*Building Conceptual Understandings
in the Social Sciences*

Approaches *to* Building Conceptual Understandings

Acknowledgments

Approaches to Building Conceptual Understandings

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Building Conceptual Understandings in the Social Sciences

About the series

Building Conceptual Understandings in the Social Sciences (BCUSS) has been designed to help teachers of levels 1–5 support their students' conceptual learning in social studies. The series consists of two kinds of books. Some provide information on **approaches** to teaching and learning in social sciences (for example, *Approaches to Building Conceptual Understandings* and *Approaches to Social Inquiry*). Others focus on key social sciences **concepts** and give examples of contexts that could be used to explore those concepts (for example, *Belonging and Participating in Society*).

Introduction

This book provides ideas and examples of how teachers can build learners' understanding of key social sciences concepts at levels 1–5 of the curriculum. It examines what concepts and conceptual understandings are, why they are important, and how they can be developed in social studies. It provides some strategies and approaches for building conceptual understanding and considers the role of the social inquiry process in developing those understandings. Assessing conceptual understandings and conceptual progression is also discussed, using examples drawn from the social studies exemplars.

Why are conceptual understandings important for social studies?

Concepts are embedded in all the social studies achievement objectives across the four conceptual strands and are an essential part of teaching and learning in social studies. Moreover, many of the same concepts form the building blocks for learning in the senior social sciences, so understanding them is crucial for these students. Teaching for conceptual understandings in social studies enables teachers to select and structure learning around important concepts. This process also provides students with conceptual frameworks for them to develop their own way of structuring their understandings.

How can conceptual understandings be developed in social studies?

Students' learning is enhanced when teaching and learning is structured around multiple and timely approaches to significant concepts. Providing opportunities to explore and revisit concepts in depth, through many perspectives in a number of contexts will enhance student conceptual understandings.

Concepts in the Social Sciences

What are concepts?

A concept is a general idea, understanding, or thought embodying a set of things that have one or more properties in common. A concept can be expressed in a single word, such as *democracy* or *needs,* or a simple phrase, such as *social decision-making* or *cultural practices*.

> *A concept is an abstraction, which pulls together a number of facts. Concepts group certain facts together and help organise them and make sense of them by revealing patterns of similarity and difference. To be understood, concepts need to be constructed by the learner under the guidance of the teacher.*

> Barr, Graham, Hunter, Keown, and McGee, 1997

Some concepts are more abstract and others are more concrete. For example, underlying the concept of *democracy* are the abstract concepts of *freedom*, *participation,* and *equality* and the more concrete concepts of *rules*, *laws,* and *groups*. Concrete concepts are generally easier to grasp and can be used to help students understand more abstract ones. Your students will develop an understanding of the concept of democracy more easily if you start by building understandings of rules, laws, and groups and then use a number of contexts of inquiry to build understandings of the more abstract concepts.

To develop new conceptual understandings, students need to build connections with other concepts that they already know.

Learning stories – Using big ideas for planning and assessment for learning

The staff at a Wellington school integrate conceptual thinking into all their planning and teaching. Each term is structured round a theme – such as "Power and control" or "Being a global citizen". At the beginning of the term, the teachers identify the big ideas that underpin these themes. When the year 7 and 8 students arrive at the start of term, the big ideas are written on the white board. The students are given twenty minutes (known as "rocket writing" – 3, 2, 1, blast-off!) to write down as much as they know about the topic. The teacher keeps this work.

At the end of the term, following in-class and student-led inquiry learning, the students complete another rocket writing time, after which the teacher hands back their original writing. The students then self-assess by listing what they have learned since the start of the term.

What are conceptual understandings?

> *Concepts allow us to identify, label, classify and relate phenomena to construct systems of ideas that we can apply to new situations and use to ask questions and solve problems. These conceptual frameworks or theories provide different perspectives on the world, and the kinds of questions and solutions we see in any situation depend on the systems of concepts we use.*

Gilbert and Vick, 2004b, page 84

Conceptual understandings are what learners know and understand about a concept, that is; the generalisations learners can develop about the nature or properties of that concept. Some people refer to them as "big ideas". A range of conceptual understandings can be associated with any one concept. By selecting particular bundles of concepts as the focus of social studies learning, you can help your students to develop networks of connected knowledge structured around those concepts.

The four conceptual strands in the social sciences curriculum are:

- Identity, Culture, and Organisation;
- Place and Environment;
- Continuity and Change;
- The Economic World.

The achievement objectives in the social sciences curriculum integrate concepts from one or more of the four strands and express a common set of conceptual understandings that New Zealand students are expected to develop at each curriculum level. Over time, and at their own rate, students explore and develop their own understandings of the concepts related to those conceptual understandings. For example, the achievement objectives express several conceptual understandings that relate to the concept of *place*:

- level 1: *places* in New Zealand are significant for individuals and groups;
- level 2: *places* influence people and people influence places*;*
- level 3: people view and use *places* differently;
- level 4: exploration and innovation create opportunities and challenges for people, *places*, and environments.

At each level, the conceptual understandings about the concept of place will differ according the context of study and the accompanying concepts.

Why focus on concepts and conceptual understandings?

> *Concepts and conceptual understandings are described as "the most productive means of accessing and framing knowledge in the curriculum*

Gilbert, 2004a

Concepts help learners to organise new information by categorising groups of facts according to patterns of similarity and difference. From these patterns, learners form their framework or schema for each concept. This process is a method of enabling students to develop their own way of viewing the world.

> *In an information-based society, there is an endless amount of accessible information. Pupils are faced with the enormous task of making meaning out of a sea of seemingly unrelated facts. They need mechanisms for categorising and organising information, connecting ideas and identifying or constructing patterns.*

Stoll, Fink, and Earl, 2003, p.58

Focusing on concepts allows you, as the teacher, to select and structure the knowledge and conceptual understandings (or "big ideas") that are important for the particular area of learning. It also offers opportunities to develop those understandings in ways that connect to your interests and experiences and to those of your students (Aitken, July 2004). Research suggests that if learners construct networks of connected knowledge around powerful ideas, they learn with understanding and retain that learning in forms that they can access and apply more easily (Brophy, 2001).

Concepts also provide a powerful tool for learning across curriculum areas. For example, a student may learn about the concept of *sustainability* through a social and cultural context in social studies and develop further knowledge and understanding of this concept through a science or economic context.

How Can Conceptual Understandings be Developed in Social Sciences?

How do learners construct their conceptual understandings?

People learn in different ways, and nobody has ever developed one theory that encompasses them all. The ideas presented here describe some generally accepted theories about the ways in which people may learn.

One theory is that a learner responds to new information by comparing it to the ideas and beliefs in their existing schema (see Fig 2.1). When the new information is similar to their prior knowledge and beliefs, they can add it to their schema quite readily, in a process called assimilation. However, when it conflicts with their prior ideas, they may have to change their schema – a process called accommodation. Every new experience has the potential to help learners develop new knowledge that they can use to make sense of the world.

Figure 2.1 Changing schema by accommodation and assimilation
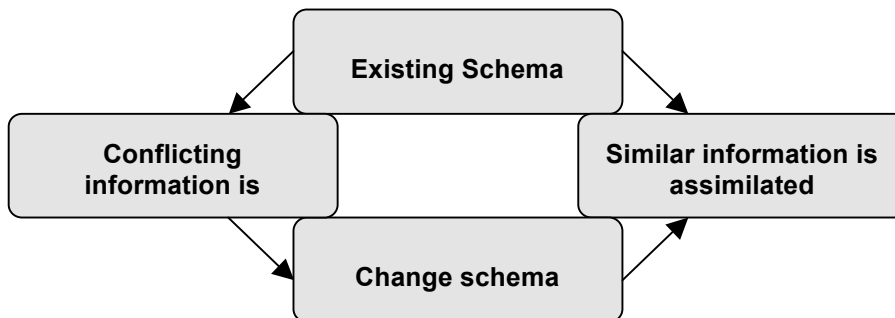
A related theory is that learners quickly identify the essential features or characteristics of a concept and use them to classify new examples of the concept according to basic rules or prototypes. The prototype represents what the learner believes to be the most typical example of a concept. The learner compares a new idea to their prototype to decide whether it is an example or non-example of the concept. The prototype becomes more complex as the learner has more opportunities to consider and classify examples in relation to the initial concept.

