GOALPOSTS

A professional development resource for new tertiary teachers in their first year

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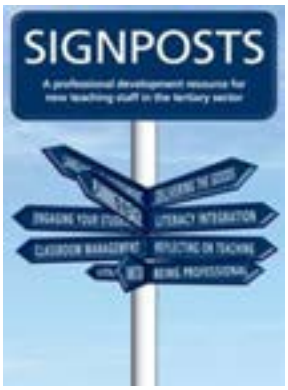
Introduction

Welcome to Goalposts!

Who is this guide for and how can it be used?

Goalposts is designed to assist new tertiary teachers early in their new role, by providing a quick overview of some of the key principles and theories of adult learning. Using *Goalposts* will:

- help new teachers design effective learning activities underpinned by theory
- offer a resource for reflecting on their practice
- provide a starting point for further reading and study about learning and teaching.



Goalposts is intended as a continuation from *Signposts* (http://akoaotearoa.ac.nz/signposts) to assist you in linking theory and practice. Where *Signposts* outlines learning and teaching strategies, *Goalposts* provides an overview of some of the key principles and theories to add to and expand your understanding and practice.

What's in this guide?

There is no one theory of learning that explains how adults learn, or applies across all adult learning environments. Therefore, *Goalposts* is arranged as a series of one-page summaries of commonly agreed principles and theories. Words in italics have a definition or description in the Glossary. The Appendix offers practical examples of how each of the principles might be useful in a learning environment.

- **Principle #1 Prior knowledge and experience**
- **Principle #2 Importance of culture and the NZ context**
- **Principle #3 Respectful partnerships and relationships**
- **Principle #4 Autonomous and independent**
- **Principle #5 Goals and motivation**
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- **Principle #8 Critical reflection**
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- **Glossary**
- **References**
- **Appendix Practical examples and suggestions**

Goalposts represents a summary of some of the most recent and influential ideas at the time of writing, but new teachers are encouraged to keep abreast of developments by engaging with *communities of practice* through such resources and opportunities as conferences, webinars and educational journals.

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Principle #1 Prior knowledge and experience

Pedagogy and andragogy

Pedagogy can be generally defined as the art and profession of teaching, and refers to the intentional planning of activities and instructional methods to develop knowledge and skills.

A subset of this wider theory of learning is *andragogy*, which builds on a field of study which began in Europe in the 1950s, and gained momentum with the work of American practitioner and theorist Malcolm S. Knowles in the 1960s, '70s and '80s. Knowles defined andragogy as the art and science of helping adults learn. The distinction, he said, was in the particular needs and characteristics of adults which differ from those of children, due to the far greater level of life experiences adults have encountered.

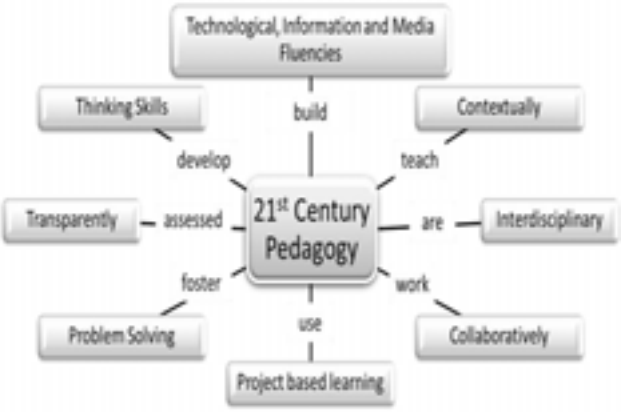
In response to critique of his work, Knowles himself came to acknowledge that andragogy may be less of a theory of adult learning (or teaching) than a set of assumptions about adult learners in general. That is, the focus is more on the characteristics of adult learners, rather than the process of learning: it is descriptive rather than critical. Knowles' work is still well regarded today for his contribution to an emerging profession.

Critical pedagogy

In a related branch of learning theory associated with the work of John Dewey (1939) and Paulo Freire (1993), critical pedagogy views education as political and focuses on the role of power in the relationship between teacher and learner. Critical pedagogy argues that learning and education should be culturally relevant, socially empowering, and participant driven. Teachers need to share power with their learners and respect and acknowledge their prior skills and learning.

21st Century pedagogy

This approach argues that how we teach must reflect the world our students move into - a world which is rapidly changing, connected, adapting and evolving.



The key features of 21st Century pedagogy (Source: http://edorigami.wikispaces.com/21st+Century+Pedagogy)

Prior experience

Almost all adult learning theorists acknowledge that adult learners' previous educational and work experiences constitute a valuable classroom resource (Brookfield, 1986; 1995). If teachers can connect new learning to what is already known and assimilated, it will be more meaningful and easily understood.

However, Brookfield also reminds us that experience, attitudes and expectations are all *cultural constructs* and their meaning is constantly changing as individuals revisit and reinterpret experiences to make sense or meaning of these influences. To capitalise on students' prior learning and life experience teachers must get to know their learners and their backgrounds, openly acknowledging and valuing their contribution.

Some writers (e.g. Calloway, 2009) say experience can be a barrier to adult education. The argument here is that learners do not like to hear that their way of doing things is "wrong" or limited. Again, the teacher must know the students in order to introduce new information in such a way that resistance and anxiety are minimised.

While recognising and incorporating learners' contributions is important, the teacher is still required to take overall responsibility for the *curriculum*. One risk is that when learner experience is placed at the centre of educational practice, it becomes 'privileged' and may be treated as a source of authentic knowledge, rather than being examined critically (Avis 1995).

Challenging the concept of 'adult' learning

"Most descriptions of how adults experience learning are rendered by researchers' pens, not learners themselves" (Brookfield, 1995). Brookfield, Cercone (2008) and others have discussed whether, in fact, there should even be something called 'adult learning'. They say that variables such as culture, ethnicity, personality, gender, religious and political ethos – as well as life experiences – may be more important to learning than chronological age. An individual's response to these factors occurs across the lifespan, they argue, and is not necessarily a defining aspect of adulthood.

Focus question: *How can teachers get to know their learners?*

Principle #2 Importance of culture and the NZ context

Adult learners have unique characteristics and backgrounds

The individuality of the adult learner is a product of biology, environment, learning, cognitive styles, personality, culture, beliefs, world-views, experiences, memories, relationships... in other words highly diverse and unique. Further, these conscious and unconscious worlds influence each student differently.

Theories of human development emphasise culture as a universal characteristic of being human. Many educationalists argue that learning can only exist within a societal and cultural setting. It is widely accepted that many early discussions of adult learning were marred by a *Eurocentric* or westernised lens (Brookfield, 1995). Instead, *ethnocentric* theories recognise that cultural groups have their own definitions and range of learning and teaching styles and preferences.

Diversity

In 2003, Adrienne Alton-Lee compiled a 'best evidence synthesis' which examined the pedagogy shown to increase student outcomes across a large number of New Zealand studies and research projects. In this summary, diversity encompasses many characteristics such as ethnicity, socio-economic background, home language, gender, special needs, disability, and giftedness.

(Image: www.māori.org.nz)

Alton-Lee identifies 10 characteristics of quality teaching to support diversity: (1) a focus on student achievement; (2) caring, inclusive and cohesive learning communities; (3) effective links between school and other cultural contexts; (4) responsive to student learning processes (5) effective and sufficient opportunity to learn (6) multiple task contexts (7) curriculum alignment (8) scaffolding and feedback (9) self-direction and metacognitive strategies (10) goal-oriented assessment.

