



**A Guide for Providers of
NCALE:
Teaching Adult Literacy
and Numeracy Educators**

Version 1 – April 2009

Teaching Adult Literacy and Numeracy Educators: a Guide for Providers

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Introduction

This resource provides information and support for providers of the two qualifications, National Certificate in Adult Literacy Education (Educators) and National Certificate in Adult Literacy Education (Vocational). These are entry level qualifications at the beginning of a qualifications pathway that aims to lift the literacy and numeracy skills of adult learners in New Zealand, across a wide variety of learning settings.

The purpose of this resource is to support providers to ensure the high-quality, evidence-based programme design and delivery of these key qualifications.

The qualifications have many similarities but the focus or purpose for each is different and the graduates of each qualification present different profiles. In addition, although the vocational qualification has somewhat less content than the educator qualification, the overall objectives and the underlying pedagogy are the same for both.

In this resource, the term “literacy and numeracy” is used to refer to all of the literacy, language and numeracy skills adults may require. In some places “literacy” may be used to include both literacy and numeracy.

Terminology used

- “Tutors” refers to the tutors, trainers and educators who teach in the post-compulsory sector
- “Providers” are those who teach the NCALE qualifications
- “Candidates” are those who are (or wish to be) enrolled in NCALE qualifications
- “Learners” are the adults who are taught by tutors/candidates.

Overview

The purpose of the resource is to support providers as they plan for delivery of one or both of the NCALE qualifications. The resource may also be helpful in preparing course approval submissions. It describes:

1. The relationships between the two qualifications (Table 1)
2. The graduate profiles of the qualifications (Table 2)
3. A set of content areas (based on the learning outcomes assessed in the unit standards) and the connections and commonalities between the unit standards that make up the qualifications (Table 3)
4. The pedagogical and research bases that providers need to consider for delivery
5. Models of programme design that can be used by providers to deliver the qualifications
6. An overview of teaching activities
7. An overview of assessment

8. Tables that show recommended resources, examples of teaching and learning activities and examples of assessment activities for each of the learning content areas (Tables 4 to 10).

Appendices contain examples to further illustrate aspects of qualification design and delivery, an example that illustrates Mātauranga Māori in action, further information about assessment and templates for assessment schedules and session planning. There is also a glossary of terms used in the context of these qualifications and a full reference list of the recommended readings.

1. Relationships between NCALE (Educator) and NCALE (Vocational)

Although these qualifications are similar in many ways, they have somewhat different purposes and audiences. Individual providers will need to make judgments about eligibility criteria for their particular programmes.

	NCALE (Educator)	NCALE (Vocational)
Requirements	61 credits of compulsory unit standards plus 17-22 additional relevant credits	US21204 (30 credits) plus 10 additional credits at Level 5 or above
Audience	Current and aspiring literacy and numeracy tutors	Tutors currently teaching in their specialist vocational field (may include workplace training).
Purpose	To enable graduates to provide specialist support to develop learners' literacy and numeracy skills in order that learners can achieve qualifications or reach their personal goals. Graduates are expected to be able to embed literacy and numeracy into a range of programmes. Graduates may act as a resource for other tutors and as leaders of literacy and numeracy development within organisations.	To enable graduates to embed literacy and numeracy into their own teaching areas so that learners can improve their literacy and numeracy skills and gain a vocational qualification at the same time.
Primarily useful for	Tutors who wish to extend the depth and breadth of their literacy and numeracy knowledge and skills within a variety of contexts.	Tutors who are new to literacy and numeracy teaching but who have encountered learners with literacy and numeracy issues in the course of their vocational teaching.
Also useful for	Tutors with a specialist language teaching background.	Assessors, field staff and materials writers who work in or with Industry Training Organisations

		<p>Administration staff in tertiary education organisations who may not have a teaching role but whose roles are critical to the development and maintenance of systems and processes which support literacy and numeracy development.</p> <p><i>(Note that providers will need to find ways for non-teaching staff to have access to learners for practicums)</i></p>
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Table 1: Comparison of purpose and audience for NCALE qualifications

2. Graduate profiles

This table shows the minimum profile for graduates. The additional electives enable graduates to address literacy and numeracy with groups and/or organisations.

NCALE (educator)	NCALE (vocational)
People credited with this qualification:	People credited with this qualification:
<ul style="list-style-type: none"> • Understand historical and theoretical issues underpinning adult literacy and numeracy education in Aotearoa New Zealand • Are knowledgeable about Mātauranga Māori • Are able to identify the literacy and numeracy demands of a wide range of programmes, materials and work tasks • Are able to assess a person's literacy and numeracy strengths and needs and to assess their progress • Are able to design, deliver and explicitly embed literacy and numeracy skills development for an individual adult learner or group of learners • Can contextualise material to teaching and learning situations • Are able to evaluate instructional strategies and activities specific to literacy and numeracy • Are able to operate as an adult literacy and/or numeracy educator in one or more specialist context(s) 	<ul style="list-style-type: none"> • Understand historical and theoretical issues underpinning adult literacy and numeracy education in Aotearoa New Zealand • Are knowledgeable about Mātauranga Māori • Are able to identify the literacy and numeracy demands of their programme • Are able to identify a person's literacy and numeracy strengths and needs, and to assess their progress in relation to the programme they teach • Are able to embed literacy and numeracy skills development into their programme and use appropriate teaching strategies • Are able to evaluate effectiveness of literacy and numeracy support, strategies and activities in the training or education programme • Have demonstrated teaching or instructional competence in other areas relevant to their programme.

<ul style="list-style-type: none"> Are able to act as a resource for other tutors and as leaders of literacy and numeracy development within organisations. 	
In addition, candidates will select and complete electives as required.	

Table 2: NCALE graduate profiles

3. Learning outcomes, connections and shared content areas of the qualifications

The learning outcomes assessed in the *compulsory* unit standards of both NCALE qualifications have much in common. One way to show these commonalities is to summarise the compulsory unit standard elements in terms of seven shared content areas. In this table, these content areas are connected with the relevant unit standards and/or elements for each qualification.

Note that this is a suggested approach only: it is not intended to be prescriptive.

Content areas	NCALE (educator) compulsory unit standards (version 1, 2005)	NCALE (vocational) compulsory unit standard 21204 elements (version 2, 2008)
To attain the compulsory unit standards of the NCALE certificate candidates will demonstrate that they are able to:		
1. Describe what it means to be competent in literacy and numeracy in today's society, identify reasons for low literacy and numeracy levels in the adult population and describe initiatives for adult literacy provision, including literacy for Māori	21191 21192 21193 element 1 21199 element 4	Element 1 Element 2
2. Describe current theories of teaching and learning adult literacy and numeracy, including Mātauranga Māori and Mātauranga Māori	21192 element 3 21193 elements 1.5 and 2 21199	Element 2.3
3. Determine the numeracy and literacy demands on learners in the context of the learners' course of study, workplace and /or cultural environments.	21194 21200 element 1	Element 3
4. Develop and/or use a range of assessment tools and strategies to assess a learner's literacy and numeracy skills in relation to the Learning Progressions	21194 21200 element 2	Elements 4 and 7
5. Plan and deliver activities that will	21196	Elements 5 and 6

enhance literacy skill development, based on current theories of adult teaching and learning, including Mātauranga Māori	21197	
6. Understand numeracy concepts. Plan and deliver activities that will enhance numeracy skill development, based on current theories of adult teaching and learning, including Mātauranga Māori.	21199 elements 1, 2 and 3 21200 elements 3 and 4	Elements 5 and 6
7. Demonstrate the use of appropriate methods for evaluating the effectiveness of planning, delivery and assessment of a programme for developing adult literacy and numeracy skills.	21197 element 4 21200 element 5	Element 8

Table 3: Comparison of NCALE qualifications

4. The pedagogical and research base of NCALE

These qualifications are grounded in research about adult literacy and numeracy, adult learning and best practice instruction which includes an understanding of Mātauranga Māori.

Research about adult literacy and numeracy

NCALE provision uses and teaches evidence-based instruction based on key understandings from research about how adult literacy and numeracy can be improved. This includes understandings about

- How adults develop their literacy and numeracy expertise
- The features of effective embedded literacy and numeracy provision
- Managing and sustaining change to achieve effective long-term embedding of literacy and numeracy, and
- The importance of the workplace as a context for adult literacy and numeracy learning.

See the TEC document *Strengthening Literacy and Numeracy through Embedding* at www.tec.govt.nz for further details of each of these understandings.

Principles of adult learning

NCALE provision uses and teaches principles of adult learning¹. These include the following understandings.

¹ Knowles, 1990; Knowles, Holton & Swanson, 2005.

- Adults are self-directed learners and are capable of independent learning.
- Adult learners draw on their previous experiences of life and learning, and bring these experiences to bear on new learning.
- Learning needs to be directly related to the developmental tasks of an adult's social roles and directly applicable to real-life issues.
- Motivation factors for adult learners are deep-seated and internally derived.

See *Starting Points: Supporting the Learning Progressions*, TEC 2008, page 48-49 for further details. Also available at www.tec.govt.nz

Mātauranga Māori

The concepts and principles of Mātauranga Māori form a strong holistic base for teaching and learning. The use of these concepts and principles is not limited to any one group of learners.