For example, a child's initial prototype for a family is likely to be based on their own family. If he has two parents and three sisters, his initial prototype for a family will consist of those features. As he experiences new examples that fit into the category of "family" but don't quite match his prototype, he modifies the list to include a wider range of possible features. Over time, the child's prototype for a family will accommodate the fact that families can be of many different sizes and structures.

Approaches to building conceptual understandings

There is no "one size fits all" way to teach building conceptual understandings. You will help your students gain deeper conceptual understandings by providing:

- a range of activities that engage them in actively constructing their conceptual understandings in new settings;
- opportunities to approach the concepts in different ways through multiple perspectives;
- opportunities to revisit concepts several times (no more than two days apart) in different contexts;
- opportunities to collaborate with others;
- time to explore the concepts.

Vary your teaching approach to meet the needs of individual students and recognise that some contexts will enhance learning in some students more than in others.

Exploring concepts in depth

Examining concepts is much more than developing definitions for them. At an early stage, it can be helpful to label, sort, and define concepts, but the process of developing deeper understandings will often result in different definitions of a concept and different interpretations of a conceptual understanding. The context of study, the perspectives (viewpoints) represented, and examining the same concept at different points on a timespan can result in wide variations in defining that concept. Over the course of a unit, provide many opportunities for your students to engage with the same concepts and to make connections between concepts. Research conducted in New Zealand by Nuthall and Alton-Lee (1993) suggests that students need to be exposed to a new concept on three to five occasions over no more than two days to develop strong understandings about the concept.

Providing opportunities to approach concepts through multiple perspectives

> *We know that historical, cultural and gender and other differences will affect the way we see the world, and this can be true of the way we define concepts as of any other aspect of our interpretations of the world… [W]e simply cannot assume that a concept can be applied universally and objectively without considering the perspective of other people or the effects of the concepts on them.*

> Gilbert and Vick, 2004, pages 91

In social sciences, the main way we examine "different ways of viewing" is through exploring the values and perspectives people and groups hold. For example, in the unit overview Tongariro National Park: Whose Park It Is Anyway? (see the *Approaches to Social Inquiry* book in this series)*,* descendents of Ngāti Tūwharetoa chief Horonuku Te Heuheu, the original gifter of the Park, have a particular view of how the mountains of Tongariro should be used and valued. Their perspective is closely linked to the concepts of tapu and mana. Many tribal members hold the mountains in the same reverence one would hold for an ancestor. Their values conflict sharply with those of the ski operator who wishes to install a new alpine lift to boost profits and who holds a very different view of the concept of "using the mountain's resources".

Providing opportunities to approach concepts through many contexts

The context provides the vehicle for exploring the concepts. Students are motivated to learn when they feel that what they are learning is relevant to them. Using effective contexts and authentic current issues that connect with the students' lives will make social studies learning far richer.

Contextual changes (of setting, time, and place) allow deeper knowledge of a concept and the introduction of higher-level (more contestable) concepts, creating "a potential hierarchy of elements from relatively concrete and singular to abstract, complex and contested" (Gilbert, May 2004a,*)*. For example, conceptual understandings of *sustainability* today are likely to have changed from those held even one generation ago. A historical approach to developing conceptual understandings is often appropriate.

The following example illustrates how concepts are embedded in achievement objectives in social sciences and how a concept map can highlight relationships between concepts and indicate conceptual understandings.

EXAMPLE: Developing conceptual understandings through social studies contexts

Conceptual understanding: People make *choices* to meet their *needs* and *wants*.

In the above conceptual understanding (derived from a level 2 achievement objective), the concepts are identified in italics. These are *choices*, *needs* and *wants*.

A number of other conceptual understandings could be related to these concepts, depending on the focus of study and the prior knowledge that the student brings to the learning. In a social

studies context of study focused on people making choices to fulfil their wants and needs, these concepts could have varying interpretations as a result of that **context** of study, the **perspectives** of different individuals and groups, and **changes through time**. For example, the context may be an examination of the *needs* and *wants* of early settlers in New Zealand, from those of the earliest Māori/Polynesian settlers to those of European settlers, and a comparison between those of early settlers and individuals and/or groups today. This context could include additional concepts, such as *tangata whenua, rahui, conservation,* and *consumption.*

Another context of study could be comparing the *needs* and *wants* of young people in New Zealand with those of young people in Bangladesh. This context may require conceptual understanding of the additional concepts of *social justice*, *poverty*, and *trade*. The concept bundle will vary according to each unique context of inquiry and will need to be developed specifically for that context. In the following example (Figure 2.2) students were considering the concepts of needs and wants within a context of advertising and cultures. A student created the following concept map to show his understandings. It shows that the student's conceptual understandings include that:

- choices are influenced by money, culture, and advertising;
- advertising influences what people want;
- needs are normally more important than wants.

Figure 2.2 Concept map: needs and wants
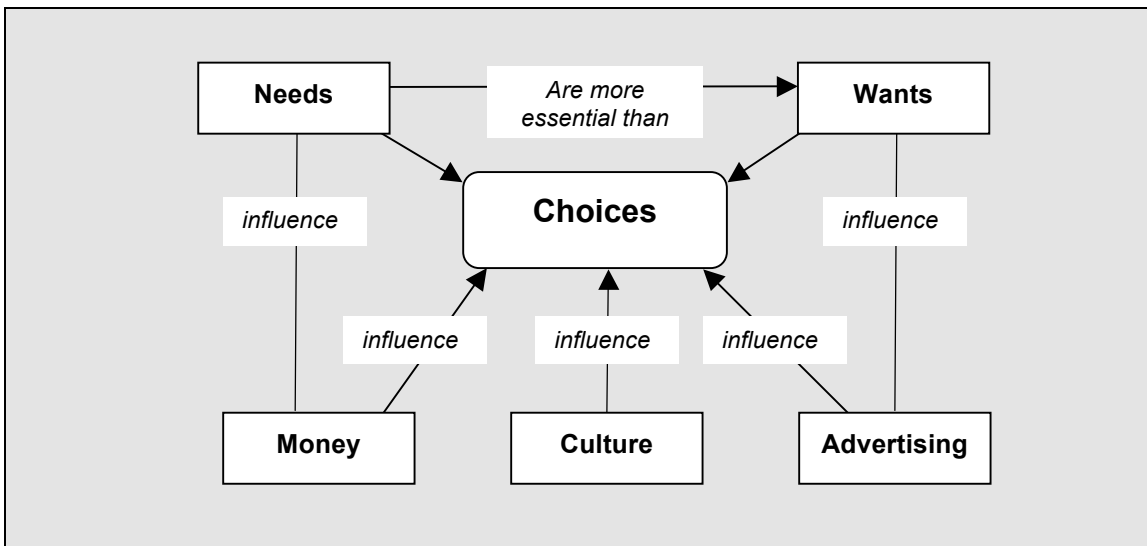
A concept map indicates the learners' understanding of relationships between concepts within a context. This example, with a focus on money and advertising, is only one interpretation of how needs and wants could be viewed. These ideas are developed further in Figure 2.3, which provides more detailed description of teaching approaches and strategies that could be used to develop conceptual understandings.