Aotearoa NZ and biculturalism

Cultural theory development and understanding in New Zealand is informed by the work of international writers, and is increasingly characterised by perspectives which reflect our unique bicultural heritage.

A key element is New Zealand's founding document, the **Treaty of Waitangi**, enshrined in our constitutional framework and often cited as a cornerstone of educational design. In tertiary organisations the Treaty's core concepts of partnership, protection and participation are visible in strategic vision and priority statements. While not a theory as such, the concepts behind the Treaty are often incorporated in discourse around cultural inclusion, philosophy and ethics. Ensuring equity in education outcomes for Māori and non-Māori is fundamental to all national policy.

Effective Teaching Profile

Russell Bishop (2003) is a New Zealand educational writer and researcher who studies the influences on Māori student learning. His work draws on indigenous Māori pedagogical and research principles, and confronts the *deficit* notions of Māori student achievement, which he sees as a lingering result of colonisation. Instead, he promotes an Effective Teaching Model which emphasises empowerment, *co-construction* and the critical importance of cultural recognition. Bishop's research 'Te Kotahitanga' identifies six practices effective teachers do that enhance Māori students' learning: Manaakitanga (Caring for students), Mana Motuhake (Caring for the performance of each student), Ngā whakapiringatanga (Creating a secure, well managed learning environment), Wānanga (Engaging in effective learning interactions), Ako (Using a range of teaching and learning strategies), and Kotahitanga (Using student progress to inform future teaching practices). Like the holistic learning models Te Whare Tapa Whā (Durie, in Bishop & Glynn, 1999) and Te Wheke (Pere, 1999), the Effective Teaching Profile can be, and is applied in any learning environment to improve **all** students' outcomes. Above all, for Bishop and his colleagues, the success of any teaching intervention begins with exploring and developing the value set and attitudes of the teacher (Bishop & Berryman, 2009).

Kaupapa Māori

Kaupapa Māori theory has been continuously evolving since the 1980s when it was first advanced as an attempt to develop a pedagogy of teaching and learning which did not disadvantage Māori. Graham Smith (2012), at the forefront of this movement, describes Kaupapa Māori theory as providing "a space for thinking and researching differently, to centre Māori interests and desires, and to speak back to the dominant existing theories in education" (p. 11). Drawing on elements of a number of western traditions, it is both cultural and political, emphasising transforming strategies that "allow Māori still to be Māori, and also enable successful participation in all aspects of New Zealand life" (p. 16).

Focus question: *What strategies can teachers use to ensure students are able to learn and express cultural ideas and identity?*

Principle #3 Respectful partnerships and relationships

Modelling respect

Adult learners require respectful, positive learning environments that acknowledge their uniqueness, opinions, questions and viewpoints. Such an environment encourages students to take responsibility for aspects of their learning such as independent inquiry, critical reflection, teamwork and group leadership.

Relationships

Getting the climate right means that both student-student and teacher-student relationships are vitally important. Stephen Covey (1989), an American educator, author and popular speaker, is one of many to describe the significance of high and low trust culture. Building trust comes from being true to your commitments, by clarifying expectations, by treating people with kindness and respect, and by transparent communication and information sharing. There is an increasing acceptance that these ideas apply to educational settings just as much as to business ones (Siegel, 2004).

Educator beliefs

'No longer the sage on the stage, but the guide from the side' is an often-quoted mantra. This requires a *paradigm* shift, and in a true learning community, all participants, including the teacher, share ideas and learn from one another. The teacher is no longer the only one with the knowledge, responsible for supplying facts; rather they must guide learners to their own knowledge. John Hattie (2009), a New Zealand education researcher, calls this 'reciprocal teaching' where learning is supported by conversations between teacher and students to gain meaning from subject and context.

Russell Bishop (2003) also believes teachers' beliefs are critical. He argues that teachers come into classrooms with very strong theories about the students, particularly minority and Māori students, and often resist evidence that students do not conform to these *deficit* theories – about race, culture, learning, development and students' levels of performance and rates of progress. Bishop says that it is important to survey students' views on these matters, and compare them with the teachers' – before commencing the work of teaching and learning in a jointly constructed approach.

It is now commonly accepted that "There is no 'universal' knowledge. There is no 'foundational' knowledge. Knowledge is contingent and socially constructed all the way up and all the way down" (Bruffee, 1999, p. 267).

Educator attitudes

In a study which compared the effect of over 100 learning interventions, Hattie (2012) identified 'high-effect' teachers (those who use proven strategies for improving student learning) and 'low-effect teachers'. Findings showed that a student in a high-effect teacher's classroom had almost a year's advantage over peers in a lower effect teacher's class. A key difference, he says, is teachers' attitudes and expectations.

Learner-centred teaching

Related to the principles of andragogy and pedagogy (Goalposts #1) is the difference between the two major educational perspectives of instructivist and constructivist philosophies. Instructive teachers set performance objectives and make delivery decisions independent of the learner, whereas the constructivist philosophy places the emphasis on the learner and self-directed exploration to 'construct' an individual understanding of the world (Cercone, 2008).

Instructivist	Constructivist
Didactic – teacher's exposition of subject (e.g. lecture) dominates, students are passive	Facilitative – teacher does not attempt to control learning outcomes. Student autonomy and initiative encouraged
Body of knowledge 'abstract', text-based	Concrete, with relevance to learner's world. Encourages primary sources
Set learning goals and programme content	Self-discovery promoted

A summary of contrasted teaching philosophies

Collaboration

Brookfield (2005) says that collaboration between teachers and learners should be a constant feature, visible throughout learning programmes. It includes the diagnosis of needs, setting of objectives, curriculum development, teaching methodologies and generating evaluation criteria. This approach ensures learners are actively participating in guiding course activities and assignments, rather than passively accepting everything.

Like collaboration, *coaching and mentoring* models which promote different tiers of professional relationships. Lesley Peterson's study of high impact mentoring practices emphasises that when mentoring is multi-dimensional, process-oriented and institute-wide, it offers a powerful tool for supporting and enhancing teaching and learning practices (Peterson & Walke, 2012).

Focus question: *How can teachers establish respectful relationships with students from the first day of the learning programme?*

Principle #4 Autonomous and independent

Self-initiated learning

Some commonly held assumptions in adult learning theory are that adults enter the tertiary learning environment from choice, and to create opportunities and change. This could encompass change in a) skills, b) behaviour, c) knowledge level/qualifications, d) attitudes/confidence (Russell, 2006). Adults have selected what and when they want to learn, and are responsible for their own learning outcomes. Carl Rogers' (1969) work on *student-centred learning* is based on the idea that the student usually knows better how to proceed for themselves than the teacher. He argues that when adult learners control the nature, timing and direction of the learning process, the experience is facilitated, and the learning is lasting and sustainable.

Resistance to imposed learning

A related idea is that adult learners can resent being told what to learn, or having information, ideas or actions imposed on them (Fidishun, 2000, 2005). If they have no influence over content or delivery, learners can become disengaged and passive and the learning process impeded by a negative attitude. Well known educationalist John Holt (1989) advocates that learners of any age can and should be in control of their own learning. This idea is linked to the concept of the *democratic classroom* where negotiation between teacher and learner to determine a learning contract and learning outcomes is utilised.