Durie (1998) used the metaphor of Te Whare Tapa Wha (a strong house) to describe Mātauranga Māori in which the house represents the person: in this context, the house represents the learner. The house is used as a metaphor for good health and wellbeing. To achieve optimum health and wellbeing, each dimension (or “wall” of the house) should be healthy and well balanced. These dimensions are defined as:

- Taha Wairua – spiritual wellbeing
- Taha Tinana – physical wellbeing
- Taha Whanau – social (family) wellbeing
- Taha Hinengaro – wellbeing of the mind (cognition, mental wellbeing).

In the same way, Pere (1991) used the metaphor of Te Wheke (the octopus) as metaphor to describe the same four dimensions. The use of this metaphor gives wider scope for consideration as there are four additional dimensions that contribute to the health and well-being of the person.

In teaching situations, these metaphors or models can inform the way in which a tutor optimises learning by attending to all dimensions. In addition, Mātauranga Māori uses models as the basis of different instructional strategies²:

- The concept of *ako*, which relates to the traditional Māori thinking about the transfer and absorption of skills, knowledge, wisdom, experience, much of which has traditionally occurred in the course of everyday activities. It implies learn and instruct at the same time.
- The concept of *tuakana-teina*, which refers to the relationship between an older (tuakana) person and a younger (teina) person and is specific to teaching and learning in the context of Māori. Within teaching and learning this can take a variety of forms:
 - Peer-to-peer, where teina teaches teina, tuakana teaches tuakana

² The sources for these concepts can be found in the work of Pere, 1991 (*Ako*); Tangaere, 1997 (*Tuakana-Teina*, Powhiri Poutama) and Durie, 1998 (*Te Whare Tapa Wha*).

- Younger to older, where the teina has some skills in an area that the tuakana does not and is able to teach the tuakana
- Older to younger, where the tuakana has the knowledge and content to pass on to the teina
- Able to less able, where the learner may not be as able in an area, and someone more skilled can teach what is required;
- The concept of Powhiri Poutama which refers to the mythological story of Tane's ascent to the heavens to retrieve the baskets of knowledge. In a teaching and learning context, this can be seen as stair-casing or scaffolding learning; and
- The concept (described above) of Te Whare Tapa Wha –which can describe group arrangements in which all dimensions are attended to and support learning.

Evidence-based instruction

Recent evidence about effective adult literacy and numeracy teaching In New Zealand is summarised in the 2005 literature review by Benseman, Sutton and Lander (*Working in the light of evidence, as well as aspiration*). Their findings need to be applied to the teaching of qualifications for those who are or will teach adult learners who have literacy and numeracy needs.

In the context of providing NCALE qualifications, this means that providers should arrange for instruction that models best practice in order for candidates to experience and be able to implement best practice themselves in their own work. They use instructional strategies that:

- Are consistent with and draw on the concepts of Mātauranga Māori and the principles of adult learning
- Encourage learners to progress independently
- Are focussed, explicit and direct so as to show learners what proficient adults know and do
- Are directed towards specific goals that learners recognise and understand
- Are used consciously and deliberately for a purpose
- Provide multiple opportunities to practise so that new learning is reinforced and consolidated
- Are part of a wider environment that facilitates learning, and
- Are relevant, challenging, interesting and enjoyable for the tutor and the learners.

Specific instructional strategies that have been identified through research as sound practice include:

- Modelling
- Prompting
- Questioning
- Giving feedback

- Explaining, and
- Discussion.

These can and should all be used in parallel with the concepts of Ako, Tuakana-Teina, Powhiri Poutama, Te Whare Tapa Wha.

The resource books that accompany the learning progressions have more information about effective instructional strategies. These resources are in print (see reference list) or can be downloaded at: www.tec.govt.nz

See also *Effective Literacy Strategies in Years 5 – 8* (Ministry of Education, 2006).

The teaching and learning process

The resource books that accompany the learning progressions (see the reference list or go to www.tec.govt.nz) show how the learning progressions can be used to support teaching and learning using three key aspects of effective teaching and learning practice.

- Knowing the demands (of texts, tasks, situations or problems that learners encounter)
- Knowing the learner (what a learner can do already, in order to determine the next learning steps: this includes the use of assessment activities)
- Knowing what to do (to help learners move on to the next steps: this includes the use of teaching and learning activities).

This three-sided or triangle model is a useful basis for planning and teaching, and should be reflected in the candidates' own practice with learners. It can also be modelled by providers in the delivery of these qualifications.

5. Programme design and delivery

Providers have several options when they are considering the design and delivery of one or both NCALE qualifications. For example, programmes may be designed for delivery in face-to-face classes, online or blended learning.

The examples below and in Appendices A.1 and A.2 show some of the ways in which programmes can be designed to reflect the philosophies and special character of the provider. There is no one right way to deliver these qualifications.

Non-teaching candidates

Where prospective NCALE candidates are not actually teaching learners but wish to gain a qualification that increases their capability and understanding in literacy and numeracy (for example, workplace assessors and TEO administrators), organisations can consider several options. They can:

1. Include existing Adult Literacy Education unit standards within their own in-house staff development programmes. Relevant unit standards could be selected to meet the needs and interests of the prospective candidates and their organisation.
2. Use a qualification from the Adult Education and Training domain, where subfield Adult Literacy Education has been included in the electives

3. Enable candidates who undertake NCALE (Vocational) to take on learners on a casual basis, so that they are able to cover the teaching component of the qualification. This gives non-teaching staff an awareness of the complexities of adult learning processes, and an appreciation of the tutor/trainer's role.

Case study 1: NCALE (Educator) at Christchurch Polytechnic Institute of Technology (CPIT)

CPIT recognises the importance of adult educators contributing to the improvement in the foundation skills including literacy and/or numeracy of adult learners in New Zealand. It has taken a whole-of-organisation approach to literacy development and has created direct links between the NCALE qualifications and other programmes:

- The Certificate in Adult Education incorporates a pathway option for current students to complete US 21204. In 2009, the Certificate will be re-developed to fully integrate US 21204.
- The CPIT literacy staff development programme for foundation tutors (Words Add Up) incorporates much of US 21204 and includes an RPL option toward this Unit standard.
- A group of staff will complete the Educator qualification by 2010.

To strengthen this approach, CPIT is developing a team of staff (literacy specialists and vocational tutors) who will tutor, support and mentor CPIT tutors and NCALE candidates.

Consistent with the pedagogical and research base of NCALE³ CPIT has taken an integrated approach to the structure of the Educator qualification. Unit standards have been combined into courses to enable the best alignment of learning activities and assessment with the overarching outcomes, connections and commonalities of the qualifications⁴. This approach will also provide the most effective scaffolding for the development of candidates. See the first page of Appendix A.1: NCALE (Educator) course design.

Delivery of NCALE (Educator) will be by cohort over 18 months because the developmental sequence of the courses is important. Learning activities and assessments can be contextualised to candidates' individual situations. Candidates will be connected to one another and to mentors through online support. Delivery will include workshops, online activities and individual support. See the second page of Appendix A.1: NCALE (Educator) learning pathway

In order to ensure nationally aligned development, CPIT has been a member of National Certificate in Adult Literacy Education Provider's Forum where NCALE providers meet to discuss developments. Ongoing relationships to other providers are essential to ensuring the ongoing quality, research base and relevance of the programme.

Case study 2: using the kaupapa of the provider

In this example, the kaupapa of the provider is reflected in the way the qualification on offer, NCALE (Educator), has been designed so that prospective candidates can

³ refer to page 7 ff: The pedagogical and research base of NCALE

⁴ refer to Table 3 above

quickly gain an understanding of the whole, from entry to exit and including the organisation's teaching philosophy. Candidates enter and move through the different points as each component is taught. In the compulsory "loop" the first three unit standards form the *socio-cultural* component. Next, there is an *assessment* component of one unit standard, a component about *individual learning plans* that has two unit standards then a *numeracy* component of one unit standard. Candidates can see their choices of applied learning projects in the electives "loop": one is about *group work*, one is on *organisational development*, and one is about literacy and numeracy *communication technology*. The exit point is represented by the *graduate profile*.

See also the example of how using principles of Mātauranga Māori enhanced retention in a trade course, in Appendix B.

Case study 3: a unit-by-unit approach

Manukau Institute of Technology offers the educator programme on a straight forward unit by unit basis, with the following units integrated together: 21196 with 21197, and 21195 with 21198. Each unit or pair of units is offered as a stand-alone course over seven to nine weeks (within terms) over two years. This means that if candidates need to or want to they can do one unit and then have a break and catch up when the next unit is offered again.

See Appendix A.2 for the delivery model used by Workbase.

6. Teaching activities: an overview

This resource suggests teaching and learning activities that may be used within NCALE instruction. These activities meet the guidelines for evidence-based instruction as outlined above and allow candidates to experience teaching and learning activities that they can adapt and use themselves in their work with learners.

Each teaching and learning activity has a purpose statement that may be used to construct learning intentions or outcomes for evaluation. Each activity has an example of how it may be used in direct instruction. Where possible, the activities have drawn on and are referenced to the resource books that accompany the learning progressions (listed below). The activities outlined here are illustrative examples only and are used to indicate the range and level of NCALE instruction. They are not intended to cover the entire content.

Further teaching and learning activities to support the learning progressions are summarised in each of these books.

Teaching Adults to Read with Understanding: page 27

Teaching Adults to Write to Communicate: page 27

Teaching Adults to Make Sense of Number to Solve Problems: page 17-18

Teaching Adults to Measure and Interpret Space and Shape: page 11

Teaching Adults to Reason Statistically: page 14

If candidates spend time getting to know and engage with the learning progressions and how they can be used, they will be well-equipped to work with learners and with other tutors to support literacy and numeracy skill development.