Some teaching strategies for building conceptual understandings

Gilbert and Vick (2004) suggest a sequence of approaches for concept teaching, moving from simple to more complex understandings. Figure 2.2 adapts their ideas and suggests some teaching strategies that could be used with each step.

Note: If students only use the approaches described in steps 1–3, without considering other perspectives and contexts, they may only develop limited conceptual understandings. Approaches 4–6 encourage students to apply their conceptual knowledge in new contexts and, by doing so, gain fresh understandings.

Figure 2.3 Approaches and teaching strategies to develop conceptual understandings

Approaches to building conceptual understandings	Teaching strategies
1. List, sort, label, and define concepts a) List, sort, label and define concepts, looking for simple relationships between concepts; sort and group into similar and dissimilar. Explore first definitions with students. b) Examine the key attributes of the concepts and have the students use their prior knowledge and experiences to: • build concept hierarchies – classify "bundles" of concepts to show understanding about how concepts in a hierarchy are sequenced, in other words, which are the higher-order concepts and which concepts follow them; • use analogies and prior knowledge to make abstract concepts more concrete. For example, most students are familiar with the use of a scale to balance weights. Using a scale as an analogy for *justice* provides a way to help students understand that justice is about balancing arguments.	**Card sort** **CD maps** **Concept shapes** **Spider web maps** **Free word associations** **Concept walls** **Concept charades**
2. Identify further examples and non-examples Construct links between like-concepts. For example, ask students to show relationships between concepts in a context of learning (such as rules, laws,	**Structured overviews**

2. Identify further examples and non-examples Construct links between like-concepts. For example, ask students to show relationships between concepts in a context of learning (such as rules, laws, and government and their relationship with democracy). Non-relationships can also be explored (such as rules, laws, and government in relation to anarchy). In doing so, keep the following guidelines in mind: Select examples that are clearly different from each other, for example, you could compare different settings such as rural–urban; western nation–developing nation; minority group–majority group. Provide opportunities for the students to compare examples and non-examples of the concept. For example, to construct a concept of "equality under the law", they could compare different examples and non-examples of people being treated impartially and in accordance with the law.	**Structured overviews** **Chalk and cheese** **Concept maps**
3. Demonstrate connections between multiple concepts Explore the relationships between concepts and how they are linked. Select bundles of concepts around a conceptual understanding and encourage your students to explore their understanding of connections between these concepts.	**Concept maps** **Structured overview** **Card sort** **Concept arrows**
4. Transfer conceptual understanding to previously unseen and/or unknown examples Use the concept in new and/or unrelated contexts. As concepts become more abstract, give your students more feedback and monitor the students more closely. Start with a prototype (typical example) of the concept and move towards examples that are less typical. For example, if the concept is "democracy", you could move from what, for most students, is the familiar example of New Zealand's own government to a less familiar example, such as the United States, and then on to a non-example, such as Saudi Arabia.	**Chalk and cheese** **Structured overview** **Concept charades *from different settings***
5. Taking action and/or making decisions based on new knowledge and understandings Have your students use their knowledge of the concept in a meaningful context to generate solutions to problems and make decisions. Examining analytical concepts such as decision making or participation provides students with opportunities to decide what actions or decisions they themselves can take. Encourage responsibility within the class community (which may lead to social action).	**Concept debate**
6. Identifying a range of ways in which the concept may be interpreted Explore the ways in which a concept can mean different things to different groups of people. Using social studies perspectives, select contexts where there are conflicting values and understandings of a theme or issue. Current events	**Concept maps** **CD maps** **Concept shapes** **Concept debate**

Source: Derived and adapted from ideas by Gilbert and Vick (2004)

The following strategies provide a window or an entry point into developing conceptual understanding, but they need to be supplemented by authentic learning contexts and rich teaching and learning experiences for students. It is important to note that conceptual understandings are strongly linked to individual understanding and contexts and therefore are not universal. For that reason, the way an individual represents a concept cannot be "right" or "wrong". The aim is for students to develop their own conceptual understandings.

Card sort

Source: Jonassen (2006)

Learners are presented with a group of cards that have one concept on each card. The learner sorts the cards into different piles and labels each pile. Alternatively, the learner places the cards on a sheet and links concepts with arrows, lines and so on, adding descriptions of why and how the concepts are connected.

Note: Limit the number of concepts to probably no more than eight at one time.
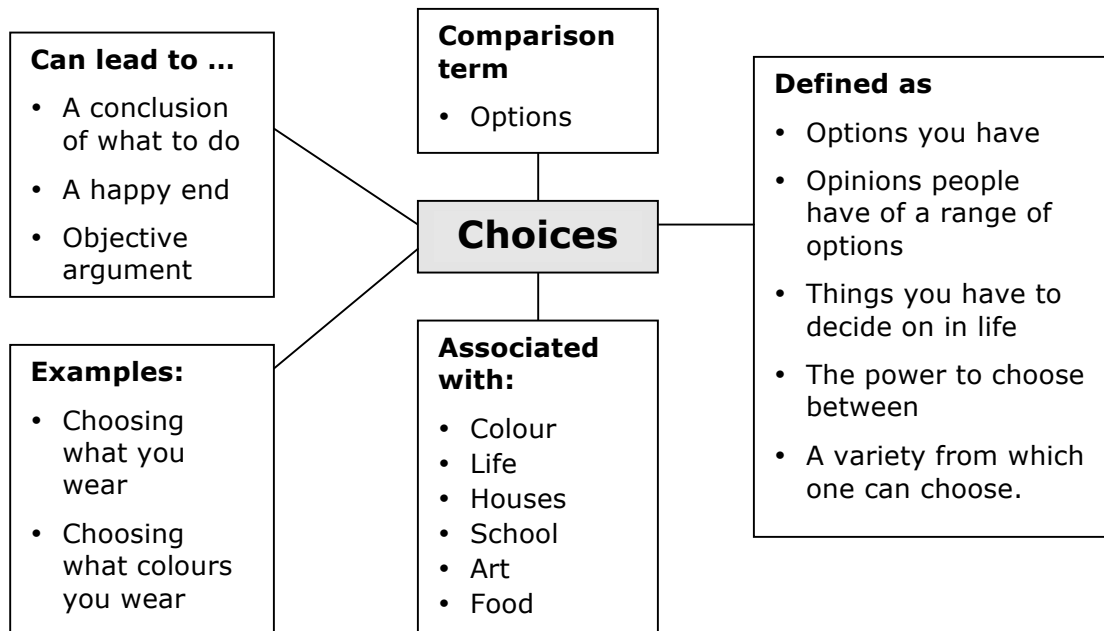
Free word associations

Source: Jonassen (2006)

This strategy is useful to find out what students already know about particular concepts. Ask the students to list the words they associate with each concept. For example, students may list the words *freedom, protest,* and *opportunities* when asked to list words associated with *human rights*. The words they give first are likely to have, for them, the strongest associations. Each student can then compare their list with those of other students to derive a group summary, or the lists can be explored further to examine relationships between concepts.

Concept of definition (CD) maps

Source: Reading quest.org (http://www.readingquest.org/strat/cdmap.html)

A dictionary definition of a concept can be quite narrow. A concept of definition (CD) map enables students to consider concepts more broadly. A CD map can be constructed at the beginning or end of a unit and can be completed by groups or individuals to explore a number of focus concepts for each unit.

