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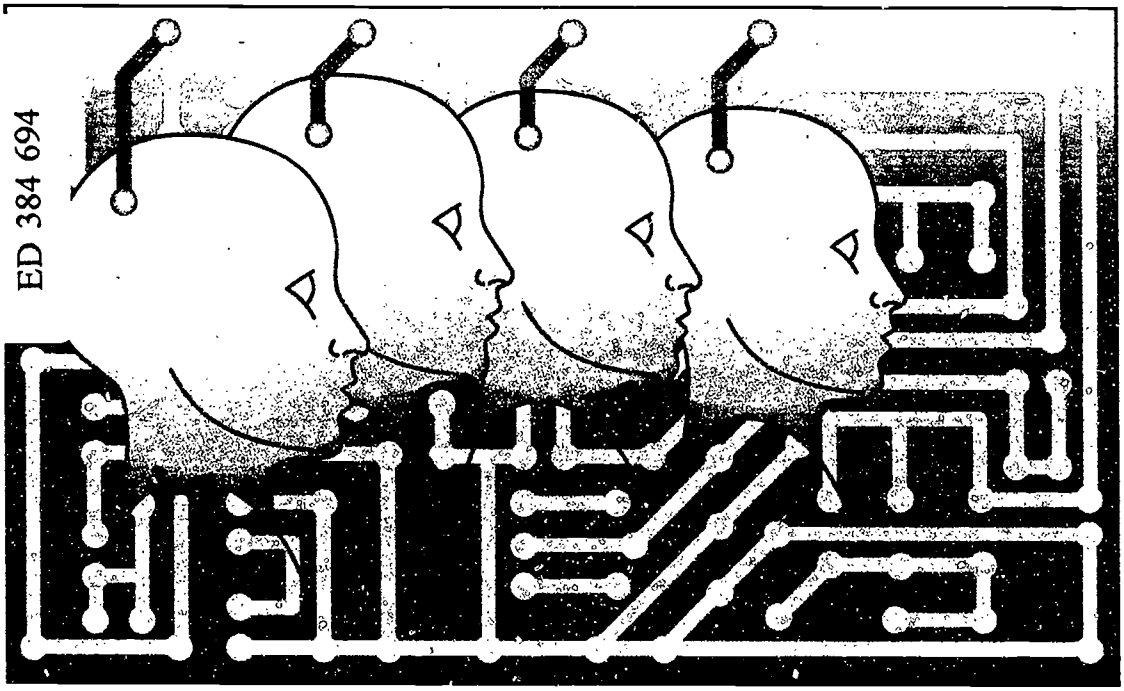
ABSTRACT

This publication contains six essays that offer a range of practical and theoretical perspectives on work-related curriculum. It is part of the study materials for the one-semester distance education unit, Curriculum and Competencies, in the Open Campus Program at Deakin University (Australia). An introduction proposes a course design and pedagogy for the unit. "A Curriculum Model for Education in the Workplace" (Michael Langenbach) offers a philosophical base, differentiates between education and training, and describes a model. "Valuing Cognitive Dispositions and Cognitive Structures in Vocational Curriculum Development" (John Stevenson) uses the concerns for the role of knowledge and the nature of thinking processes to examine policies and trends in vocational education. "Competency-Based Curriculum Development" (Paula Steenholdt) addresses vocational curriculum development in the technical and further education system and outlines advantages and disadvantages of competency-based training. "Putting Ourselves into Practice: New Prospects for Program Planning and Evaluation" (Michael Collins) proposes an alternative approach with an orientation toward theory and practice. "If Competence Is the Answer, What Is the Question?" (Nancy S. Jackson) explores the paradoxes and contradictions of the competency movement in Great Britain and North America and points to implications for contemporary policy developments in Australia. "Working Knowledge: Intelligent Design of Workplace Education" (Richard C. Pipan) considers the nature of the work one does as a professional educator. (YLB)



A COLLECTION OF ORIGINAL ESSAYS ON CURRICULUM FOR THE WORKPLACE

INTRODUCTION BY MIKE BROWN

EAE604 CURRICULUM AND COMPETENCIES

A COLLECTION OF ORIGINAL ESSAYS ON CURRICULUM FOR THE WORKPLACE

INTRODUCTION BY MIKE BROWN

Deakin University

This book has been produced as part of the study materials for EAE604 *Curriculum and Competencies*, which is one of the units offered by the Faculty of Education in Deakin University's Open Campus Program. It has been prepared for the unit team, whose members are:
Mike Brown
Frances Patrick (developer)
Doris Tate
Steve Wright

The study materials include:
*A Collection of Original Essays on Curriculum for the Workplace**
*A Collection of Readings Related to Competency-Based Training**

* These books may be purchased from Faculty of Education, Deakin University, Geelong, Victoria, Australia 3217.
Enrolled students also receive a course guide.

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A pilot edition of this book was issued in 1992.

CONTENTS

SERIES INTRODUCTION

The nature and purpose of education in the workplace has been the subject of much debate in Australia in recent years. While the vagaries of local and international competition have led many firms to reconsider the role of their workforce and the training requirements this entails, governments have been equally keen to adapt existing education systems to the perceived needs of industry. Leading union bodies have been distinguished in this debate by their pro-active role, outlining the path by which a reconstructed industrial climate can win the nation a new place in the world economy.

The study materials of which this volume is a part explore the approaches to learning currently modelled within industry. In the process the question inevitably arises as to whether existing orientations and practices are in the best interests of the various stakeholders in the workplace.

The arguments developed in these volumes address themselves to a range of contemporary issues in industrial education. To date, prevailing approaches have rested upon narrow, instrumentalist notions of learning; in their different ways, the writers have set out to challenge this orthodoxy. In doing so, they highlight the silences—on questions of gender, class or ethnicity—that underpin the behaviourist outlook still dominant in the world of training.

In preparing these study materials, the course team has sought to address issues that are of fundamental concern to those involved in the complex and demanding field of workplace learning. It is hoped that, in its own modest way, the pedagogy we have developed can serve to exemplify a different notion of what industrial education might become.

NOTES ON CONTRIBUTORS

The content within any publication involves many decisions. As is often the case in these matters, the selection of writers was driven by perceptions of particular authors derived from a reading of their previous work. All the six writers were asked to write for a unit at Graduate Diploma level called Program Development & Evaluation (now Curriculum and Competencies). Each was asked to relate this to 'curriculum for the workplace'.

An extremely large thank you is extended to all of the six authors represented in the collection. It was difficult at times to communicate around the world with people who we initially knew only through their published work.

Michael Collins is a Professor in Adult and Continuing Education at the University of Saskatchewan in Canada. Michael has developed an extensive critique of competency-based approaches to adult and vocational education. These have been expressed in various publications over the past decade. Readers who would like to review this work should refer to articles in the *Journal of Adult Education Quarterly*, in particular the debate and reactions which were sparked off in volumes 33 and 34. His book, *Competence in Adult Education* (1987), develops these issues further, while his latest book moves beyond competency to explore ideas associated with what some of the Canadian educators are calling a critical turn in adult education. His writing for this publication is critical of the theorising and thinking that regards learning adults as human resources and suggests that in contrast adult educators need to work at ways of putting themselves into practice.

Nancy Jackson is an educator from Canada (McGill University, Montreal) who is involved in much needed theorising on gender politics and work-related education. Nancy's work is already well known to course participants through her monograph *Skills Formation and Gender Relations: The Politics of Who Knows What* (1990). This text was commissioned for a previous unit. Nancy has visited

Australia and given a number of presentations and papers. Subsequently, TAFE teachers and educators have been asking for details of other work that she has written. Interestingly, the newsletter compiled by the Network of Women in Further Education has reprinted a number of her previous articles. Another of her articles is entitled 'The case against competence'. This is very informative for some of us still grappling with much of the criticism. It was during her visit that she developed this paper. It is with very fond memories that we remember her visit, her talks and her presence.

Michael Langenbach is a Professor of Educational Leadership and Policy Studies at the University of Oklahoma in the United States of America. His book, *Curriculum Models in Adult Education*, was published in 1988. In this he describes twelve different approaches to curriculum development.

The major theme in his writing is the contextualisation and contrasting views behind education and training and how these views might impact on program development. A recurring theme which runs through Michael's work on curriculum generally is the focus upon how different models and approaches are developed to suit differing purposes.

Richard Pipan is an Assistant Professor of Education in the School of Education and Human Services, and a Research Associate in the Institute for Action Research and Professional Development at Oakland University located near Detroit, Michigan. His article links concepts from psychology, philosophy and curriculum theory to human development and education in the context of work and workplaces. Those interested in reading more of Richard's work might look at 'Towards a curricular perspective of workplaces' in Leymann and Kornbluh's *Socialization and Learning at Work* (1989). It is similar to his essay for this collection in that it is very thought provoking.

Paula Steenholdt is a Principal Curriculum Officer with the Department of Employment, Industrial Relations and Training in Tasmania. She is often called upon to represent her state on curriculum development projects of national significance. Paula wrote an impressive thesis on Curriculum Development Practices in Tasmanian Technical and Further Education (TAFE) in 1989. In her contribution to this collection she writes about the dominant model for curriculum development on the national agenda: competency-based training (CBT). She begins to connect this with moves overseas, particularly in the UK. Importantly, Paula explains the various stages of curriculum development

within competency-based training (CBT) and reveals the intentions behind this approach. This piece is very much the explanation of a person who is involved daily with the policy and practice of curriculum development and evaluation.

John Stevenson is Professor of Post-compulsory Education and Training at Griffith University in Queensland, Australia. John has written numerous articles on the vocational education and training sector. He is the editor of *The Australian and New Zealand Journal of Research in Vocational Education and Training*. Readers interested in looking up more of his work are referred to his article in the very first issue of this journal. While the article is important on its own, the bibliography cites many of his most recent articles.

In his essay he writes from his perspective as an educational psychologist where in particular he discusses his views about cognitive dispositions and cognitive structures. In addition, he places this discussion within a number of frameworks. One of these is the context of different orientations and approaches to curriculum and a description of the different streams important within vocational curricula. He also reviews the discourse constructed through government policy.

INTRODUCTION

MIKE BROWN

This publication has two purposes. The first is to provide directly relevant reference material in a format appropriate for the distance education mode of teaching as employed in the elective unit EAE604 Curriculum and Competencies. This unit is offered at Deakin University over one semester. It is one of a total of eight units required for completion of the Graduate Diploma of Adult and Workplace Education. The second purpose is to compile a publication which offers a range of practical and theoretical perspectives on work-related curriculum and make this available to a broader audience of readers. This book of original essays, like the twenty or so other publications that have been commissioned and prepared for this Graduate Diploma, seeks to make a contribution to the discourse on work-related learning.

The six authors contributing to the collection write about vocational education and training within the context of global economic restructuring. The two Australian authors discuss curriculum from within the context of the national Workplace Reform Agenda. The changes being advocated for the workplace have resulted in the formation of a more specific agenda for vocational education and training. This is referred to as the national Training Reform Agenda.

This agenda is being conveyed through a series of government reports and policy documents. Some of these have come directly out of government departments and others have emerged from government sponsored committees of inquiry. These documents are commonly discussed by reference to the name of the chairperson for each committee rather than by their official titles. These are outlined below.

Ivan Deveson, a prominent business leader, chaired a committee which reviewed the cost of training associated with award restructuring (Deveson Report 1990). Brian Finn, the General Manager of IBM, chaired an inquiry that reported and established targets for participation rates for young people within schools and for vocational education and training (Finn Report 1991). Finn also identified key areas of competence that were considered desirable for all adults

entering work. Eric Mayer, previously an executive with a major insurance company, chaired a rather large group of stakeholders to do further work on the key competencies and to propose a means by which these could be integrated into existing programs (Mayer Report 1992). Laurie Carmichael, a well-known trade union official and former Assistant Secretary of the Australian Council of Trade Unions (ACTU), has been a major player in the shaping of the reform agendas to the point where some people have come to discuss the broad realm of industrial change as 'Carmichael-ism'. He has been a common denominator in a number of the inquiries and chaired a group that focused upon very specific competencies for work-related learning and proposed the introduction of a system of articulated programs and qualifications called the Australian Vocational Certificates (Carmichael Report 1992).

As stated earlier, these reports on vocational education and training were not produced in isolation, rather they were produced within the context of workplace change. The reports related to these changes need to be mentioned as these were important in creating the climate which paved the way for the more specific reforms in vocational education and training. These include the ACTU/TDC report *Australia Reconstructed* (Department of Trade 1987), John Dawkins's *Higher Education: A Policy Statement* (1988) and the DEET document *Industry Training in Australia: The Need for Change* (Department of Employment, Education and Training 1988).

Connecting theory to our own practice

Suggesting a course design for EAE604

This section attempts to set out a proposed course design and pedagogy for this distance education unit and open it for further discussion. The intention is that readers of the texts are invited to reflect upon the very issues and topics expressed within the essays. Subsequently, the issues associated with program development and particularly those aligned to competency-based training (CBT) can be foregrounded in discussions directly related to practice. The curriculum and the pedagogy of the program becomes a kind of laboratory where the design and the enactment of the intentions can be examined in implementation.

[Note: Enrolled students should see the Unit Guide for the current form of assessment for this unit.]

Assessment

One of the first concerns raised during the implementation of a program relates to the issue of assessment. Consequently, the educators are required to explain and justify the tasks which then prescribe the assessment.

In order to address these concerns, the assessment for this unit will be discussed 'up front'. It is based on the completion and submission of three tasks.

1 A minor assignment: this consists of a two-page summary on a topic selected from the list provided and negotiated with the other course participants. In addition, each participant is required to write three abstracts on articles and reading related to their particular topic. The abstracts should be a minimum of two paragraphs in length.

2 A major assignment: this will be an essay which is between 3000 and 3500 words in length. This essay needs to be based upon one of two frameworks (as outlined later).

3 A reflective piece of writing: this will have a maximum length of two pages. This essay needs to provide a personal account of what you believe to be the intentions behind the design of this unit and should indicate to what extent your experience either does or does not align.

Task 1: Minor assignment

The content focus for this assignment has been organised around some fourteen different topics relating to curriculum, program development and evaluation. These are set out below. Students are required to select and write about one of these topics.

1 Orientations to curriculum

2 Curriculum as technology

3 The concept of competence

4 What is CBT?

5 The historical development of CBT

6 CBT and reform

7 Introduction to evaluation

8 An integrated approach to evaluation

9 CBT as technology

10 TAFE curriculum

11 CBT in practice

12 An industry/enterprise approach

13 Critiques of CBT

14 Alternative models: Moving beyond competence

All course participants are encouraged to undertake a minor study on different topics selected from the list. The task for assessment requires participants to prepare a two-page summary on the topic. In addition, three abstracts are required each of two paragraphs in length on reading related to each topic.

In taking a lead from what is considered good teaching practice in fields like adult literacy, each of the pieces of writing submitted by course participants will be collated and distributed as study materials for fellow course participants. This means that the summary you write and submit along with the summaries written by the others (your peers) on their particular topic will be compiled into a jointly authored reference and shared as a collaboratively constructed text.

Consequently, you are writing your summaries and abstracts to assist each other in the course. At this stage it is intended that each course participant will be writing about a different topic. The final selection of topics can be made during a telephone link-up conducted and organised by the tutors in the program.

The collection of course participants' writing can become *A Collection of Abstracts and Summaries Relating to Program Development and Evaluation–(year of study).*

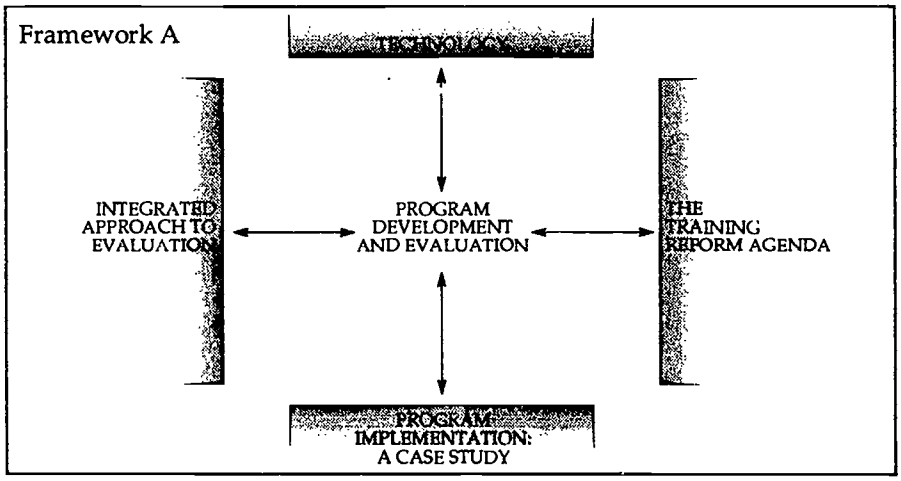
In order for this collaborative learning exercise to be effective it will be necessary for course participants to negotiate successfully and agree to cover the different topics listed. It is further suggested that each participant should attempt to obtain feedback on their work from a study partner prior to submission. Therefore course participants will be required to contact others doing the course and make the appropriate arrangements.

The assessment for this assignment will be a binary decision of either Pass or Fail depending on whether work of the required length on the selected topic is submitted by the due date.

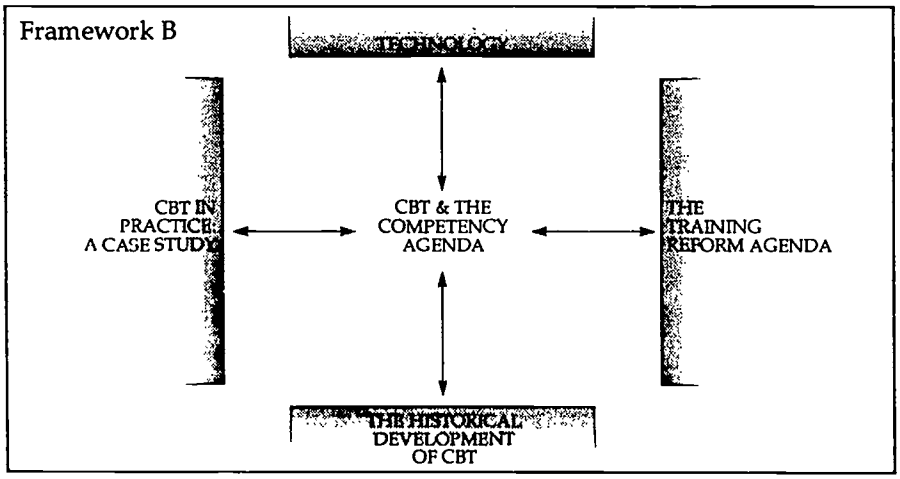
Task 2: Major assignment

Each participant is required to write an essay which has a minimum of 3000 words and a maximum of 3500. This piece of writing should attempt to address all the aspects within *one* of the frameworks below.

Choose one of the frameworks provided to guide the structure of your essay.



Framework A is intended to convey an interrelationship between topics of a more general form than Framework B which is intended to be more specific.



The essay may tend to emphasise c ne aspect of the framework more than another. However, course participants should attempt to give a sense of balance by including all of the aspects within the selected framework. As has been the case in previous units, participants are encouraged to express their own experiences along with their own interpretations and readings of the recommended study and reference materials.

This assignment will be awarded a grade as set out in previous units, High Distinction, Distinction, Credit, Pass, and Fail. Prior to any decision to fail an opportunity will be given to re-submit.