7. Guidelines for a collaborative approach to assessment

Assessment is an integral aspect of the teaching and learning process. Assessments are designed to facilitate learning, by providing information about a learner's strengths and needs and to test achievement against learning outcomes.

Assessment practices should provide constructive feedback to learners and provide a measure of their progress against stated learning outcomes, enabling them to learn from the assessment process.

What is good assessment?

Good assessment methods will be:

- Appropriate – a variety of assessment methods will be available to ensure that assessment is suited to the performance being assessed.
- Fair – assessment methods will not disadvantage individuals or groups by hindering or limiting them in ways unrelated to the evidence sought.
- Integrated with work or learning – evidence collection can be ongoing, linked with normal learning or work.
- Manageable – the methods used will be straightforward, readily arranged and will not interfere unduly with learning.

Evidence from good assessments will be:

- Valid – assessment will be fit for purpose, so that assessment focuses on the requirements specified in unit standards.
- Direct – assessment activities will be as similar as possible to the conditions of actual performance.
- Authentic – the assessor will be confident that the work being assessed is attributable to the person being assessed
- Sufficient – the evidence will establish with confidence that all criteria have been met and that performance to the required standard could be repeated with consistency.

In addition, good assessment will be

- Systematic – planning and recording will be rigorous to ensure sufficiency and fairness in assessment.
- Open – learners will understand the assessment process and the criteria to be applied, and can contribute to the planning and accumulation of evidence.

- Consistent – given similar circumstances the assessor would make the same judgement again and the judgement will be similar to judgements that other assessors would make.”

Reference: www.nzqa.govt.nz/publications/learningassessment.pdf (p. 15)

See Appendix C for further information about assessment, including information about formative and summative assessment and a summary of some common forms of assessment.

8. Shared content areas, resources, activities and assessments

Each of the tables below takes one of the shared content areas described in Table 3 above and gives a list of recommended resources, suggested teaching activities and suggested assessment activities for that area. This is a guide only: providers will develop details of how they will teach and assess the qualifications in ways that are appropriate to their organisations and the needs of the candidates.

Resources

The resources listed in these tables are recommended for NCALE providers. They represent recent adult literacy-specific research and practitioner guides, based on high quality evidence with adult literacy and numeracy learners.

Providers who are new to delivering NCALE and who are establishing their resource base (often from a general adult education starting point) will be able to use these lists for guidance about other related resources. The reference list gives full details of these resources, many of which can be easily sourced on the internet.

Some additional resources provide valuable information relevant to several outcomes. See for example:

- Tertiary Education Commission. (2008). *Starting Points: Supporting the Learning Progressions for Adult Literacy*. Wellington: Tertiary Education Commission. This is a vital resource for tutors who are working with learners who may not yet be operating at the first steps of the literacy learning progressions. Also available at www.tec.govt.nz
- National Research and Development Centre for Adult Literacy and Numeracy (NRDC) <http://www.nrdc.org.uk/> . NRDC have an extensive research and development programme and produce reader-friendly summaries and practitioner guides to ensure research findings translate into practice.
- National Centre for the Study of Adult Learning and Literacy (NCSALL) (<http://www.ncsall.net>) In particular, see the series of Occasional Papers produced on this website, the Focus on Basics publications that are written for tutors and programme managers and the 7 volumes of the leading annual publication, the [Review of Adult Learning and Literacy](#) (1999-2007)

Teaching activities

The teaching activities listed illustrate some ways in which the knowledge, skills and attitudes covered by each area could be taught. There are some specific examples,

and providers are encouraged to use the many activities in the resource books that accompany the learning progressions as models. The activities in those resource books are written for tutors working to improve the literacy and numeracy knowledge and skills of learners but they are easily adapted to NCALE candidates. By using these activities, candidates will be exposed to effective teaching and learning models that they can then use in their own work.

Many NCALE candidates will come from background where there has been a stronger focus on literacy than numeracy and will possibly have anxieties about their own numeracy skills and their ability to teach numeracy. Providers of NCALE need to create a safe environment and use directed activities that will allow candidates to explicitly and openly address these anxieties. This will be a model for how candidates should address maths anxiety with their own learners.

Assessment activities

The assessment activities listed illustrate some ways in which evidence of learning and application to practice can be captured. Providers need to bear in mind the level of the qualification (Level 5) determines the appropriate level of assessment and need to be wary of under- or over- assessing. NZQA guidelines provide a useful reference.

The focus here is on providers modelling quality literacy and numeracy instruction to NCALE candidates. Modelling best practice includes modelling assessment practices. Assessment should be dynamic and varied to meet a range of outcomes including modelling possibilities for candidates' own practice. See also Appendix C.

Shared content areas of NCALE qualifications: recommended resources and suggested teaching and assessment activities.

These tables list resources and suggested teaching and assessment activities for each of the shared NCALE content areas. The resources contain the essential research and theoretical basis for each content area. The teaching and learning activities that providers use to cover these areas should model the teaching and learning activities that NCALE candidates will develop and use on the job. See also Appendix G for an illustration of the way one provider has embedded numeracy into their NCALE (Educator) programme.

Content area 1:

Describe what it means to be literate and numerate in today's society, identify reasons for low literacy and numeracy levels in the adult population and describe initiatives for adult literacy provision.

Recommended resources (see reference list for details)

- Ashcraft, M. H., & Kirk, E. P. (2001). "The relationships among working memory, math anxiety, and performance."
- Benseman, J., & Sutton, A. (Eds.). (2008). *Facing the Challenge*.
- Bishop, R., Berryman, M., Cavanagh, T. & Teddy, L. (2007). *Te Kotahitanga Phase 3 Whanaungatanga*
- Bishop, R., Berryman, M., Tiakiwai, S., & Richardson, C. (2003). *Te Kotahitanga: The experiences of Year 9 and 10 Māori students in mainstream classrooms*.
- Bynner, J. & Parsons, S. (2005). "Does numeracy matter more?" Most people recognise that low literacy levels make it difficult to function in adult life but it is often assumed that numeracy is less important than literacy. This study was designed to test whether this is in fact the case.
- Durie, M. (1998). *Whaiora: Māori Health Development*.
- Hill, K. (1990). *This Fragile Web: An informal history of the adult literacy movement in New Zealand 1974-1988*.
- History Group of the New Zealand Ministry for Culture and Heritage. (n.d.) "History of the Māori Language – Te Wiki o Te Reo Māori."
- Looney, J. (2008). *Teaching, learning and assessment for adults. Improving foundation skills*. This book contains a background chapter on

NZ that could also be used in US21191.

- Manly, M. (2008, May). "Numeracy matters." This brief article summarises the ideas explored in depth in "Does numeracy matter more?"
- Māori Adult Literacy Reference Group. (2001). "Te Kawai Ora. Reading the world, reading the word, being the world."
- Pere, R. R. (1991). *Te Wheke: A Celebration of Infinite Wisdom*
- Pihama, L., K, S., Taki, M., & Lee, J. (2004). "A literature review on kaupapa Māori and Māori education pedagogy."
- Porima, L. (2006). "Understanding the needs of Māori learners for the effective use of eLearning."
- Sharples, P., Dr (2006 and 2007). "Boys in Education"; "The power of 'and'."
- Tangaere, A.R. (1997). "Māori human development theory".
- Tertiary Education Commission. (2008a). *Learning Progressions for Adult Literacy and Numeracy: Background Information*.
- Tertiary Education Commission. (2008j). *Literacy, Language and Numeracy Action Plan 2008-2012*.
- Wevers, L. (1997). "Reading and literacy."

Suggested teaching and learning activities	Examples
See <i>Teaching Adults to Read With Understanding</i> , page 54: Selecting relevant information (adapted activity)	Purpose: to identify reasons for and implications of low level of literacy. Using two given texts, create a list of reasons why there are low levels of literacy and numeracy in our adult population. Sort the list into socio-cultural reasons and personal reasons. Discuss the implications of the two lists for understanding who has responsibility for responding to the issue.
See <i>Teaching Adults to Write to Communicate</i> , page 33: Using templates and acronyms	Purpose: to use a paragraph-writing structure to generate summaries of articles. In small groups, use discussion acronym PPQ (Point, Paraphrase, Quote) to generate paragraphs based on group article readings on the changing demands of literacy and numeracy in the workplace. Share

	paragraphs with whole group. Discuss changing demands of workplaces. Analyse use of acronym to structure and support writing.
Brainstorm to explore the meaning of numeracy Readings about current definitions and theories on what it means to be numerate	Purpose: to explore the meaning of numeracy In small groups, brainstorm everything to do with number or spatial thinking that learners have encountered since they woke up. Draw out less obvious contexts, such as a petrol gauge, that have underpinning numeracy concepts (fractions), but don't explicitly use numbers. Use the results to develop a definition for numerate behaviour that includes more than the ability to 'do arithmetic'. Compare the group definition with that used in the Learning Progressions.
Exploring attitudes to maths/numeracy and the impact on numeracy learning. Exploring the implications of changing numeracy demands in the workplace.	Purpose: to identify personal attitudes to numeracy. Use continuum activities to explore personal attitudes and experiences around numeracy, eg.: hate numbers ↔ love numbers; don't feel very competent ↔ feel very competent Create a personal timeline from birth to present to express changing feelings about maths over time. The horizontal axis represents time, perhaps by decade, and the vertical axis represents a scale from -10 (awful) to 0 (neutral) to +10 (excellent). Discuss the impact of different or changing work demands on feelings towards math.
Suggested assessment activities	Examples
Report	Compare and contrast two forms of local literacy and numeracy provision. Include their historical and planned development, their target audience and their unique response and the effects of recent policy changes on their provision (limit: 1500 words).
Presentation See <i>Teaching Adults to Listen/Speak</i> , activity 14: Using notes to speak. (Adapted activity)	Prepare notes and make a 15 minute oral and visual presentation to a local company management board on implications of changing literacy and numeracy demands in the workplace.