An example of a CD map about choices constructed by a year 8 student

Can lead to …	**Comparison term**	**Defined as**
• A conclusion of what to do	• Options	• Options you have
• A happy end		• Opinions people have of a range of options
• Objective argument	**Choices**	• Things you have to decide on in life
Examples:	**Associated with:**	• The power to choose between
• Choosing what you wear	• Colour	• A variety from which one can choose.
• Choosing what colours you wear	• Life	
	• Houses	
	• School	
	• Art	
	• Food	

Chalk and cheese

Select two (or more) very different concepts, such as *dictatorship* and *democracy*. Ask the students to compare and contrast them, showing what the concepts have in common and what makes them different. This could be laid out as a table or a Venn diagram.
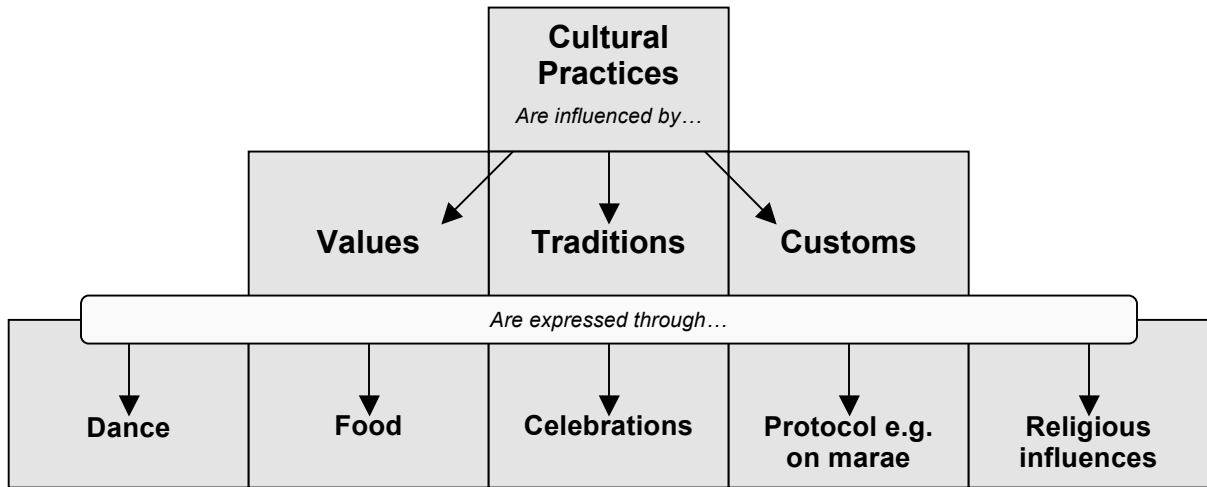
For example:

Government	
Dictatorship -- **Democracy**	
self-imposed leader	elected leader
no voice of the people	voice of the people

These ideas could be developed into a concept map by exploring the relationships between the polar opposites using new concepts (in this case concepts such as *power* and *leadership styles)* and demonstrating how they are linked, or alternatively, students could use a similarity scale, where they rate the degree of similarity or difference between two pairs of concepts.

Concept walls

A concept wall enables students to take concepts and place them into an order or hierarchy. The following example could be a concept wall for a unit examining cultural practices in New

Zealand. The process of sorting the higher-order concepts from the lower-order ones demonstrates conceptual understanding. The students could be asked to justify why they made decisions about where to place the concepts. The use of connectors, arrows, and descriptors that show relationships and non-relationships is important to indicate conceptual understanding.

Cultural Practices

Are influenced by…

Values   **Traditions**   **Customs**

Are expressed through…

Dance   **Food**   **Celebrations**   **Protocol e.g. on marae**   **Religious influences**

Concept charades

Source: Kathy Grey, Horowhenua College *(developed within Beacon Schools in the senior social studies project)*
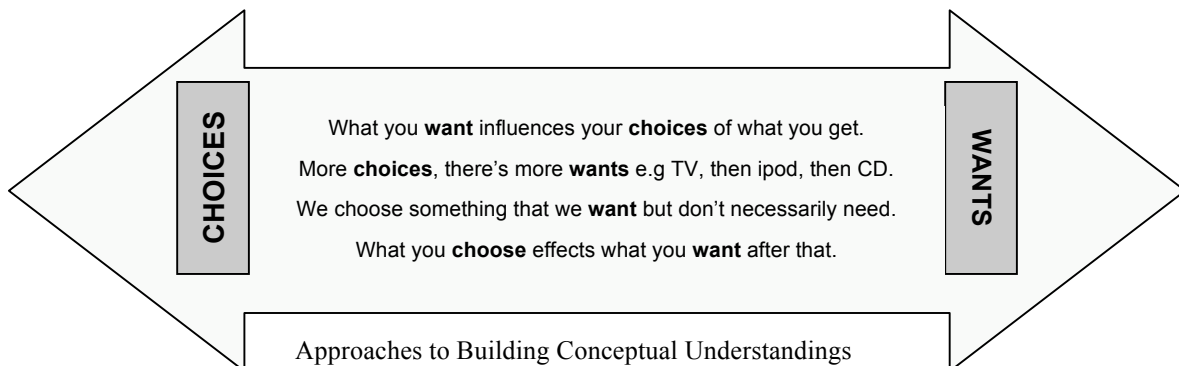
To consolidate their learning, the students play "charades" with relevant concepts. The focus concepts are written on cards. A student chooses one and then has to act out the concept, either by mime or by using any words except the chosen concept. Other students have to guess the concept.

Concept arrows

Source: Frank Wilson, Raroa Intermediate

Students are placed in groups, and each group is given two concepts. Each group is asked to write a statement describing how their two concepts are linked, connected, or related to each other. Each statement shows a conceptual understanding.

Example of work by year 8 students

CHOICES   What you **want** influences your **choices** of what you get.
More **choices**, there's more **wants** e.g TV, then ipod, then CD.
We choose something that we **want** but don't necessarily need.
What you **choose** effects what you **want** after that.   **WANTS**

Concept shapes

A concept shape is a way to show depth of understanding of a concept by portraying it visually. It is a challenge to students to show as much understanding as they can without using words (they can use symbols, colours, and so on).

Webs (spider webs, attribute webs, and concept webs)

Source: Cubitt, Irvine, and Dow (1999)

A spider web map shows all the main ideas (concepts and conceptual understandings) emerging from a central spot (the centre of the web). Subheadings go along the spider web's "branches" and can show linking concepts. These links can also be colour-coded. For example, a spider web diagram showing focus concepts for a unit on a special place might look like this. The words in italics express how the concepts connect.
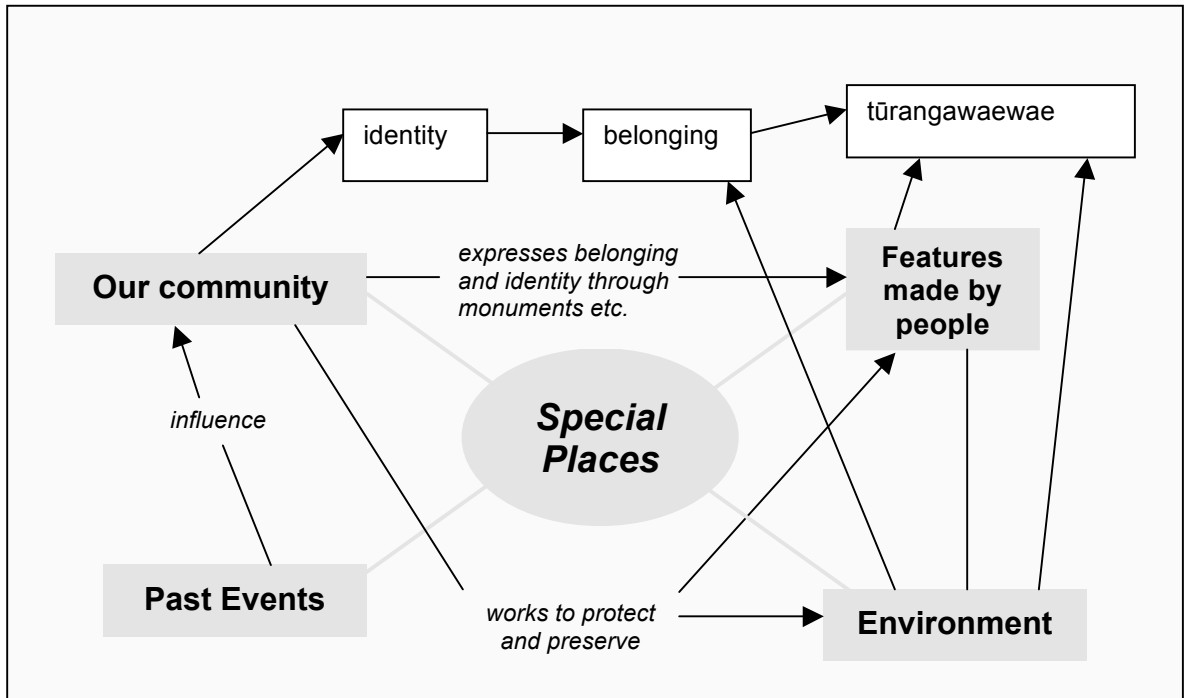