Task 3: Reflective writing exercise

The final assessment task is a two-page reflective piece of writing. Like the minor assignment this will be assessed as either an Ungraded Pass or a Re-submit. In this short piece, each participant is asked to write about their experience in engaging with this unit. Important to this task is that participants give consideration to the design and reflect upon the implicit and explicit intentions of the unit. To get you started with your thinking you may wish to consider the following questions: How might you change this design? Why? What principles guide your thinking?

This task invites the writer to construct a personal narrative, to which a typical opening might be: 'I found this unit to be ...'

> In what way does the course design assign importance to and privilege certain knowledge(s) more than others?
> To what extent is the unit directive/cooperative?
> Is the course restrictive?
> How are power relations embedded within the design?

The selection and organisation of the study/reference materials

Course participants will find it helpful to consult the five texts listed below. Two of these have been designated as prescribed texts. These are available through the University bookshop on the Geelong Campus and are:

U. Franklin, *The Real World Of Technology*, CBC, Toronto, Canada, 1990.

Y. Wadsworth, *Evaluation on the Run*, Action Research Issues Association, Melbourne, 1991.

The two Deakin University publications, that are supplied to all course participants,

Deakin University, *A Collection of Original Essays on Curriculum for the Workplace*, Deakin University, Geelong, Vic., 1994.

Deakin University, *A Collection of Readings Related to Competency-Based Training*, Deakin University, Geelong, Vic., 1994.

The fifth text will result from the collation of all the minor assignments and might be entitled:

A Collection of Abstracts and Summaries Relating to Program Development and Evaluation –(year of study)

Personal acknowledgment

I would like to acknowledge and say thank you for the formal and more often informal assistance of my two co-workers at Deakin University (Geelong), Steve Wright and Doris Tate; I also extend thanks to Fran Dickson, David Dawkins and the developer Fran Patrick. Similarly I need to thank Elaine Butler from the Centre for Human Resources at the University of South Australia.

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Australian Education Council (1991), *Report of the Review into Young People's Participation in Post-Compulsory Education and Training* (T.B. Finn, Chair), AGPS, Canberra.

Austlian Education Council (1992), *Putting General Education to Work: The Key Competencies Report* (E. Mayer, Chair), AGPS, Canberra.

Carmichael Report. *See* Employment Skills Formation Council

Dawkins, J (1988), *Higher Education: A Policy Statement*, The White Paper, AGPS, Canberra.

Department of Employment, Education and Training (1988), *Industry Training in Australia: The Need for Change*, AGPS, Canberra.

Department of Trade (1987), *Australia Reconstructed: ACTU/TDC Mission to Western Europe*, AGPS, Canberra.

Deveson Report. *See* Training Costs Review Committee

Employment and Skills Formation Council (1992), *The Australian Vocational Certificate Training System* (L. Carmichael, Chair), NBEET, Canberra.
Finn Report. *See* Australian Education Council (1991)
Mayer Report. *See* Australian Education Council (1992)
Training Costs Review Committee (1990), *Training Costs of Award Restructuring*, Vols 1 & 2 (Mr Ivan Deveson, Chair), AGPS, Canberra.

A CURRICULUM MODEL FOR EDUCATION IN THE WORKPLACE

MICHAEL LANGENBACH

Introduction

A well-worn story of three people on a desert island has a variety of instructive uses for delving into the topic of curriculum models in the workplace. The abandoned individuals were a chemist, a physicist and a model-builder. All that they had to eat was an unopened can of beans. The chemist said, "Let's build a fire, and, knowing that heating the can will cause it to burst, we will be able to eat." The physicist added, "We can determine the mass of each bean, calculate the force acting on it, plot each bean's trajectory, and place a leaf at each point of landing to avoid the prospect of having the beans covered with sand." Finally, the model-builder spoke up and said, "Let's assume we have a can opener."

The model-builder's seemingly vacuous assumption illustrates an important problem frequently encountered in the social sciences, especially by social scientists who study phenomena more than they engage in them. We simply assume certain aspects of a situation, build on the assumptions and often wonder why we seem to be talking past the intended audience. Our misguided assumptions often are detected by others long before we realise our errors and the net effect usually is a serious erosion of our credibility. All too often we deserve the dubious distinction of being out of touch.

The story, however, has other potentially instructive lessons—not as obvious as the first, but equally important. The chemist and physicist are seen as so pragmatic, indeed, objective, in dealing with reality that their suggestions reinforce the conventional wisdom that they are in touch with reality. The belief

here is that physical scientists concern themselves with little assuming and abstracting, i.e. physical scientists, unlike social scientists, pride themselves on their objectivity and their rationalism.

It is important to recognise that the less obvious assumptions regarding physical scientists, reality, objectivity, and rationalism are themselves abstractions. That these terms are abstractions does not mean they are not true, but we need to know a little philosophy to understand them better.

Philosophical base

The philosophical area called ontology, which means view of reality or world view, can be construed as a continuum with one extreme called perspective-seeking and the other extreme called Truth-seeking. Each of these extreme world views has a number of associated concepts that, once again, we assume to be true, depending on the world view we happen to embrace. Figure 1 illustrates the two extremes and their associated notions regarding reality.

Figure 1 The ontology continuum

Ontology — View of Reality or World View

Perspective-seeking	**Truth-seeking**
Internal	External
Subjective	Objective
Post-positivist	Positivist
Soft data	Hard data
Value laden	Value-neutral
Inventing	Discovering
Mind–body integration	Mind–body dualism
Individuals as participants	Individuals as subjects

The right hand extreme point in Figure 1 represents the world view and associated notions that conventional wisdom (the mythical person on the street) takes for granted, assumes. "Of course, there's a reality and yes, it's 'out there', external to me," is what the conventionally wise man or woman would say. And, he or she might add, "What's the matter with you, that such a question would even be asked?"

In 1925 Whitehead called this point of view 'misplaced concreteness'. He claimed we erroneously assume the concreteness of reality is 'out there', external to us. 'Correctly placed concreteness', according to Whitehead, is within our brain where sense is made of the undifferentiated mass of stimuli that bombards us. We see, he claimed, not with our eyes, but with our brain. And we see or understand what we see by abstracting from the mass of stimuli according to the concepts we currently understand. We make connections with what we already know or we make no connections at all.

Such philosophical discourse may seem to be very distant from the topic at hand—a curriculum model for education in the workplace—but the philosophical underpinning is critical to understanding models of any kind. A few more comments about Figure 1 are necessary before the model can be addressed.

The left hand extreme of the continuum represents a perspective-seeking ontology and its attendant notions regarding views of reality. The most important difference between the two extremes is the assumed location of what is real for a human being. If one embraces the perspective-seeking beliefs, the assumption is that reality resides within the individual; reality is what an individual perceives. The implication for those people who are trying to make sense out of other people's behaviour is that the inquirers need to ask people what they perceive. This kind of inquiry is to the Truth-seeker hopelessly subjective, but the perspective-seeker, rather than apologising for the lack of objectivity, celebrates the subjectivity and virtually scoffs at the idea of making anything objective. That does not mean the perspective-seeker is careless or unconcerned about truth, but simply that he or she believes truth, like reality, is a matter of perception. And, because of the importance of perception, there may be multiple truths—not just one Truth.

This is scary stuff, if all we have ever known has been dualistic: subjective *or* objective; mind *or* body; and inner perceptions *or* external reality. What does all of this mean to the model-maker? How can a model that purports to represent the real world make any sense to anyone if the real world is a function of what each individual perceives and we all know our perceptions, in turn, are functions of our own, individual experiences? Why even bother? The answer requires a suspension of the urge to find the Truth.

The urge to find the Truth is about as close to a basic instinct as humans ever get. More precisely, the urge is to make sense out of the world or, at least, one's environment. The propensity is to classify and categorise; sense-making is easier if we engage in black and white issues and avoid the grey ones. The urge, unchecked, leads us to dualistic thinking. A model, to those who engage

in dualistic thinking, then, either represents the Truth, or it does not. Instead of succumbing to this urge to classify rigidly, we need to be reminded of Francis Bacon's advice to read about ideas, not to accept or reject, but to weigh and consider.

The extent to which a model accurately represents reality, especially a reality made up of people who carry with them their values, beliefs and attitudes, is problematic. Can a visual, two-dimensional figure adequately capture and accurately represent something as elusive as education? No. A model can, however, represent some assumptions about values, beliefs and attitudes and suggest relationships that can serve as a conceptual scaffold on which to build other values, beliefs and attitudes, as well as behaviours. We are back, then, to assumptions, and if any of the above made any sense, assumptions will be viewed with both more caution (even the seemingly 'objective' kind) and more credibility (even the 'unrealistic' kind).

Education and training

A lot of grey area is ignored when education and training are considered as discrete, mutually exclusive enterprises. Education, considered simply, is focused on the individual's development in ways that enable the individual to reach his or her potential, whatever that may be. The end product is elusive. Indeed, the end is really a process—to help an individual become (and maintain the state of being) a lifelong learner. Proponents of liberal education articulate such a vision: to promote the continuous development of individuals (assuming always that such development is within the ethically constrained agreements of good behaviour).

Training, by contrast, often is construed as the acquisition of some rather superficial skill or ability. Learning to weld metals is an example. Learning to read, however, is another one. Training can be part of education or education may be predicated on a certain kind or amount of training. How can we differentiate between them? One way is to consider purpose.

Purposes

If the purpose of an activity is a well-defined end product or competence, we can consider that activity to be training. If, by comparison, the end product or end process, often called a competence, is not known with much precision and,

more importantly, if the end product is really a process that involves the continual learning and development of the individual (including, in some cases the unlearning and most always the redevelopment of values, beliefs and attitudes), then we can consider that activity education.

Admittedly, for some discussions, differentiating between education and training is unnecessary. The two terms are often used interchangeably, but when the focus is on purpose, the differences between education and training are more apparent. Purpose includes end result as well as a justification for the question, 'Why are we engaged in this activity?' If the end result is a specific behaviour, such as welding two metals, and the justification for learning is to improve the effectiveness of the organisation in which the welder works (or will work in the future, as is the case with most vocational schools), the enterprise is training. When the behaviour at the termination of a learning experience is unknown, because it is unknowable, and the justification for the learning is to enhance a person's being, not necessarily the improvement of a performance that translates easily to the improvement of an organisation's effectiveness (though that might happen), the enterprise is called education. As indicated above, however, some learning, like learning to read, can serve a variety of purposes. A grey area exists and a tolerance for this grey area and other ambiguities is a necessary prerequisite for understanding education and training.

Just as words like education and training can be differentiated by examining purposes, so too can organisations. At the surface level, some organisations called businesses, corporations and factories are where workplaces are found. And, with the exception of government agencies, these organisations are typically in business for a profit. Their purpose, first and foremost, is to make a profit. Products and services are offered to customers for a price that includes a profit for the managers and owners.

Even so-called non-profit organisations must generate enough money to cover the costs of staying in business. Schools, both public and private, need money to continue to provide their services. Public schools rely on tax-generated revenues, and beyond high school, tuition is charged to help defray costs. Private schools rely far more on tuition money for their support. Public and private institutions of higher education also obtain financial support from private and public grants for research and training. Despite the shades of grey regarding organisational types, all of them share a common purpose—to maintain themselves. And all of them have what can be considered workplaces—the sites where the individual employees make their contributions to the organisation.

Increasing organisational effectiveness is the primary purpose for training in the workplace. Although the rhetoric may be human resource development (HRD), training in the workplace is justified on the basis of improving organisational effectiveness. Indeed, Nadler, one of the chief proponents of HRD (1982), essentially says if an employee can be replaced with another who has the skill the training is designed to achieve, the organisation should opt for replacement rather than training, as training can be expensive and rarely ever a certain guarantee that the skill will be achieved.

Even schools are vitally interested in maintaining themselves as organisations and consequently have an intense interest in organisational effectiveness. The charge has been levied that as organisations engaged in education, schools often lose sight of their purposes because of their bureaucratic inclination to 'do things right' rather than 'do the right things'. Schools in which training occurs have an easier time in justifying themselves: such schools satisfy the potential employers of their students or the schools are out of business. Schools that are supposed to be engaged in education—such as K–12 public schools, liberal arts colleges, and universities—have a more difficult time in justifying their existence to the publics who support them because the products of those schools are not very product-like. The end product of an educational enterprise is far more a collection of processes than a product. Moreover, those processes are not particularly amenable to any kind of conventional measurement. The values, beliefs and attitudes—even the actual behaviours—of an educated person are not predictable, either. Creativity, for example, is an inherent element in an educated person's repertoire of behaviours and, by definition, creative behaviour defies predictability. If test makers are not certain about what to measure and how to measure what 'it' is, how can there be anything like conventional testing or assessment of the products?

Education affects values and beliefs and evidence of changes in these is not easily measured. Brookfield's (1986) assertion that education involves the critical review of uncritically assimilated values and beliefs is clearly a process—and an ongoing one that should not cease simply because schooling ceases. The process aspect of education is what makes it so unpredictable, so messy for those who desire and demand accountability.

Workplaces in non-educational settings are even more saturated with 'bottom line' results-oriented expectations. There should be no surprise in this mind set. Profits are realised and organisations maintain themselves because of the 'survival of the fittest' sense of competition. Efficiency and effectiveness are viewed as not only legitimate expectations, but as part of the hegemony, assumptions that are not to be challenged.

Education in the workplace requires challenging the hegemony; revisiting the assumptions that undergird so many values and behaviours. Making education in the workplace a reality is like assuming on the deserted island that there is a can opener. At first blush, the assumption appears objectively wrong, but upon inspection, it is really just a value.

Examples of learning in workplaces

In the mid-1980s, the Carnegie Foundation for the Advancement of Teaching sponsored a study of education in American industry and business. The ensuing report, *Corporate Classrooms* (Eurich 1985) describes the variety of educational and training opportunities available in a growing number of businesses and industries. The report is an excellent source of information on program descriptions, their histories and prospects for the future.

The magnitude of the enterprise is impressive: nearly as much money and as many learners are engaged in business and industry-based education and training in the US as there are money and learners in conventional, four-year colleges and universities. How much of the activity, however, is education as opposed to training? No final answer can be a fair generalisation without more specific examination, but Eurich observed that 'corporate college catalogs state their goals with refreshing clarity; usually it is an unambiguous statement of objectives that is quite specific and explains what the student may expect to achieve in skills, competency, and behavior, as well as knowledge' (1985, p.121). It is not necessary or desirable to make a brief for ambiguous and unclear goal statements of traditional college catalogues, but the differences between education and training discussed earlier suggest that the corporate classrooms Eurich describes are more concerned with training than with education—a distinction she tends to overlook.

What Eurich does not overlook is the dramatic difference in learning opportunities for top executives and managers compared with ordinary workers. From 'culture workshops' conducted in Socratic fashion to the Aspen Institute for Humanistic Studies, a two-week 'escape' to discuss readings from the Great Books—'sent well in advance to participants'—corporate managers engage in what appear to be educational experiences far more than training programs. One doubts that 'unambiguous statements of objectives' and 'specific competencies' apply to such educational experiences as discussing the Great Books. The vast majority of corporate classroom learning Eurich describes, however, is of the training variety, not educational, as both were defined above.

Closer examination reveals that the training is specifically for the benefit of the organisation. Undoubtedly, the trainee benefits by being able to keep his or her job, but even Eurich notes the danger of 'training programs (that can be) so directed to immediate employment and specific tasks that workers may bounce from job to job and intermittent training programs for the rest of their lives' (p.137). To what extent the phenomenon about which Eurich warns currently exists, is an open question. The concern here is to counter the possibility that training is exclusively too specific for workers—that training needs to be supplemented with education in order to enhance not only the continued employability of the worker, but the overall quality of his or her life.

A curriculum model for education in the workplace

If creating access to knowledge (Apple 1979) is what a curriculum is about, then a variety of sources exist to aid in the development of curriculum (Sork & Buskey 1986; Langenbach 1988). But the context or setting for a curriculum model has an important relationship with the curriculum that is developed (Giroux 1983). If the setting's purposes and goals are antithetical to the purposes and goals of the curriculum, there is little hope that the curriculum will ever be developed, or, if developed, ever accomplish its purposes and goals.

If, for example, an organisation is interested in making itself more effective, and believes it can become more effective by training its employees, it will develop a curriculum for training. Examples of such training programs abound and the most comprehensive description of them is contained in *Corporate Classrooms* (Eurich 1985).

Likewise, an organisation that purports to be promoting education, such as a library, will invest in activities that are educational in nature. The 'Let's Talk About It' program (Moores & Rubin 1984) and 'Great Books' discussion groups (Great Books Foundation 1985) are natural outgrowths of libraries. Both training and education are rather easily accommodated by the respective types of organisations. The challenge then is to develop a curriculum for education within an organisation that typically is far more interested in training than it is in education. The impulse is to solve this conflict or find a mutually satisfying solution to the problem. The impulse should be checked, however, because problem-posing may be all that can be accomplished at the current level of generalisation. Finding solutions to problems is the province of the participants who are the most knowledgeable of and sensitive to the particular qualities of

their setting. The relevant assumptions, beliefs and attitudes can be explicated here, but the specific actions must be left to the actual participants.

Returning to the question of what constitutes education, it is not enough to say it is different from training. Although it can be distinguished from training in that education rarely has specific, predictable outcomes, the hallmarks of training, there is at least one other important distinction that must be made with regard to the very process involved. Freire (1970) differentiated between what he called the 'banking' concept, which he associated with education for domestication; and praxis, 'the authentic union of action and reflection' (1985, p.87), which he considered necessary for liberation. The distinction here also turns on end result, but instead of simply and only an absence of specific, predictable competencies, education for liberation contributes to personal empowerment. The beneficiaries of empowerment cannot be expected to behave in necessarily predictable ways, but their lives should be enhanced because of it. The assumption here is that an organisation with empowered, liberated people is better than one with domesticated and unliberated people.

Introducing the problem with the banking concept raises an unsettling notion that can plague efforts toward establishing a curriculum for education in the workplace. The notion can affect the assumptions that should be made near the beginning of the model and are major parts of the scaffolding upon which the rest of the model is built.

The first assumption is that very many adults are interested in education. The adult education literature is replete with principles and admonitions that adults prefer a high dosage of utility in their learning fare (Knowles 1984; Tough 1979). The concern with andragogy, as contrasted with pedagogy, is an obvious illustration of the nearly obsessive interest in utilitarian ends for the majority of adults engaged in formal or informal learning experiences.

One of the four basic tenets of andragogy is that whatever is learned has immediate utility for the learner. Pedagogy, by comparison, is viewed as the preparation for some future life. Viewed this way, andragogy is better, but the argument really turns on good versus bad teaching. What is important is the widely held belief that utility is the indispensable criterion of all adult learning. If knowledge is not seen as being immediately useful, i.e. having some utility for solving problems, then that knowledge is not worth having. Is it any wonder that training appeals to so many adults? It is so *useful*!

Figure 2 An overview of education and training in the workplace

Where?	**Liberated organisations**	**Domesticated organisations**
How?	A variety of instructional strategies and devices, including: tutoring, small groups, formal classes, technology-assisted instruction, distance education, and self-directed learning.	
What?	**Education**	**Training:**
	- Unspecified ends	-Specified competencies
	- Unpredictable behaviours	-Predictable behaviours
	- Liberation	-Domestication

By implication, it appears that education cannot be useful, but no such brief will be made for that notion here. Education is assumed to be ultimately more useful because its effects, though often not amenable to quantitative measures, are lifelong and have greater potential for improving the quality of living.

