Dr. Kim H. Veltman

A National Networked Centre for Education and Training

Unpublished Vision Statement, McLuhan Program, Toronto, 1992.

The nature of education is changing. In the past there was an acknowledged corpus of knowledge to be taught, with basic methods for critical thinking, as well as techniques of verbal and written expression. This corpus was summarized in textbooks. It was recognized that there was a lot more knowledge in great libraries, but this remained largely overlooked on the assumption that if one wished to go to the frontiers of knowledge one would eventually spend some time at one of the major centres of learning (Oxford, Paris, Rome etc.). A teacher was one who had mastered this corpus and teaching consisted of handing down or passing on this knowledge to students. Knowledge was mainly past knowledge. Great universities such as Oxford and Harvard often prided themselves in refusing to deal with anyone who was still alive.

Three things have changed. First, the computer is making past knowledge in different centres available electronically such that one's local resources no longer define the limits of the sample with which one can or should work. Second, present knowledge is changing so fast that one can no longer wait a generation before beginning to consider it as worthy of inclusion within the corpus. Third, future knowledge, in the form of design, simulation, planning, projection, scenario building and even gaming, is becoming essential to our continued existence.

These three changes call for a new integration of past, present and future knowledge, because we cannot sensibly make new designs without an awareness of past and present visions, projects and plans, both successful and unsuccessful. These three changes also call for transformations in the roles of the teacher which are not yet reflected in teaching practice or even teacher training in faculties of education. It is not enough to use technology to repeat online in the form of tele-learning, the traditional modes of teaching. Nor is it enough to pretend that we are shifting from a teacher oriented to a student oriented environment. Students need to know more knowledge, they need to learn more about the techniques for finding knowledge and they need more critical tools for separating knowledge from advertisement, propaganda, and even conscious disinformation, to which topic major institutes are now dedicated.

Some indication of the enormous changes that are happening is provided by a graphics software package such as AutoCAD. At a recent meeting it was pointed out that there are more than 1000 specialized applications of this software to topics as diverse as office management, digital terrain modelling, structural analysis and storm pipes. In Canada alone there are over 1 billion AutoCAD drawings. Major industries such as the hydro and telephone companies as well as government departments (Statistics, Parks Canada, Heritage Canada) have enormous quantities of information which cannot presently be accessed systematically and therefore remains almost useless. A simple integration of

public and private documents in Geographical Information Systems (GIS) alone would revolutionize the way we teach or even think about geography and profoundly affect our approaches to history and other traditional school subjects. Integrated with native culture and knowledge this could open up new ways of understanding the richness of Canada's heritage.

The big corporations have embarked on policies of open architecture which entail sharing of information, code and knowledge across platforms and across companies. The electronic revolution will only come of age when this principle is applied across the board and a framework is created that allows small and medium sized enterprises (SME's) to enter into this same spirit.

A national centre for networked education and training must create new links between past knowledge (libraries, museums, art galleries), present knowledge (training, testing, tracking, evaluation) and future knowledge (design, simulation, projecting, planning, gaming). This is not possible through yet another specialized software package or fancy application. It requires an integrating software such as the System for Universal Media Searching (SUMS 1992, 1994) which will a) create bridges between past, present and future knowledge and b) link an enormous range of presently disparate tools for imaging, design, simulation, training, testing, and evaluation. This also that at least five and potentially all seven of the Canadian Government's proposed pilot projects for the G-7 Ministerial Conference on the information Highway can be integrated into a single larger framework.

The combined resource thereby created will have at least three major consequences: 1) it will give Canadians themselves systematic access to the cumulative knowledge that is presently disparate and spread out across the country; 2) this will in turn make Canadians aware of the products and expertise that they have to sell to other countries; 3) subsets of this material can be made available as a new version of aid to developing countries and help to bridge the gap between the haves and the have nots.

It is unrealistic to duplicate great libraries such as London, Paris or Rome in every emerging country. It is however entirely possible for Canada to provide tools for accessing that information from anywhere in the world and also provide software for the creation of knowledge packages which will translate the hitherto oral traditions of knowledge dissemination in these developing countries into electronic forms. It is not enough to give the third world copies of the first world's knowledge. The challenge is to give the third world tools whereby they can also communicate their knowledge back to the first. In this way a national centre of networked excellence in education and training will be linked internationally as well as with other centres in our own country. The global economy is not about finding electronic versions of earlier competitive models: it is about creating a new framework for co-operation and exchange. Canada is privileged to have some of the most advanced tools for technology and training. It is ideally poised to create a model of national importance, international significance and enduring value throughout the twenty first century: a fitting role for one of the G7 countries that strives to offer an example to the rest of the world.

NATIONAL NETWORKED CENTRE FOR EDUCATION AND TRAINING

CANARIE and Schoolnet for pipeline

SUMS for framework (McLuhan)

n-Power for video and TV (Rogers Communications Centre)

Imaging Tools (NRC camera etc.)

Design Tools (Banff, School of Landscape Research, Alias)

Simulation Tools (CAE, Hydro)

Training and Testing Modules (Alberta Research Council, Concordia, Bouchard)

Evaluation Tools (OISE, Simon Fraser University, McMaster)

National Databases of Libraries Demos of Techniques Individuals

Museums Multimedia Training Packages Products

Art Galleries Symbol Libraries Companies

Educational Packages Standards Libraries (Tradelink)

Local Databases of

      Contents and Analyses Techniques Individuals

      Products

      Companies