Reflective journal See <i>Teaching Adults to Write</i> , page 43: Concept Circles.	Read, reflect and report on relevant published research articles Adapt the activity to focus on making connections between concepts and ideas, then reflecting on them to arrive at own interpretations.
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Table 4: Content area 1

Content area 2:

Describe current theories of teaching and learning adult literacy and numeracy, including Mātauranga Māori.

Recommended resources (see reference list for details)

- Benseman, J., & Sutton, A. (Eds.). (2008). *Facing the Challenge*. The 8 chapters in the teaching and learning section all refer to adult literacy teaching and learning as it applies to New Zealand.
- Brooks, G. M., Burton, M. et al. (2007). *Effective teaching and learning: reading*.
- Burton, M., Davey, J., Lewis, M., Ritchie, L., & Brooks, G. (2008). *Improving reading: phonics and fluency*.
- Campbell, P. (2006). *Teaching reading to adults: A balanced approach*.
- Durie, M. (1998). *Whaiora: Māori Health Development*.
- Gal I., & Ginsburg L., (1996). *Instructional strategies for teaching adult numeracy*. This report identifies instructional strategies that address issues of assessment and development of numeracy and problem solving skills. The strategies are based on research on how adults learn and the cognitive processes involved in learning mathematics.
- Ginsburg, L., Manly, M., & Schmitt, M. J. (2006). *The components of numeracy*. The writers of this paper examined a variety of existing frameworks for numeracy and identified three major components of adult numeracy: context, content and cognitive and affective factors.
- Gray, A. (2006). *Upskilling through foundation skills – a literature review*.
- Grief, S., & Chatterton, J. (2007). *Developing adult teaching and learning. Practitioner guides - writing*.
- Grief, S., Meyer, B., & Burgess, A. (2007). *Effective teaching and learning: writing*.
- Krudenier, J. (2005). *Research-based principles for adult basic education*. This report reviews all the available adult-related research on the teaching of adults.
- McShane, S. (2005). *Applying research in reading instruction for adults. First steps for teachers*.
- Māori Adult Literacy Reference Group. (2001). "Te Kawai Ora. Reading the world, reading the word, being the world." The document should be read in its entirety to provide a fuller understanding of what literacy can mean to Māori.

- Nonesuch, K. (2006). *Changing the way we teach math. A manual for teaching basic math to adults*. This manual sets out best practice from the literature, discusses issues with regard to its implementation and includes activities for classroom use.
- Pere, R.R. (1991). *Te Wheke: A Celebration of Infinite Wisdom*.
- Sharples, P. (2006). "Boys in education conference."
- Tangaere, A.R. (1997). "Māori human development theory".
- Tertiary Education Commission, (2009) *Strengthening Literacy and Numeracy through Embedding*. This gives a good overview of current research. The extensive bibliography lists many authors whose research could be used for teaching activities.
- Tout, D. and M.-J. Schmitt (2002). "The inclusion of adult numeracy in adult basic education." This book chapter looks at how far the field of numeracy has come, how far it needs to go and where it might look for models of progress and accomplishment.

Suggested teaching and learning activities	Examples
See <i>Teaching Adults to Write</i> , page 36: Using word maps	<p>Purpose: to develop vocabulary of a current theory of adult literacy or numeracy.</p> <p>Create a word map based on a current theory of adult literacy or numeracy e.g. using Te Whare Tapa Wha model. Begin using prior knowledge, allow time for article reading, then revise word map.</p>
See <i>Teaching Adults to Write</i> , page 30: Sharing quality work	<p>Purpose: to develop a reference checklist for use in analysing literature reviews.</p> <p>Analyse an exemplar literature review on current theories of adult literacy and numeracy teaching and learning (eg., Gray, 2006). Create a checklist of features of a literature review.</p>
See <i>Teaching Adults to Read</i> , page 57: Reciprocal reading	<p>Purpose: to build understanding of numeracy pedagogy; to practise using reciprocal reading, focussing on comprehension strategies.</p>

	In groups of 4, assign roles: predictor, clarifier, questioner and summariser. Together, read at least one current article about adult numeracy pedagogies and discuss using the four roles.
Suggested assessment activities	Examples
Presentation	Prepare and present a poster presentation comparing three current theoretical approaches to literacy and numeracy teaching. Include one form of Mātauranga Māori. Be prepared to discuss your poster with the group
Literature review See <i>Teaching Adults to Write</i> , page 31: Writing frames	Using the checklist from the writing frames activity above, prepare a literature review on theories of adult literacy and numeracy teaching.
Reflective journal	Reflect and report on how your teaching can be adapted to include current numeracy pedagogies

Table 5: Content area 2

Content area 3:
Determine the numeracy and literacy demands on learners in the context of the learners' course of study, workplace and /or cultural environments.
Recommended resources (see reference list for details)
<ul style="list-style-type: none"> • Adult Literacy and Life Skills (ALL) Survey (2006) This survey defines and gives the impetus for efforts to improve adult literacy and numeracy. • Looney, J. (2008). <i>Teaching, learning and assessment for adults. Improving foundation skills</i>. This book contains a background chapter on NZ that could also be used in US21191.

- NZCER. (2006). *Assessment for foundation learning*
- Tertiary Education Commission. (2008a-i). The learning progressions outline the steps towards competence; the accompanying resource books contain suggestions for determining the demands of literacy and numeracy tasks.
- FitzSimons, G. & Mlcek, S. (2004). Doing, thinking, teaching and learning numeracy on the job: an activity approach to research into chemical spraying and handling. The researchers visited twelve sites and found that though there were many comparatively straightforward calculations in this industry, there were many complexities in the actual practice.

Suggested teaching and learning activities	Examples
Using interview skills	<p>Purpose: to identify the literacy and numeracy demands of an employee, and to understand a manager’s perspective of workplace literacy and numeracy.</p> <p>Interview a workplace manager and identify the literacy and numeracy demands faced by an entry-level employee. Collect examples of the workplace documentation used by the employee. Identify which tasks occur most frequently and cause the most difficulties for employees. (They may not be the same tasks.)</p>
Mapping activity (see “Knowing the demands” in <i>Teaching Adults To Make Sense of Number</i> or any of the other resource books in this series)	<p>Purpose: to map a text to one or more strands or progressions of the learning progressions</p> <p>Choose an on-the-job activity in your work context then work in groups (using the numeracy strands of the learning progressions) to identify and map the underpinning numeracy concepts in the activity. Refer to <i>Teaching Adults to Make Sense of Number to Solve Problems</i> pages 6 – 8.</p> <p>See Appendix D.1 for a simple example of this in a Raranga (weaving) class.</p>

Suggested assessment activities	Examples
Portfolio	Provide a collection of contextual realia for an identified learner and analyse them using the learning progressions. Discuss how this analysis will affect a programme of study
Report or visual presentation	Produce a grid that identifies the underpinning numeracy skills and knowledge required to complete a task, where the skills and knowledge sit on the numeracy progressions, and hence the requisite concepts that may need to be taught. See Appendix D.2 for an example of this.

Table 6: Content area 3

<p>Content area 4:</p> <p>Develop and/or use a range of assessment tools and strategies to assess a learner's literacy and numeracy skills in relation to the Learning Progressions</p>
<p>Recommended resources (see reference list for details)</p> <ul style="list-style-type: none"> • Looney, J. (2008). <i>Teaching, learning and assessment for adults. Improving foundation skills</i>. This book contains a background chapter on NZ that could also be used in US21191. • NZCER. (2006). <i>Assessment for foundation learning...</i> • Sutton, A., & Denny, G. (2008). <i>Facing the Challenge</i>, chapter 16: The role of assessment in foundation learning. • Tertiary Education Commission (2008a-i) The learning progressions outline the steps towards competence; the accompanying resource books contain diagnostic assessment tools and suggestions.