Figure 2 represents an overview of education and training in the workplace. The assumptions about education and training are important distinctions for the overview. The 'how' questions or, more precisely, the teaching or instructional strategies, are offered as options. The obvious reminder relevant to strategies is the concern mentioned above regarding Freire's contention that 'banking' versus praxis will affect the end results of the learning experience—whether it be education or training.

The 'where' question in Figure 2 includes the continuum of organisations that ranges from liberated (meaning the value of liberated, empowered individual employees is cherished); to the domesticated organisations wherein a higher value is placed on controlled, predictable behaviours of unempowered employees. The extreme positions make descriptions easier, but the placement of any organisation is likely to be short of either extreme—once again, the grey area is invaded.

A curriculum model for education in the workplace must be built upon the values of education more than training, include teaching or instructional strategies that are not at cross purposes with the goals of education, and occur either within the organisation or through its sponsorship. If the workplace is not physically suitable for education, an appropriate alternative site must be designated. Figure 3 represents a curriculum model for education in the workplace.

Figure 3 A curriculum model for education in the workplace

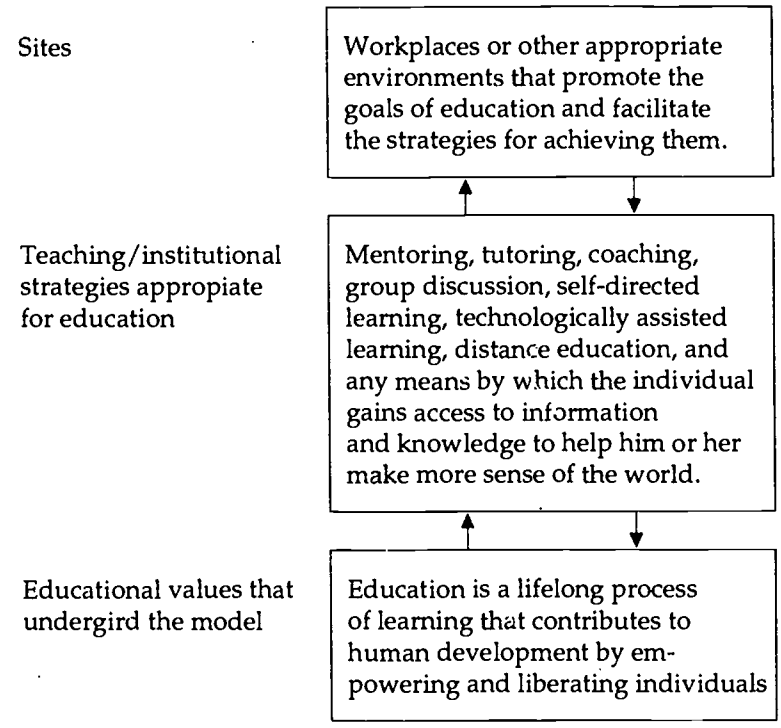

Figure 3 is skeletal, to be sure, but the fleshing out is necessarily the responsibility of the actual participants—teachers and learners. The model is suggestive of necessary prerequisites at its base or foundation—that the goals of education are empowerment and liberation. Such rhetoric, however, does not mean workers will rebel and take over the organisation, although that could happen, but more importantly that individuals will rise up to take more control of their own lives; to believe that they are capable of changing themselves; that they are vital actors and not passive victims of circumstance. Are there any guarantees that such empowerment and liberation will occur? Absolutely not. The assumption operating here is that education—lifelong learning—is better than lifelong ignorance. Precisely predicting such expectations is not possible. Proceeding on the assumption is a matter of faith.

The content and strategies for teaching or instruction are only devices to assist learners and should not become counterproductive. For example, if small group discussions of a contemporary novel do not yield a greater sense of empowerment for the participants, the strategy and/or content should be

adjusted or abandoned for combinations that do promote such empowerment. Even a conventional lecture format could be appropriate for certain topics or instances, but the prevailing strategy should include active participation for the learners. Another guideline for both strategy and content can be found in Whitehead's (1929) conception of the rhythm of education—romance, precision, and generalisation. The first engagement with content emphasises the romance or excitement associated with a topic. The next level of engagement entails knowing the details better. The romantic interest remains and becomes the driving force for learning more precise information. Finally, a perspective on the whole and generalisation become possible. The cycle continues with each new content area.

The content for learning can be anything that promotes the educational goals that undergird the model. Conventional subject areas of the humanities, social sciences and natural sciences could be a starting point for some. If the actual content of the curriculum is Eurocentric or Afrocentric, or viewed through some other lens, teachers and students should be aware of the view and its attendant bias at the beginning. Such views, if consciously acknowledged, can be educative through comparison and contrast with others. Other content that is interdisciplinary, for example, women's studies and multiculturalism, might be appropriate for others. The content needs only to meet the criterion of being a reasonable vehicle for promoting the educational ends of the entire enterprise.

Finally, with regard to content and strategy, Houle (1972) probably suggested the best generalisation:

> It is equally wrong for a teacher to be so true to content that he ignores the abilities and desires of his students and for him to be so concerned with their wishes and feelings that he forgets or denies content. (p. 162)

Choices for content and strategies must be made by the participants, and often times will best be made tentatively, in a trial and error spirit. The arrows between the boxes represent the interrelatedness of all of the parts of the model. Changing one part may necessitate changing the others.

The site for such education could be the workplace, if appropriate space and physical arrangements are possible (tables, chairs, chalkboard, etc.) or any other space where such physical arrangements can be made. The workplace phase of the model really revolves around the sponsoring and promoting of education for workers. The actual physical site is rather immaterial. The most important element of the model is the rationale for it: answering the 'why' question.

The 'why' question

The major obstacle to the promotion of education in the workplace is convincing people of its value. Unlike training, that is usually heartily embraced by employers because of its immediate utility and accountability factors, education promises no more than what might happen if and when individuals gain access to knowledge that helps them make more sense of their environment. Unfortunately, a liberal or general education is considered by many people as an extra; it is considered as unnecessary for day-to-day living and survival.

Furthermore, there is no assurance that a liberally educated person will behave well. Josef Goebbels, one of Adolf Hitler's men who oversaw the systematic extinction of millions of people during the Second World War, had a PhD in the humanities (Toland 1976). Evil people will still exist, even if they have an education that is more than just training. The hope, however, is that such evil and racism will not flourish as well in a more educated organisation or society. The most defensible reason for having education in the workplace is the assumption that education is a birthright.

Perhaps the most important difference between human and other animals is that humans can be educated. Bears can be trained, as well as dogs and dolphins. Why not assume education, a uniquely human phenomenon, deserves attention for everybody, including the highly trained employee? I do, but I am still looking for the can opener.

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VALUING COGNITIVE DISPOSITIONS AND COGNITIVE STRUCTURES IN VOCATIONAL CURRICULUM DEVELOPMENT

JOHN STEVENSON

Introduction

Many questions arise and need to be answered when developing vocational courses. For example: What is the purpose of vocational education? Who should be afforded the opportunity to provide input? At which goals should the course be directed? What relationships are there among individual, industrial and social goals; and what values underlie these goals? What knowledge is necessary to achieve these goals? This paper seeks to develop principles to guide curriculum development in vocational education—principles which will assist in answering the above questions. Fundamental to these principles are the *values* which underlie different approaches to curriculum development. By values, I mean beliefs about what is important and desirable in education, and how best to secure goals derived from these beliefs.

Values underlie the influences of individuals and groups involved in the processes of curriculum development, whether a vocational or any other course is involved. Values are implicit in the kinds of knowledge emphasised in courses and in the roles assigned to that knowledge in securing individual, group and wider social goals. Some goals and the knowledge needed to secure them, are complementary, but others appear to be more difficult to reconcile.

My background is in cognitive psychology and I view knowledge in terms of the underlying *cognitive structures* (Anderson 1982; Evans 1991; Ryle 1947; Scandura 1981; Stevenson 1991a), needed for such purposes as reasoning, the acquisition of new skills, problem-solving, adapting, reflecting, accommodating and assimilating, judging and taking action. On the other hand, critical

theorists (Carr & Kemmis 1983; Kemmis with Fitzclarence 1986; Grundy 1987; Marsick 1988; Mezirow 1981, 1985) view knowledge in terms of *cognitive dispositions*, i.e. an *interest* in using knowledge for control, sharing and appraising meaning or taking action to improve society. In this paper, these two perspectives are contrasted, and it is argued that the approaches to classifying knowledge are complementary in analysing curriculum development for vocational education.

For cognitive theorists, cognitive structures can be differentiated as follows:

- *propositional knowledge* (knowledge of information, facts, principles, theories, propositions) (Anderson 1982, 1990; Collins, Brown & Newman 1989; Glaser 1984; Gott 1989; Ryle 1947);
- *specific procedures* (Anderson 1982; Evans 1991; Scandura 1981; Stevenson 1986a, 1991a);
- *higher order problem-solving procedures* (for analysing unfamiliar situations, planning problem-solving approaches, monitoring problem-solving progress and acquiring new skills) (Anderson 1982; Scandura 1981; Evans 1991; Stevenson 1986a, 1986b, 1991a); and
- *higher order executive procedures* (for control over cognitive processing, switching between one approach and another, modifying one's heuristics) (Evans 1991; Sternberg 1985; Sternberg & Davidson 1989; Stevenson 1986a, 1991a).

For critical theorists, cognitive interests or cognitive dispositions are differentiated according to characteristics of the role assigned to the knowledge which is sought—whether it is concerned with achieving technical control, interpreting and understanding meaning in complex situations in mutually comprehensible ways or empowering people to overcome injustice in society. The categories of dispositions are as follows. A *technical* disposition is concerned with increasing control over the environment. This is concerned with the mastery of skills and technology for scientific and technological accomplishments. A *practical* disposition is concerned with understanding through interpretation, and involves the negotiation of consensual social norms so that real communication can take place between two or more people, and meaning can be shared. It enables interpretation of the complexities of practical situations in a holistic manner and the sharing of acquired understanding with others. It is not value-free, but involves making judgments about what is considered to be right. An *emancipatory* disposition is concerned with self-knowledge through

reflecting on libidinal, institutional or environmental forces which limit our options and rational control over our lives, but have been taken for granted as being beyond human control (Mezirow 1981). Emancipation comes from insights gained through critically reflecting on these forces. These three dispositions have also been equated with three domains of learning: instrumental, dialogic and strategic (Mezirow 1981, 1985), referring, respectively, to task-oriented problem-solving, understanding consensual norms in society and understanding ourselves.

Yet, attributes which are derived from similar kinds of knowledge (cognitive structures) underlie the attainment of goals, arising from apparently different dispositions. That is, curricular goals which are set in accordance with different views about the role of knowledge (cognitive dispositions) often rely on the development of the same kinds of cognitive structures. For instance, problem-solving is an important attribute for all dispositions. Moreover, learning processes needed in developing perspectives about the nature of knowledge and its role in society (for example, critical reflection) are the very processes which develop a comprehensive range of cognitive structures (propositional knowledge, specific procedural knowledge and higher order procedural knowledge).

In this paper, the nature and alternative roles of knowledge are described and related to views about curriculum development. From this analysis, it is concluded that concerns for the role of knowledge (cognitive dispositions) and the nature of thinking processes (cognitive structures) are two fundamental aspects of vocational curriculum development. These concerns are used to examine overall governmental policies and international trends in vocational education. They are also used to analyse governmental discourse in the area of competency-based training (CBT) and to criticise both CBT and the ideology which it exemplifies. It is argued that even the goals of the government, utilitarian as they are, will not be achieved through CBT; and that, in any case, CBT is far too limiting a paradigm to accommodate the concerns of vocational education.

Goals for vocational education, wider than those embraced by the government, are also examined in this paper and contrasted in terms of cognitive structures and cognitive dispositions. Approaches are proposed for vocational curriculum development which promote and accommodate appraisal of the cognitive structures and cognitive dispositions underlying the goals of different individuals and groups who should be involved in influencing curriculum decision-making. It is argued that appraisal and reappraisal of concerns is necessary throughout curriculum development as individuals and groups have more opportunity to reflect on content.

The centrality of values

In this section, the kinds of values which can underpin curriculum development are examined. They are further illustrated by reference to the Technical and Further Education (TAFE) sector. The cognitive structures (propositional, specific procedural and higher order procedural) and cognitive dispositions (technical, practical and emancipatory) underlying different values are identified, and it is argued that discussion of these aspects of values is central to curriculum development.

Curriculum development in vocational education proceeds from value positions. To return to what was said earlier, values here refer to beliefs about what is important and desirable in education; and how best to secure goals derived from these beliefs. Indeed, values are central to all aspects of curriculum decision-making, including decisions about overall purposes of courses, who should be involved in selecting content, what comprises legitimate content, documentation of that content, accreditation, teaching, student assessment and course evaluation. Values of individuals, groups, formal bodies, and society are implicit in influences which they exert on curriculum development. These influences come from a number of sources, and can become ideologies, that is 'social processes and practices by which characteristic structures of social life are reproduced and maintained both in the consciousness of individuals and in the social practice and relationships characteristic of social life in a society' (Kemmis with Fitzclarence 1986, p. 97).

For example, consider the values underlying the influence of governments seeking to achieve economic and political goals; bodies involved in accrediting, recognising and funding programs, seeking to achieve standards which they have set; and industry seeking to secure the development of skills they regard as important in work. As explained below, these values can be in conflict with each other, and can conflict with the values of teachers and trainers seeking to implement their personal views about teaching and learning; and with the values of learners themselves, pursuing individual goals. Yet, the social processes and practices, put into effect by those with powerful influence, can work to entrench narrow perceptions of what is valuable in vocational education. One example is the imposition, by the government, of CBT, also discussed below.

To illustrate differences in values, further, consider Technical and Further Education (TAFE), a major sector of vocational education in Australia. In this sector, the values which underlie curriculum development seem to vary across categories of courses (Stevenson 1989). TAFE courses are classified into *streams* (Stevenson 1982; Stevenson & Mountney 1982). The streams and an indication

of the nature of each stream are given in Table 1. Examples of the differences in values underlying curriculum development in streams are as follows.

Table 1 Streams of TAFE courses

Stream	Description	Comment
1000	Courses for recreation, leisure and personal enrichment (Non award courses, Statement of Attendance)	Often full fee-paying, broad course outline only, content emerges in response to participant
2000	Preparatory courses (Statement of Attendance, Statement of Attainment, Certificate)	Prepare students for entry to work or further education; often bridging courses; often funded by government as it targets specific groups e.g. the unemployed
3000	Initial vocational courses (Certificate, Advanced Certificate, Associate Diploma, Diploma)	Courses directed at different occupational categories, e.g. operatives, skilled, para-professional and professional categories; accredited syllabuses; competency-based; derived from occupational analyses
4000	Courses taken subsequent to an initial vocational course (Statement of Attainment or Endorsement of initial award)	Courses directed at broadening or advancing competence in different occupational categories, e.g. operatives, skilled, para-professional and professional categories; accredited syllabuses; competency-based; derived from occupational analyses

Firstly, the need to satisfy skill needs of industry seems to be of a higher priority in vocational courses (Streams 3000 and 4000), than developing conceptual understanding, improving students' problem-solving abilities or contributing to individual growth and development. Secondly, the need to contribute to the artistic and creative development of individual students

seems to be more important in recreational, leisure and personal enrichment courses (Stream 1000) than others. They also seem to be viewed as an end in their own right, rather than being valued because of their benefit to society as a whole.

Thirdly, an emphasis on individual personal development and an understanding of society seems to be confined to preparatory courses (Stream 2000). It is especially in Stream 2000 courses that students (for example, unemployed people) struggle with understanding and interpreting the complexities of the situation in which they find themselves—the nature of society, how it affects them as individuals and the social forces influencing attainment of their goals.

Thus, the values underpinning different streams of courses seem to be different, and there seem to be entrenched social practices which maintain those differences. Moreover, Australian TAFE assessment practices reflect similar differences in emphases. For instance, there is a greater emphasis on assessment of creativity, self-expression and human relations in non-vocational streams, than in vocational streams (Stevenson, in press).

Hence, assumptions underpinning the selection and assessment of content, leave fundamental questions unanswered, such as:

- Who is the client? (students, industry, governments, society ...)
- Which needs are paramount? (social, individual, economic ...)
- Who should select content? (students, industry, teachers, the National Training Board ...)

Without addressing these questions and the underlying values, the TAFE sector is in danger of losing its way unless there is a reconciliation of values not only among different kinds of courses within the sector, but also within individual courses themselves (Stevenson 1989). Perhaps this is why the Finn Report (Finn 1991) recommends that TAFE cease provision of Stream 1000 courses. Such a move may lead to less variation in values underpinning courses, but would be unfortunate as it would ignore the overlap in attributes needed in work and in other life pursuits. Almost twenty years ago, the Australian Committee on Technical and Further Education (Kangan 1974) argued that the differences among educational goals are more apparent than real because vocational education develops some general skills, and general education develops some attributes of use in the workplace. This theme has been reasserted, more recently, in the Aulich (1991) Report.

However, for all providers of vocational education, a tension between relative emphases on specific vocational and general education has persisted, and it is necessary to develop, for vocational educators, curriculum principles which address the issues involved. The debate is not merely one between general and skills-based education, but also involves the nature of what is

meant by such terms as 'general' and 'skills' and recognition of the nature of the kinds of knowledge which are to be developed in vocational education (Stevenson 1985).

As indicated above, any classification of knowledge is based on assumptions about the underlying cognitive structures and cognitive dispositions. The value which individuals and groups place on different cognitive structures and cognitive dispositions are often manifest in their goals for vocational education. So, too, for those involved in curriculum development. Because of the influence which individuals and groups have on learning, through curriculum development, their adoption of different cognitive interests, and their emphasis on developing the cognitive structures which are required to pursue such interests, need to be the subject of discussion. Only then is it possible to communicate about values, to address differences among values, to agree on goals, and to review this agreement.

This paper discusses values which appear to underlie the influences of various bodies with an interest in vocational education. It is argued that classification of value positions in terms of cognitive dispositions assists clarification of beliefs about the role of vocational educational goals, but that it is not useful to confine vocational curriculum development to any single disposition. Rather, for many courses, a reconciliation of these dispositions is needed. Indeed, the three dispositions are not easily separated in any given situation (Marsick 1988); and the influence of one disposition or other can be subtle (Grundy 1987). Similarly, it is argued that examination of the cognitive structures which are the focus of different approaches to vocational curriculum development is important for the attainment of educational goals. Rather than assigning the development of categories of cognitive structures to different conceptualisations of curriculum, it is argued that all orientations rely on, and need to encompass, the development of a comprehensive range of structures. For instance, an instrumental focus in learning a technique which never varies relies almost exclusively on specific procedures, with little need for the development of conceptual knowledge or higher order procedures. However, a focus on developing individual autonomy in adapting to new situations requires these latter structures. Further, an emancipatory focus on empowering learners to challenge the social order requires the development of new concepts, specific skills and higher order procedures in order to develop new constructs, appraise these new ways of viewing reality and take action in bringing about social change.

Competency-based education and training (CBT) is taken as an example where undue emphasis on 'technical' (Carr & Kemmis 1983, p. 35; Grundy 1987, p.22) interests and certain cognitive structures, to the exclusion of others, can threaten even the utilitarian goals set by governments. It is argued that, ironically, governmental goals require attributes which develop from non-

technical conceptions of knowledge and education; and cognitive structures not easily defined or assessed in competency-based education. It is also argued that the single-minded disposition which seems to underlie governmental goals is inappropriate.