Concept of self

An individual's emerging self-concept or self-identity includes habits and biases determined from their experiences, as well as cultural/personal history (Holtzclaw, 1983). Self-concept is a continuous process of re-creation as individuals adapt ideas about their personal, work and social worlds to new knowledge and self-knowledge. Armed with an accurate self-concept, the individual can find self-actualisation (see below) across various life experiences and career roles.

Maslow's 'Hierarchy of needs' and self-actualisation

Maslow's 1943 model of escalating human motivation has remained one of the most important theories in human development. Maslow used the terms Physiological, Safety, Belongingness and Love, Esteem and Self-Actualization to describe the order in which an individual's needs should be met.

This model, most often represented as a pyramid, argues that each level of need must be met before the individual will strongly desire (or focus motivation upon) higher level needs. Self- actualisation refers to the realisation of a person's full potential (Huitt, 2007).

An interpretation of Maslow's hierarchy of needs, with the more basic needs at the bottom

However, an important critique of this model is that it is *ethnocentric*, failing to distinguish between the social and intellectual needs of those raised in individualistic societies and those raised in collectivist societies.

Self-directed learning

This concept, widely discussed by Knowles (as cited in Smith, 2002), Brookfield (2005), Collins (2004), Holt (1989) and others, examines how adults take control of their own learning. This can include setting their own learning goals, locating appropriate resources, deciding on which learning methods to use and evaluating their own progress. Learning is seen to be most effective when adults can proceed at their own pace, so independent study should be encouraged.

Debate around issues of power and control mean that self-directed learning is often viewed as having a political/ideological perspective, such as the concept of *emancipatory adult education,* a common theme in critical pedagogy (Goalposts #1).

Self-determined learning

A new term, heutagogy, which has recently entered the discussion, refers to self-determined learning (Blaschke, 2012), where learning how to learn is as important as learning a given subject itself. An important development here is the focus beyond structured education alone, to all learning contexts, both formal and informal.

Focus question: *How can the use of technology best promote self-management, discovery and independence for learners?*

AUTONOMOUS & INDEPENDENT

Principle #5 Goals and motivation

Adult learners are goal-oriented

Traditional models of learning assume that students will simply learn what they are told (Fidishun, 2005). However, adults are used to understanding what they do in life, and want to know why they need to learn something and how it will benefit them. Learners expect to see how the programme they have enrolled in will help them achieve their goals. Practice and feedback must be designed to provide information on progress toward the goal, often called *formative assessment* as distinct from *summative assessment* in the form of final marks (Ambrose et al., 2010).

The role of motivation

Adults need course content which is applicable to real-world roles and responsibilities which they value, or 'What's in it for me' (WIIFM).

Motivation affects direction, intensity, persistence and quality of learning behaviours.
Motivation can be *intrinsic* and/or *extrinsic*. Knowles, Holton III and Swanson (2005) say that while adult learners respond to external motivators, internal motivation is more powerful and contributes to lifelong learning.

External motivators might include salary increases, higher status, job titles and perks, incentive pay, academic credit, or promotions; but internal motivators, such as job satisfaction, the desire to grow, improved self-esteem, and quality of life, are usually more important to adults in their learning process, and must therefore be fostered by educators.

Extrinsic motivators can also help to develop intrinsic motivation (Culatta, 2011).

Lieb's (1991) six sources of motivation for adult learning

In this model, six sources of motivation provide a framework to guide teaching:

- Social relationships: to make new friends, to meet a need for associations and friendships.
- External expectations: to comply with instructions from someone else; to fulfil the expectations or recommendations of someone with formal authority.
- Social welfare: to improve ability to serve mankind, prepare for service to the community, and improve ability to participate in community work.
- Personal advancement: to achieve higher status in a job, secure professional advancement, and stay abreast of competitors.
- Escape/Stimulation: to relieve boredom, provide a break in the routine of home or work, and provide a contrast to other exacting details of life.
- Cognitive interest: to learn for the sake of learning, seek knowledge for its own sake, and to satisfy an inquiring mind.

Building motivation

Lieb says the best way to motivate adult learners is to emphasise the value to their goals of what they are learning. Teachers should gauge what their learners' motivating factors and goals are, and plan strategies to show learners the relationship between the programme content and their desired outcomes. Similarly, Russell (2006) believes the key to using adults' natural motivations is to tap into their most teachable moments – when they are convinced of the need for knowing the information. She argues for teaching which provides a challenge, but avoids frustrating the learner, building motivation through positive reinforcement and stages of success.

Student persistence and engagement

American author Vincent Tinto (1993), a leading researcher into causes of student attrition, believes it is based on the inability of students to make the transition to higher education and become incorporated into the institution's social and intellectual life. A recent New Zealand focus has been to foster persistence, or retention, by focussing on *student engagement* as a key indicator of motivation (Leach & Zepke, 2011).

Focus question: *How can teachers engage student motivation to support higher level thinking and enduring understanding?*

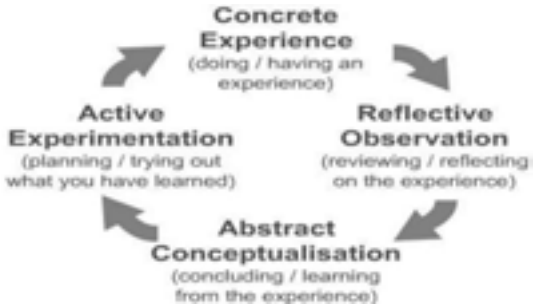
Principle #6 Relevant and practical

Learning needs to be applicable in order to be of value

Adult learners want to see how what they are learning will assist in their task performance, or address some issue in their lives. Therefore, theoretical concepts need expanding using case studies and scenarios to focus on real world problems using practical strategies.

Experiential learning

In the 1960s–70s, educational pioneer Carl Rogers distinguished two types of learning: cognitive (meaningless) and experiential (significant). Cognitive is seen as academic knowledge, while the experiential equates to learning by doing (O'Brien, 2004). He described experiential learning as equivalent to personal change and growth.



(Image: C. Davies, & T. Lowe, www.ldu.leeds.ac.uk Reproduced with permission).

In the 1980s, David Kolb extended this idea in his Experiential Learning Cycle theory. In this model, effective learning is seen when a person progresses through a cycle of four stages: of (1) having a concrete experience followed by (2) observation of and reflection on that experience which leads to (3) the formation of abstract concepts (analysis) and generalizations (conclusions) which are then (4) used to test hypothesis in future situations, resulting in new experiences (McLeod, 2010).

Scenario-based learning

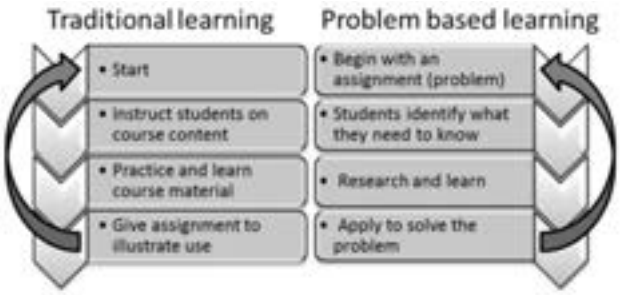
Scenario-based learning is a means of introducing learners to authentic, experiential learning experiences. Kindley (2002) argues that knowledge can't be known and fully understood independent of its context, situation, and social framework. Scenarios give context.

Scenarios need to contain key elements that the learner will experience in reality. The first essential element of a scenario is the description - basically the problem the learner has to solve. Next are choices – specific options the learners will select from that will progress through the scenario and eventually solve the problem. Finally students should be given learning aids, or resources that they can use to solve a scenario.

