The virtualMe:
A Knowledge acquisition framework

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Abstract

Throughout life, we continuously accumulate data, information and knowledge. The ability to recall much of this accumulated knowledge commonly deteriorates with time, though some forms part of what is referred to as tacit knowledge. In the context of education, students access and interact with a teacher's knowledge in order to create their own, and may have their own data, information and knowledge that could be added to teacher's knowledge for everyone's benefit. The realization that students can contribute to enhancing personal knowledge is an important cornerstone in developing a mentor (teacher, tutor and facilitator) focused knowledge system.

The research presented in this thesis discusses an integrated framework that manages an individual's personal data, information and knowledge and enables it to be enhanced by others, in the context of a blended teaching and learning environment. Existing related models, structures, systems and current practices are discussed.

The core outcomes of this thesis include:

- the *virtualMe* framework that can be utilized when developing Web based teaching and learning systems;
- the *sniplet* content model that can be used as the basis for sharing information and knowledge;
- an annotation framework used to manage knowledge acquisition; and
- a multimedia object (MMO) model that:
    - allows for related media artefacts to be intuitively grouped in a logical collection;
    - includes a meta-data schema that encompasses other meta-data structures, and manages context and referencing; and

- includes a model allowing component parts to be re-aggregated if they are separated.

The *virtualMe* framework provides the ability to retain context while transferring the content from one person to another and from one place to another. The framework retains the content's original context and then allows the receiver to customise the content and metadata so that the content becomes that person's knowledge. A mechanism has been created for such contextual transfer of content (context retained by the metadata).

Keywords:

Knowledge acquisition, knowledge management, knowledge technologies, computer supported cooperative work, sniplet, Media Vocabulary Markup Language, MVML, multimedia object, MMO, virtualMe

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Ethical approval

Ethical approval was obtained from the Massey University Human Ethics Committee and Eastern Institute of Technology, Hawke's Bay Research Committee for the survey used to validate parts of this research and described in the thesis. Copies of the ethical approval correspondence are included in Appendix D.

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