audio/video conference. E-learning, while an attractive option for trainers, may not be as accessible to support workers either in the community or in residential care settings.

The facilitators were energised by the process of development and piloting these workshops. They also discovered as they went which order tools and techniques would be best used, and developed a vision for adapting the workshop series for trainers.

In summary the pre and post workshop critical thinking skills self-assessments indicated a shift towards the application of critical thinking skills by the participants following completion of the workshops. Of particular interest was a change in perception of their own attitudes as evidenced by more participants reflecting that they had strong opinions and found it hard to change, jump in without thinking and act without thinking of the consequences post workshops than pre-workshops.

Feedback on the workshops by the participants, directly to the evaluators, indicated an overall appreciation of the experience. All seemed to have trialled some tools in the workplace and had commented on the positive impact from staff in terms of inclusiveness and providing more structure to everyday activities. While enthusiastic to apply more tools within their training roles, the constraints of time, availability of support workers and organisational support were cited as potential barriers.

From the perspective of the workshop facilitators, they also gained great value out of the process for similar reasons as those expressed by the participants. The co-operative approach to development of the workshops and the opportunity to think out of the square and be creative with both content and format provided an exciting environment for the workshop development and delivery. Future adaptations to the workshops, particularly to line up even more explicitly with unit standard requirements, were viewed as having the potential to provide a launch pad for training innovation in other sectors.

Discussion

Those working in the health arena must not only have the skills and knowledge to work and think critically in an ever changing environment but also the ability to be professionally sensitive and empathetic to the needs of the health consumer. Therefore it was crucial that the workshops utilised the lived experience as an integral component of the learning process; as a scaffold to providing a link to personal transformation and reflective thinking on that process. This may have contributed to the sense of discomfort that resulted in workshop 3. If extra time had been available it would have been worthwhile unpacking the sense of vulnerability, further utilising the reflective cycle as a tool to make meaning from this experience.

The intention of the workshops was to provide a unique opportunity for participants to collectively engage in an interactive process utilising critical thinking skills as a means of connecting new learning ,and to have conversations which would help bridge and enrich the caring process in ways that traditional academic efforts have not been able to provide (Leonard,1994).

The workshops were premised on the ability to link learning and critical thinking skills with the assumption that adult learners bring a vaster and richer "reservoir of experience" which sees honouring personal or life experience at the heart of successful adult learning (Knowles, 1980). It would be worthwhile surveying course participants in six months to see if the experiences that they had been exposed to as a result of the phenomenological approach to teaching had brought some changes to their teaching practice.

Conclusion

The ability of health practitioners to use critical thinking skills in their workplace is vital. However, given the historical value placed on a learning method that values facts and rigid teaching and learning techniques coupled with the emphasis placed on policies, protocols, lists and template documentation, the use of this thinking style is not obvious, particularly to those who occupy the lowest paid jobs in this hierarchical setting.

Given the average age of the heath support worker is likely to be at least 50 years, they will probably not have been exposed to processes that require them to consciously think about how they think and formulate decisions. It would seem from the nursing and education literature (most of which relates to working with undergraduate or graduate students) that the use of reflection on their response to a scenario is the most useful technique to demonstrate critical thinking (Hsu, 2004; Hicks-Moore & Pastrick, 2006; Clayton 2006).

It is also likely that some support workers may struggle with the nuances of critical thinking as a technique and would best be served by having trainers who possess these skills to support them as they make sense of their everyday workplace experiences and relate them to new learning. There is also the potential for trainers with critical thinking skills to empower support workers in the workplace through use of critical thinking skills, particularly in reflection, to provide positive feedback on carer management of a complex situation. The response could be dissected by the trainer to demonstrate and then reinforce the thinking associated with the actions in a supported and instructional environment. This concept could also be applied to activities required to achieve further learning for both the trainer and carer.

There have been three main outcomes from this project:

1. This project has significantly enhanced the ability of Careerforce to offer professional development in the area of critical thinking skill development. Once the resource modules accompanying each workshop have been refined and designed, they will be freely available on the Careerforce website. Workplace trainers will be able to select resources relevant to specific topics, unit standards, or groups of learners. It is also

envisaged that the full workshop series will be rolled out across the country as part of the suite of professional development supported by Careerforce's Assessment and Education Support Team.

2. The Ako Aotearoa funding, as well as supporting resource development, has allowed this initiative to be comprehensively evaluated by an independent agency. This has given us confidence that our processes work well and that we have the ability to produce a high quality educationally-sound product that will support deep transfer of learning in the health and community support sector.
3. Working in partnership with Nurse Maude has resulted in a strong bond between the industry training organisation and a significant employer. This has ensured the development of a fit-for-purpose resource and flexible delivery method, which we are confident will be well-received and utilised across the sector.

Recommendations

Factors to consider when developing this type of professional development model:

- Work with a well-respected industry partner to ensure authenticity and credibility.
- Allow plenty of time and support for curriculum and resource development – the front end development of the project is intensive and can't be rushed.
- Put in place a strong evaluative component from the outset of the project – the evaluation is integral to the initiative, not in addition to.
- Take account of the nature of the learners you wish to engage with and 'take the learning opportunity to them' wherever possible.

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