Suggested teaching and learning activities	Examples
Using graphic organisers to compare and contrast assessment tools	<p>Purpose: use a graphic organiser to compare and contrast assessment tools.</p> <p>Use a Venn diagram to compare and contrast two published literacy or numeracy assessment tools</p>
Role play using the learning progressions numeracy assessment tool, for example see <i>Teaching Adults to Make Sense of Number</i> , page 9.	<p>Purpose: to practise using an assessment tool, and to identify issues associated with using the assessment tool</p> <p>Allocate roles eg., learner, tutor, observer. Create an observer checklist form (see examples in Appendix E: these can be adapted for numeracy). Role play assessment. Identify potential issues in implementing the numeracy assessment tool, estimate length of time to complete, analyse recording sheet and discuss implications for teaching and learning</p>
Use and review the Adult Literacy and Numeracy Assessment Tool [due for release 2010]	<p>Purpose: To practise using this assessment tool and to understand how the information gained through using it can be used in teaching and learning.</p> <p>[placeholder activity: to be developed when tool is live]</p>
<p>Exploring ways to solve calculations</p> <p>Use questions from pp. 9 – 15 <i>Teaching Adults to Make Sense of Number to Solve Problems</i>.</p>	<p>Purpose: to identify strategies for solving calculations, and to understand the relationships between number knowledge and problem solving strategies.</p> <p>Provide practise in identifying and contextualising everyday and/or work-based calculations. Groups can make decisions about the degree of precision required, and level of sophistication of the</p>

	<p>knowledge and strategies required.</p> <p>As a whole group, discuss the implications of assessing strategy and knowledge progressions.</p>
<p>Model assessing a learner using a diagnostic assessment tool</p> <p>See <i>Teaching Adults to Measure and Interpret Shape and Space</i>, pages 7 – 9</p> <p>See <i>Teaching Adults to Reason Statistically</i>, pages 8 – 13</p>	<p>Purpose: to model and analyse the use of a diagnostic assessment tool.</p> <p>Model and discuss examples of diagnostic activities for assessing learners’ sense of measurement.</p> <p>Model and discuss examples of diagnostic activities and questions for assessing learners’ statistical reasoning skills.</p>
Suggested assessment activities	Examples
<p>Report</p> <p>see <i>Teaching Adults to Write</i>, page 71: Writing frames</p>	<p>Using a writing frame report on the process and outcomes from assessing the literacy levels of 3 learners using the learning progressions. Make recommendations for a programme of study for these learners.</p>
<p>Interview and report</p>	<p>Interview three learners using the diagnostic questions from <i>Teaching Adults to Make Sense of Number to Solve Problems</i>. Report the results of each learner indicating where the learner sits in each of the Make Sense of Number progressions, and reflect on any identified gaps in number knowledge that will inhibit the learner from moving along the strategy progressions. The report must include evidence that the candidate probed their learners about the strategies they used for calculations, not just whether they got a right or wrong answer.</p>
<p>Report or presentation</p>	<p>Use the information from the diagnostic assessment and the numeracy demands grid produced for learning content area 3 (above) to identify</p>

	<p>the numeracy learning needs of the learner. See Appendix D.2.</p> <p>Example report: Learner B appears to be at Step 4 or 5 of the Additive Strategies progression, Step 3 of Multiplicative Strategies progression, and Step 4 of the Proportional Reasoning Strategies progression. The Learner is at Step 4 on the Number Sequence progression, Step 3 on Place Value progression and between Step 2 and 3 of Number Facts progression. Learner B needs to be taught methods and tools for increasing her basic multiplication and division facts up to 10×10 before she can move beyond step 3 (using repeated addition) of the Multiplicative progression. Her low Place Value Knowledge will inhibit her learning of partitioning strategies or even rounding strategies for moving along the Additive and Multiplicative progressions.</p>
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Table 7: Content area 4

<p>Content area 5:</p> <p>Plan and deliver activities that will enhance literacy skill development, based on current theories of adult teaching and learning.</p>
<p>Recommended resources (see reference list for details)</p> <ul style="list-style-type: none"> • Benseman, J., & Sutton, A. (Eds.). (2008). <i>Facing the challenge</i>. See chapters 10, 12, 13, 14 • Burton, M. (2007). <i>Improving reading: phonics and fluency. Practitioner guide</i>. • Grief, S. & Chatterton, J. (2007). <i>Developing adult teaching and learning. Practitioner guides – writing</i>. • Krudenier, J. (2002). <i>Research-based principles for adult basic education</i>. • Tertiary Education Commission. (2008 d, g, i) These resource books accompany the learning progressions and contain a large number of activities for teaching specific literacy knowledge, skills and strategies.

Suggested teaching and learning activities	Examples
Creating session plans for teaching	<p>Purpose: to develop a sequence of learning to develop specific literacy skills.</p> <p>Using a session plan template (see Appendix F for an example) develop a sequence of learning within a specific learning progression. Include resources, teaching points and brief theoretical perspective</p>
Model application of a concept of adult literacy teaching and learning, eg., scaffolding, tuakana-teina	Peers observe using Teaching Observation Checklist (Appendix E: these examples can be adapted for specific literacy or numeracy purposes).
Demonstrate understanding and application of a concept of adult literacy teaching and learning, eg., scaffolding, tuakana-teina	<p>Purpose: to develop an understanding of adult literacy teaching and learning concepts and their application to practice</p> <p>Develop a teaching and learning activity for a group of learners. Explain how the tutor could vary their delivery to meet the needs of individual learners</p>
Suggested assessment activities	Examples
Deliver a teaching and learning activity to address an identified scenario based on literacy learning needs	Be observed by your colleague(s) delivering activities – you could use a teaching observation form (Appendix E has examples that can be adapted for specific literacy or numeracy purposes)
Written summary	Report on the ways in which your planning and delivery of a specific area of literacy teaching (eg., vocabulary) is based on current theories

	of adult teaching and learning.
Portfolio	Capture your processes and reflections on planning and delivering three consecutive teaching sessions on a targeted area of literacy skill development, e.g., reading comprehension strategies. Highlight practical ways in which your practice reflects approaches to adult teaching and learning theory. See Appendix F for an example of a planning template.

Table 8: Content area 5

<p>Content area 6:</p> <p>Plan and deliver activities that will enhance numeracy skill development, based on current theories of adult teaching and learning.</p>
<p>Recommended resources (see reference list for details)</p> <ul style="list-style-type: none"> • Baxter, M., Coben, D. et al. (2006) <i>Measurement wasn't taught when they built the pyramids – was it?</i> The teaching and learning of common measures in adult numeracy. • Benseman, J., & Sutton, A. (Eds.). (2008). <i>Facing the challenge</i>. See chapters 11, 13, 14 • Coben, D., Rhodes, M., et al. (2007) <i>Effective Numeracy</i>. This report is one of five that arose from the NRDC Effective Practice Studies which explored teaching and learning in reading, writing, numeracy, ESOL and ICT. It investigates approaches to the teaching of numeracy, aiming to identify the extent of learners' progress, and to establish correlations between this progress and the strategies and practices used by teachers. • Gal, I. (2002) <i>Statistical Literacy</i>. This paper proposes a conceptualisation of statistical literacy and describes its key components.

- Ginsburg, L., Manly, M., & Schmitt, M. J. (2006). *The components of numeracy*.
- Nonesuch, K. (2006). *Changing the way we teach math. A manual for teaching basic math to adults*.
- Tertiary Education Commission. (2008e, f, h). These resource books accompany the learning progressions and contain a large number of activities for teaching specific numeracy knowledge, skills and strategies
- Tout, D., & Schmitt, M.-J. (2002). "The inclusion of adult numeracy in adult basic education."

Suggested teaching and learning activities	Examples
Benchmarks for capacity: see <i>Teaching Adults to Measure and Interpret Shape and Space</i> , page 24	<p>Purpose: to consider processes for contextualising teaching and learning sequences</p> <p>Based on the support material in the resource books, demonstrate how the guided teaching and learning sequence could be contextualised to two industry areas e.g., hospitality and construction).</p>
Multiplication and division facts: see <i>Teaching Adults to Make sense of Number</i> , page 83	<p>Purpose: to demonstrate teaching of multiplication and division facts</p> <p>Demonstrate a method of assisting learners to acquire multiplication and division facts which is based on using known facts to find unknown facts.</p>
Model teaching and learning activities for numeracy	<p>Purpose: to consider numeracy teaching and learning activities.</p> <p>Model teaching and learning activities for numeracy that progress learners from using materials, to imagining the concept without materials, to generalising the number property eg., teaching place value: see <i>Teaching Adults to Make Sense of Number to Solve Problems</i>, page 73-79) for easily contextualised generic lessons to use for introducing whole number and decimal place value. Also see <i>Teaching Adults to Make Sense of Number to Solve Problems</i>, pages</p>

	69 – 72 and page 87 for teaching percentages, decimals and fractions.
Role play	Purpose: to consider numeracy teaching and learning activities Develop a teaching role play that demonstrates a specific numeracy skill teaching sequence and present to the group.
Suggested assessment activities	Examples
Written summary	Report on the ways in which your planning and delivery of a specific area of numeracy teaching e.g. place value is based on current theories of adult teaching and learning.
Design a teaching and learning activity to address an identified scenario based on numeracy learning needs (this may be linked to content area 3).	Scenario example: An educator working with learners in the building industry has identified that his learners need to be able to calculate areas. This calculation requires multiplying multi-digit whole numbers and decimal numbers. The diagnostic assessment indicates that a learner is not competent at basic multiplication facts up to 10×10 , and the main strategy used by the learner for multiplication is repeated addition. Design a teaching plan for this educator incorporating activities (in the context of calculating areas) for building multiplication facts, understanding place value, and increasing multiplication strategies. See the overview grids in <i>Teaching Adults to Make Sense of Number to Solve Problems</i> , pages 17 – 18.
Deliver a teaching and learning activity to address an identified scenario based on numeracy learning needs	Be observed by your colleague(s) delivering activities – for example, using a Teaching observation form such as those in Appendix E.

Table 9: Content area 6

Content area 7:

Demonstrate the use of appropriate methods for evaluating the effectiveness of planning, delivery and assessment of a programme for developing adult literacy and numeracy skills.

Recommended resources (see reference list for details)

- Knowles, M. S., Holton, E .F & Swanson, R. A. (2005). *The Adult Learner: the definitive classic in adult education and human resource development*.
- Brinkerhoff, R. O. (2006). *Telling training's story: evaluation made simple, credible, and effective*.
- Brookfield, S. D. (1995). *Becoming a critically reflective teacher*.
- See also the resources listed for content area 4 (table 7 above)
-

Suggested teaching and learning activities**Examples**

Brainstorm and develop a graphic organiser for evaluation of learning

Purpose: to consider approaches to evaluation

List ways to evaluate literacy and numeracy skill development. In small groups select three items from the list, discuss in more detail who, what, when where, how and why and why not (ie. what are the limitations). Use a graphic organiser or chart to compile the results from each group.