Problem-based learning (PBL)

PBL is an approach in which problems provide the background motivation and driving force for learning. PBL enhances planning, self-discipline and teamwork (Boud & Feletti, 1977; Rahman & Debnath, 2011). Typically problems are worked through in tutorials, with the problem initially taking precedence over the 'body of knowledge'.

The objective of learning is less about content and more about the process of discovery: students need to gain knowledge, understanding, and experience of how knowledge is gained - essentially, this is the process through which problems are resolved.



The flipped classroom

This relatively new language and practice reverses the traditional class-work / homework elements of course design, using technology to provide online repositories of learning resources such as readings, podcasts and videos. Students view these at home prior to the in-class session which is devoted to practical exercises, projects, or discussions (Berrett, 2012).

Vocational-based approaches

Initiatives which enable learners to "train" in another setting as part of their formal study bring an element of authenticity to the learning programme. These experiences can include student and teacher exchanges, as well as co-operation projects to transfer or develop innovative practices in industry.

Partnerships in industry, business, government and not-for-profit organisations build currency, responsiveness and work-readiness.

Fieldwork, internships, work placements

Interacting with real clients and real-life situations allows learners to move from the classroom to hands-on applications within the work context. It provides authentic work experience, enhances problem-solving skills and teamwork capability.

Community service

Projects based in the community allow learners to apply what they've learned in the classroom to real human needs. Participation builds self-efficacy, pride and civic responsibility. Many of these qualities score highly in recruitment and industry-generated graduate attribute wish-lists.

> ***Focus question:*** *How can courses balance theoretical and practical components, and engage in real world experiences?*

Principle #7 Learning styles and ways of thinking

Learning style research

The concept of learning styles relates to the characteristic strengths and preferences in the way learners take in and process information. People think and feel differently as they solve problems, create products and interact (Cercone, 2008). Individual learning styles are influenced by personality, intelligence, education, experiences, culture, and sensory and cognitive preferences (Collins, 2004) and have led to the development of numerous models and tools.

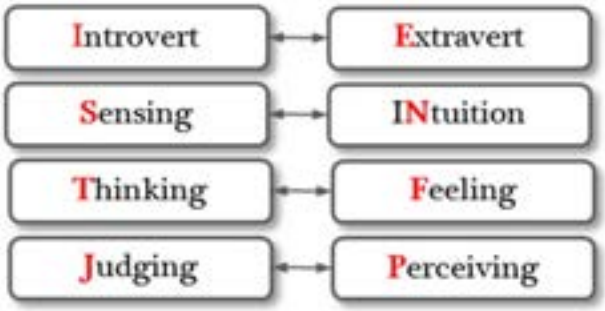
Although there are critics of learning style theory, there is general agreement that in any group of adults there will be a wide range of individual learning style differences. The use of learning styles measurement tools in the classroom can offer students increased self-awareness, promote discussions about individual learning, encourage a learner-centred approach and support diversity. The following are some well-known examples:

VARK

Fleming and Mills' (1992) VARK model is one of the most popular representations of learning styles. Learners are identified by whether they have a preference for visual learning (pictures, movies, diagrams), auditory learning (music, discussion, lectures), reading and writing (making lists, reading textbooks, taking notes), or kinesthetic learning (movement, experiments, hands-on activities). Most educators agree that while a student may be strong in one area, most learners have aspects of all four. Some commentators advocate the addition of a new category of learning style: T for Technology.

Myers-Briggs

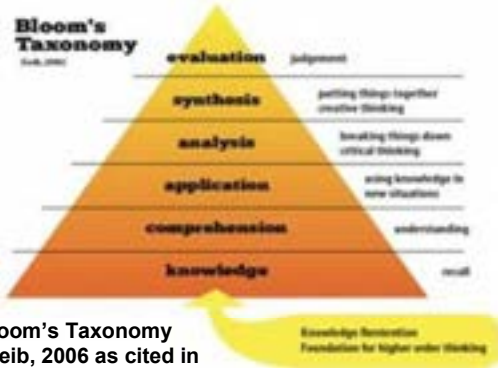
Psychologist Carl Jung described four ways by which we experience the world: sensing, intuition, feeling, and thinking. Based on Jung's work, the Myers-Briggs Type Indicator (MBTI) assessment is a questionnaire designed to measure psychological preferences in how people perceive the world and make decisions. The MBTI sorts these preferences into four opposite pairs, or dichotomies, with a resulting 16 possible types, or preferences.



The Myers-Briggs Personality Components (Myers and Briggs Foundation, 2003)

Bloom's Taxonomy

In the 1950s, educational theorist Benjamin Bloom developed a taxonomy, or classification, of three domains of educational activities: Cognitive: mental skills (***K***nowledge); Psychomotor: manual or physical skills (***S***kills); and Affective: growth in feelings or emotional areas (***A***ttitude). After a learning session, a learner should have a new range of KSA's. Bloom's Taxonomy is best known for its description of the six subdivisions of intellectual skill acquisition within the cognitive domain, starting from the simplest behaviour to the most complex. Learners need to master one level before proceeding to the next, with the emphasis on goal attainment rather than student comparison.



Bloom's Taxonomy (Geib, 2006 as cited in Petram, 2010. Reproduced with permission).

Cone of learning

The Cone of Learning is a model developed by Edgar Dale in the 1930s, to assist teachers and students to think about how they learn, and what makes learning 'stick'. This can be a useful tool for students in pre-course learning-to-study programmes, as well as teachers designing course delivery to ensure that they include student-centred activities as part of their planning.

One example of the Cone of Learning adapted model (http://en.wikipedia.org/wiki/Edgar_Dale)

Focus question: *How can educators use learning styles examples to best support students' self-analysis?*

Principle #8 Critical reflection

Adult learners engage in self-reflection

In trying to define learning that is 'distinctly adult' Brookfield (2005), calls critical reflection 'probably the idea of the decade'.

Critical reflection focuses on three interrelated processes: (1) learners question and then replace or reframe an assumption; (2) they develop alternative perspectives on previously taken for granted ideas; and (3) they come to recognize the *hegemonic* aspects of dominant cultural values. As they reflect on what they are learning, adults are also learning about themselves, and how they learn. This idea is also known as 'meta-cognition'.

Practical theorizing

This term is used to outline the ways in which teachers and learners can become critically aware of their own informally developed theories and philosophy of learning. Teachers come to a more informed understanding by comparing their emerging sense of theory with that of their colleagues – through informal discussions and participating in *communities of practice (*Brookfield, 1995). By critiquing their own actions and assumptions, and combining individual and universal perspectives, teachers are defining their practice in an action-reflection-action process (*praxis*).

Active reflection

Donald Schon's (1983,1987) ideas of reflection-in-action, and reflection-on-action, advocate that teachers should be self-aware and frame their practice within the context of their delivery, reflect, and reframe delivery in the light of prior knowledge or experience, before planning future teaching action. A related theory is his concept of *double and single loop learning*, developed with Argyris (1993).