In the next section, cognitive dispositions and the required cognitive structures, underlying different conceptions of curriculum development in general, adult and vocational education, are examined and compared. In later sections, goals of the government and other stakeholders in vocational curriculum development are examined, and suggestions are made for accommodating diverse dispositions and comprehensive cognitive development in vocational curriculum development.

Values underlying curricular goals

In this section, curricular goals are analysed in terms of underlying cognitive dispositions and cognitive structures. Classifications of curriculum development approaches, developed over the last ten years, are examined. Classifications of approaches taken in general education, adult education and vocational education are briefly reviewed, and summarised. Then, the underlying cognitive dispositions and cognitive structures are identified and compared. It is argued that cognitive dispositions and cognitive structures are interdependent.

Classifications of curriculum approaches in general education

As an example of the value positions identified in general education, consider the set of five conceptions, used by Print (1993). These conceptions are based on those of McNeil (1985) who differentiated *academic rationalist, cognitive processes, humanistic, social reconstructionist* and *technological* conceptions. (Print also identifies a sixth conception which he designates eclectic.) These conceptions are differentiated, respectively, according to their focus on intellectual abilities, holistic personal development, social reform and the achievement of predetermined ends. Similarly, Marsh and Stafford (1984) differentiated three types of theories: *personal, social* and *behaviourist*; and recognised the emergence of *reconceptualist* theory. They separate the theories, respectively, on the basis of concerns for data, concept and problem-solving; personal development; social development and reform; and behaviour. In these and other attempts to differentiate assumptions underlying approaches to curriculum development, distinctions can be analysed on the basis of the relative emphases on different cognitive dispositions (Carr & Kemmis 1983; Grundy 1987; Mezirow 1981), for example:

- emphases on controlling the environment through behaviour and knowledge (academic rationalist, behaviourist); and
- emphasis on emancipating the individual from control through oppressive social norms (social development and social reform).

Humanist (or personal development) categories can be seen as having an emphasis on developing mutual understanding and judgment, but fall short of the call for developing shared meaning in the practical disposition.

However, the cognitive processes cluster (i.e. the cluster emphasising cognitive structures) is more problematic, as the development of cognitive structures of various kinds (propositional knowledge, specific procedural knowledge and higher order procedural knowledge) is also needed in all other categories. That is, each cluster can be further differentiated according to the relative emphasis on underlying categories of cognitive structures. Implicit requirements for the development of cognitive structures (for example, see Glaser 1984; Stevenson 1986a) can be differentiated as follows. All clusters of curriculum theories, except the behaviourist/technological categories, require *deep conceptualisation*, that is the development of propositional knowledge (concepts, theories, principles, propositions, data). All (but to a smaller extent for the humanist/personal category) focus on the development of *high levels of expertise in specific skills*, that is specific procedures (skills, techniques, algorithms, methodologies, procedures, taking action). And all, except the behaviourist/technological category, require the development of *higher order thinking*, that is higher order procedures (problem-solving, analysing, reasoning, monitoring, appraising, using heuristics). These comparisons are pursued further, after considering classifications of curriculum development approaches in adult and vocational education.

Classification of curriculum approaches in adult education

In adult learning, the distinctions among curriculum approaches use similar terminology. For instance, Millar (1991) has classified adult learning approaches as discursive maps: *technological*, *humanist*, *liberal* and *radical*. These maps are differentiated according to their discourse and how it addresses such questions as social problems, educational processes, educators' tasks, knowledge and values in practice. Again, the differentiation involves not only disposition, but also relative emphasis on categories of cognitive structures (using such cognitive terminology as competent, integrated, reason, empowerment, growth, and initiation—all with cognitive structure connotations). Moreover, Boud (1987) has characterised adult education traditions in terms of freedoms: traditions

concerned with *training and efficiency* in learning (freedom from distraction in learning), *self-directed* learning (freedom as learners), *learner-centred* education (freedom to learn) and *critical pedagogy and social action* (freedom through learning). Again, as well as identifying the cognitive dispositions, the classification implies emphases on the development of different kinds of cognitive structures, ranging from specific procedural in the training and efficiency approach (the development of specific skills) to a more balanced set of structures in the latter two categories (higher order procedures involved in exploring, reasoning, and problem-solving; conceptual understanding in comparing perspectives, and specific skills in taking action). Thus, a strength of classification systems taken from adult education is that there is no single category called cognitive. Rather, concerns for cognitive structures are implicit in each category.

Classification of curriculum approaches in vocational education

Similarly, the same kinds of distinctions have been made in vocational education. Blachford (1986), in considering curriculum development in TAFE, has summarised clusters of values underpinning curriculum development as the following curriculum orientations: curriculum as *technology, cognitive processes, humanism* and *social-relevance reconstruction*. According to Blachford, technological curricula are product-oriented, and seek to achieve technological ends, predetermined through needs analyses, occupational analyses, and other techniques of ascertaining desired objectives. He regards such curricula as being responsive to powerful external interests. He views cognitive process curricula as responsive to changing needs of external interests, seeking to develop conceptual and procedural knowledge required in subsequent endeavours. His view of humanist curricula is that they are responsive to student need for self-actualisation, and seek to achieve cognitive, affective and personal growth. He regards social relevance–reconstructive curricula as responding to the disadvantaged and powerless minorities, seeking to increase social participation, plural values and debate. Again, the language used in his classification illustrates a mixture of concerns about the social construction of knowledge and its role, and the cognitive structures needed for action. However, it does not seem to recognise the variation in the cognitive structures emphasised in different orientations (for example, a high emphasis on specific procedures—skills—in the technology orientation and a high emphasis on conceptual understanding and higher order procedures in the humanist and social relevance–reconstructive orientation). Moreover, it confines concerns about such cognitive structures to one category—cognitive processes.

Cognitive dispositions in curriculum development classifications

Thus, there are commonalities among the categories used to cluster values which underpin curriculum development in general education, adult education and vocational education. Proponents of critical theory would classify differences inherent in the above classifications according to the three dispositions defined above: technical, practical and strategic (Carr & Kemmis 1983) or technical, practical and emancipatory (Grundy 1987; Mezirow 1981). The technical interest would correspond to Blachford's technological (and cognitive[1]) orientations, the behaviourist (and information processing[2]) categories of Marsh and Stafford; Print's academic rationalist and technological conceptions; and Millar's technological discourse. Kemmis (Kemmis with Fitzclarence 1986, p.113) would use the terms *scientistic*, *bureaucratic*, and *technicist* to refer to the language and discourse, the social relationships, and the nature of actions and practice, respectively, which flow from this view of curriculum. The practical interest has no exact equivalence in the categories described above. It includes the humanist, personal and liberal categories, but takes these ideas further by including not only personal development, but also the development of personal interactions with others. Both practical and emancipatory dispositions go beyond humanist curricula in that they are concerned not only with individual growth and development, but also the individual in relation to others in society—negotiating meaning, making judgments and taking action to overcome unjust social practices. The emancipatory categorisation incorporates the radical, social reconstructionist and social categories of other authors.

However, the cognitive disposition classification is inadequate in its treatment of cognitive structures. It does not seem to recognise the need for conceptual understanding, specific skills and higher order thinking in different dispositions. This aspect of different dispositions towards curriculum development is discussed further below.

Cognitive structures in curriculum development classifications

Relative emphases on different categories of cognitive structures, for different conceptions of curriculum development, drawn from general, adult and vocational education, are illustrated in Table 2.

1 However, see the next paragraph, below

2 However, see the next paragraph, below

Table 2 **Relative emphases of different cognitive structures in curriculum orientations**

Curriculum orientations	Cognitive structures: Propositional knowledge	Specific procedures	Higher procedures
Behaviourist; Technological; Training and efficiency		++ skills	
Academic Rationalist	++ realms of knowledge	++ principles of procedures	
Information processing; Cognitive processes	++ understanding; conceptualis-ation	++ learning; procedures	++ problem-solving
Humanist; Personal; Learner-centred	++ meaningful learning		++ exploration; discovery
Social Recon-structionalist; Radical; Critical pedagogy and social action	++ understanding; perspective transformation	++ taking action	++ judgment; critical reflection

Note: ++ denotes a high relative emphasis on developing this cognitive structure in this orientation

Key words are given in each cell to exemplify structures emphasised by that curriculum development approach. From the table, the assignment of a concern for cognitive processes to a technical disposition is inadequate as it denies the close correspondence of emphases on cognitive structures between this concern and the emancipatory concern.

Salient characteristics of educational values

Thus, an important difference between the direct adoption of the classification of cognitive interests in terms of critical theory and the concepts which under-

pin this paper is the treatment of the cognitive orientation to curriculum development. While critical theorists tend to equate a concern for cognitive structures with the technical disposition, they generally use behaviourist psychology to support their contention that such interests are confined to shaping, moulding and manipulating. While these metaphors can be readily applied to conditioning, they are less appropriate to learning theories concerned with cognitive structures and processes. In contemporary learning theory, the concerns are more about the development of expertise, higher order procedures, and deep conceptual understanding which gives students control over their own learning and assists them in confronting changing situations in problem-solving and reflective ways.

Here, analysis of cognitive structures is regarded as important for all dispositions or cognitive interests. The importance of cognitive theory is clear in the following questions. How can one be emancipated through perspective transformation, without the cognitive processes needed for reconceptualisation? How can one share meaning and develop consensual norms without subsuming and/or accommodating others' cognitive constructs? How can one take action, without mastering specific and higher order procedures? How can one reflect without higher order procedures? The abilities to analyse, reason, problem-solve and conceptualise are all important in achieving shared understanding and emancipation. While critical theorists regard a focus on cognitive processes as a focus on mechanisms, rather than on judgments, this misrepresents cognitive theorists' concerns for the development of understanding, skill, autonomy, individual control over learning, reflection, the ability to evaluate, and judgment. While the work of cognitive theorists assists judgments about the merits of different instructional approaches for the development of cognitive structures, it is also true that value positions are adopted about the worth of different kinds of knowledge and how it is used. That is, cognitive theorists, too, are concerned about individual development and the development of society. Like critical theorists, cognitive theorists have different value positions.

In this paper, 'interests' are taken to be 'cognitive interests' (Habermas 1972, p.308). However, the term is taken to have a wider meaning and to include reference to the underlying cognitive structures, as well. This is because the development of cognitive structures is regarded as important for each of the technical, practical and emancipatory interests of people.

The position adopted here is that all dispositions (technical, practical and emancipatory) are valuable in vocational education and warrant recognition in vocational education curriculum development. They contribute to the development of expertise, individual growth and societal improvement. As well, it is believed that a comprehensive range of cognitive structures is valuable in

vocational education and ought to be the subject of curriculum development, for each cognitive disposition. Without propositional knowledge, specific skills and higher order procedures, there can be little expertise, individual growth or empowerment.

In the next section, values and goals are examined through reference to the pervasive and dominant influence of the government. These include the current governmental policies on vocational education. Because of the current dominance of this ideology (Kemmis with Fitzclarence 1986), the values implicit in governmental policies are analysed, compared with international trends, related to the terminology of governmental discourse and criticised.

The pervasive influence of governmental values and goals

Different views about the importance of cognitive structures and cognitive dispositions underlie different kinds of curricular goals in vocational education. Some of the proponents of different curricular goals are more influential than others, and their views can dominate vocational curriculum development, that is become the 'dominant ideology' (Kemmis with Fitzclarence 1986, p. 101). As an example, consider the pervasive way in which the government has brought about the imposition of CBT and the values which underlie it. Even the vocabulary of discourse has been altered to impede debate about values in vocational education.

In this section the nature of the government's goals is discussed. The ways in which these goals have a pervasive and powerful influence, especially through the vocabulary which has been imposed for discourse, and governmental imposition of curriculum development parameters, are discussed.

Firstly, terminology used for the present analysis is explained. This terminology has been adopted to be relatively independent of the ideology underlying governmental terminology. Secondly, overall national goals as expressed by the government, since 1987, are analysed and related to international trends. Thirdly, the terminology of governmental discourse is analysed as evidence for the underlying disposition for the government's educational paradigm. It is concluded that governmental goals will not be achieved through CBT, that more comprehensive cognitive structures are needed in vocational education, that emphases on processes of learning rather than only measurable products are needed, and that dispositions in addition to the technical one should be embraced.

Terminology for the development of individual capacities

In discussing governmental concerns in vocational education, especially its persistent and pervasive adoption of CBT, it is necessary to use terminology distinct from that which forms official discourse. For this reason, I prefer to refer to individual characteristics as *attributes* (Hager, Gonczi & Oliver 1990; Hager & Gonczi 1991), rather than to use such terms as 'skills', 'competency', 'competence', or 'competences'. Hager, Gonczi and Oliver (1990) regard competent workers as those who possess the *attributes* necessary for job performance to appropriate standards. That is, they differentiate the *possession* of necessary underlying attributes from the *demonstration* of that possession in observable performance.

This differentiation can be likened to that of Field (1990) who depicts observable performance as the tip of a largely submerged iceberg; but goes beyond Field's conceptualisation in that the non-observable skills identified by Field also ignore valuable cognitive structures and dispositions: student control through higher order attributes, such as problem-solving, and executive cognitive procedures (Evans 1991; Stevenson 1991a); and student capacity for critical inquiry (Carr & Kemmis 1983).

From the viewpoint of cognitive psychology, the differentiation between observable and unobservable aspects of competence is important because adaptation derives from higher order cognitive structures, rather than from specific skills (see Stevenson 1986a, 1991a). That is, even when adopting a technical disposition, it needs to be recognised that, with changes in society and particularly technology, contexts change in which competence must be demonstrated. Then, the same *attributes* may enable quite different *performance* to meet the changed demands. Adaptation to different circumstances is possible, providing the underlying attributes are transferable or generalisable.

In addition, the differentiation is important in terms of the cognitive dispositions identified in critical theory. The term 'attributes' is more accommodating of the ability to negotiate meaning, engage in critical reflection and take appropriate action. As is argued below, these attributes are needed even in pursuing apparently utilitarian goals.

Overall national goals

The government regards vocational curriculum development as a means for securing national economic objectives: that is, to develop a skilled and adaptable workforce which is innovative, creative and productive, assisting Aus-

tralia to produce goods and services which are internationally competitive; and which enable the country to redress its level of indebtedness (Dawkins & Holding 1987, Dawkins 1988a, 1988b, 1989).

As indicated earlier, such a disposition appears to be 'technical', that is one which seeks to control economic and workplace environments in order to shape human activity towards prosperity. But identification of the emphasis on cognitive structures is more problematic. For instance, the government recognises the importance of a wide range of attributes to achieve the competence it seeks in the workplace. It has referred to higher order thinking, broad-based skills and multi-skilling; and it has stated clearly that narrowly focused skills are not sought in vocational education. Examples it has given of broader and higher level skills include 'vocational competence and adaptability of skills' (Dawkins & Holding 1987, p. 7); 'less measurable skills on which future prosperity depends—life-time learning, enterprise and initiative, pursuit of excellence, communication skills, teamwork and responsibility' (p.9); and 'broad and transferable skills, and attitudes which equip the work force to adapt to and influence change' (p.9). Indeed, reference to developing the ability to influence change even suggests a critical perspective—the questioning of things the way they are and taking appropriate action.

The Australian Education Council's Review Committee on *The Participation of Young People in Post-compulsory Education and Training* (Finn 1991), has reaffirmed the need to develop 'general vocational skills' which it combines into the following key areas of competence, now confirmed by Mayer (1992) and governmental agreements:

- language and communication (speaking, listening, reading, writing, accessing and using information);
- mathematics (computation, measurement, understanding, mathematical symbols);
- scientific and technological understanding (understanding scientific and technological concepts, understanding the impact of science and technology on society, scientific and technological skills including computing skills);
- cultural understanding (understanding and knowledge of Australia's historical, geographic and political context, understanding of major global issues: e.g. competing environmental, technological and social priorities, understanding of the world of work, its importance and requirements);

- problem-solving (analysis; critical thinking, decision-making, creative thinking, skill transfer to new contexts); and
- personal and interpersonal (personal management and planning including career planning, negotiating and team skills, initiative and leadership, adaptability to change, self esteem, ethics).

Again the disposition appears to be technical, with a glimmer of hope that the words 'understanding', 'negotiating', 'creative' and 'ethics' may not be intended to be entirely deterministic, that is that there is room for some critical thinking and construction of new perspectives. This disposition is compared in the next section with international trends.

International trends

As in Australia, the international rhetoric for the last two decades has recognised that broad and higher level attributes are needed to achieve the instrumental goals of governments. For instance, following the neo-behaviourist pushes of the 1960s, UNESCO, as long ago as 1972, recognised the need to develop, in vocational education, wider attributes than those required, at any given point of time, in specific occupations:

> Educational action to prepare for work and active life should aim less at training young people to practise a given trade or profession than at equipping them to adapt themselves to a variety of jobs, at developing their capacities continuously, in order to keep pace with developing production methods and working conditions. (Faure et al. 1972, p. 196)

In 1980, the Organisation for Economic Cooperation and Development (OECD) listed the following competencies for working life:

- abilities and techniques (reasoning, learning, reading, writing, calculating, manipulating, elementary technology);
- personal and social skills (social skills, work values, communicating, health and safety); and
- knowledge about working life (the world of work, finding a job, survival and development in employment).

That is, for these bodies, content, not flowing directly from analysis of specific workplace practices has been recognised as legitimate and important in vocational education. More recently, in the United Kingdom, the Further Education Unit (1987, p.10) has defined competence as 'the possession and development of sufficient skill, knowledge, appropriate attitudes and experience

for successful performance of life roles'. The unit has reaffirmed the growing 'agreement between trainers and educationalists ... of the importance of *process skills* and of previous *experience*' (p.12). In 1990, Laur-Ernst of the Federal Institute of Vocational Training in Germany (Laur-Ernst 1990) argued against a narrow relationship between concrete tasks and competence. Because of the dynamic nature of work, she argued for such attributes as general social, intellectual, and emotional abilities, so that cooperation, communication, making independent decisions, and planning and organising work on one's own would be possible. So too, for the United States. For instance, Carnevale (1990), in a study undertaken for the American Society for Training and Development, and Levin and Rumberger (1989) highlighted vocational skills which include learning, developing, adapting and communicating (see Sweet 1990).

In the next section, cognitive structures and dispositions underlying national and international goals are examined.

Structures and dispositions implicit in national goals

Thus, one can discern similarities between international trends and overall goals expressed in governmental policy documents. While these goals are aimed at utilitarian ends, they tend to emphasise broader and higher level cognitive structures than *competences* as defined by The National Training Board (1991). On the surface, because of the instrumental focus of governments and because vocational ends are being sought, it is tempting to classify these concerns as belonging solely within a technical disposition. This is especially so when the content chosen for courses is set in advance and there is no room for learner negotiation.

At the same time, there is recognition, in some stated governmental goals, that a purely reductionist approach is inadequate; and that there is a need for higher order cognitive procedures for problem-solving, innovation, adaptability, and learning how to learn. Indeed, although the focus is on ends, it can be argued that the full attainment of at least some of the ends, desired by governments, are unattainable with curricula developed from a purely technical disposition. Clear examples include the need to develop the ability to share understanding with others through dialogue (a goal of those with a practical disposition); or to engage in critical reflection (a goal of those with an emancipatory disposition).