A concept web is similar but allows linked concepts to be shown visually in a much more flexible way (see concept map). An attribute web specifically details the attributes of a central idea or concept, often showing a person and their attributes.

Concept mapping

Concept maps are pictures or diagrams that show the links between related concepts. They are useful for assembling key information and for explaining what that information means. Concept maps can also be used to summarise information or to organise concepts by showing relationships between them. They can be quite simple, for example, a main idea in the centre of a page with related concepts emerging out from it in a starburst pattern. More complex concept maps might show:

- a hierarchy of concepts, in which concepts at one layer provide examples of concepts at the layer above it (see the diagram below);
- the way several smaller concepts combine to make an argument;
- the way two concepts reinforce each other;
- the way a group of concepts interact in a system.

The following example of a concept map shows many of the concepts that could be linked to the concept of *heritage*.
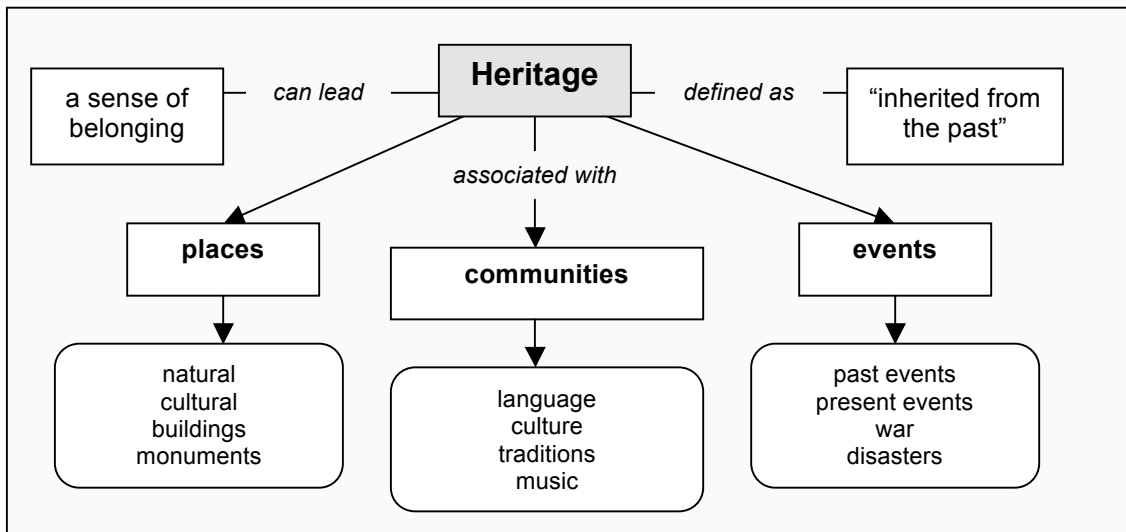
Structured overview

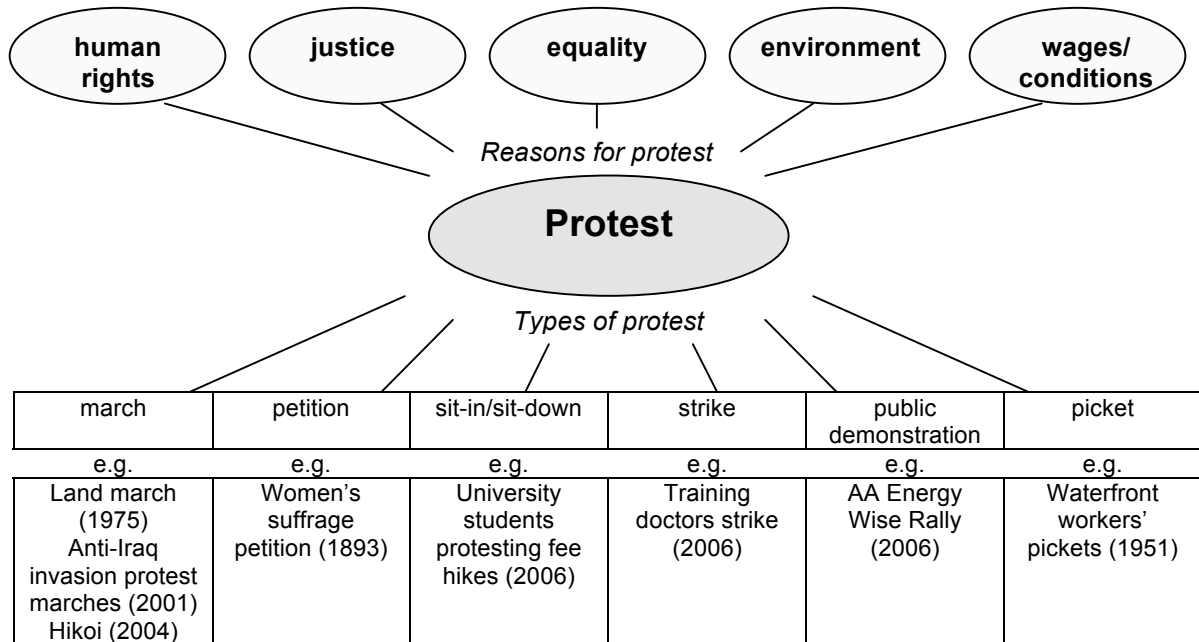Source: Cubitt, Irvine, and Dow (1999)

A structured overview is a form of concept mapping. It is arranged to show hierarchy and relationships for a topic in a visual way. Start with a topic heading – decide how many subheadings form the next layer down and organise them across the page. Draw lines to link each subheading to the topic and then link key concepts (and examples) togther to show relationships.

The following structured overview illustrates some of the concepts linked to **why** people protest and includes some **examples** of protests taken in New Zealand over the years.

Protest: Types of protest and reasons for protests

| human rights | justice | equality | environment | wages/ conditions |

Reasons for protest

Protest

Types of protest

march	petition	sit-in/sit-down	strike	public demonstration	picket
e.g.	e.g.	e.g.	e.g.	e.g.	e.g.
Land march (1975) Anti-Iraq invasion protest marches (2001) Hikoi (2004)	Women's suffrage petition (1893)	University students protesting fee hikes (2006)	Training doctors strike (2006)	AA Energy Wise Rally (2006)	Waterfront workers' pickets (1951)

Concept debate

Source: P4C website (Philosophy for Children) www.p4c.org.nz

Select some appropriate concepts. Philosophy for Children suggests these could be common, central, and contestable concepts that underpin our experience of human life, such as freedom, fairness, and truth. Form rich questions about these concepts (For example, "Are the rules in our country fair for all people?"). Develop a community of inquiry to promote safe and open dialogue and debate the question, allowing for contribution and participation of all (Golding, 2005).