De Bono's 'Six thinking hats'

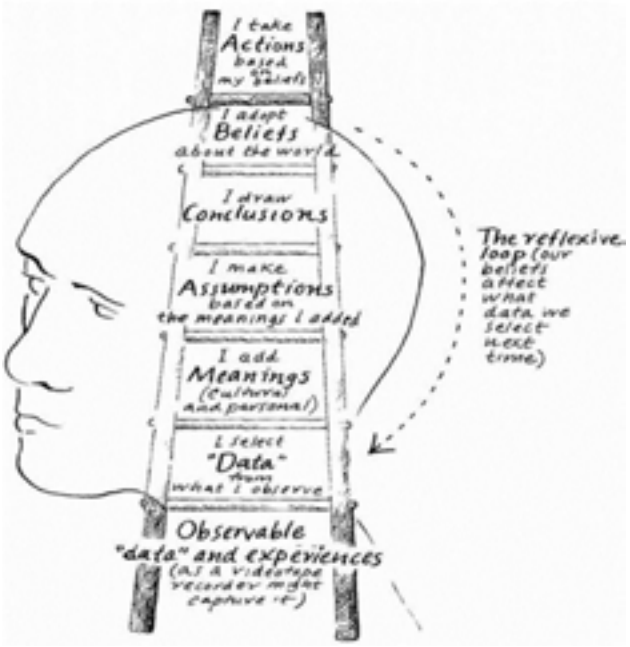
One of the best-known tools for encouraging new thinking and perspectives about topics is de Bono's (1985) concept for developing 'parallel thinking'. The six thinking 'hats' provide a means through which you can look at a concept, problem or situation using a different perspective.

The six types of thinking he identifies are:

- Information (White). What are the facts
- Emotions (Red). Intuitive/instinctive reactions
- Discernment (Black). Logic
- Optimistic response (Yellow). Seeking harmony
- Creativity (Green). Provocation/investigation
- Meta-thinking (Blue). Thinking about thinking

The Ladder of Inference (Argyris)

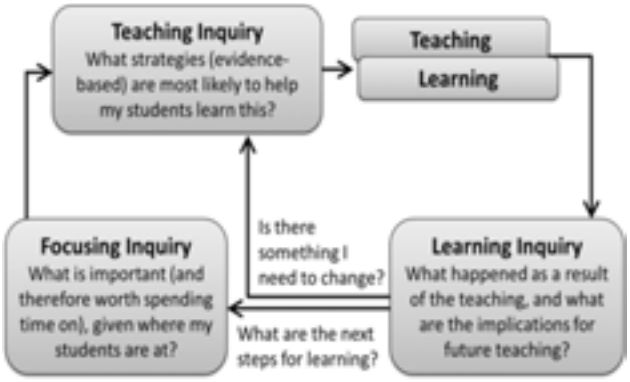
This model of how people process information and assign meaning says that we see the world as we are (not as it is). In this concept we begin with real data and experience, then select specific items we pay attention to, attaching meaning, developing assumptions, coming to conclusions, and finally developing beliefs. Beliefs then form the basis of our actions (Galoppin, 2009).



The Ladder of Inference model
(Image from producttalk@teresatorres.com)

Timperley's 'Cycle of Inquiry'

New Zealand educational researcher and writer Helen Timperley (2011) describes learning as an internal process that requires active cognitive, emotional and practical engagement in order to challenge assumptions and create new meaning. Learning, for teacher and students, must entail constant reflection as a routine part of daily work.



The teaching-learning relationship
(Ministry of Education, 2007, p.35. Reproduced with permission.)

Focus question: *What elevates critical reflection beyond just a description of events?*

CRITICAL REFLECTION

Principle #9 Environment for learning

Environmental conditions

An effective learning environment draws on many of the principles discussed in other *Goalposts*. Gregson and Sturko (2007) offer this summary of essential conditions:

- an atmosphere of inclusion and respect in which learners feel welcomed;
- relevant learning experiences that help learners to develop a favourable disposition toward learning;
- challenging learning experiences that involve the learner's perspectives and values; and
- a programme that develops competence by offering an authentic assessment that helps learners to connect their learning experiences to real-life needs.

All of these conditions require a cooperative process which involves the learners in the planning process.

Effective learning environments are also impacted by personal and situational characteristics. Personal characteristics include age and life phases (linking to models of human development), development stages (family and work responsibilities) and learning preferences as well as gender, age, class and culture. Situational characteristics include part-time versus full-time learning, institution, and qualification. O'Brien, (2004) reminds us that we must take both sets of characteristics into account when planning the administration of learning (schedules, locations, procedures, delivery modes).

A climate for learning

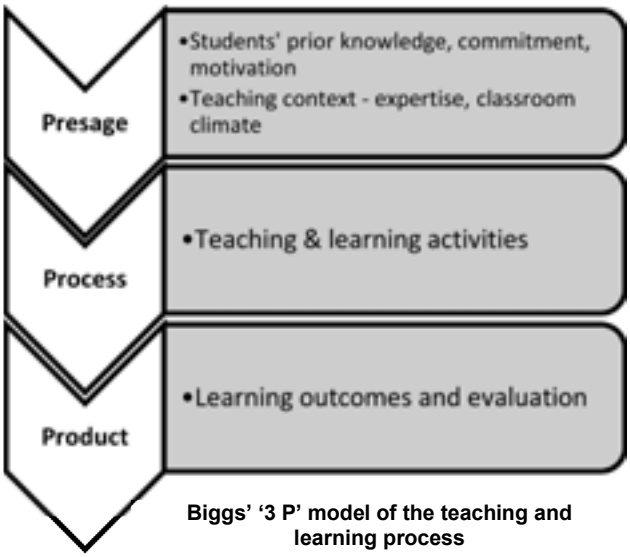
Most theorists accept that adults learn better in an informal, social environment, with a relaxed, fun atmosphere that will stimulate them to participate. Chickering and Gamson (1987) say learning is 'more like a team effort than a solo race' and is generally collaborative and social, rather than isolated and competitive. Their studies found that students working in small groups tend to learn more of what is taught and retain it longer than through other instructional formats. This is because sharing ideas and responding to others improves understanding and moves students from *surface* to *deeper learning*. These ideas are captured in their well-known work 'Seven principles for good practice in undergraduate education'.

Scaffolded support

Lev Vygotsky's (cited in Hattie, 2009) work with human development theory and the development of intellectual independence describes the zone of proximal development (ZPD) as the difference between what a learner can do without help and what he or she can do with help (scaffolding). Learning environments need to be designed so that targeted support from teacher, peers or more experienced others is an integral aspect of the learning experience.

Constructive alignment

Much recent teaching and learning literature encourages alignment between all aspects of the programme - learning outcomes, content, teaching and evaluation. John Biggs (2003), an Australian theorist, described a constructively aligned system as one in which all teaching and assessment activities support one another.



Biggs' '3 P' model of the teaching and learning process

Technology-based environments

Blended education, mixing face-to-face and online learning, is becoming a normal 21st Century learning environment. Typical adult education themes such as empowerment, critical reflection, experience, collaboration and learning styles should inform distance education activities and design, just as they do traditional education environments (Brookfield, 2005). Institutions also need to focus directly on the technological issues they will face in ensuring education can succeed in a technology-based learning environment. Vidishun (2005), advocates that good teaching in a technology-based learning environment needs to be both interactive and learner-centred.

Multimodal literacies

Increasing use of technology in the classroom has supported a widening interpretation of learning environments, learning and teaching tools, and assessment evidence (Pahl & Rowsell, 2005). No longer bound by the traditional confines of the classroom, learning, teaching and assessment tools may include blogs, gaming platforms, video making and digital graphics with a focus on creativity and individual expression.