Take for instance, governmental goals concerning needs for communication skills, teamwork and responsibility. Communication requires consensual norms which accommodate meanings which different individuals construct on phenomena. Teamwork also requires mutual understanding and interpreta-

tion of the complexities of shared problems. It is not enough to adopt meaningless constructs. Consider also the governmental goal that work practices become more efficient and that there be improvements in quality. Changes in workplace practices often require what Mezirow denotes a 'perspective transformation' (Mezirow 1981); that is, becoming critically aware of, and reconstructing, concepts which have limited our perceptions of ourselves and our relationships; so that our action can be based on new understanding and liberate us from previous constraints. If the government's goal is to liberate people in the workplace from constraining assumptions about workplace practices, then an emancipatory disposition is necessary. A similar argument can be made in favour of an emancipatory disposition in achieving such ends as innovation and the ability to influence change.

However, classification of governmental goals in terms of practical or emancipatory dispositions sits uneasily with the deterministic nature of the goals. While better communication, innovation and change can flow from these dispositions, emancipation can become a guise for passive change in directions predetermined by the government. Shared consensual understanding and transformed perspectives come from within; they are not imposed as the perspective of others. That is, the ability to influence change in a meaningful and emancipatory way comes from the formation of new insights, by sharing understanding and reflecting on experience; rather than the imposition of externally developed ideas. Action to change workplaces and society could be directed at inappropriate and unjust business practice, but they may equally be directed at oppressive aspects of governmental policy and practice.

Thus, the disposition of the government and international writers may be classified as technical, largely because they are reductionist or because the intent is to seek to implement, rather than challenge, social norms. However, the goals themselves involve development of attributes which fit uneasily in a technical paradigm. As well, the cognitive structures underlying achievement of some governmental goals are the same categories of structures underlying practical and emancipatory dispositions.

Hence, further clarification of the government's values is necessary. Matters of ideology, as evident in governmental discourse associated with CBT, are explored further in the next section. This discourse helps to clarify the deterministic nature of governmental values and goals.

The vocabulary of governmental discourse

The terminology used by the government in connection with CBT reflects its ideology, and the use of certain terms has become almost compulsory, in order

to remain 'ideologically sound' (Stevenson 1991b). The argument is as follows. In government documents, certain meanings have been assigned to such words as those which follow:

- 'training'—now taken to be a generic term encompassing 'education', 'growth' and 'development';
- 'competence' or 'competencies'—now used as a generic term for knowledge, skills and attitudes (National Board of Employment Education and Training 1990), or knowledge, skills and applications (The National Training Board 1991);
- 'skill'—now taken to be generic for all levels and kinds of manual, motor, perceptual, intellectual and social procedural knowledge (The National Training Board 1991);
- 'competency standards'—observable and measurable outcome performances, at the level of specified criteria, which are possible for all attributes;
- 'adaptability', 'flexibility'—multi-skilling, or broad skilling, i.e. the possession of multiple sets of skills usually at the *same* level, and the transfer of *credit* from one learning situation to another; and
- 'up-skilling'—the acquisition of a competency which comprises approved performance in a higher occupational category.

The new meanings have been legitimated. That is they pervade all governmental documents, and discourse about the development of the attributes needed for workplace performance is permitted only in these terms. The terminology serves to reinforce norms put in place by the government and impedes rational debate about values.

Similar words have been legitimated for the nature and purposes of the education and training system, itself—'skill formation', 'credit transfer', 'training delivery', 'delivery units', 'providers', 'quality control', 'recognition of training', and a 'level playing field'.

Thus, similar management and educational psychology terms, derived from behavioural objectives (for example, Mager 1962) (themselves derived from behaviourism (for example, Skinner 1954)) have been adopted to 'reform' education and training. The terminology reflects a paradigm which embraces outmoded management principles derived from concepts of scientific efficiency (for example, Bobbitt 1912, 1924; Charters 1924). The terminology is deterministic, focuses on the tangible and observable, is limited to the instru-

mental, and dis-aggregates human attributes into measurable behaviours. It begs omniscience and prescience in selecting the correct sets of behaviours which are required, in workplaces, now and in the future (Stevenson 1983).

To compare the old and the new vocabulary, compare the following statements:

> An objective is an *intent* communicated by a statement describing a proposed change in a learner—a statement of what the learner is to be like when he (sic) has successfully completed a learning experience. It is a description of a pattern of behavior (performance) that we want the learner to be able to demonstrate... (It) must denote *measurable* attributes *observable* in the graduate of the program ...
>
> (Mager 1962, p. 3)

> Elements of competency are the basic building blocks of the unit of competency and, as such, continue the description of the key purpose of the unit itself. They describe, in output terms, things that an employee who works in a particular area is able to do, that is, an action or outcome which is demonstrable and assessable.
>
> (The National Training Board 1991, p. 19)

Despite protestations that competency-based education is not Taylorist (Carmichael 1991), in both cases, observable and measurable outcomes are emphasised to the exclusion of other aspects of teaching and learning. In both cases, it is asserted that the processes by which abilities are acquired are not important. Rather, the curriculum design objective is to devise objectives which describe outcomes in terms of performance, express measurable criteria against which performance can be assessed, and not be 'vague' or 'general'. The teaching objective is to ensure that these prespecified standards are met.

At the same time, The National Training Board (1991) recognises that vocational attributes are not confined to narrow, routine task skills; and recognises the dangers of presentism in definitions of competency (The National Training Board 1990). To overcome these problems, competency is defined by the Board to include the ability to manage a number of different tasks within a job, the ability to deal with the responsibilities and expectations of the work environment, and the ability to respond to irregularities and breakdowns in routine.

Yet, despite the attempt to broaden the concept, the assumptions underlying the approach are still problematic. From the viewpoint of critical theory, the approach is deterministic; or to use the terminology of Kemmis (Kemmis with Fitzclarence 1986), it is scientistic, bureaucratic and technicist. That is, in

seeking to control the competence acquired by vocational students, the National Training Board, through its advisory bodies, is seeking to develop standards which require predefinition of the attributes needed in the workplace.

Further, the National Training Board (1991) has developed a set of eight national skill levels which compound the deterministic nature of CBT, the compartmentalisation of knowledge and workers, the separation of educational means from ends and entrenchment of inequities in the workplace. The skill levels and a summary of their descriptors are given in Table 3 (taken from Stevenson 1991b). While these have improved, somewhat, recently (The National Training Board 1992), the basic problems remain.

As indicated by the table, it is alarming that independence in the application of theoretical and procedural knowledge is required only from the level of Skilled upwards, self-directed application is required only from Advanced skilled upwards, the handling of complex tasks only from Skilled upwards, and creativity only from Para-professional upwards. It is also alarming that some occupations are seen to be almost robotic in the amount and level of thinking required, and it is these occupations which are targeted for increased participation by young people (Finn 1991).

This compartmentalisation of categories of knowledge, according to occupational levels is the antithesis of practical and emancipatory dispositions, and denies the need for higher level cognitive structures to develop students' control over their own learning. That is, it also ignores the importance of a comprehensive range of cognitive structures in all facets of the workplace. The compartmentalisation of knowledge, paralleling hierarchies of occupational classifications, belongs with outmoded management philosophies arising from the compartmentalisation of mechanised industry in nineteenth-century England (King 1977). It is like fragmentation in the assembly line, where the division of labour is a consequence of bureaucratic organisation (Millington 1980), and the education system functions as a differential distributor of knowledge to individuals and of suitably socialised individuals to predefined occupational roles through its certification of that knowledge (Smith 1971).

There are also flaws in the approach, in terms of cognitive theory, as follows. The approach admits no place for processes of learning which develop problem-solving abilities; development of the ability for critical reflection; and the development of new and deeper concepts and insights, during instruction and practice, about desirable learning goals. Problem-solving is seen as a set of algorithms which can be applied to breakdowns in routine; and management of groups of tasks is also treated as though direct instruction is possible, and as though the attribute is observable and measurable.

Table 3 Characteristics of attributes at different National Training Board competency levels

Competency level	Routine, predictable, repetitive, procedural-ised tasks	Apply theoretical knowledge and motor skills	Ability to perform complex tasks	Super-vision	Creative Planning Design	Management acountability Responsibility for others
1 Operative	Y(c)	L(c)				
2 Advanced operative	Y(g)	Y(c)				
3 Skilled	Y(i)	Y(i)	Y			
4 Advanced skilled	Y(i)	Y(i) Y(s)	Y	L		
5 Para-professional	Y(i)	Y(i) Y(s)	Y	L	L	
6 Para-professional	Y(i)	Y(i)+	Y	Y	Y(p)	
7 Professional	Y(i)	Y(i)++		Y+	Y+	Y+
8 Senior professional	Y(i)	Y(i)++ & Generates	Y+		Y++	Y++

Notes:

Y	Yes
Y(c)	Yes, under close supervision
Y(g)	Yes, under general supervision
Y(s)	Yes, including selection of techniques and equipment
Y(i)	Yes, self-directed application, independent use
Y(p)	Yes, relating to products, services, operations or processes
Y+/Y++	Yes, highly/very highly developed
L	Yes, but limited
L(c)	Yes, but limited and under close supervision

Rather, cognitive theory posits that problem-solving and the handling of complex situations require the development of conceptual understanding and higher order analytical, problem-solving and executive procedures (Anderson 1982; Collins, Brown & Newman 1989; Evans 1991; Glaser 1984; Gott 1989; Scandura 1981; Stevenson 1986a, 1991a) which, in turn, require approaches to instruction which are not product-oriented and which produce attributes which are not directly observable or measurable (Evans 1991; Glaser 1984; Stevenson 1986b, 1991a).

Hence, although the National Training Board recognises the dangers of presentism and narrow deterministic training, the discourse of CBT operates to prevent overcoming these problems. The vocabulary of CBT confirms that the government's policies are conceptualised within a framework which is deterministic, reductionist, and behaviourist. Within such a framework, attributes will be overlooked which require an emphasis on learning processes. Yet, it is the processes of learning which are important in developing adaptability. It is learning processes which are important in developing shared understanding among students, teachers and industry. It is learning processes which are important in helping students question taken-for-granted social norms and work practices, and reflecting on alternative perceptions.

Hence the implementation of current policies is more likely to lead to a reproduction of workforce practices than the government's desired transformation; learners are more likely to have knowledge transmitted to them, than be involved in its construction; propositional knowledge and specific procedures rather than higher order problem-solving or executive cognitive structures are likely to be developed.

Tensions in governmental goals

Thus, there are substantial tensions in governmental goals for vocational education. Overall national goals are instrumental and deterministic. That is, they are directed at such predetermined ends as workplace restructuring, business efficiency, national productivity, and international competitiveness; and hence reflect a technical disposition. At the same time, the government recognises that many of the attributes needed for successful and competitive industries are of a different kind from those traditionally valued for vocational education. They include broader and higher level attributes; they involve communication among people; they rely on less division or compartmentalisation of work; and they rely on the ability to reconceptualise taken-for-granted norms. These attributes are recognised internationally as important in vocational education. Underlying these attributes is a comprehen-

sive range of cognitive structures and the capacity to reflect on socially constructed concepts and practices. Their development requires an emphasis on learning processes which involve confrontation of the complexities of life, analysis, problem-solving and reflection. Their development needs attention, in the curriculum, not only to a specification of the outcomes, but also to the types of learning processes which are necessary for their development. Recognition is also required that an exclusive emphasis on technical knowledge without the development of practical and emancipatory knowledge cannot lead to transformations in the structure of work and workplace practices.

Yet, the government is entrenching CBT—a paradigm and associated vocabulary and practices which focus exclusively on observable educational products, products which are deterministically set in advance, and set by only one group, selected from all those with legitimate concerns about the content of vocational curricula. Thus, the government seems to be unaware that, because it flies in the face of learning theory and it ignores practical and emancipatory dispositions to knowledge, CBT will not achieve its goals. In vocational education, a more holistic view is needed of the social, personal, cognitive and specific working life attributes needed in working life. Although governmental goals are increasingly dominant in vocational education, they are but one of the factors which should be considered and discussed in vocational curriculum development.

In the next section, governmental goals are considered as but one of many legitimate concerns in vocational education. Goals in vocational education, wider than those of the government, are also analysed in terms of dispositions and cognitive theory.

Complementary and antagonistic goals in vocational education

As indicated by current national goals, various goals can be chosen for vocational education according to one's values. These values can be complementary, but sometimes they are in opposition. For example, consider the following hypothetical goals for vocational education: expertise in specific skill areas, adaptability, securing national objectives, individual growth and development, and critical understanding and empowerment. Such a range of goals often confronts curriculum developers, who are then required to reconcile them. The goals are examined in terms of cognitive and critical theory in the following sections.

Expertise in specific skill areas

Firstly, vocational education may be considered as the key to developing high degrees of expertise in performing routine skills, for example, the ability to use tools and equipment with precision and efficiency to achieve technological purposes. Such a goal is consistent with a desire to increase human control over the environment (Grundy 1987), so that it can be manipulated for benefits sought by individuals and society. Motor mechanics, highly skilled in undertaking routine maintenance services of particular brands and models of vehicles, according to manufacturers' specifications, are needed in service centres, and they are also demanded by society. Such mechanics develop their control over technical matters, and also contribute to the maintenance of control by others, for example car owners' needs to control the risk of breakdowns, and society's need for efficient, ecologically friendly transport.

Hence, the goal could be classified as belonging to a technical disposition because of its concern for increasing student control over technical matters; and others' control over the environment. It can also be regarded as technical because decisions about such curricula are often predetermined and imposed by external bodies, for example employers seeking human capital with the required skills, and the National Training Board with its national skill standards. However, criticisms, derived from critical theory, could be aimed at the way in which such a goal:

- displaces the personal and individual concerns of vocational students;
- ignores their development to question, appraise and take any action in relation to the social forces which predetermine the content which they cover in their courses; and
- ignores their development to question, appraise and take action in relation to wider social concerns associated with motor vehicles.

In cognitive theory, the goal would receive similar criticism, especially because of its emphasis on the development of specific procedures, without, necessarily, the development of understanding, problem-solving, analytical abilities and autonomy in learning.

Adaptability

Secondly, an important goal for vocational curriculum development may be conceived as the development of adaptability. For some involved in vocational education, the key to adaptability is seen to be the development of multiple

skills (multi-skilling or broad-skilling). Suggestions have been made that the common skills from a number of occupations should be taught to assist transfer (for example, Schilling 1983), where common skills can be skills which are *specific* (explicitly practised in several occupations) or *generic* (needed to generate specific skills as needed in individual occupations). Alternatively, adaptability can be regarded as consisting of general vocational skills which transcend individual occupational areas, but are needed for each: language and communication, mathematics, scientific and technological understanding, cultural understanding, problem-solving, personal and interpersonal (for example, Finn 1991).

Cognitive theory posits that the achievement of adaptability requires more than specific skills. That is, it requires the development of not only routine prespecified skills, but deep conceptual understanding (Collins, Brown & Newman 1989) and higher order cognitive processes (Stevenson 1986a, 1986b, 1991a), as a basis for handling problematic situations. Here, control consists of student control over their own learning (Evans 1991)—positive attributes and a capacity and desire to appraise a situation, to generate an approach for problem-solving and to monitor and review this approach until a solution is reached. The owner of a new car, which frequently stalls as it travels around corners on an incline, values these capacities in vehicle mechanics when a diagnosis of the problem is sought (Stevenson & McKavanagh 1992).

Critical theorists would also draw attention to inadequacies in this goal. They would again designate the disposition for this goal as technical as it is concerned with retaining control over the environment in changed circumstances. As in the previous example, criticisms would again focus on the predetermination of content, the lack of individual empowerment to question, appraise and take action, and the lack of reflectivity about the role of cars in society.

Meeting national objectives

As detailed in an earlier section, governmental goals are concerned with gaining control. This time, control is sought at a national level over GDP (Gross Domestic Product), rates of unemployment, national indebtedness, international competitiveness, standards of living, costs of social welfare and other national concerns; not to mention a government's desire for continuation in office. Both cognitive and critical theory would question the absence of a focus on individual understanding, and the capacity to question and appraise. Critical theorists would be concerned about taking for granted changes in society set by the government, without questioning their desirability and without developing individual capacities to oppose undesirable national goals

and replace them with better ones. Cognitive theorists would challenge not only the imposition of such objectives, but also the adoption of competency-based training for this set of governmentally imposed utilitarian objectives. They would argue for a focus on instructional approaches, rather than predetermined ends, and for the development of cognitive structures needed for appraisal of perspectives on social structures, socially constructed meaning and national goals, and a reconstruction of existing concepts.

Individual growth and development

Fourthly, the role of vocational education might be viewed as one which is centred on individual needs and aspirations, and which aims to foster individual growth and development, not only as preparation for work and life roles outside of work (Kangan 1974), but also as a goal for its own sake (Stenhouse 1975). In this case, the goal usually involves the transfer of control to the learner to foster individual development. With this transfer of control, cognitive theorists would be concerned about assuming readiness for independence, autonomy, and responsibility in self-directed learning; the need for support, scaffolding and gradual fading (Collins, Brown & Newman 1989) in developing deep conceptual understanding for far transfer (Royer 1979). They would be concerned about the development of the higher order procedures needed for increasing autonomy.

Individual growth and development should be regarded as a consequence of educational processes, rather than predetermined products. It may be fostered through such humanist and cognitivist open learning strategies as exploration, learning by discovery, and learning through problem-solving. In this case, not only would technical matter be mastered, but outcomes would also include deeper conceptual understanding of the complexities of real-life situations (see Gott 1989; Collins, Brown & Newman 1989); and such improved personal attributes as greater self-awareness, higher self-concept, greater sense of responsibility, more creativity, more positive feelings towards learning and more independence (for example, see Evans 1991; Giaconia & Hedges 1982; Peterson 1979). Cognitive theorists would be concerned to ensure that various approaches to instructional design are successful in preparing learners for subsequent activities, through the development of conceptual understanding, the ability to perform their chosen skills and their abilities to confront and handle new and unfamiliar situations, autonomously, critically, with confidence and with success.

An interesting example of learners seeking personal development through increased control over technical skills is in Recreation, Leisure and Personal

Enrichment (Stream 1000) courses offered by TAFE. Here, students often choose content which supports their desire to master a skill or craft or appreciate a cultural activity. For many, mastery of technical skills is a new, liberating and fulfilling experience. It 'empowers' and fulfils through control over technical matters, in much the same way as mastery of music or art.

Still, critical theorists would be concerned that there may not be an overt focus on mutual understanding and judgment, reflection on the nature of society and its effects on the individual, and action to improve society. The incorporation of processes focused on these matters would involve dialogue with others to assist judgment; and development of the ability to perceive and reject oppressive social norms.

Critical understanding and empowerment

Fifthly, the role of vocational education might be seen as the development of a critical understanding of work and its place in society, and empowerment to take considered and appraised action to improve both work and society. Marsick (1988) has argued that all learning in the workplace calls for at least some level of simple reflection. She cites Carnevale and Goldstein (1983) and Zemke (1985) who have illustrated that substantial amounts of learning which managers acquire in the workplace are acquired dialogically and reflectively.

As another example, consider the desire for learning which may arise through significant incidents (Brookfield 1987) in learners' lives. At such times, goals may be sought so that individuals are not controlled by the environment around them, but are liberated from ways of thinking which have developed from history and structures in society. For instance, a person may enrol in a vocational course as preparation for returning to the workforce after supporting a family at home for a number of years. The perception that the person should seek part-time employment may be a response to socialised norms that there is no value in household responsibilities associated with family support, and this situation is one of imprisonment. Unless the person becomes aware of the environmental pressures influencing this judgment, and reflects on them, the person may continue to be controlled by social norms of which they are unaware, rather than empowered to make free decisions and act upon them.