> **Learning stories – using a sequence of strategies to build conceptual understandings**
>
> A teacher at a secondary school was introducing a number of key concepts for a unit on human rights. These included concepts such as laws, justice, poverty, respect, and rights. She copied these onto card, cut them out, and gave a set to each student.
>
> Initially, she asked the students, in pairs, to provide a brief definition of each concept using the **free word association strategy**. At this stage, she identified students who were struggling with any concept definitions and covered those concepts with the class. Then, each pair of students was asked to sort the cards into "like" groups – that is, words that fitted together (**card sort**). They formed piles of 3–4 concepts, each pile chosen according to the concepts' relationships to each other.
>
> Finally, the students were provided with a sheet of paper and glue and asked individually to make a **concept map,** showing how concepts did or didn't relate to each other by writing on lines that linked them. These maps showed the students' conceptual understandings, which the teacher then analysed so that she could adapt her teaching accordingly.

Building Conceptual Understandings through the Social Inquiry Process

Teaching and learning in social sciences is intended to do more than help students to understand concepts; it should also help them to develop the skills, attitudes, and values that they need to act appropriately on the basis of their new knowledge. The process of social inquiry is one of a range of approaches that can help students to do this.

The social inquiry process not only encourages empirical or factual knowledge of a subject (and the concepts embedded in that knowledge) but also promotes affective and participatory understanding of a subject (Keown, 2004). As students revisit concepts in a variety of contexts through the various stages of the social inquiry process, they are more likely to understand the personal and social significance of concepts and the implications of those concepts for themselves and society. Murdoch (2006, page 32) states:

> *At the heart of the inquiry process is the task of helping deepen students' understandings by guiding their thinking about lower level "facts" through to concepts and, ultimately, to higher level, transferable generalisations [or conceptual understandings].*

Figure 3.1 illustrates how conceptual understandings can be developed through the course of a social inquiry approach. The questions that are included in the diagram are not a definitive list – where possible, you should develop further questions and opportunities to develop conceptual understandings in the course of a focus of learning.
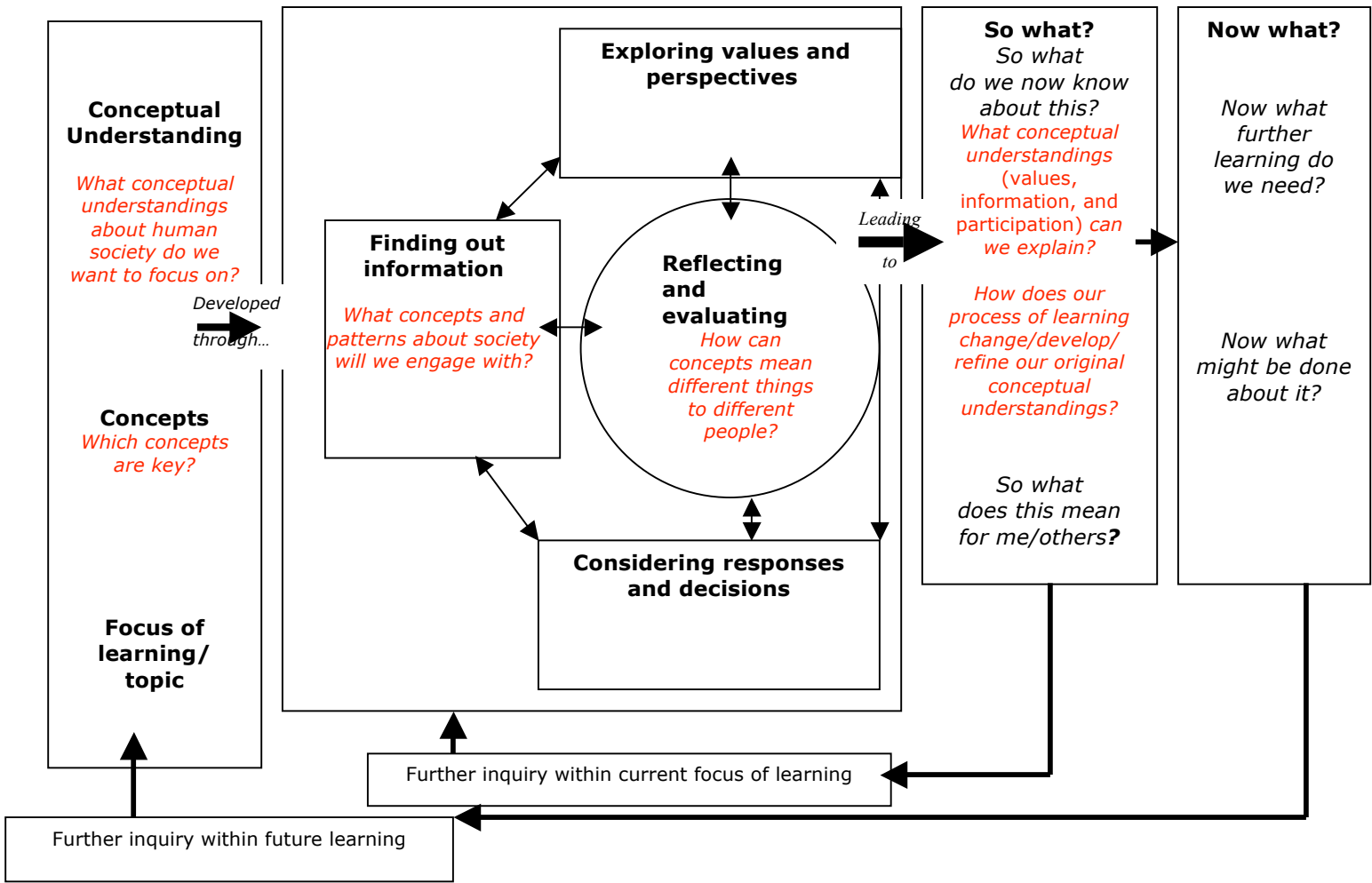
A social inquiry approach promotes the development of critical thinking and problem-solving skills, the understanding and expression of different points of view, reflective discussion, and collaboration with others.

In summary, social inquiry helps students to build their conceptual knowledge by encouraging:

- learning of facts and knowledge (past and present) about key concepts in specific contexts (finding out information);
- understanding of multiple perspectives about concepts (exploring values and perspectives);
- consideration of how the learning affects themselves and/or others (So what? Now what?);
- consideration of what decisions and actions could be taken in response to the context of study in social sciences (considering responses and decisions and Now what?).

See *Approaches to Social Inquiry* in the BCUSS series for more on this topic.

Figure 3.1 Some examples of guiding questions for building conceptual understandings within a social inquiry approach

Conceptual Understanding

What conceptual understandings about human society do we want to focus on?

Developed through…

Concepts
Which concepts are key?

Focus of learning/ topic

Exploring values and perspectives

Finding out information

What concepts and patterns about society will we engage with?

Reflecting and evaluating
How can concepts mean different things to different people?

Considering responses and decisions

Leading to

So what?
So what do we now know about this?
What conceptual understandings (values, information, and participation) can we explain?

How does our process of learning change/develop/ refine our original conceptual understandings?

So what does this mean for me/others?

Now what?

Now what further learning do we need?

Now what might be done about it?

Further inquiry within current focus of learning

Further inquiry within future learning

How Can Conceptual Understandings Be Measured?

