Chapter 1

Reflections Concerning Technology

A Case for the Philosophy of Technology in Early Childhood Teacher Education and Professional Development Programs

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An important feature of a learning machine is that its teacher will often be very largely ignorant of quite what is going on inside, although he may still be able to some extent to predict his pupil's behavior. (Turing, 1992, p. 158)

ABSTRACT

The philosophy of technology underlies how people view and use technology. The historic relationship of humans to technology is important to explore when developing a context for current technology applications. Within such a context, this chapter outlines the core components, philosophy and debate contributing to sessions run with early childhood education student teachers and early childhood educators.

INTRODUCTION

Humans have a complex relationship to technology. Watching children playing with technologies, old and new, in early childhood centers, teachers amaze in the child's abilities and passions. And they often reflect that they do not really know what is going on inside those seemingly well-connected learning machines: the child and the technology. Alan Turing, widely regarded as one of the central figures in the development of intelligent machines, established a strong connection between the child and the machine. When constructing machines that might display human attributes in a condition requiring some form of intelligent response he looked to the behaviors of young children as they learn. If he could replicate the child's behaviors in a machine he might take great leaps towards constructing an artificial

intelligence. However, as Arthur C. Clarke warned us in 2001, such a prize comes with associated costs (see Kubrick, 1968), and Clarke's message remains relevant some forty years on. From the ape's use of a bone as a weapon (the dawn of technology?), to the intelligent computer HAL 9000's unswerving dedication to a predetermined task despite the cost to human life (the dusk?), we are confronted with metaphors of the impact of technology on our lives.

What then are the benefits and costs associated with technology in the early childhood curriculum? This is a question that has attracted an immense amount of popular and scholarly opinion and research, particularly with regards to technologies such as personal computers, educational software, the Internet, digital cameras and more. This book provides an important contribution to such opinion and research. However it is a question that is not the focus of this chapter. Given that there is already much said about both the pitfall and possibilities of technology, of interest here is 'how do teachers make sense of it all?'

Within such a context, this chapter outlines the core components, philosophy and debate contributing to sessions run with early childhood education student teachers and early childhood educators. The sessions encouraged critical reflection of the role of new technologies, particularly Information and Communication Technologies (ICT), in early learning environments. They reflected a commitment to weaving the philosophy of technology into teacher education and professional development. In particular attention is drawn to the ways in which the early childhood educator is constructed in ICT literature. These constructions may have varying affects on the role of the teacher, the experiences of children, and the 'progress' of communities and societies. Philosophy can contribute to understanding constructions of the teacher and their effects.

Understanding and engaging with philosophy should not be considered a luxury or superfluous in early childhood education if we are to remain committed to the idea of the teacher as a reflective and critical pedagogue. Within this context that chapter first establishes the importance of critical reflection in early childhood education. The second section gives a brief overview of three key philosophies of technology and additionally relates key philosophical themes to popular fiction to evidence how a wide range of resources can be employed to encourage teachers and student teachers to reflect critically on technologies in their educational environments.

The chapter builds around the author's reflections on his development and delivery of the sessions and not on the reception and evaluation by the participants. Such contributions would be valuable components of further research, as noted in the concluding section of this chapter. The student teachers were participating in a field-based diploma of teaching program whilst the educators were participating in a professional development network. Research from the past three decades is drawn into the discussion to emphasize key themes, and their relative stability over time. Much of the literature refers to the use of computers in early childhood education and primary education. In general the terms technologies or new technologies are applied here acknowledging that understanding technology in a wider and more philosophical sense provides the scope and aim of this chapter. Finally, the problem of constructing the teacher as technologically weak is explored, with attention to more positive constructions that draw upon the philosophy of technology.

BACKGROUND: ISSUES, CONTROVERSIES AND PROBLEMS

The Importance of Critical Reflection in Teaching Practice

Rachel Bolstad's (2004) Government-funded research The Role and Potential for ICT in Early Childhood Education: A review of New Zealand

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