Analysing goals in terms of cognitive structures and dispositions

Thus, goals can be quite different, and the values which underlie these goals, just as diverse. Indeed, sometimes the goals can be in conflict. For instance, industry may seek the transmission of specific skills in short supply to its next

generation of workers; the government may have a perspective that a greater focus on the development of adaptability and greater student control over their own learning may be of greater long-term benefit to the individual, businesses and the nation as a whole; both of these instrumental goals may be challenged by those concerned for the rights and freedom of learners to fashion their own learning and increase personal autonomy as part of their ongoing and lifelong learning; and by others concerned about the need to develop students' self-awareness, awareness of the ways in which society has constructed reality, awareness of societal forces which maintain personal and group disadvantage, and the ability to appraise and take actions which will improve society.

A curriculum developer in vocational curriculum development is confronted with the difficulty of choosing among such values and goals, seeking to reconcile them, or otherwise dealing with the apparent lack of congruence. One key to dealing with apparently opposing goals is to examine the nature of the underlying cognitive structures needed for goal accomplishment. For most goals, a comprehensive set of propositional knowledge, specific procedures and higher order problem-solving and executive procedures will usually be found to be required. Making the cognitive structures and dispositions explicit makes communication about different perspectives easier and can lead to agreement to include a wider range of goals and structures in the curriculum.

In the next section, approaches are suggested for vocational curriculum development against this variety of goals and values, the governmental context and the earlier analysis of different conceptions of curriculum development in terms of cognitive dispositions and structures.

Principles for vocational curriculum development

In the preceding sections, values underlying alternative goals for vocational education have been explored and analysed in terms of cognitive theory and critical theory. The goals of governments and the vocabulary used by the Australian government in implementing competency-based training have been analysed to demonstrate the pervading influence of the technical disposition with its narrow range of cognitive structures which underlie this paradigm. In this section, approaches to developing vocational curricula are suggested against this context. The issues for curriculum developers are the identification of those who have a legitimate interest in the content of vocational courses, clarification of their concerns, identification of underlying cognitive structures and cognitive dispositions which need to be developed, promoting

discussion about these values and drawing conclusions about desirable content. The suggested framework is derived from Laird and Stevenson (in press).

Firstly, it is argued that approaches should not separate design from implementation, but should regard implementation as an input to curriculum development. Secondly, it is argued that appraisal of concerns is of initial and continuing importance in vocational curriculum development. This concept is differentiated from occupational analysis, needs analysis and situational analysis. It is argued that vocational curricula should evolve through decision-making in response to concerns appraisal, rather than following automatically and predictably from a once-and-for-all situation analysis. Appraisal of concerns should involve, directly, the views of all with a legitimate concern about course content. Thirdly, suggestions are made concerning the content of vocational courses and the needed accommodation of technical, practical and emancipatory knowledge.

Design and implementation in vocational curriculum development

When the technical disposition underlies curriculum development, implementation is usually conceived as a phase of curriculum development, distinct from design, and as a natural and automatic consequence of design. Such a programmed perspective is but one of three perspectives on implementation which can be differentiated: programmed, adaptive and evolutionary (Fullan 1981). In the programmed perspective, fidelity between curriculum design and the implemented curriculum is assumed and demanded. For example, a course may be designed by a central agency and colleges would be expected to implement it exactly as prescribed. In the adaptive perspective, it is regarded as desirable that all innovations be adapted during implementation according to the needs of the situation. On the other hand, in the evolutionary perspective, implementation does not occur after a fully articulated policy decision. Rather, it is part of policy development. Fullan (1981) also differentiated *adoption* and *implementation*. He argued that while a course may be approved or accredited (adopted), this does not achieve implementation. Implementation requires educational change and is multidimensional; for example, it can require changes in attitudes and beliefs, objectives, student entry behaviours, content, instructional materials, teaching strategies, learning experiences of students, assessment tools and procedures.

A programmed perspective (and one which also equates adoption with implementation) has been embraced by the Australian government and State governments for competency-based training. The National Training Board establishes Competency Standards Boards for various industries; these boards

determine the competences to be acquired in various occupations; each state and territory adopts the set competences and insists on the inclusion of these competences before courses will be accredited; and teachers and trainers are expected to implement the development of these competences as a matter of course. Yet, it is known that, even with formal agreements and state-wide involvement in the design of national curricula (that is formal adoption), implementation does not automatically follow, and implementation does not proceed with fidelity (for example, see Parkinson & Broderick 1988); and nor should it (Fullan 1981).

Kennedy (1985) labelled such programmed approaches in vocational curriculum development as *research, development* and *diffusion* after Havelock (1971). We know that diffusion is not automatic and cannot be assumed. What is needed, in vocational education, is recognition of the multidimensional nature of educational change, especially the role of attitudes, beliefs and values in the implementation of curricula (Fullan 1981). Implementation decisions, like all other curriculum decisions, proceed from value positions. It is values which guide a teacher in teaching some content and not other, in assessing some content and not other, in emphasising some content by treating it in more detail than other, and in deciding on the instructional approach which will be taken. Decisions, based on individual teacher values, will be taken in the learning setting, irrespective of the adopted, approved, nationally consistent, industry-driven curriculum.

Thus, because of the influence of values in teaching, implementation cannot be regarded as a phase, especially the last phase of curriculum development. Values need to be openly stated and discussed, not only when a curriculum is being conceived and planned, but also on a continuing basis, so that decisions about desirable content can be reviewed through reflection on experience in the course. Any modelling of vocational curriculum development, therefore, needs to integrate into the process, values and implementation decisions which are guided by values. Thus, the cognitive structures and cognitive dispositions, emphasised in implementation, should be input to the discussion about what is valuable in vocational courses. Recognition of the role of consultative processes which involve all who have legitimate concerns is fundamental as a principle of vocational curriculum development.

Centrality of an appraisal of concerns in an evolving curriculum

As indicated throughout this chapter, values are central to vocational curriculum development and perceptions of desirable goals for courses can differ. Over the last two decades, approaches which centre on techniques of needs

analysis, often limited to occupational analysis (for example, Anderson & Jones 1986; Hermann 1989), have been gradually accepted for vocational curriculum development. These approaches are used to generate lists of skills which enable efficient performance at work; and these skills are often directly adopted as syllabus content. Moreover, the prescription of these skills in the curriculum is not informed by consideration of the educational processes involved in the implementation of the course.

Use of these approaches even predates the Australian government's current competency-based training paradigm. Since the early 1980s, state TAFE authorities have been attempting to perfect analysis of skills used in the workplace, and have based course design on the development of these skills (for example, Broderick & Kuhl 1981; Technical Education Division 1982). The approach is often designated *systematic* after the military approach to course design on which it is based (for example, Board of TAFE Studies 1986; Department of Employment, Vocational Education and Training 1988; TAFE Board of Victoria 1984). Yet, these approaches emphasise only one concern, that of industry, for a workforce highly skilled in areas of current business demand.

A wider perspective on the concerns which can inform curriculum development has been developed by Skilbeck (1984) who identified the factors: available internal and external resources, the climate and power structures within the institution, and educational system requirements. Stevenson and Laird (1986) derived, from Tyler (1949), a still wider set of concerns, and proposed a model of vocational curriculum development. Their conception is that of a comprehensive set of factors which provide both impetus for and constraints upon curriculum development. Their factors include not only the skill needs perceived by industry, but also other important factors such as the learners; the teachers; the social, economic, historical and political context; and psychological, philosophical and sociological factors.

By appraisal of concerns, in this paper, is meant open discussion about course content, which is considered to be important and the values which underlie this judgment. That is, appraisal of concerns must accommodate and promote discussion not only about the factors identified by various writers, but also about how to derive content from a consideration of these factors. That is, discussion about relative emphases on different cognitive dispositions and cognitive structures. There needs to be opportunity to perceive the social forces which are pressing for the achievement of curriculum goals, opportunity to identify the dispositions and structures which underlie different goals, and opportunity to reflect on them. For these opportunities to be provided, interaction is needed among those with a legitimate stake in the curriculum (stakeholders)—at least, the students who undertake the courses, those who

offer them employment, the teachers who provide the course and those who are funding course p vision. What is often not recognised is that the wider community is also a stakeholder, because course graduates have interdependent responsibilities in society through and beyond their employment.

Such discussion about concerns is impeded by the CBT ideology. In imposing CBT, the Commonwealth government assumes that it is acting on behalf of most stakeholders—transforming the structure of work, ensuring the skill needs of industry are met, preparing students to make productive contributions to society through greater national competitiveness, helping teachers by providing them with detailed content to teach and ensuring that students obtain skills directly relevant to employment requirements. That is, it is assumed that, in electing to undertake a vocational course, students surrender their rights to choose content; and that governments can act on behalf of the community and in its best interests. The arguments proceed as follows. Is it not true that students are unaware of what competence is needed in occupations for which they are seeking preparation? Don't they need to accept that others are better informed about desirable content? Similar assumptions are made that the government is acting on behalf of all employers in developing national competence standards. Support for this argument is adduced from the direct involvement of peak employer bodies in Competency Standard Bodies. The argument for ignoring the views of teachers is even more problematic. Nevertheless, the government is happy to assume that the role of teachers is merely to implement syllabuses contrived elsewhere. Indeed, this has been a tradition in TAFE since the early 1970s when curriculum development was centrally funded by the Commonwealth government, and curriculum design was usually undertaken centrally with curriculum design separated from implementation.

It is argued here that concerns should not be deputed in this way. Even if, after an initial appraisal of concerns, utilitarian aims are accepted for vocational education, the key to their achievement rests with individual students. Only through the contribution of individuals can workplaces and society improve. Hence, opportunities are needed for students to reflect on content and be involved in its continual reappraisal. Similarly, teachers are key to instruction and have more practical knowledge of teaching and learning than those external to the learning setting. So, teachers also need the opportunity to propose concerns and be involved in initial and continuing appraisals of concerns. They need the opportunity also to reflect on teaching and learning practice. So, too, for the wider concerns of society. None of these concerns should be deputed. There should be active discussion about the cognitive structures and dispositions which underlie goals set by various stakeholders and the advocated content. For example, students and teachers should have the opportunity to debate the relative merits of such diverse content as that

designed to achieve business prosperity and international competitiveness and that designed to encourage reflection on the interrelationships among individual roles in the business, profits and society.

This is not to deny that values of industry and the government are important. Rather, it is to claim that values of all stakeholders (those with a right to voice and press their concerns) need to be explicit and the subject of discussion. Clearly, such discussion cannot occur before there are students in a program or before teachers are charged with its provision. To accommodate the progressive involvement of stakeholders in curriculum development, then, the programmed approach is inappropriate. What is needed is an evolutionary approach, where practice is continually appraised, the identity of the full range of stakeholders becomes more apparent, and the form of the curriculum evolves in response to the changing perspectives of stakeholders, reflecting on practice. For example, renewed appraisal should occur as students become more aware of the true nature of the content, its role in employment and societal forces which contribute to these relationships; and as teachers have the opportunity to reflect on their experiences of teaching in the course; and as community needs change.

It is also restated here that appraisal of concerns should not be conducted merely as a first phase of curriculum development. While such appraisal is important to guide initial planning and decision-making, it needs to be recognised that judgments based on values are made in all curriculum decision-making. The capacity to make such judgments develops as conscious awareness of oneself, one's needs, the relevance of content, the vested interests of stakeholders, and the interdependence between occupations and society develop, as the course progresses (Laird & Stevenson, in press).

Content of vocational curricula

As argued above, the processes of curriculum development should accommodate implementation and reflection on implementation as important ingredients, rather than a final phase of curriculum development. As well, appraisal of concerns is central to all curriculum decision-making, rather than being confined to initial planning activities. Important concerns include not only aspects of the situation and goals which stakeholders seek to achieve through the curriculum, but also underlying cognitive dispositions and cognitive structures. It is these latter considerations which help to achieve a focus on the content which is appropriate in any course.

Content derived from considering each of the cognitive dispositions and developing each category of the cognitive structures is generally important in

all vocational courses. In terms of cognitive structures, all vocational students need specific procedures in order to be skilful. However, they also need conceptual understanding and higher order procedures in order to adapt to new situations, handle problems, diagnose faults, and acquire new skills more autonomously. Such cognitive structures are needed for attributes, recognised, internationally, over the last two decades, as important in vocational education. To acquire these structures, there needs to be an emphasis on learning processes—processes which include exploration; problem-solving; modelling, scaffolding and fading; and varied encounters with the complexities of real-life situations.

In addition, vocational education is more than the acquisition of skills, even the acquisition of broad and higher level skills. Rather, as Dewey (1916) argued, it should develop the fullest intellectual and social meaning of work, illumine scientific and human connections of vocations and encourage students to confront pervading problems and possible solutions in wider society. It should develop courageous intelligence and intelligence which is both practical and executive. That is, development of curricula exclusively from a technical disposition is inadequate. Vocational students need to be able to share understanding with others, reflect on practice and on the interrelationships among course content and wider social concerns, appraise content and their own situation, and take appropriate action. This includes reflection which involves immediate course content and also wider social concerns. Again, learning involves an emphasis on processes of learning, rather than a preoccupation with prespecified outcomes. It includes experiences of analysis, exploration, problem-solving, and appraisal. It also includes reappraisal of the course content itself.

The inclusion of content wider than the predetermined objectives set by the National Training Board is not to argue that all nationally set competences are totally irrelevant to vocational curricula. Rather, it is to augment the range of concerns which are legitimate and valuable in vocational education and to give them parity of importance in the appraisal of concerns. Of course, many students and teachers will attach importance to developing skills, predefined as important for competence. However, for all students, this content is unlikely to be enough, because it is largely confined to a technical disposition and to specific procedural cognitive structures. Students and teachers need to be alerted to alternative ways of viewing how knowledge can be constructed and the influences of such perceptions. They need to be encouraged to share understanding of technical knowledge and its role in society and the value of knowledge gained from other dispositions.

Towards principles for vocational curriculum development

Thus, in summary, the following principles are suggested as a basis for vocational curriculum development:

- An evolutionary perspective on implementation is needed, so that implementation becomes important input in curriculum development.
- Students, teachers, society as a whole, industry and the government (including the National Training Board) may all have legitimate concerns relating to vocational curricula.
- Initial and continuing appraisal of concerns, and the cognitive dispositions and cognitive structures which underlie concerns should be encouraged in all curriculum decision-making.
- Decision-making needs to evolve in response to appraisal of concerns; and should involve all stakeholders in this appraisal.
- Appraisal of concerns should not be deputed, but should involve direct and continuing discussion among students, teachers, employers and members of the wider community.
- Students should be awakened to the nature and role of the knowledge that they are acquiring, so that they are more able to criticise curricula.
- As students and teachers have more experience with particular courses, they should be encouraged to reflect further on course content and its ongoing modification.
- Provision should be made to identify and include wider groups in appraisal and reappraisal of concerns as the curriculum evolves.
- A comprehensive range of cognitive structures is needed for all vocational courses, so that students can not only acquire specific skills, but also adapt, analyse, reflect, form concepts, solve problems, and acquire more control over their own learning.
- All cognitive dispositions are important in vocational curriculum development. Students and teachers should be alerted to different ways in which course content can be perceived, and encouraged to reflect on it.

- Comprehensive attention to cognitive structures and dispositions is important in all learning. Courses should not be assigned to categories of approaches to curriculum development, and these categories then used to confine attention to selected cognitive structures and content derived from selected cognitive dispositions.
- Vocational curricula should not focus exclusively on predicted, observable and measurable outcomes of learning. Rather, emphasis should also be given to the processes of learning, especially such important learning processes as exploration, discovery and problem-solving; modelling, scaffolding, and fading; engaging in dialogue about meaning and reflecting on experience.

Conclusion

Values are central to decision-making in curriculum development. Values underlie the influences on curriculum development of various individuals and groups. These values can emphasise different views about the role of knowledge and its use for control, judgment, reflection and social reform; and different views about the importance of acquiring cognitive structures for skilful performance, adaptation, analysis, problem-solving, diagnosis, control over one's own learning, appraising and judging, reflecting on practice and bringing about change and reforms in work and in society.

Comprehensive attention to the development of all categories of cognitive structures, and empowerment to reflect, judge and take action can be discerned in different approaches to curriculum development in general, adult and vocational education. Such comprehensive attention to cognitive structures and dispositions is warranted in vocational curriculum development. It is argued in this paper that, despite the claims of some critical theorists to the contrary, a concern for the development of a comprehensive set of important cognitive structures is not confined to a technical disposition, but is important for all dispositions. An analysis of the emphases on different categories of cognitive structures for common groupings of curriculum orientations confirms this view. It is concluded that, without a concomitant emphasis on empowering cognitive structures, a sharing of understanding, reflection, judgment and emancipation are shallow concepts. Salient characteristics of educational values are the relative emphases on cognitive structures and cognitive dispositions.

Overall national vocational educational goals, as enunciated by the government, are consonant with international recognition of the importance in vocational education of broad and higher level attributes, not confined to immediate functional performance. While explicitly utilitarian and therefore too limiting for vocational education, the goals nevertheless recognise the value of a wide range of cognitive structures and attach importance to attributes which develop through dialogue, reflection and action to produce change. However, the imposition of competency-based training and the associated terminology which forms the discourse of vocational education serves to support policies and practices which emphasise only a technical disposition to knowledge and the development of specific cognitive procedures. The exclusive focus on educational outcomes with no regard for the importance of learning processes compounds the narrow, deterministic and reductionist approach. Even the utilitarian goals of the government are at risk with the implementation of this paradigm, not to mention wider individual and social concerns.

Goals advanced by different individuals and groups with an interest in vocational curriculum development can be antagonistic. Curriculum developers are confronted with the difficulty of dealing with divergent claims for content. One strategy for dealing with different goals is to examine the underlying cognitive structures and seek to achieve agreement about the kinds of knowledge which are valuable. Another is to awaken stakeholders to the dispositions which underlie goals embraced by different parties to the process, and encourage reflection on these goals, their appraisal and modification as necessary.

Principles are needed to guide vocational curriculum development. However, curriculum development for streams of courses or groups of courses categorised in other ways should not be confined to an emphasis on any category of cognitive structures or the adoption of any category of cognitive dispositions. The principles need to assign a central role to values, the cognitive structures and dispositions which underlie them and their appraisal. An evolutionary view of implementation is needed so that reflection on implementation becomes important input for curriculum decision-making. The principles need also to involve stakeholders (including students, teachers and the wider community) in enlightened discussion of values which underpin concerns and goals. Because reflection is informed by practice, such appraisal of concerns needs to be an ongoing process, as those with an interest in the course gain more understanding of the structures and dispositions which are involved.

An immediate implication of these principles is the need to reject the ideology which is confining the development of vocational courses to those

which are developed within the competency-based training framework. What needs to be rejected and overcome is the narrowness of this perspective and its role in reinforcing inappropriate social norms. Secondly, the compartmentalisation of knowledge into the skill levels defined by the National Training Board needs to be rejected. The ethics of reducing the development of individuals to the short-term, mechanistic and dehumanising aspects of these skill levels needs to be overcome. Recognition is needed of the inability of CBT to achieve even the utilitarian ends for which it has been adopted. A third immediate implication is the need to reject the central design and accreditation of courses without the involvement of students, teachers, and society in discussion about the desirable nature of curricula. A fourth implication is the need to reconcile streams of vocational courses so that each disposition and set of cognitive structures is afforded value; and the interrelationships among categories of courses, their client groups and the sectors of education which provide them become apparent. Then, artificial boundaries among sectors of education, categories of courses and occupational categories may disappear; and barriers to appropriate approaches to curriculum development be overcome.