There are many valid purposes for assessment, including reporting to parents and reflecting on the effectiveness of the teaching programme. However, the emphasis of these books is on assessment for learning or formative assessment. Assessment for learning takes place during the course of teaching. It puts students at the centre of the teaching and learning process and informs and modifies that process. Teachers can assess student learning more effectively and involve their students more closely in their own assessment if they:

- share learning intentions and criteria with students;
- provide prompt, effective feedback;
- involve students in monitoring their own progress.

For more information on formative assessment, see:

http://www.tki.org.nz/r/assessment/one/formative_e.php

Research suggests that conceptual learning must be assessed by examining the understandings students have about patterns of concepts and about how those concepts relate (or don't relate) to one another, rather than examining the students' understanding of concepts in isolation. Secondly, a student's knowledge of concepts can best be examined when the student is using those concepts in a variety of different contexts (Jonassen, 2006).

Learning stories – using conceptual understanding in formative assessment: an example of one approach

At the start of a new social studies unit, a teacher introduced the key concepts he would be using for a focus of learning by doing a **card sort** (see page 14). He asked the students to classify the cards as they wished into "like piles". Students were then asked to paste the concept cards onto paper and to provide linking arrows to show relationships. The teacher collected and read this information and then modified his teaching programme appropriately. He kept these basic concept maps until the end of the unit, when he asked the students to repeat the same task.

Collating this data indicated the conceptual learning that had occurred. He returned both concept maps to the students and asked them to examine them. The students then had to state what they had learned and what they still needed to learn. This final step helped his students to develop a better understanding of their own learning processes and therefore to build their metacognitive skills.

Looking for progression in conceptual understandings

Learners of different ages may address the same concept at different levels of understanding. The development of conceptual understanding is cumulative. As learners return to familiar concepts in different contexts throughout their learning, they gradually increase the breadth, depth, and subtlety of their understanding.

We can see that learners' conceptual understandings have progressed when:

- the level of their understanding and use of abstract concepts increases;
- they make connections between multiple concepts;
- they apply and transfer their understandings to more complex and distant contexts as well as to those that are familiar;
- they take responsible actions and make informed decisions that are based on their new understandings;
- they begin to understand that concepts can have different interpretations.

For example, a student working at level 2 may have examined how students in their class make choices about their needs and wants (see Figure 1.1, page 11). In future years, the same student may demonstrate that their conceptual understanding has progressed when they:

- examine more abstract concepts, such as *consumption* and *inequality*;
- make connections with other concepts that enrich their understanding – such as *consumer rights and responsibilities* or *accessibility to resources*;
- apply knowledge about needs and wants to other contexts (for example, the Pacific, Asia, or Africa);
- make decisions and take actions in response to their understandings, such as making an informed consumer decision about fair trade;
- gain understandings about varying interpretations of concepts such as *economic choices* and *sustainability*.

Figure 4.1 gives some examples, based on *The New Zealand Curriculum Exemplars: Social Studies*, of how teachers can obtain evidence of their students' current conceptual understandings, identify conceptual progression in student learning, and respond in a way that promotes further conceptual understanding. The exemplars can be found online at:

http://www.tki.org.nz/r/assessment/exemplars/socialstudies/index_e.php

Figure 4.1: Evidence of progression in conceptual understanding and appropriate teacher responses

We can see that learners' conceptual understandings have progressed when:	An example of this is shown in the exemplars when:	The teacher responded by:
level of their understanding and use of abstract concepts increases;	in *Playing a Part* (level 2), the students demonstrated in the teacher–student conversations that they understood the concepts of roles and co-operation in the production process.	using questioning to encourage the students to form conceptual knowledge of the concept of specialisation. For example: Teacher: Could someone in the production process do someone else's job? Ashleigh: No, you wouldn't know what to do. People get specially trained to, so they can do their part of the work.
they make connections between multiple concepts;	in *The Key to Me* (level 5), the students were asked to conduct a class survey about New Zealand identity. The results of the survey suggested there were many different ideas and values about New Zealand identity.	designing a concept map to classify multiple concepts around the ideas of customs, traditions, lifestyle, and so on. Working in groups, the students concluded that the increasingly diverse and multicultural nature of our society has changed New Zealand's national identity.
they apply and transfer their understandings to more complex and distant contexts as well as to those that are familiar;	in *Uluru: Rock of Then* (level 2), Darshika and Arslan could identify reasons for the importance of Uluru to Aboriginal people in the past and today and, therefore, why it should be respected and protected.	asking the students to identify places of value in New Zealand and then to choose one and explain what happens when people have different views about it.
	in *September 11*, (level 4) students participated in a civil defence day at school. In response to their learning, they wrote questions to interview members of a fire training centre and the City Mission. They then examined the events of September 11.	encouraging Alice and Nick to transfer the knowledge they had of local firefighters to the September 11 context in the USA. The students realised that the victims and rescuers showed similarities to people in those roles in New Zealand.
	in *Stories along the River* (level 1), after considering the history of the Waikato River specifically,	taking the class to visit the local museum or talking to a member of the historical society to find out

	in *Stories along the River* (level 1), after considering the history of the Waikato River specifically, Cameron could transfer this knowledge to the level of a generalisation: "People make records so they don't forget things that happen at places."	taking the class to visit the local museum or talking to a member of the historical society to find out more about the impact of the community's memories on its present and future direction.
they take responsible actions and make informed decisions that are based on their new understandings;	in *Different Democracies* (level 5), students compared the systems of government in New Zealand and the United States and then considered their own levels of participation in decision-making bodies (such as the local Council).	encouraging other students to consider their actions in a school council or to study a local issue (see Where to next?) – similar to Michelle's participation in her involvement in the local City Youth Council.
they begin to understand that concepts can have different interpretations.	in *Parihaka, Past and Present,* (level 5), students gained some simple understandings of the difference in views about ownership between Pākehā farmers and Te Āti Awa (when Sean states in his role as a Pākehā farmer): "This is my home, but Te Āti Awa	developing some creative problem-solving (see generating solutions) to the conflict and injustices and considering where else historic injustices have occurred (see Where to next?).

In conclusion, to develop conceptual understandings in social sciences, learners need opportunities to:

- approach concepts in different ways;
- revisit concepts in different contexts;
- explore connections between multiple concepts;
- have multiple and timely exposures to key concepts.

It's crucial for all students' learning that teachers provide these opportunities in social sciences classrooms.

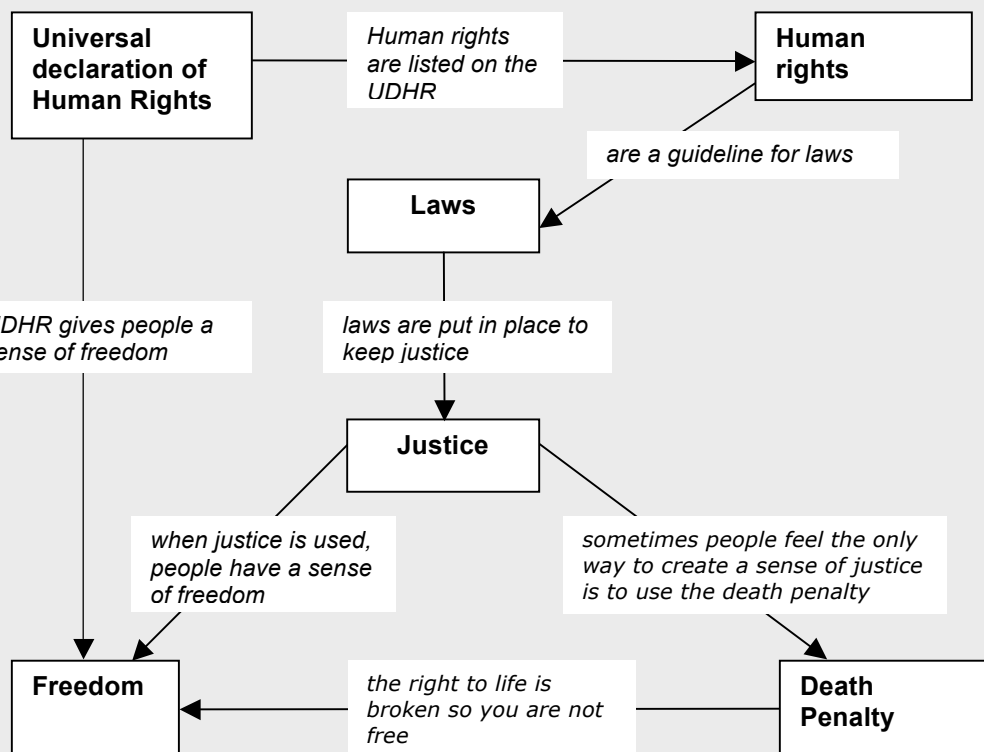## Learning stories – using concept webs for formative assessment