Evaluate using learning intentions

Purpose: to develop learning intentions for use in framing and evaluating teaching and learning.

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After input (see link above), create learning intentions for a future teaching session based on allocated topics, eg. the Write to Communicate learning progressions for vocabulary, language and text

	features etc. Develop methods for tutors and learners to evaluate their teaching and learning using the learning intentions.
Suggested assessment activities	Examples
Reflective journal entries	Describe three different approaches you have used to evaluate the effectiveness of a specific course of literacy or numeracy teaching. Report on your findings of the approaches and make suggestions for future uses.
Case study	Prepare a case study that describes how your evaluation results have influenced your teaching.

Table 10: Content area 7

Appendix A.1

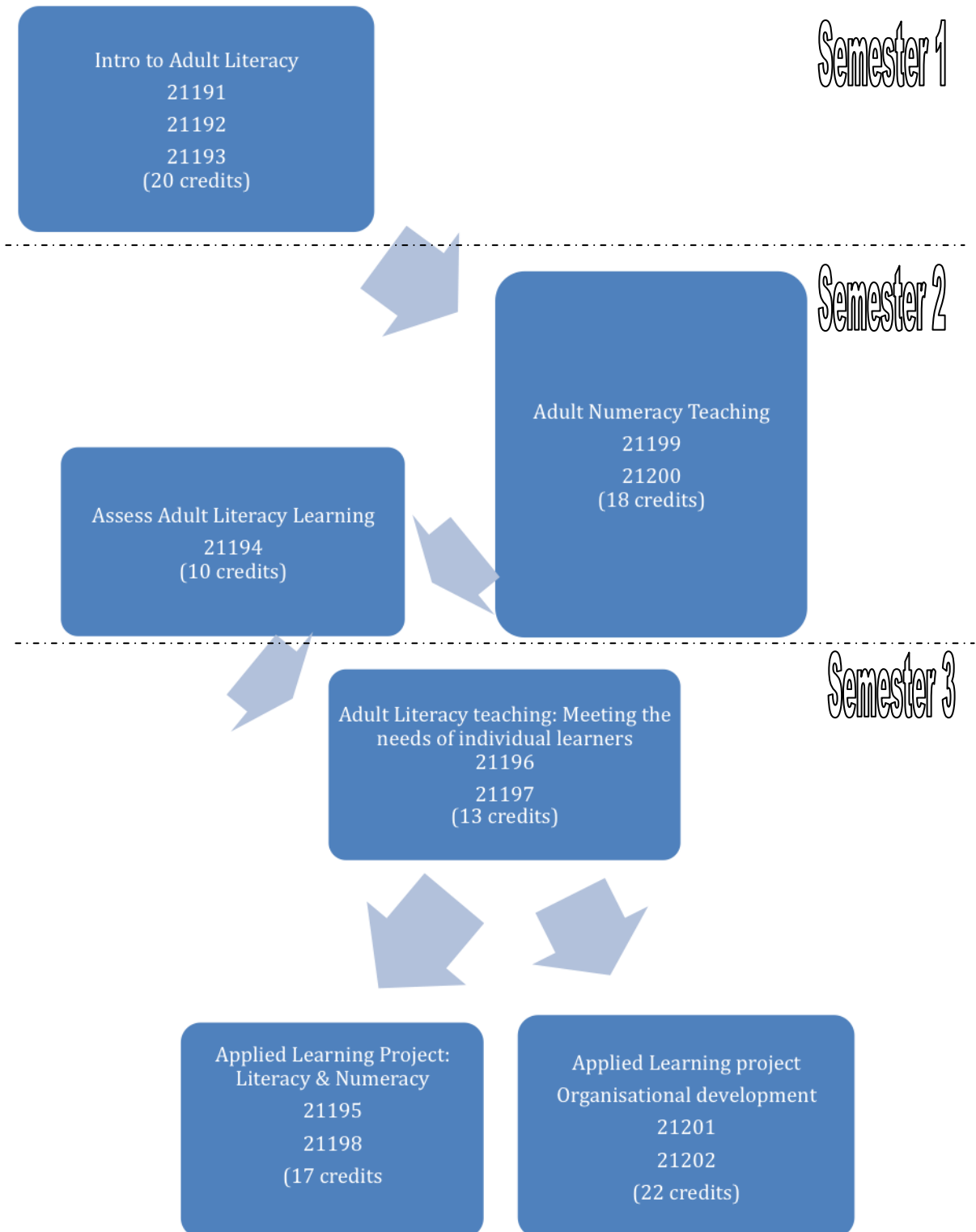
CPIT NCALE (Educator) course design

The National Certificate in Adult Literacy Education (Educator) (Level 5) has 61 credits of compulsory unit standards plus 17-22 credits of electives

Course Code	Course Title	Unit Std	Level	Delivery Hours				CPIT Credits	Indicative Assessment Tasks
				Tuition Hours	Other Directed Hours	Self Directed Hours	Total Learning Hours		
COMPULSORY									
AELE591	Introduction to Adult Literacy Education	21191 21192 91193	4 4 5	60	20	120	200	20	Assignment Presentation
AELE594	Assessment for Adult Literacy Learning	21194	5	40	10	50	100	10	Assignment Project
AELE596	Adult Literacy Teaching: Meeting the Needs of Individual Learners	21196 21197	5 5	50	15	65	130	13	Portfolio: <ul style="list-style-type: none"> • Development plan • Resource for tchg • Evaluation report
AELE599	Adult Numeracy Teaching	21199 21200	4 5	75	15	90	180	18	Portfolio (as above) Incl. Personal needs assess.

ELECTIVE Students select one									
AELE521	Applied Learning Project: Adult Literacy and Numeracy	21195 21198	5 5	32	27	111	170	17	Assignment Workplace Project
AELE522	Applied Learning Project: Organisational Development	21201 21202	5 6	32	32	156	220	22	Assignment Workplace Project
AELE523	Applied Learning Project: ICT and Literacy	21203 21195	4 5	32	27	111	170	17	Assignment Workplace Project
TOTAL				144	125-130	511-556	780-830	78-83	

CPIT: Learning pathway for NCALE (Educator)



Appendix A.2

The Workbase NCALE delivery model

Workbase delivers the NCALE (Vocational) Unit Standard 21204 to cohorts within and outside of Auckland. Typically, each cohort consists of 12 participants. The Workbase delivery model is highly structured and is supported by comprehensive course materials which have been developed and published in-house.

The 24 week Workbase blended delivery model consists of both distance learning and workshops. The model enables participants to relate literacy and numeracy to their particular contexts using the Learning Progressions as the framework.

Learning occurs through face to face workshops, group work, one-to-one telephone and email tutorials, completion of a project and self directed learning. Facilitators scaffold learning, both in the workshops and through regular and ongoing telephone and email communication with participants.

In order to complete the programme, participants need to have access to a group of at least four learners. Ideally, these would be from their own programme but in some cases non-teaching participants are able to organise access to learners in order to complete the Unit Standard.

3 weeks	Pre-Workshop One Reading and activities	Assessment tasks
2 days	Workshop One Two-day block course	
Approx 6 wks	Pre-Workshop Two Project work, activities focusing on demands of a programme, and assessing learners	
2 days	Workshop Two Two-day block course	
Approx 12 wks	Post-Workshop Two Project work activities focused on teaching and learning, assessment and evaluation	

Appendix B

Case study: incorporating Mātauranga Māori

This is adapted from a “Most Significant Change” story, written by a participant in the ITP professional development literacy and numeracy clusters initiative (TEC Evaluation, 2008).

Barry teaches in the trades department of a local polytechnic. In the past, Barry has felt somewhat disconnected from his students and he wondered if he were too old and “out-of-touch” for the smart young high-tech students enrolling on his courses now. After learning about Te Whare Tapa Wha (see *Mātauranga Māori*), Barry decided to make some changes.

First, he considered the school’s main social event for students. The school usually puts on a barbecue for a celebration at the end of the course. Barry decided to have a barbecue for his students at the beginning of the course. He hoped that this would create a welcoming atmosphere, build rapport within the group and help students to make new friends. Some tutors were surprised and asked him why he was doing it – “We only do that at the end of the course.” Some just ignored him. Barry just wanted to be able to relate to his students and he saw this as a good way to start doing that.

The barbecue turned out to be a hit. Students experienced care and hospitality from their tutor first hand. They were able to make new friends and build relationships from the outset, outside of the classroom environment. Barry used the success of this occasion to continue to work on building relationships in class and within a few weeks, the students themselves decided to have another barbecue. Everyone contributed and brought something to share.

This year, Barry has felt more like a mentor rather than someone who just teaches trades. There is a better atmosphere in class and in the relationship between students and with Barry. Students turn up early to class now and sometimes they don’t want to leave at the end of the session. The small change that Barry made in his practice (the barbecue) set the scene a change in atmosphere and gave Barry a new energy for teaching.

Significantly, the usual course attrition rate of up to 50% has fallen dramatically: only three students left this year and all three had valid reasons for leaving.