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COMPETENCY-BASED CURRICULUM DEVELOPMENT

PAULA STEENHOLDT

Introduction

This paper addresses the topic of vocational curriculum development in the Technical and Further Education system. It focuses on the current dominant curriculum development model, competency-based training (CBT) outlining its advantages and disadvantages.

TAFE curriculum documents

Program development and review in the Technical and Further Education system in this country is a highly structured process. It often operates under ministerial guidelines, varies little across the country and produces a highly standardised document.

Of the various education sectors—Kindergarten to Year 12; Technical and Further Education; higher education—the TAFE sector operates to the most tightly specified program guidelines. Curriculum documents in TAFE are detailed, standardised, prescriptive documents. Certainly, competency-based education wherever it is being adopted requires such syllabuses but TAFE has been operating in this mode for many years.

One of the reasons for the importance of detailed, prescriptive syllabuses in the vocational education sector is its public and accountable nature. This accountability is to users of the system, that is, students and employers. A large number of TAFE students are studying and working concurrently or are employed immediately upon completion of training and hence require a very close nexus between work and training.

Accountability requires public objectives. Only if potential users of the system can see beforehand what they are supposed to receive can they make an informed decision about its appropriateness and later, its effectiveness. A curriculum is in fact an agreement which is designed to allow the student and employer to select and evaluate. To achieve these detailed, prescriptive curricula a highly structured process of curriculum development and review is undertaken in the TAFE system. This process is much the same whether the course is a completely new one or an existing program under review. While there are common features of most curriculum development models the current model, competency-based training (CBT), is very much the dominant model and will form the basis of much of the discussion in this paper.

In Tasmania, TAFE courses must be reviewed at least every five years to remain accredited. The rationale for this frequency of review is the speed of change in technology and work practices. Other education sectors which deliver education or training with a high theory component may not be subject to such frequent change. For example, while theories of motivation may not have changed very much over the last couple of decades, work practices and methods of motivating workers have changed considerably.

What this rapidly changing industrial setting for vocational training means is that not only do programs have to be reviewed frequently but also the review must be a total reconsideration of all the basic questions which were considered when the program was developed. Such questions as these need to be considered:

- How has an industry/occupation changed over the last five years (or whatever period has elapsed since the course development/review)?
- How is it likely to change over the next five years?
- What training is required for whom and by whom?

A review and an initial development are virtually indistinguishable in that even in a review the focus is largely external to the program and is on the needs of the client rather than how well the current program has been performing in the past.

This question of to what extent a review is looking forward to what is needed in the future or is a reconsideration of what has been offered in the past is a potential source of disagreement between some of the parties involved. Generally, teachers and students tend to focus on the continuity with what has been offered in the past while curriculum developers and industry personnel focus on the uniqueness of the current situation and likely future industry practices. Whether or not to 'reinvent the wheel' is a common debating point in curriculum development.

Because of the long history of TAFE in this country and the existing large number of courses, very few completely new programs are developed. Most are the latest version of a training program which has been offered in the past. Courses evolve rather than disappear. However, new programs are developed, and whereas the initiative for reviews usually comes from the requirements of the system, those for new programs come from outside the training system, usually from unions, employers or professional associations. Current or past students may identify the need for additional programs or teachers may express the views of their client group.

Curriculum development processes

Whether the process is one of initial development or subsequent review the procedure is essentially the same, namely:

- establishment of need and demand
- identification of workplace competencies
- syllabus writing
- accreditation
- implementation
- review

Some of the stages may be speeded up with a review in that a good deal of information about needs and training objectives will already exist and syllabuses will possibly be amended rather than written anew. This paper will take each of these stages and consider it in detail, paying particular attention to who is involved and who are the decision-makers.

Establishment of need and demand is to do with the allocation of limited public resources. There are always more programs that could be offered than exist the resources to provide them. Any decision to proceed with a program either new or existing must be based on certain criteria. These are to do with need (that is, who wants the program, for what purposes and how significant is that want) and demand (that is, how many people are likely to access the program).

In order to make judgments about need and demand, an information-gathering process has to be undertaken. The first stage is to identify the stakeholders who usually include employers, employer organisations, employees, unions, government agencies, professional associations and current and/or potential students. Information is sought from all these parties as to

short-term and long-term needs, alternative training avenues, numbers of potential students, resources required, possible joint arrangements and so on. The process is meant to be one of consultation and joint decision-making, though it is ultimately the training provider who has to decide whether the proposal can be pursued or not.

Increasingly, with the shift from state to national vocational training courses and the greater involvement of industry, these decisions about what to offer will be made outside the local training system. At this stage there is no reason to believe that such a shift would make the training system less able to respond to local needs. It may mean that small local pressure groups have less influence on training provision but should result in the training system becoming part of the broad training and industry reform agenda in this country.

Workplace competencies

Once a decision has been made to proceed the next stage is the identification of workplace competencies. Prior to CBT these competencies were called tasks or duties or performances. Whatever they are called they are the heart of a training program as they identify what a worker actually does to perform his or her job. While the jargon may have changed with CBT the process has been part of vocational curriculum development for many years. What CBT requires is that the process be undertaken in a much more clearly defined manner and with specification of the various players in the process.

With CBT the identification of workplace competencies is under the auspices of the National Training Board. This body approves industry organisations (Competency Standards Bodies) to carry out the task of identification of competencies or standards, and registers the final product. The Competency Standards Bodies are often National Industry Training Boards and are sometimes major employer or employee groups. Their task is to identify and document in a standardised format the competencies of workers in a particular industry or occupation.

The National Training Board describes competencies as:

> Competency standards reflect the specification of the knowledge and skill and the application of that knowledge and skill to the standard of performance required in employment. Standards are developed by the industrial parties, based upon the organisation of work, expressed in terms of workplace outcomes and regularly reviewed to ensure continuing relevance to the workplace. (1991, p. 7)

These competencies or standards are being expressed in terms of an Element of Competence, for example 'clean and store equipment', and Performance Criteria, for example 'chemicals correctly selected and used according to health regulations for cleaning crockery, cutlery, pots and machinery' (1991, p. 21). Such statements then become the basis of vocational training for that industry.

The advantages and risks of this system are great and are quite rightly becoming the focus of critical debate. The competency-based or outcomes-based approach to education and training is modelled largely on the British National Vocational Qualifications (NVQs). For a thorough exposition of this model see Jessup (1991). The crucial issue is whether the full scope of a worker's role can be described in a competency model. A National Board of Employment, Education and Training report on curriculum initiatives expressed a widespread concern regarding the applicability of a competency-based approach:

> There is an assumption held by some that all vocational and professional training and education can be stated in competency terms. This is an untested hypothesis and a risky one on which to base a total education/training program.... What is by no means clear is the extent to which professional activities which require more complex forms of knowledge and skills and the exercise of critical judgement can be expressed in competency terms which are useful. (1992, p. 34)

This debate is not new but has been around since the existence of technological or mechanistic models of curriculum development. The predecessor of CBT in the TAFE system, the Instructional Systems Model (ISM), attracted a lot of criticism. Much of that was justified and while some of it may well also apply to CBT there are significant differences in the two approaches. While both systems were initiated in the manual trades and subsequently applied to all areas of training, there is a very significant difference between the two models with regard to their level of generality and the comprehensiveness of their identification of the components of a job.

One of the major problems with ISM was the detailed nature of the tasks identified. It was a totally reductionist model; the smaller the unit identified the more it excluded. CBT standards are more general and more holistic. They must incorporate the skills, knowledge and attributes necessary to carry out an activity. Whether they can capture the essence of all work requirements, particularly the creative, is yet to be seen.

The risks of a reductionist, behaviourist approach are fully recognised by the present proponents of CBT. The literature abounds with warnings about

taking a mechanistic, simplistic approach to competency. The Mayer Committee (undated) which is investigating the Finn Key Competency concept, when commenting on the definition of competence suggests that it is very important that a broad definition be adopted:

> The Committee has rejected narrow behaviourist definitions ... The concern is to identify competencies required for employment generally rather than those required to undertake specific tasks ...
>
> Broader notions of competence recognise that performance is underpinned not only by skill but also by knowledge and understanding, and that competence involves both the ability to perform in a given context and the capacity to transfer knowledge and skills to new tasks and situations (10)

It goes on to say that such competencies are not 'automated, "trained" behaviours' but are the thoughtful application of underpinning knowledge and skills. Importantly, the committee accepts that this broad definition is the one being used in the current vocational training debate:

> These principles are embodied in current thinking about curriculum in the schools and training sectors. They are consistent with the developments in competency-based training. (10)

A Queensland Office of Vocational Education, Training and Employment Commission published paper on CBT (Research and Development Division 1991) warns of adopting a behavioural model which is unable to take account of higher learning and learners' attitudes. With such a model it warns:

> The temptation ...is to focus on the trivial at the expense of the important. This must be avoided. (20)

What is needed, the paper suggests, is a holistic approach which is able to encapsulate fully all the important elements of competence.

The challenge to industries or occupations such as management, visual and performing arts, or community services is to ensure that all the necessary components of the jobs or roles in that industry are captured in the competency statements. This may well be a difficult task and one which will require enormous amounts of consultation but it is a challenge which must be accepted. CBT is the dominant training model at the moment and one which attracts large amounts of funding and status. It has both industrial and political backing. At a Special Ministerial Conference on Training in April 1989, State and Common-

wealth ministers endorsed CBT in principle, recommending that it should proceed with some urgency. On 2 November 1990, a special Minister's Conference on Training endorsed a national strategic framework which aims at making substantial progress towards CBT by 1993 (Research and Development Division, Office of Vocational Education, Training and Employment Commission, Queensland 1991, p.17). To say that certain industries or occupations cannot be described in these terms is to leave that sector open to the risk of someone else coming in from outside to carry out the task or to see it marginalised and starved of training resources.

What is required is that the practitioners from within the industry specify the process to be undertaken and the form the outcome is to take. This is particularly crucial in those industries where under-represented groups predominate and where the tasks undertaken are not easily described in terms of measurable outcomes. This is exactly what is happening with the Community Services industry which is about to embark on a standards writing project. This industry under the guidance of its Industry Training Board has produced a discussion paper outlining issues relating to definitions of competence, the role of underlying knowledge, the place of values/ideology, the method of expressing performance criteria and some methodologies for the identification of competencies. While this paper identifies some major concerns in the development of competencies it acknowledges the advantages to be gained from a CBT approach:

> ... the transformation of the training system provides opportunities for skill formation in community services. This is crucial in an industry where much of the work involves skills which are undervalued, and many of the workers have no formal qualifications. (Social and Community Services ITB 1992, p. 1)

A related paper entitled *Policy on Competency in the SACS Industry* elaborates the point:

> The setting of standards is seen as having very important equal opportunity implications for a large portion of SACS work which has traditionally been perceived as 'woman's work' such as home care, child care assistance and personal care attendant work. (Burston 1991, p. 12)

This is also very much the view of Laura Bennett, expressed in the *Journal of Industrial Relations*, when writing about the exploitation of women workers in the Australian child-care industry. There is a very close relationship in this

country between gender and skills, she suggests. Traditionally, male-dominated employment has been characterised by documented skill levels, regulated training, standardised credentials and restricted access. The declared trades are a prime example. Female occupations such as child-care, on the other hand, have open access, unacknowledged skills levels, lack of credentials and fragmented or no training. To achieve satisfactory career and pay structures traditional female occupations need to specify clearly what constitutes quality service, what skill levels are required and what minimum training should be enforced through such structures as licensing (1991, p.22). A competency-based approach which documents skills required, recognises those already held by practitioners and sets desirable training levels should go a long way towards such objectives.

The competencies or standards being documented must be appropriate to the industry they attempt to describe. For example, in the Community Services industry they must be prevented from becoming too reductionist and practitioners in the industry must be prepared to say that a task cannot be broken down into smaller units without a crucial element being lost. In the terms of the SACS industry discussion paper one must '... adopt a holistic conceptualisation of competence' (Social and Community Services Industry Training Board 1992, p.11). Not only can competencies be written in terms of 'hang a door' but also 'critically evaluate a proposal 'or 'analyse one's own learning requirements'.

Perhaps a whole new language needs to be developed to describe adequately the duties undertaken by workers in the community services or people management areas. Competencies or standards may need to include terms such as:

advise	encourage
comfort	involve
empower	support
counsel	assist
advocate	develop
inform	

The role knowledge plays in workplace competence and how it can be documented is a somewhat controversial issue. One argument is that knowledge can be inferred from effective performance. For example, one cannot effectively develop a play program for children without knowledge of child development, safety issues etc. Opponents to this approach would suggest that this is not necessarily the case.

> This view is not tenable in community services, where much of the knowledge underpinning performance is not clear from merely observing behaviour. (Social and Community Services Industry Training Board 1992, p. 12)

Certainly many groups of professionals are concerned about the possible devaluing of the place of theory. Professional behaviour involves drawing on a very broad base of theoretical knowledge to enable sound decision-making. The National Office of Overseas Skills Recognition (NOOSR) publication *Establishing Competency-based Assessment in the Professions* notes the role of knowledge:

> Recent studies of inputs in a wide range of fields have drawn attention to the crucial role that the professional's knowledge base plays in professional practice. There is increasing evidence that what distinguishes competent professionals from novices (e.g. students) is the access that competent professionals have to a rich and highly-organised knowledge base. (1990, p. 13)

While not denying the crucial role knowledge plays in professional competence, CBT advocates adopting an integrated approach to training wherever possible. The theory–practise dichotomy has been another of those unhelpful distinctions like education–training. An integrated approach requires that the focus be on the application, but that the necessary underpinning knowledge be incorporated.

This issue needs to be resolved by the actual writing of workplace competency standards. If, after identifying observable behaviours, there are still essential aspects of a job which have not been noted then they need to be either incorporated into other competencies or listed separately. Where possible, incorporation into another competency would be desirable to retain an application focus. For example, rather than state a competency as 'organise an excursion for a group of children', it could be expanded to 'organise an excursion for a group of children and produce a rationale of the activity'.

The question of the applicability of CBT to the professions is the topic of a series of papers produced by the National Office of Overseas Skills Recognition (NOOSR), a subcommittee of DEET. Generally, the NOOSR analysis suggests that CBT can be applied to the professions and that there are benefits to be gained from so doing:

> Competency-based standards offer a number of advantages to professions and paraprofessions whilst at the same time furthering important national objectives, particularly maintenance of professional standards, labour market efficiency and equity. (1990, p. 7)

In particular NOOSR sees real advantage in the move to demonstrated competence rather than paper qualifications in providing equity to those who have

trained overseas. Such an advantage can be broadened to all of those people who have been excluded from employment or promotion on the basis of lack of credentials.

Even sectors of the university fraternity acknowledge the advantages to be gained from a competency approach. The Federated Australian University Staff Association Union of Australian College Academics in a paper entitled 'Quality in Higher Education' say:

> The concept of competency is central to the education and training reform process which is underway in Australia ...
>
> The essential feature of the notion of competency which allows it to play its part in this reform process is that it brings together knowledge and skills.(1992, p. 40)

A further concern in this process of identification of workplace competency standards is that personal development competencies such as English language facility, problem-solving and assertiveness skills, will be overlooked. Several points need to be made with regard to such concern. Firstly, these issues are often raised by trainers whereas it is the task of the industry to identify what is needed to perform a job. It is up to the members of the industry to make sure they get it right; not some other body such as a training institution. Secondly, workplace competencies will be expressed in terms of work-related outcomes and not primarily in terms of underlying knowledge and skills. Hence an outcome might be 'give and carry out routine instructions' and not 'speak, read and comprehend basic workplace English'. The latter is a means to the former, not the desired end in itself. This does not mean that when training for the competency relating to instruction, English language competence can be overlooked. It will be focused on in the next stage of the curriculum development process which is that of translating the workplace competency standards into training/learning outcomes. Hence, the debate about competencies must be clear in the distinction between means and ends.

A further distinction which needs to be kept clearly in mind is that between training and industrial relations issues. This distinction has been clouded in some of the debate about what should be included in competency standards and what effect the process might have on various groups. It is an industrial relations issue as to who is involved in the competency determination process and it is also an industrial relations issue as to who will have access to training. Without doubt there are close links between training and industrial relations issues, but the most appropriate method of solving a problem requires the identification of the true nature of the problem. Concerns have been

expressed that particular groups of people such as women and migrants will be disadvantaged by a competency-based training system. In fact such concerns are usually to do with issues relating to access to training and are nothing to do with competency-based training as such. Quite rightly unions are crucially interested in training and will have to work hard to ensure that the standards development process is carried out appropriately and that their members have fair and equitable access to training.

To some extent the success and acceptance of the competencies will be a result of the appropriateness of the methods used to derive them. Observation, surveys, group processes are all methods which can be used. Whichever method is adopted, it is important that it is able to elicit the full range of what is required to carry out a task. Usually one method alone, such as observation, is inadequate. A broad-brush qualitative approach may be more appropriate than a highly focused quantitative method. Case studies, interviews, group discussions are equally as applicable as surveys and observation. Jessup recommends adopting a functional analysis methodology rather than identification of tasks and duties. Functions, he says, are more likely to capture all facets of performance we wish to see in a fully competent employee or professional (1991, pp. 36, 128).

In many cases it may be necessary to gather information from the clients of the product or service as well as from the producers or suppliers. When defining the competencies of a child-care worker it may be highly appropriate to ask the parents of the children in the service their views about what is needed to carry out the role.

The competency-based model in fact has the potential to empower groups of employees who have traditionally been undervalued. An accurate description of the competencies required by a secretary may very well acknowledge the complexity and comprehensiveness of the work she or he carries out. Often both practitioners and employers are surprised at the extensiveness and demanding nature of the lists of duties/roles/functions produced. It is important that such lists not only be extensive but include a complete description of what is involved and not merely focus on what is easily quantifiable.

Many employers when asked to identify the range of activities, tasks, duties undertaken by a secretary will list functions such as:

- maintain confidentiality
- protect employer's interests
- 'smooth troubled waters'
- make visitors feel welcome

as well as the easily observable tasks of answer the telephone, type correspondence and make travel bookings. These aspects of a role must be incorporated into the competency statements.

Performance criteria

The second component of a competency statement, the performance criteria, must be handled with even more caution. The performance criteria are evaluative statements which define how well a task must be performed. For example, an outcome of learning may be 'relate the effects of government policy on child-care funding'. On its own such a statement is not definitive enough in that it gives no indication of what constitutes satisfactory performance. One person may complete the activity by identifying a single aspect of policy, another may provide a very comprehensive analysis of a range of policies. The performance criteria in fact attempt to specify the standard of performance. In this case these might include:

- all relevant major government policies, both State and Federal, are identified;
- each policy is analysed in regard to child-care funding; and
- conclusions are drawn about the short-term and long-term effects on child-care funding of each of the policies.

With many tasks such as typing a letter, it is relatively simple to set the standards required. With tasks utilising a great deal of underlying knowledge and cognitive skills the setting of standards is quite difficult. The type of standards used to qualify a task such as advising a client will be of a different order from those applicable to a task such as building a table.