Focus question: *How can digital media promote learner contribution in creating an effective learning environment?*

Principle #10 Change and transformative learning

A new focus

Modern society is changing rapidly and the knowledge and skills required in almost every field are also growing exponentially. Educational design is increasingly focussing away from a specific 'body of knowledge' and towards 'soft skills' such as management, communication and critical thinking skills. These skills are essential in industrial and professional working environments and are relevant across a range of contexts.

Transfer of learning

Transfer of learning is the ability to use information taught in a course in a new setting. Lieb (1991) describes two variants: positive transference (when the participant uses the behaviour taught in the course), and negative transference (when the participants avoid doing what they are told not to do, and this then results in a positive (desired) outcome). Transference, says Lieb, is most likely to occur when:

- Learners can associate the new information with something that they already know (association)
- The information revisits a logical framework or pattern (similarity)
- The learner's degree of original learning was high
- The information learned contains elements that are extremely beneficial to the job (critical attribute element).

Transformative learning

This concept relates to the change within the learner's frame of reference or bigger picture understanding, as a result of exposure to new ideas and learning. Learning is about change through discoveries that the learners experience. That is, learning transforms their way of seeing the world. The role of the teacher is to facilitate and guide this change, as a 'change agent'. Transformative education which leads to changes in our cultural, social and political worlds is also an essential focus of Kaupapa Māori theory (Smith, 2012).

Reinforcement and feedback

Behaviourist theorists from human development such as Skinner (1938) have created models of reinforcement, which can be positive or negative, to describe behaviour as a function of its consequences. The learner will repeat the desired behaviour if positive reinforcement (a pleasant consequence) follows the behaviour (Dunn, 2000).

Calloway (2009) says that the need for feedback is part of the cause and effect loop which directly influences attitudes and beliefs about learning, and so can shape future and *lifelong* learning behaviour.

John Hattie (2012) offers the following guide for effective feedback:

Levels		Major questions	Three feedback questions
1	Task	How well has the task been performed? Is it correct or incorrect?	Where am I going? How am I going? Where to next?
2	Process	What are the strategies needed to perform the task; are there alternative strategies that can be used?	How am I going? What progress is being made towards the goal?
3	Self-regulation	What is the conditional knowledge and understanding needed to know what you are doing? Self-monitoring, directing the processes and tasks	Where to next? What activities need to be undertaken next to make better progress?
4	Self	Personal evaluation and affect about learning	

Feedback levels and questions for visible learning (Hattie, 2012. Reproduced with permission).

Formal reinforcement structures of assessment and evaluation are built into most learning programmes. Wiggins (2012) offers a useful summary of assessment: it should be (1) goal focussed (2) tangible and transparent (3) actionable (4) user-friendly (5) timely (6) ongoing (7) consistent.

The 21st Century learner and interdisciplinarity

'21st century learning' is a term used to distinguish what educational theorists believe people need to know now to be useful and productive citizens in the future, and includes the concepts of the *Knowledge Age* (and Knowledge Economy) and *Postmodernism*. The most important *paradigm* shift here is that 21st century learning is about building independent learning capacity, rather than passing on a set body of knowledge. Subject content is important, but developing students' awareness of learning strategies, competencies and general intellectual skills such as analysing and creative thinking, is even more critical.

Concepts like "rewired learning" focus on linking to learning opportunities beyond the classroom, installing technology that can simulate real-world situations and planning for the unknown (OWP/P Architects et al., 2010).

"Connectivism" accepts that new knowledge is continually being acquired and emphasises personal and organisational knowledge management and decision-making (Siemens, 2004). One way this can be built, is through interdisciplinary design – where approaches and models from one field of study are applied to a new context to provide new lens for additional insight (Davies et al., 2010).

Focus questions: *In what way(s) could education be more "transformative"? What would the impact be?*

Glossary

Andragogy
The art and science of helping adults learn.

Coaching & mentoring models
Mentoring traditionally refers to a relationship where an experienced colleague will offer guidance and career advice to a novice. Increasingly common in higher education organisations, mentoring can integrate a theoretical and practical framework to assist new teachers enhance their own future growth and reflective practice, or support students in their first year of enrolment in higher qualifications. Coaching is generally seen more as training in delivery. Peer-mentoring programmes for students – often in particular groups: international students, Māori students, post-graduate students - utilises experienced senior students who can offer direction, alleviate stress and generally be a buddy, or 'peer pal' (Ayo & Fraser, 2009).

Communities of practice
A group of people who share a craft and/or profession. The term was coined by cognitive anthropologists Jean Lave and Etienne Wenger in the 1990s. A community of practice can meet face-to-face or online, usually to share information and experiences so that members learn from each other, both personally and professionally.

Co-construction
An approach to learning and knowledge development where the emphasis is on collaborative, or partnership working to deepen understanding between all learning partners, and improve learner outcomes.

Cultural construct
The idea that an experience, concept or attitude is framed and shaped by an individual's cultural context. How we experience events and the meaning we assign to these can change according to the language we use, the theoretical, moral and ideological frameworks we use to analyse it, and the response of others around us. The way our interpretation of events is affected, or filtered, by surrounding structures and perceptions is often so embedded that we are scarcely aware of this effect.

Curriculum
A complete course of study offered by an educational institution. A curriculum is a planning and guiding document which includes the content of courses, the delivery methods and resources, and desired learner outcomes and skills.

Deep versus surface learning
A widely discussed theoretical principle related to the way students approach a learning task. Generally a surface approach to learning occurs when students are aiming to reproduce material in a test or exam rather than actually understand it. More desirably, a deep approach to learning aims at understanding, and critically analysing new ideas, promoting long-term retention of knowledge and information.

Deficit theorising
Linked to socioeconomic theories, sometimes referred to as the culture, or politics of poverty, deficit theory explains lower achievement in schools by a particular group as due to a problem with the student and their background rather than considering the role of the institution and its instructional practices and organisational structures. This perspective almost predicts poorer outcomes for individuals as a near inevitable result of their circumstances.

Democratic classroom
An approach to teaching by sharing power with students and supporting them in managing their own behaviours. The environment, timetable, lesson content, learning activities etc are discussed and negotiated within curriculum constraints.

Emancipatory adult education
The goal of emancipatory learning is to free learners from the forces that limit their options and control over their lives and to move them to take action to bring about social and political change (Imel, 1999). Such learner transformation can take place only in adulthood because it is only then that a person can recognize being caught in his/her own history and reliving it. Commonly discussed in feminist theory and indigenous/cultural studies.

Ethnocentric
Refers to judging another culture solely by the values and standards of one's own culture.

Glossary

Extrinsic and intrinsic motivation
Extrinsic motivation comes from sources external to the student and the task. It can come through praise, recognition, or a system of rewards. Intrinsic motivation comes from within the student or from factors inherent in the task being performed, even though there is no reward attached – here, involvement and achievement is its own reward.

Formative assessment
Formative assessments occur during the programme and are used to monitor student learning to provide ongoing feedback to teacher and student. Formative assessments are for learning from.

Hegemony
The cultural domination of one group by another. This idea is linked to critical pedagogy and Kaupapa Māori theory, both of which strongly resist the idea that the goal of education is for students from one culture to be taught that assimilation into their new culture is essential for success.

Holistic education
The idea that people – and learning – cannot be separated into component parts or addressed out of context. Instead of narrow and discrete definitions and approaches, a holistic way of thinking looks at integrating layers of meaning and meeting learners' needs on a range of levels. The term comes from humanist explanations of human development and places importance on relationships and primary human values within the learning environment.