Tutor reflection

Barry realised that as a teacher, he’d seen and worked with only one dimension (Taha Hinengaro) of his students and that he was not making any significant connecting links with them. Inspired by what he learned about Te Whare Tapa Wha, Barry was able to address all four dimensions of his students. This supported them to move into the class dynamic through a safe and enjoyable experience. Students responded quickly and were able to settle into learning. He moved his teaching from the superficial imparting of information to something with deeper meaning for all. Barry also found that the changes he made addressed his frustrations about his work (his sense of irrelevance and disconnection with his students) and that taking a more holistic approach made his job feel worthwhile. It also had a big impact on students.

Appendix C

Assessment

Purposes of assessment

Assessment serves two purposes:

1. Formative assessment.

Formative assessment is an ongoing process throughout the course. Its purpose is to provide informal feedback to students on their individual progress. Formative assessment forms a vital part of the learning process as it also provides an opportunity for academic staff members and students to identify specific learning problems and undertake remedial work if necessary. Formative assessment includes a variety of processes, for example, group online discussions and one-to-one feedback on progress from a staff member. Formative assessments are not recorded formally and do not contribute to a student's final grade.

2. Summative assessment

Summative assessment provides students with a specific measure of their learning in relation to course learning outcomes. Its purpose is to determine the student's level of achievement in attaining course outcomes and to ensure that students have met the requirements for completion.

Source: CPIT NCALE Final Document Dec 2008

Although formative and summative assessment serve very different purposes the same assessment method may be used for both purposes.

Forms of assessment

“Evidence for assessment takes many forms: a product (a set of accounts, a cake or a poem); an explanation (in a report, an essay or a talk); a performance (a song recital or a high jump). Answers to questions and solutions to problems are evidence. The best evidence is usually the most direct: if you want to know if someone knows how to conduct an experiment, get them to do it rather than just talk or write about it.” <http://www.nzqa.govt.nz/publications/learningassessment.pdf> (p. 12)

Whilst there are many forms which assessment can take, NCALE provides an opportunity to model and analyse forms of assessment and consider their uses for learners who have literacy and numeracy difficulties.

The following table captures some common forms of assessment and gives a brief descriptor of the assessment product and some suggestions for teaching practice. See also the examples of assessment schedules in Appendix E.

Form of assessment	Descriptor	Suggestions for implementation
Assignment	Commonly an extended piece of writing based on researched material or analysis of experience. An assignment might be: <ul style="list-style-type: none">• A report	Provide word limit Provide framework or structure Provide and analyse an exemplar Provide an assessment schedule,

	<ul style="list-style-type: none"> • An essay • A literature review • A comparison • An opinion piece • A reflection and analysis of practice 	eg., a rubric.
Reflective journal	<p>Commonly used as a way of reflecting on and capturing changes to practice.</p> <p>Entries must be dated.</p> <p>Using reflective journals for summative assessment may restrict the student from writing freely for fear of losing marks.</p>	<p>Provide starter questions or guide activities for each entry</p> <p>Provide tutor feedback</p> <p>Engage in tutor/student conversation through response writing</p> <p>Allocate a fixed mark (e.g. 10% of total) and providing clear expectations of length, frequency of writing etc.</p> <p>Provide an assessment schedule, eg. a checklist.</p>
Presentation	<p>Oral or visual presentation e.g. talk, debate, PowerPoint, poster.</p> <p>Could be presenting a balanced argument, summarising findings, persuasive argument, teaching a new skill, modelling a technique</p>	<p>Provide and analyse an exemplar</p> <p>Provide a framework or structure</p> <p>Provide guide questions</p> <p>Provide an assessment schedule.</p>
Written summary	<p>Shorter written piece capturing blend of theory, personal experience and analysis.</p>	<p>Provide and analyse an exemplar</p> <p>Provide expected word length</p> <p>Provide an assessment schedule.</p>
Project	<p>A collection of documents exploring a topic from a range of view points, eg. historical, policy-based, practice-based, theoretical</p> <p>May be research based and include methodology and findings</p>	<p>Provide and analyse an exemplar</p> <p>Provide framework and structure</p> <p>Provide an assessment schedule, eg. a checklist for specific criteria.</p>
Portfolio	<p>A collection of documents often around a particular topic or theme.</p> <p>Useful for showing skill development and changing practices over time</p> <p>All documents must be dated.</p> <p>May be online for example, in blog form</p>	<p>Provide suggestions for content e.g. development plan, resource for teaching, evaluation report</p> <p>Provide and analyse an exemplar.</p> <p>Provide an assessment schedule, eg. a checklist for specific criteria.</p>

Case study analysis	<p>Critical analysis of given case study</p> <p>Maybe presented from a range of perspectives for example, organisation, tutor, candidate.</p> <p>Generating a case study from composite experience including suggestions for use in teaching</p>	<p>Provide and analyse an exemplar.</p> <p>Provide an assessment schedule, eg. a checklist for specific criteria.</p>
Observation	<p>Role play</p> <p>Peer or tutor observation of practice. Develop a schedule for the observer to use for analysing practice and for providing feedback. (See Appendix E for examples.)</p> <p>Witness testimony.</p>	<p>Provide an assessment schedule, eg. observer checklist.</p>

Suggestions for implementing assessment

Many of these forms of assessment provide generic supports such as:

- A word or item limit
- An exemplar (a piece of student work that shows the desired features and/or meets the set criteria) for analysis
- A checklist compiled from the specific, required criteria
- Guide questions, that can be used as reminders of specific criteria or to prompt responses
- Tutor feedback
- An assessment schedule.

Providers need to consider the ability of candidates to deal with choices for assessment. It may be more effective to select one or two forms of assessment (appropriate to the content being assessed) rather than confusing candidates with too many choices.

Assessment processes

Each provider should have their own assessment policies and procedures and provide clear information to candidates as to how each learning outcome is to be assessed. Here is a brief example from CPIT:

“All students should be given written detailed information on assessment procedures and practices at the beginning of each course. This information includes:

- The course descriptor which includes the prerequisites, learning outcomes, credit value, assessment grid, grade scale, resubmission opportunities, pass requirements and required texts and resources.
- The timetable/planning calendar for the course.
- The number, type and due dates for all assessments, assessment methods, including
- Marking schedules/marking criteria.
- The timeframe in which marked assessments will be returned.
- Regulations regarding extensions, resubmissions.”

Source: CPIT NCALE Final Document Dec 2008

Assessment schedules

Assessment schedules are integral to any assessment process. They assist the assessor to make judgements as to whether or not the evidence provided is sufficient to meet the required standard or criteria (for example, of a unit standard). They also assist the learner by indicating what is required for a specific assessment. Assessment schedules may take many forms, for example teaching observation schedules or checklists: see the examples in Appendix E.

NZQA uses the term in a more specific way where Assessment Schedules are used in the moderation process. They consist of evidence and judgement statements:

- "Evidence statements" give examples of learner responses which meet the requirements of the standard.
- "Judgement statements" clearly describe performance levels (quality and quantity) which meet the requirements of the standard.

Source: <http://www.nzqa.govt.nz/for-providers/moderation/tertiary.html>

Recommended reading

NZQA provide a wealth of material on assessment for Unit Standards:

<http://www.nzqa.govt.nz/publications/learningassessment.pdf>

Learning and assessment: A Guide to Assessment for the National Qualifications Framework. www.nzqa.govt.nz

Assessment activity design www.nzqa.govt.nz

Appendix D.1

Numeracy Scenario: Raranga

A weaving (raranga) tutor teaches students to weave a kete (basket). She explains the importance of checking the number of strands of flax (whenu) which run in opposing directions. It's important to have the same number in each direction for the kete to be successful: if there are different numbers, the kete will not close. It is not important whether the number is odd or even: having the *same* number on each side is what matters.

Careful counting and checking has to be done before the final stage. If the numbers are not correct, students will find out the hard way because their kete will not succeed.

This critical check involves the first step (up to 20 whenu) or second step (up to 100 whenu) of the Number Sequence learning progression.

Appendix D.2

Numeracy scenario: Logging mill

Jeff works in logging mill with a machine that cuts boards to 3000mm (3 m) lengths. As a quality assurance measure, three boards are measured in the morning and three in the afternoon. The boards are chosen by taking every 10th board from a randomly selected starting point. The average of the 3 boards is checked to make sure the average falls within the tolerance range of 2995 to 3005 mm.

Problem	Underpinning ideas	Teaching Points
Measure length of 3 randomly selected boards	<ul style="list-style-type: none"> • Sample selection Step 6 interpreting data • Sense of 1mm, 10 mm and sense of length measured in mm Measurement step 4 • Measuring accurately and why Measurement step 5 	<ol style="list-style-type: none"> 1. What is random sample/why randomness? 2. Benchmark for mm (what does 10, 100, 1000, 2000, 3000, look like?) 3. Accurate estimating of measurement 4. Make sure measuring instrument at 0 5. Reading in mm on measuring instrument 6. Degree of accuracy
Average the three lengths	<ul style="list-style-type: none"> • Which 'average' is appropriate (mean, median) and why • How to calculate mean Step 6 analysing data • Estimate sum of the 3 lengths and use calculator or mental strategy to find exact answer Step 4 additive strategies 	<ol style="list-style-type: none"> 1. Why use mean and not median? 2. To find a mean you add the lengths and divide by the number of lengths 3. If you are using a calculator estimate the answer first and check reasonableness of calculator answer <p>Discuss possible mental strategies</p> <p>For example for sum:</p>

	<ul style="list-style-type: none"> Estimate sum divided by 3 and use calculator or mental strategy to find exact answer <p>Step 4 multiplicative</p> <ul style="list-style-type: none"> Know that average is reasonable (i.e., somewhere between the original 3 measurements) <p>Step 6 analysing data</p>	$3001 + 3002 + 3003 = 9000 + 1 + 2 + 3 = 9006$ $2995 + 3003 + 3004 = 5\text{mm under } 3000 \text{ and } 7\text{mm over } 3000 \text{ gives } 2 \text{ mm over so answer is } 9002 \text{ mm}$ For example for division: $9006 \div 3 = 9000 \div 3 \text{ and } 6 \div 3 = 3002$ 4. Discuss why the average must lie between the biggest and smallest measurement.
Decide whether the average calculated is within tolerance range (eg., 2995 – 3005)	<ul style="list-style-type: none"> Make a judgement about numbers. <p>Step 4 number sequencing</p> <ul style="list-style-type: none"> Take appropriate action. 	1. Does calculation fit within tolerance range? 2. Recalibrate machine or not?