A high school teacher completing a unit on human rights (level 5) wanted to know what her students now understood following about five weeks of learning. The students were asked to develop concept maps from the key concepts that had been used within the unit. Many students found this quite hard. Some even complained that their heads hurt because they were thinking so hard to do this!

By collecting these concept maps and analysing them, the teacher obtained a lot of knowledge about the students' level of conceptual understanding at the end of the unit and where more work was needed. For example, the student work below indicates that the student has the ability to:
- list, sort, and label concepts;
- define some key concepts;
- demonstrate some connections between multiple concepts;
- identify a range of ways in which a concept may be interpreted (see the comment on justice and the death penalty).

She decided that next year this activity should be done at the beginning of the unit so that she had a clearer idea of her students' conceptual progression. The following example is part of a 'Concept Map' that one of her students created following the unit.

An example of student work

Universal declaration of Human Rights

Human rights are listed on the UDHR

Human rights

are a guideline for laws

Laws

UDHR gives people a sense of freedom

laws are put in place to keep justice

Justice

when justice is used, people have a sense of freedom

sometimes people feel the only way to create a sense of justice is to use the death penalty

Freedom

the right to life is broken so you are not free

Death Penalty

Glossary

abstract concept: a concept representing something that is intangible – a quality rather than an object, for example, leadership

accommodation: the process of changing an existing schema in order to understand a new concept or experience (see "schema" below)

analytical concept: a concept that describes the approach taken to learning, such as values exploration or participation

assessment for learning: the process by which learners and teachers look for evidence to decide where learners are in their learning, where they need to get to, and what they need to do to get there

assimilation: the process of fitting a new concept or experience into an existing schema

beliefs: principles, propositions, and ideas held to be true

concept: an idea embodying a set of things that have one or more properties in common

conceptual progression: increases in the breadth, depth, and subtlety of a person's understanding about a concept

conceptual understandings: what a person knows and understands about a concept

concrete concept: a concept representing something that is tangible – something that is real and definite

context: the issue or topic chosen to help students to explore a concept

generalisation: a general statement; a summary of information

metacognition: the internal process by which people reflect on and monitor their own learning

metacognitive skills: skills that help people to reflect on their learning, for example, planning, monitoring, evaluating, and revising

multicultural: encompassing understandings, practices, and beliefs from many cultures; describing the interactions, relationships, and sharing of many cultures

perspective: a world view or ideology informed by values; beliefs that guide actions (Guba, 1990)

prototype: what somebody believes to be the most typical example of a concept

schema: the organised set of ideas that reflect a person's understanding of a concept

social sciences: the study of society and of the relationship of individual members within society; the social sciences include economics, geography, history, political science, psychology, anthropology, classical studies, legal studies, and sociology

values: deeply held beliefs about what is valuable or important in life; these are expressed in how people think, respond, and act

values position: a stance taken in regard to an issue or proposal

viewpoint: an opinion or point of view

References and further reading

Aitken, G. (2004). Talk2learn online conversation (May 2004).

Aitken, G. & Sinnema, C. (2008) *Effective Pedagogy in Social Sciences / Tikanga a iwi: Best Evidence Synthesis,* Ministry of Education, Wellington: Learning Media Ltd. Available at:

http://www.educationcounts.govt.nz/publications/series/2515/32879/35263

Barr, H., Graham, J., Hunter, P., Keown, P., & McGee, J. (1997). *A position paper: Social studies in the New Zealand school curriculum*. Hamilton: University of Waikato.

Brophy, J. (2001) Ed. Subject-specific instructional methods and activities. *Advances in Research on Teaching*, Vol. 8. New York: Elsevier.

Cubitt, S., Irvine, R., & Dow, A. (1999). *Top tools for social science teachers*. Auckland: Addison Wesley Longman New Zealand Ltd.

Gilbert, R. (2004a). Talk2learn online conversation (May 2004).

Gilbert, R. (2004b). *Studying society and environment: A guide for teachers* (third ed.). Melbourne: Thompson Social Science Press.

Gilbert, R. and Vick, M. (2004). The knowledge base for studying society and environment. In R. Gilbert (Ed.) *Studying society and environment: A guide for teachers*. (pp 80–92). Melbourne: Thompson Social Science Press.

Golding, C. (2005). A "Philosophy for children" approach to social studies. In P. Benson & R. Openshaw (Eds.), *Toward effective social studies* (pp 113-129) Palmerston North: Kanuka Grove Press.

Guba, E. G. (1990). The alternative paradigm dialog. In E. G. Guba (Ed.), *The paradigm dialog* (pp. 17-30). Newbury Park, CA: Sage.

Jonassen, D. (2006). On the role of concepts in learning and instructional design. *Educational Technology, Research and Development 54*(2), (pp. 177–197).

Keown, P. (2004). Coming to terms with values exploration: a teacher development module. Unpublished online module notes. Hamilton: Values in the Curriculum Project, University of Waikato.

Keown, P., Parker, L., & Tiakiwai, S. (2005). *Values in the New Zealand Curriculum*: *A literature review on values in the curriculum*. Wilf Malcolm Institute of Educational Research, School of Education, University of Waikato. Available at:

http://www.minedu.govt.nz/web/downloadable/dl7010_v1/litrev-27oct05-edited-version-217-pages2.doc

Ministry of Education (2007). *The New Zealand Curriculum.* Wellington: Learning Media Limited.

Ministry of Education (2004). *The New Zealand Curriculum exemplars: Social studies*. Wellington: Learning Media and the Learning Centre Trust of New Zealand. Online versions available at:

http://www.tki.org.nz/r/assessment/exemplars/socialstudies/index_e.php

Ministry of Education (1997). *Social studies in the New Zealand Curriculum*. Wellington: Learning Media.

Ministry of Education (2005). *Curriculum project discussion paper: Key competencies*. Downloaded from www.tki.org.nz/r/nzcurriculum/docs/CompetenciesDiscussionPaper.doc

Ministry of Education (2008). *Approaches to social inquiry*. Wellington: Learning Media Limited.

Murdoch, K. (2006). Inquiry learning – journeys through the thinking processes. *Teacher Learning Network. 13*(2), 32–34.

Nuthall, G. & Alton-Lee, A. (1993). Predicting learning from student experience of teaching: A theory of student knowledge construction in classrooms. *American Educational Research Journal*, 30(4) 799–840.

Smythe, K. (1992). The social concepts of children. In R. Openshaw (Ed.), *New Zealand social studies: Past, present and future*. Palmerston North: The Dunmore Press.

Stoll, L., Fink, D., and Earl, L. (2003). *It's about learning (and it's about time): What's in it for schools?* London: Routledge-Falmer.