Knowledge Age (and Knowledge Economy)
So called to distinguish our times from the Industrial Age (20th century), in which mass education was more about packaging what we know into a logical, controlled, cumulative sequence. In the Knowledge Age, this information is still important, but as a resource to learn and think with, rather than as a learning outcome in itself. Application of learning (or of known ways of doing things) focuses on adaptation, innovation and creativity to create new knowledge and new solutions.

Learner-centred (student-centred)
An approach to education focusing on the needs of the students, rather than those of teachers, organisations and administrators. Student-centred learning is focused on each student's needs, abilities, interests, and learning styles, placing the teacher as a facilitator of learning. In contrast, traditional teacher-centred learning has the teacher at its centre in an active role and students in a passive, receptive role.

Lifelong learning
Today, learning is seen not just as the preserve of the classroom, but something which takes place throughout life and in a range of situations. It is about employability and training, but also social inclusion, active citizenship and personal development. A related term in recent use is 'life-wide learning' referring to whole-person development in real-world situations.

Paradigm
A set of widely accepted concepts or thought patterns. Similar words would be ideologies, worldviews and mindsets.

Postmodernism
Modernism began in the mid-late 18th century, a time of the Industrial Revolution and American and French Revolutions, and a time marked by great progress and discoveries, especially through reason and scientific knowledge, which it was the role of education to disseminate. Postmodernism is our current age, which has seen a critique of these ideas. Knowledge is growing so rapidly that we cannot know it all – instead we engage with it through multiple networks and pathways, with ideas that form and reform.

Praxis
The term is associated with Paulo Freire and refers to the continuous and mindful process of action, reflection and experimentation (Barrett, 2001). This is also a key aspect of Kaupapa Māori (Smith, 2012).

Single and double loop learning
Chris Argyris (a leading theorist in organizational psychology) describes double-loop learning as how an individual, organization or entity is able, having attempted to achieve a goal on different occasions, to modify the goal in the light of experience or possibly even reject the goal. Single-loop learning, the most common approach, is the repeated attempt at the same problem, with no variation of method and without ever questioning the goal (Galoppin, 2009).

Glossary

Student engagement
There are many definitions, for example: "The time and energy students devote to educationally purposeful activities" (Kuh, 2004 in Leach & Zepke, 2011, p. 193). Leach and Zepke's study identifies four key perspectives: motivation and agency; transactional engagement; institutional support; and active citizenship. Teachers and institutions can use these concepts to generate high quality learning and promote retention. Student engagement is increasingly seen as an indicator of successful classroom instruction.

Summative assessment
Summative assessments occur at the end of a period of learning and evaluate outcomes by comparing these to a standard or benchmark and recording a grade.

Te Whare Tapa Whā
Developed by Dr Mason Durie in 1982, this model of Māori health uses the analogy of the four walls of a house to show the four dimensions of wellbeing – whānau (family health), tinana (physical health), hinengaro (mental health) and wairua (spiritual health). Each wall is necessary to the strength and symmetry of the building.

Te Wheke
Rangimarie Rose Pere's model of te wheke, or the octopus, shows Māori health as a function of eight factors that collectively contribute to waiora or total wellbeing. The head of the octopus represents the whānau, the eyes the waiora (total well-being of the individual and family) and each of the eight tentacles a different aspect of health: Wairuatanga – spirituality; Hinengaro – the mind; Taha Tinana – physical well-being; Te Whānau – the family; Whanaungatanga – extended family; Waiora – total wellbeing for the individual and family; Mauri – life force in people and objects; Mana ake – unique identity of individuals and family; Hā a koro ma, a kui ma – breath of life from forebears; and Whatumanawa – the open and healthy expression of emotion.

Universal Instructional Design (UID)
UID is a teaching approach that involves considering the potential needs and learning style preferences of all learners when designing and delivering instruction. It focuses on being accessible, fair and flexible and on removing barriers by mixing delivery methods and offering a range of learning options. The six principles are: equitable use, flexibility, simple and intuitive, perceptible information, tolerance for error, low physical effort, size and space for approach and use (NCSU, 2010).

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Practical examples and suggestions for putting the *Goalposts* principles into action

Tertiary teaching and learning environments include a wide range of organisations, part and full time courses, academic and vocational programmes, class sizes and learner demographics. Teacher and student preferences and personalities are also an important factor in teaching design and delivery. The following examples of ways in which the *Goalposts* principles can be realised in learning settings is intended as a smorgasbord, from which you, as a new tertiary teacher, can consider, choose, trial and adapt. We hope to revise and extend this collection of ideas in future editions of *Goalposts*; if you have an example of an effective strategy to implement one or more of the principles of adult learning and teaching, please contact the authors we would like to hear from you.

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Principle #1 Prior knowledge and experience

- To get to know your learners, a first-session icebreaker from a workshop run by Linda Hutchings (http://www.lindahutchings.com/) suggests writing six statements about yourself on the board, and asking students in groups to determine which three are true, which are false, and why. Students can then share three things about themselves. This approach models the principles of relationship building by sharing personal information, and by the teacher not asking the students to do anything that they would not do themselves, first.
- The KWL strategy: the teacher introduces a new topic by asking the learner (on a handout) what they already KNOW about a subject, and what they WANT to know. At the end of the session, they add what they LEARNED about the topic (Collins, 2004).
- A pre-session quiz. This can be done using an audience response system, such as Clicker software, common in many teaching institutions, but easily replicable with alternative voting systems. The idea is to allow all students to actively participate in classroom discussions and quizzes instead of assuming the one or two students who answer questions represent the majority of learners. The teacher can identify, not assume, how familiar students are with a topic (Collins, 2004).
- Inviting the students to begin a personal, confidential dialogue with the teacher through journal entries. This might include goals, motivation and expectations, as well as new learning and reflection. While this can be online, one pilot participant advocated a hardcopy notebook, as the student retains ownership.
- Allowing students to react, in writing, to statements or questions about a new topic. Discussing the responses allows the teacher to ask for clarification or to invite a class member to share expertise. The teacher then becomes more of a facilitator, adjusting the content to suit current needs (Collins, 2004).
- Vision boards – students work on developing a poster-style or noticeboard representation of their aspirations following the completion of the qualification. This might comprise motivational or inspirational sayings, mementos from home, images of career and lifestyle. This project is on-going and revisited continually throughout the course, with a display as part of completion celebrations (Acknowledgement: Pacific Coast Technical Institute).
- Encourage students to answer each other's questions instead of answering them yourself.

Principle #2 Importance of culture and the NZ context

- Offering and sharing food is a powerful way to establish a learning environment which is safe, supportive and nurturing. It allows for conversations about cultural practices, can break down barriers and can foster respect for diversity. All shared refreshments should be opened with a karakia.

- Culture squares is an early-in-course activity where students assemble a collage of images and symbols that represent different aspects of their life, to share with others. These can be displayed as a celebration of each individual's unique heritage, and can also prompt students to have conversations with family and whanau to learn more about their origins (Acknowledgement: Hair to Train).
- Incorporate te reo and tikanga in classroom delivery for greetings or as metaphors. If learners from other ethnicities are represented, use a greeting from their native language as an addition to your regular greeting of the class.
- In class discussions of new concepts, invite input from other represented cultures. Use comparisons with traditional knowledge or ways of knowing, demonstrating respect for the contributions.
- Include representatives from Māori and other cultures as guest speakers and panel members.
- Recognise the Māori concept of holistic wellbeing, and how this translates into teaching and learning, by assisting students to make links between course content and spiritual, physical, mental, social and family dimensions of their lives. Students need to see the value and connection of learning to their lives, rather than as a separate aspect which requires them to leave their culture at the door.