Appendix E.1

Teaching Observation Schedule

Tutor _____ Observed by _____ Date _____

Learning session (duration, type, topic): _____

Elements <i>Use <input checked="" type="checkbox"/> <input type="checkbox"/> to note if the following were demonstrated</i>	Comments/questions <i>Choose a maximum of 3 elements to comment on:</i>
Provide lesson plan <input type="checkbox"/> Yes <input type="checkbox"/> No State learning outcome <input type="checkbox"/> Yes <input type="checkbox"/> No	What is the learning outcome for the session? How is this made clear to learners?
Establish relevance/purpose <input type="checkbox"/> Yes <input type="checkbox"/> No	Is the learning outcome made relevant to the learners? How?
Review previous teaching <input type="checkbox"/> Yes <input type="checkbox"/> No	Is there a clear connection between what has been taught before?
Use an activity <input type="checkbox"/> Yes <input type="checkbox"/> No	What is the activity? How does the tutor ensure learners engage with the activity?
Make a teaching point <input type="checkbox"/> Yes <input type="checkbox"/> No	How does the tutor explain the point?
Use resources <input type="checkbox"/> Yes <input type="checkbox"/> No	What resources are used? How do these support the activity?
Summarise session <input type="checkbox"/> Yes <input type="checkbox"/> No	How does the tutor check learners' understanding?

Appendix E.2

Teaching Observation Checklist

Tutor _____ Observed by _____ Date _____

Learning session (duration, type, topic):

Performance Criteria	Self	Peer
1. A technique is used to establish prior learning (describe):		
2. A learning outcome has been prepared (state it):		
3. A teaching activity is used:		
4. The tutor engages learners (describe):		
5. A formative assessment method is used (describe):		
6. Use of voice enhances delivery: <ul style="list-style-type: none">○ volume○ pitch○ tone○ pace○ pronunciation○ enunciation		
7. Body language enhances delivery: <ul style="list-style-type: none">○ eye contact○ manner○ gestures		
8. Use of resources enhances delivery: <ul style="list-style-type: none">○ Whiteboard○ Handouts○ OHP○ Data projector○ PowerPoint○ Other		

Appendix F

One example: Embedded Reading Lesson Plan

Name of text		Date	
Purpose Students will be able to...	1. Content	Name of class	
	2. Reading	Number of students	
Sequence	<i>eg. First of two lessons</i>	Time/ Duration	

Time	Content	Teacher Activity	Student Activity	Resources
	Introduction	Pre-reading activity		
	Body	During-reading activity		

		Post-reading activity		
	Conclusion/Summary/ Formative evaluation (checking learning)			

Self evaluation, eg. *How well did I teach this lesson? What went according to plan? What would I change for next time?*

Appendix G

Embedding numeracy

Manukau Institute of Technology describes how they have embedded numeracy (including assessment) into their delivery of NCALE (Educator) programme:

Unit standards 21199 and 21200

These unit standards are based on considering numeracy as an individually and socially constructed set of human activities, where the contexts of adult learners need to drive their own learning. These contexts may be personal or family related, communal, work-related, or to satisfy adult curiosities around mathematics. There is often the need for many adults to first visit their own mathematical histories and to address any residual anxieties they have about mathematics, acknowledging to whare tapa wha considerations in their past learning.

At present MIT offers two courses: 901.411, which incorporates US 21199 and 901.508 which incorporates US 21200. They are run in separate terms, with 901.411 starting with theories and affective positions around adults' learning of mathematics. Numeracy is discussed concurrently and then a large proportion of the course is devoted to Number Sense. Measurement and Statistical Reasoning occupy the latter parts of the course, and there are deliberate parallels made with the three strands of the Learning Progressions.

This course is assessed through

- Paragraph writing around the theory and affective parts
- Written and if it helps, visual number sense examples, covering whole and part number thinking in contexts designed by the participants
- Investigative tasks for both measurement and statistical reasoning; the measurement task has a paired setting with the expectation that a tuakana-teina approach is likely to evolve between the participants.

Course 901.508 begins with the participants evaluating their learners and their own positions around numeracy teaching and learning. They then assess their learners and plan and deliver a teaching episode around the findings of the assessment (usually based around number sense). Finally the learners are reassessed using the same tool to see whether there have been increased their understandings within the focus themes. In this course, assessments are more in tune with reporting back on the various stages from assessment to final evaluation. This includes peer assessment (of a draft plan) and lecturer observation locally (of the final plan) to attest that numeracy teaching and learning is being soundly delivered. Where the delivery is by distance learners a senior colleague of the participant is invited to observe and to forward comments of the teaching episode.

Glossary

Competency	The knowledge, cognitive and practical skills, and the attitudes (including motivation) needed to meet demands or carry out tasks successfully.
Context, contextualise	Contextualising literacy and numeracy learning means using topics, tasks or situations from the contexts learners are in (for example, a vocational course, a workplace) as the basis for literacy or numeracy instruction.
Course	A specific and prescribed series of instructional or study tasks or sessions. Several courses may together form a programme of study.
Curriculum	The content of a course or programme; the topics, tasks and activities that, together, form the teaching and learning within a course.
Demands	Requirements or needs for a task, for example, the reading skill required to read and interpret a document or to carry out an action.
Diagnostic	Used to identify, indicate or characterise something. For example, a diagnostic assessment is used to identify specific skills.
Embedded teaching and learning	Teaching and learning of one subject or skill (for example, literacy) within the context and tasks of another subject or skill (for example, panel beating).
Graphic organiser	An instructional tool used to help organise information and develop comprehension skills
Integrated instruction	This term is used to describe the weaving together of vocational instruction with literacy and numeracy instruction. In New Zealand this is now referred to as “embedded instruction”.
Learning support tutor	A tutor who provides support to learners (and/or their tutors) who have learning difficulties. These difficulties typically include literacy or numeracy. Support may be provided in a variety of ways.
Literacy	Literacy is the written and oral language people use in everyday life and work. A person’s literacy refers to the extent of their oral and written language skills and knowledge and their ability to apply these to meet the varied demands of their personal, study and work lives.

Needs	The knowledge, skills and abilities that are necessary in order to perform particular tasks or to carry out particular activities.
Numeracy	Numeracy is the bridge between mathematics and real life. A person's numeracy refers to their knowledge and understanding of mathematical concepts and their to ability to use their mathematical knowledge to meet the varied demands of their personal, study and work lives.
Outcomes	The expected result of learning.
Programme	A planned and coordinated sequence of study to achieve a specified aim. A programme is often made up of separate or linked courses.
Qualification	A recognised acknowledgement that a person has satisfactorily completed a prescribed programme or course of study.
Realia	Real-life documents or objects, used for teaching
Rubric	A scoring tool that uses specific criteria and /or checklists against which subjective assessments can be made.
Specialist literacy/numeracy tutor	A tutor who has expertise in literacy and/or numeracy instruction. Specialist literacy and/or numeracy tutors provide support to learners and other tutors in a variety of ways, most often through supporting embedded literacy and numeracy in vocational or other programmes.
Strategy	A strategy is a way of using related techniques together in order to meet a specific learning goal
Strengths	Abilities, skills or knowledge.
Strengthening	In the context of strengthening skills, strengthening means taking every opportunity to raise awareness and increase understanding of the issues and implications of those skills.
Teaching team	A group of people who, together, are responsible for instruction within a programme. In a tertiary organisation, teaching teams may comprise a mix of tutors who are specialists in subject, discipline, vocational or work areas as well as tutors who are specialists in teaching literacy and/or numeracy.
Template	A standardised form that can be used as a model for writing.

Tertiary education organisation	Institutes of technology and polytechnics, universities, wānanga, private training establishments, industry training organisations, other tertiary education providers, rural education activities programmes.
Vocational	Related to work or other purposeful outcomes.

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Notes

1. The Tertiary Education Commission works listed above are mostly available in print and/or can be downloaded at www.tec.govt.nz
2. In addition to specific resources listed, the following organisations provide a large amount of recent relevant information for use in these qualifications:
 - NRDC - the National Research and Development Centre for Adult Literacy and Numeracy www.nrdc.org.uk/ . NRDC have an extensive research and development programme and endeavour to produce reader friendly summaries and practitioner guides to ensure research findings translate into practice.
 - NCSALL – the National Centre for the Study of Adult Learning and Literacy www.ncsall.net/?id=1 . Readers should note the series of Occasional Papers produced on this website, the Focus on Basics publications that are written for tutors and programme managers and the 7 volumes of the leading annual publication, the [Review of Adult Learning and Literacy](#).