TECHNOLOGY AND KEY COMPETENCIES

INITIAL DISCUSSION OF THE RELATIONSHIP

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ABSTRACT

The key competencies are a clear focus of *The New Zealand Curriculum* (2007). They provide an overarching series of competencies for all schools to embed in their school curriculum. This paper presents the key competencies and discusses how they link with technology education in a mutually enhancing manner.

KEY COMPETENCIES IN NEW ZEALAND

The key competencies are described in *The New Zealand Curriculum* (2007) as 'the capabilities people need in order to live, learn, work and contribute as active members of their communities'.

The curriculum identifies five key competencies. These are:

- thinking
- using language, symbols, and texts
- managing self
- relating to others
- participating and contributing

THE RELATIONSHIP BETWEEN TECHNOLOGY AND THE KEY COMPETENCIES

Technology, as an essential learning area, has a responsibility to work with all other learning areas, to ensure the key competencies are mediated into the classroom curriculum. The capabilities captured in the identified five competencies are all essential underpinning capabilities for the development of a technological literacy that is broad, deep and critical, in nature, and one that will result in increasing student empowerment for future citizenship.

Key competencies cannot be developed or evidenced outside of a context. Technology provides a range of diverse contexts, where students can develop their capability with regards to these five foci as well as use these capabilities to support their learning in technology. In this way, technology-specific learning intentions and the competencies become integrated within the learning environment.

All aspects of technology education would support and be supported by an increase in sophistication across the key competencies. Examples of how the key competencies are embedded within technology learning experiences are discussed below.

Thinking

Critical and creative thinking are essential in technology education, as is the development of a high level of awareness of the nature of thinking underpinning any decisions. Being able to step back from a situation and answer questions such as 'what is happening?', 'why is it happening?', 'should it be happening?' and 'how could it be done differently?' rely on sophisticated thinking skills.

These thinking skills are required across all three strands of technology education. Such thinking is essential for making informed decisions that are based on ethical, as well as functional grounds, allowing for an understanding of fitness for purpose, as well as explorations of the fitness of any stated purpose.

For example, opportunities for the enhancement of such thinking are clearly identifiable when:

- undertaking technological practice within innovative problem solving situations
- understanding the nature of technology through exploring examples of existing technological outcomes or developments, debating contentious issues, or projecting into alternative scenarios
- developing key technological knowledge that is then used to evaluate within technological modelling, or to explain how and why products and/or systems work

Using Language, Symbols, and Texts

The specialised language of technology provides significant opportunities for enhancing students' competency in using language, symbols and texts. This will be reinforced through informed technological practice where critical evaluation, as part of ongoing experimentation, analysis, testing and final evaluative judgement, requires students to understand specialised language, symbols and texts. They will also need to use such language to explain and justify their thinking across a diverse range of contexts.

Because technology draws knowledge and skills from across a range of learning areas, and additional disciplines, it allows students to appreciate how and why language, symbols, and texts differ across disciplines and contexts, and why what is thought of as accepted knowledge and skills, also differs across disciplines and contexts. Understanding these differences supports students in their ability to interpret and use language, symbols and texts in appropriate and informed ways in their own lives.

Managing Self

When undertaking their own technological practice, whether individually or as part of a group, students are required to develop self management skills in order to effectively plan ahead and manage resources efficiently. The ability to understand and undertake technological practice that takes account of wider social and physical environmental factors allows students to develop a strong sense of self, and recognise how they can manage themselves within and across a range of life situations inside and outside of formal education communities.

Relating to Others and Participating and Contributing

Technology programmes provide opportunities to develop ongoing and mutually beneficial community relationships critical for developing student competency in relating to others and participating and contributing. Because of the inclusion of a range of knowledge and skill bases in technology, both technological and those from other disciplines, it is common practice in technology education to draw expertise from the community and/or industry. Inviting people in as valued experts provides a meaningful opportunity for the development of relationships with a range of people from local and extended communities. Students also often work alongside service organisations, local businesses and other community groups to meet an identified school or community need. This type of working relationship allows all parties the opportunity to develop a better understanding of the ethics, beliefs and understandings of respective groups and individuals, and thus enhance future interactions.

All technological practice and resulting outcomes are situated in specific social and physical environments, resulting in both opportunities and constraints. Conflicts and the need for collaboration are common factors that students in technology have to deal with. In turn, students become empowered to operate across a wide range of social groups. This is key to increasingly sophisticated technological practice, and the development of a broad and critical understandings of technology's role in contemporary society.