Principle #3 Respectful partnerships and relationships

- Class contracts. Group discussions around behaviour expectations which are then formally recorded and signed by all students can be displayed as a subtle reminder of agreed standards, and referred to as necessary to reinforce respect and inclusivity in learning activities. This tool can assist to protect minority opinions and keep disagreements civil while promoting a sense of democracy and citizenship values.
- Recognise and value expertise from prior learning by inviting students to address the class, or asking them to assist other students in particular areas. An example from a PTE was of asking older Māori women to help the teacher 'settle' some of the younger students, drawing on their innate respect for elders.
- Provide student support through teacher-student and student-student strategies such as coaching, study groups, peer mentoring and opportunities to learn by watching peers perform.
- Encourage students to post responses on online forums, to read one another's comments, and to reflect using threaded discussions, or by sharing excerpts from a learning journal.
- Encourage students to suggest new readings, projects or course activities, YouTube clips. The learning environment needs to be dynamic, and students empowered, not passive.

Principle #4 Autonomous and independent

- E-portfolios. Students develop graphics and use photos to supplement written explanations and capture evidence of learning, which can then be uploaded by the teacher for assessment. As an extension, students may also be required to present their work in a class, industry or public forum, using PowerPoint or a similar presentation application.
- Prior to setting self-directed tasks, teachers need to ensure students have appropriate inquiry decision-making, and evaluative skills. One suggestion is that the first exercise is completed collectively, allowing these skills to be embedded and demonstrated in the activity.
- Use problem-based scenarios which require students to use and develop learning material and resources in new ways.
- Provide flexibility in assignments and post all learning materials in an accessible repository that allows students to work ahead.
- Allow students some choice of assignments, projects or research topics – as well as delivery options.
- Plan group learning activities which allow the demonstration of responsibility and leadership.
- Include activities and projects outside the classroom.

Appendix: Practical examples and suggestions

Principle #5 Goals and motivation

- Divide learning into small manageable units or sub-units that can be completed in relatively short amounts of time, with logical starting and stopping points. This allows students and teacher to celebrate incremental success with positive feedback and a sense of achievement.
- Assignments need to reflect the students' maturity and competency level, as well as areas of interest. The level of difficulty needs to be set at the correct level. It should challenge, but not be too challenging, to avoid frustration and demotivation.
- Provide exemplars for assignments and models of 'best practice' behaviour so that students can benchmark what they are doing and producing against a known model, template, industry tool or good practice.

Principle #6 Relevant and practical

- Experiential methods: games, simulations, case studies, psychodrama, internships (Brookfield, 1995).
- Role play, including competitive and improvised scenarios such as 'Theatresports', can enable participants to see multiple perspectives to an issue, and recognise these within group dynamics. Conflict engagement, rather than conflict resolution, encourages students to view real world problems as complex and on-going living systems.
- Alternative assessment models could include projects with public displays, debates, or demonstrations which link ideas to other subjects or contexts, as well as audio-visual capture and postings.
- Limit lecturing or 'teacher talking time' and provide opportunities for sharing of experiences, questions and exercises that require students to practice a skill or apply knowledge.
- Include field trips to sites where course content is being applied.
- Invite guest speakers from industry or the profession to describe the application of learning content in their field. Successful past graduates who can describe subsequent career pathways are another excellent resource.
- Explain theory from a practical point first, using concrete, real life situations, and then include the structural elements. This might mean using a case study, a news item or sharing an anecdote.

Principle #7 Learning styles and ways of thinking

- Involve learners in diagnosing their own needs and monitoring their own progress.
- When using a tool such as a VARK questionnaire, follow up with a discussion or mind-map exercise about different learning strategies which would accommodate individual learning style preferences. Students could then participate in a discussion about the validity and accuracy of such a test.
- Ensure that all learning styles are addressed by presenting material in multiple modes including text, graphics, audio and video clips. Use links to online examples and resources such as YouTube. Provide reference lists for further reading. Delivery methods might include a variety of group discussion, role-playing, lecturing, case-studies, guest/expert panels, structured note-taking, individual coaching, demonstration (Collins, 2004).
- Teachers could share with their class a model such as Boud and Griffen's 'Six guitar strings' (1987), a metaphor to describe six learning capabilities: rational, emotional, relational, physical, metaphoric and spiritual. This model could be used to brainstorm different perspectives of a topic and to examine the relationships between them to encourage critical thinking.

Principle #8 Critical Reflection

- Provide ways for students to engage in metacognitive reflection about their learning. Specific tools include learning journals, case study logs, and group discussions and online functions such as Wikis, chat forums and personal blogs. Students should be encouraged to consider what learning strategies they find most effective.
- Use online forum chat facilities to probe student assumptions and encourage reflection. Unlike face-to-face classroom conversations, in an online environment the student does not have to respond immediately. Most of the discussions are asynchronous, which allows time to think and reflect critically before answering. This can be a real advantage.
- Teachers need to model receiving and acting on feedback. One way is to provide a place in the course to discuss class perceptions of learning, content, pace, activities etc. This could take the form of a focus group, an anonymous survey or an online forum discussion thread. Show the response overtly: “You said…I did…”.
- Teachers can reflect on their own practice by inviting input from colleagues through peer teaching observations, as well as observing others’ classes. Video or audio recording may also assist teachers to review their own delivery performance.

Principle #9 Environment for learning

- Welcome all students to a new course with a personalised email or text including your availability and contact details.
- Encourage students to articulate problems.
- Provide consistency across assessments and courses and ensure all expectations are transparent, documented and up for discussion.
- Ensure a culture where all learners can voice their own opinion, and are allowed to disagree with the teacher.
- Acknowledge and celebrate diversity. Learners should feel safe and comfortable expressing their views, especially where these reflect their religion, gender, ethnicity, class, age, sexuality and/or physical abilities.
- Plan student-centred activities which do not rely on the teacher assuming leadership or directing tasks. Know when to pull back in a discussion and let the students go.
- Manage group work. Ensure individual students’ talents and contributions are recognised. The teacher can act as a summarizer and reflector when providing feedback, and is the source of external help if the group fails.
- Introduce cooperative and collaborative learning structures to assist students manage their own group work, especially to equalise power relationships, encourage shared leadership and equitable task allocation. One example of a tool which can help to set parameters for larger projects is the Wilder Collaboration Factors Inventory (http://www.wilder.org).
- Stay for after-class conversations and questions. Maintain an open door policy and ensure students know how to contact you.
- In smaller classes, learn students’ names and use them to personalise the delivery and acknowledge contributions.

Principle #10 Change and transformative learning

- Include opportunities for consciousness-raising activities which avoid right/wrong answers or moral judgements. Examples might include discussions and debates about relevant current affairs issues, or role plays set around ethical dilemmas with several stakeholder perspectives.

- Watching videos or reading about controversial interventions, outdated or discredited theories or historical practices followed by questions and discussion can introduce opportunities for triggering events. Students can be exposed to new ways of thinking by encountering various and wide-ranging ideas, minority or contrarian opinions, trying on new roles, and sharing of experiences and assumptions.
- The principle of transformative learning is closely linked to praxis – the link between theoretical understanding and action. Teachers need to help students transfer new learning and awareness to a practical application. A first step might be to ask students at the close of the course to share what they learned that expanded or changed their thinking on a topic and how this would be observable to others.