Experience to date is suggesting that writing performance criteria is one of the most difficult tasks associated with CBT curriculum development. Few people are experienced in it and we do not have a legacy of describing expectations with regard to employment in any great detail. What we have tended to write in the past when describing training standards has been more to do with the assessment instrument than the performance being judged. As well as being difficult to write, the identification of performance criteria is very time-consuming. This is tending to mean that in the absence of many industry competency standards, teachers and curriculum developers are left with the task of developing them. This is a far from satisfactory situation in that in most cases it is only practitioners or clients who can describe the desired standard of

performance. A series of very focused questions needs to be developed to elicit easily from practitioners indicators of satisfactory performance. Appropriate questions might include:

- With regard to ... (specific task/duty/role), what is the difference between an unsatisfactory and a competent employee?
- How would you (as the employer/colleague/client) know when the task was satisfactorily completed?
- What are the indicators of good performance with regard to a particular task?
- What would you write in a detailed job description with regard to particular duties?

These are all questions which attempt to elicit measurable indicators of competent performance.

What must be accepted with standards of performance is that in many cases subjective judgment is appropriate. One comes back to Lawrence Stenhouse's argument about professional judgment and the teacher as critic (1975, p.95). This role is eminently suitable in a situation where teachers are also part of the industry and where competence in that industry is largely determined by peer assessment. The evaluation of professional workers such as teachers, designers, managers is largely a matter of how they are perceived by their colleagues. Thus, it is acceptable to have a standard or performance criteria such as 'the child is encouraged to be autonomous', or 'the design is original and suits the purpose of the article' or 'the table is set according to industry standards'. While none of these standards is quantifiable they are a guide to someone able to make a professional judgment. At the very least such standards identify for both the student/worker and the assessor/teacher what the criteria for judgment will be.

Just as it was suggested that a range of terms be considered which adequately describe tasks or activities in certain industries, a similar list of qualifiers or indicators of satisfactory performance might be helpful. While qualifiers such as speed, accuracy, precision, neatness, conformity might be appropriate to one industry, others such as relevance, appropriateness, timeliness, variety, scope may be suitable to another. How acceptable such rather vague terms as 'appropriate', 'relevant', 'to industry standards' will be has not yet been determined.

Syllabus development

Once these industry competency standards, consisting of a statement of competence and performance criteria, have been developed, the next stage in the curriculum development process is to turn them into a training syllabus. This process is undertaken by people with curriculum development expertise. While the industry competency standards will be the starting point for curriculum development, they may not be the total source of material. Many training programs, particularly those catering for special needs groups such as the young or the unemployed will need to include competencies which are aimed at personal development or generic life skills. Students have needs which may not be part of industry needs and these usually have to be addressed in a training plan. Career path planning, compensatory literacy, assertiveness and industrial rights are common inclusions in courses over and above those aspects identified by industry.

To date very few industry competency standards have been developed and approved by the National Training Board. In their absence, syllabuses must be based on a state-by-state interpretation of their industries' needs. Industry Training Boards/Councils and various industry reference groups are essential to this process which is sometimes facilitated by TAFE, sometimes by an industry group.

The distinction between industry competency standards and training/learning outcomes is the cause of some confusion. While a learning outcome will be based on an industry standard and will be aimed at addressing that standard, in some cases it might not be identical with it. Some competencies, because of their contextual nature, their complexity or perhaps the long time span required, cannot be directly duplicated in a training situation. For example, it would be impossible to teach and assess competencies such as 'counsel a grief-stricken client', 'resuscitate an unconscious patient', 'manage a work team' or 'create a quality management system' in a training situation. The first two because it would be unethical to experiment on grief-stricken or unconscious people and the last two because of the context and extended time period which would be involved.

In some cases a simulation will come close to duplicating a work situation but in others it cannot. Basically there are two ways of accommodating this disparity. The first is to list in a training program only those outcomes which can be provided and assessed in a training situation (whether that be college-based or workplace-based). Examples might be 'list the stages of grieving', 'demonstrate active listening skills', 'demonstrate resuscitation techniques' and 'develop a strategy for managing a work team'.

The other possibility is to include the full range of competencies in the learning program and leave the best way of implementing them to the training provider. In some syllabuses such as the Australian Traineeship System programs, the off-the-job and the on-the-job learning outcomes are both listed but are differentiated. The implementation arrangement is that one set of outcomes will be achieved in a training environment and the other in the workplace. All learning outcomes are to be assessed.

It must be noted that CBT ultimately requires a training situation which involves work-based or on-the-job learning and assessment. This is premised on the principle that competence relates to application of skills in the workplace and that ultimately it is only in the workplace that such skill can be demonstrated.

A VEETAC Working Party on the Implementation of Competency-Based Training put it thus:

> Assessment is of performance against competency standards required in the workplace so, wherever practicable, assessment of performance should occur in the workplace or under conditions as close as possible to those under which the competence will normally be exercised. (undated, p. 10)

Paul Byrne in his article entitled 'The training market' in *The Australian TAFE Teacher* points out that in the past training has consisted of either institution training or workplace training, seldom both in an integrated way. The two approaches have rarely intersected, but now the demands of industry reconstruction and changing work organisation are forcing them together and towards a new training framework (1991, p. 15).

While such models have, at least in principle, been applied to apprenticeships and traineeships, less vigour has been applied to the work-based learning and assessment than to the institution-based. This situation is the subject of much investigation and it is likely that in the future the training/learning and assessment requirements for the on-the-job learning will be as clearly specified as for the off-the-job component.

It is also probable that many more training programs will have an on-the-job component which will have to be completed before a student will be issued with a credential. This possibility has far-reaching repercussions for both the development and implementation of programs. It will make absolutely unavoidable the involvement of industry in the development of courses and it will call for a good deal of cooperation between industry and off-the-job providers in their delivery.

Whether the training program lists only off-the-job competencies or both off-the-job and on-the-job, these competencies or learning outcomes, like

industry standards, have to be accompanied by evaluative statements or performance criteria. Syllabus writers are likely to find these very difficult to write even when sitting at the right hand of experienced industry personnel. We are not used to articulating what makes for satisfactory performance. Even employers when asked, tend to offer statements such as 'he just gets on with it' or 'she's reliable' or 'I can leave it up to ...'. Teachers usually have in their head the criteria for satisfactory performance but find it difficult to agree upon them. One might consider presentation very important while another will put more emphasis on accuracy.

Once learning outcomes and performance criteria have been developed, appropriate assessment items need to be identified. Because CBT is to do with demonstrable outcomes, assessment is a crucial component of the model, possibly even more so than in other models of education and training. The adoption of CBT is an industry-driven initiative and as such is focusing on proven competence. It is up to assessment mechanisms to provide that proof.

Assessment

There are some substantial differences between assessment as part of CBT and other models. Whereas with previous school-based practices assessment formed a variety of roles—such as providing feedback to students and educators, grading or ranking a student in relation to a group of peers, motivating students, predicting success in future courses and employment—assessment under CBT has a much narrower focus (Research and Development Division, Office of Vocational Education, Training and Employment, Queensland 1991, p.22). In the context of CBT, assessment is defined by the National Training Board as the process of judging competence against prescribed standards of performance (1991, p. 7). It is not concerned with grading students against each other, nor particularly with providing motivation. While it will still, in many instances, give students and teachers formative feedback on student progress, its central focus is judging whether a student's performance reaches a specified standard.

Much of the debate about CBT assessment focuses around issues such as the time taken to test every student on every learning outcome, the degree of specificity of assessment instruments noted in a syllabus document, the number of opportunities a student should have to demonstrate competence, uniform interpretation of performance criteria, methods of acknowledging excellence, and the role of on-the-job assessment.

The time taken to assess students is a very real concern to teachers. CBT requires that every student be assessed on every learning outcome. Gone are the

days of an end of unit examination which was meant to assess students on every aspect of a program. At the best of times such examinations covered a sample of knowledge and skills expected. CBT requires a 'competent' or 'not yet competent' evaluation of each student in regard to each competency or learning outcome. While in some cases it may be possible to assess this in an end-of-unit examination, it is more likely that assessment will be ongoing. With outcomes which require demonstration such as conducting an interview, fault-finding a piece of machinery, or running a computer program, the time taken to assess each student might be enormous. What is going to be needed is some fairly creative ways of allowing students to demonstrate their competence. These might include self-assessment and peer assessment, team teaching, on-the-job assessment and the integration of learning and assessment.

The whole issue of duration of competency-based training programs is a difficult one to come to grips with. While CBT requires a move away from timeserving, there is still the need for syllabus writers to give some indication of how long is needed to teach and assess a program, even if only for timetabling purposes. This duration is expressed as nominal only and is usually a knowledgeable guess as to how long the average student might take to acquire the identified knowledge and skills. Numerous potential difficulties arise relating to implementation of a flexible program as far as duration is concerned but they are outside the scope of this paper.

The degree of specificity of assessment items in syllabuses varies enormously. Some contain only very general statements listing a range of options such as observation, written examination or role-play, while others will prescribe a particular activity, the conditions under which it is to be performed and the criteria which will constitute satisfactory performance. While it may not be desirable that there be consistency across curriculum it may be an appropriate topic for further investigation.

A related issue is that of uniform standards of assessment across all providers offering a program. This is possibly more of a concern in the TAFE system than in any others as in the near future TAFE colleges all around the country will be offering identical programs. Consistency of assessment will be assumed by employers and graduates. Teachers often see this as a major issue, particularly in the light of the move away from written examinations to ongoing assessment. Several significant national TAFE curriculum projects such as Communications and Management have identified the development of standardised assessment items as the most useful tool to assist teachers in implementing CBT courses.

A further area of concern for many teachers is the lack of provision in a CBT program to have graded passes. A student's result at the end of a period

of training will be expressed in terms of 'competent' or 'not(yet) competent'. The model does not allow for a result to be denoted as, for example, credit, high achievement, or excellent. The principle underlying this approach is that the outcome of the learning is specified in terms of an identifiable behaviour which can either be demonstrated or not. A single set of performance criteria will be written to describe how well that behaviour needs to be performed. If an assessor were to award a variety of successful results then they would have to be based on a specified hierarchy of criteria. For example, if a learning outcome is to write an analytical report, the performance criteria might include requirements such as: the report addresses its objectives, it is written in a format appropriate to the purpose, it uses correct grammar, it makes recommendations based on the research and so on. Who is to say that a particular report is excellent and warrants a higher grading than another which meets all the criteria? While one teacher may think leather binding of the report warrants a credit another may hold it in no special regard. If varying levels of award were necessary, varying levels of performance criteria would have to be written. What is recommended is that other methods of rewarding excellence be adopted. These might take the form of industry prizes, skill olympics or special awards. The major incentive to excel will ultimately be the opportunity to complete the training at an accelerated rate.

One aspect of CBT which is still unclear is the acceptability or otherwise of classroom-based assessment. While it is accepted that assessment should match as closely as possible the workplace application of a competency, it appears to be undecided as to whether a student/worker can be credentialed on the basis of classroom-based assessment alone. The VEETAC discussion paper on assessment referred to earlier suggests that the final granting of a credential such as a certificate will take place after demonstration of competency in the workplace. This immediately raises issues of accessibility and hence equity. If credentials will only be issued after completion of a work experience component of training the question has to be raised as to whether this will exclude students who are not employed or who do not have access to such work experience.

The final element of a syllabus document is a list of content. While in the past this may have been the most important part of a teaching document, under this model it takes a relatively minor role and usually consists of no more than a list of topics which should be addressed in achieving the learning outcomes. It should be reiterated that CBT syllabus documents are designed with the client as the audience rather than the teacher. How easily they will be able to be understood and implemented by teachers has yet to be explored.

Modules

The way all of these statements of outcome are organised is into modules. A module is a structured unit of study which incorporates knowledge, skill and application and is based around a work-related activity:

> A module is a specific learning segment, complete in itself, which deals with one or a number of competencies to a particular standard. A module is capable of being separately assessed and may either stand on its own or be linked to other modules in the same or related study areas. (TAFE Metal Industries Project Team 1988, quoted in Field 1990, p. 156)

There are significant differences in principle from subjects, in that the latter are usually based on a discrete body of knowledge such as mathematics or psychology whereas a module is based on a workplace application or activity. While in TAFE, subjects were more usually organised around vocational knowledge such as computing, accounting, calculations, drawing, they still consisted of foundation knowledge which would be applied across a variety of occupations. The module approach is one based far more on the application of that knowledge and skill. A module focuses on an identifiable workplace activity which may in fact require the use of a range of knowledge, skills and attitudes. For example, a subject-based carpentry course may have units covering calculations, drawing, use of tools, occupational health and safety and types of timber. A module-based program is more likely to be organised into units such as constructing simple joins, building cupboards, finishes, and fitting out. In many regards a competency-based modular approach to education / training is an attempt to eradicate the debilitating theory–practice dichotomy and produce a truly integrated model. Modules are as discrete and stand-alone as possible so as to minimise prerequisite requirements and allow the greatest amount of flexibility of course design.

The main advantage of such a system is that greater choice is available to students and employers to select those modules which are appropriate to their particular needs. Students can then choose not only their study program but also the sequence of that study. Such a system is only possible if each module contains within it all the learning which is required to complete that task.

Such independence of modules may in fact be almost impossible to achieve in many cases in that it may be very inefficient to teach basic knowledge several times; it is more time-effective to address it once only and then apply it in a variety of situations. There will also often be a hierarchy in learning and

students will need prerequisite study before attempting a higher level module. Each of these limitations is acknowledged by the CBT model but the general principle adopted is to make each module as workplace-based and stand-alone as possible.

Criticism of the modular approach is based on the possible fragmentation of learning that such an approach encourages. If each module is seen as a discrete unit of learning, relatively unrelated to others, the assumption is that the student will make the necessary connections. This, in fact, may or may not happen. The situation may vary from initial to subsequent training programs in that often initial programs have clearly specified study paths while subsequent ones may be much more open. In the interest of student choice, it may be that fragmentation of learning is the price one has to pay. Certainly there is a great deal of pressure on the training system at the moment, from forces such as award restructuring, to provide programs with the greatest possible amount of flexibility.

Course accreditation

Once modules have been developed and incorporated into a course, the next stage in the development process is accreditation. This is a final review of a program by an outside body, usually consisting of employers, employee bodies and government authorities. The details of the process vary slightly from state to state but the underlying principle is to have a final review of a training proposal by a body of experts who have the broad training requirements of the industry and national considerations uppermost in their minds.

The review may consist of a single or several committees; it may involve consideration of documentation alone or may include site visits, consultation with trainers; it may analyse the details of a program or confine its focus to the broad issues. The outcome of the accreditation process may be to accredit a course for a specified period of time, to recommend amendment or to refuse accreditation. The experience in Tasmania is that the most likely outcome will be accreditation dependent upon recommended amendments.

Program implementation and evaluation

The final two stages of curriculum development are program implementation and evaluating. Evaluation has been mentioned as being a built-in feature of

reaccreditation, and implementation is a whole study in its own right and will not be covered in this paper. However, it should be noted that except for a few examples such as at Richmond College of TAFE in Victoria, there have not been many instances of implementation of competency-based programs. The National Metals Industry training programs have been adopted across the country and some evaluation of that process might be fruitful. While this paper has touched on some important issues to do with the development of competency-based courses in this country, even more potentially significant ones to do with implementation await to be considered and resolved. Issues such as the training of teachers to implement the model; the integration of classroom-based and workplace-based training; the integration of public and private training into a nationally accepted system; the time taken to assess individual competencies; the currency of competencies; the resources needed to adopt an open entry, open exit, self-paced model are but some of the pressing matters which drastically need serious attention. Though there is little likelihood of CBT failing to be adopted across the country, that adoption will be a far less painful process if the policy-makers support the process with resources, methodologies and guidelines.

Students and competency-based training

The role of students or participants in competency-based training is a subject of debate and varying views have emerged. On the one hand is the very real concern that a mechanistic approach to education and training such as CBT is dehumanising, treats students as automata, leaves no room for negotiation of outcomes or catering for individual differences; while on the other hand, is the view that CBT is student-centred and allows greater student choice than many other education/training models. To a large extent this is not a real controversy in that each argument is focusing on a different component of the model. Critics of CBT focus on the prescriptive outcomes while proponents point to the flexibility of choice of modules. Both aspects are important and need to be considered.

The applicability of a negotiated outcome with regard to vocational education is very debatable. It may genuinely be asked whether students should be able to negotiate their outcomes in a vocational training program. If the industry, remembering that includes workers, says that a certain competency is required to work in that industry, should a student have the right to question that inclusion? If one wants the qualification perhaps one has to meet the specified outcomes. For example, if it has been decided that to become a

teacher one has to be able to develop lesson plans, it should not be up to individual trainee teachers to opt out of that requirement.

Unequivocally, CBT is a 'top down' model of curriculum development; what Michael Langenbach calls 'an organizational effectiveness curriculum model' (1991). Such a model, he claims, is designed for the benefit of the organisations which employ or will employ the students and as such he suggests is undesirable. He contrasts it with one where the needs of the learner are central. The assumption that the needs of the two will be in opposition is probably false. In fact, debate in the humanities, and in education in particular, is often hampered by the creation of unnecessary dichotomies.

To prove his case Langenbach chooses an example which does little for his argument. He describes a workplace literacy model where organisational needs and learner needs are discussed by the two parties and a training program is negotiated. He has chosen an example where all individuals have some idea of the skills required, and there is fairly general agreement in the community as to what constitutes a desirable level of literacy for employment. It is, on the other hand, an area which has not received a great deal of focus by employers except in a few occupations such as journalism and teaching, where it is central to the job. Thus, in this example, the students or workers are in a strong position to negotiate an outcome.

Whether such an approach is applicable in occupations where there are very low levels of understanding of the skills involved by the uninitiated, and very specific expectations by employers, is highly questionable. Should a trainee pilot or surgeon be encouraged to negotiate his or her training? I certainly hope the mechanic who repairs my car did not negotiate not to do brakes, or the dentist I attend elect to study picture-framing instead of controlling bleeding!

There are several aspects to CBT, some which have been mentioned earlier, which in fact empower students. The first is that the model requires recognition of a student's existing knowledge and skill. While lip service has been paid in the past to students' individual differences, CBT actually specifies a mechanism for assessing prior learning and giving credit for it. The principle is that a person should not be expected to demonstrate competency more times than is reasonable. Thus, if a student is already competent in certain aspects of a training program she or he should not be expected to relearn and be reassessed on that component. This principle and accompanying procedures has become known as Recognition of Prior Learning (RPL). All TAFE systems are currently in the process of developing guidelines for the implementation of RPL.

The adoption and implementation of RPL will have both short-term and far-reaching consequences for students. Immediately, it will mean that they

will not have to sit through hours of unnecessary training prior to reaching the component which is new to them. It will also mean that many students will receive advanced standing in courses and thus complete the program in a shorter time than otherwise. It should also mean that recognition is given for those currently undervalued skills which have not been gained through formal education and training. Thus, a parent will probably receive some advanced status in a child-care course and a secretary in an office administration program. In the longer term it may mean that large numbers of people who have traditionally been excluded from the education/training system can now be assessed and credentialed based on their work and life experiences.

The CBT model also empowers students by making it very explicit to them what a particular training program 'promises'. It is like clearly labelling products on a supermarket shelf; it allows the client/customer to make an enlightened choice. This supermarket metaphor may be worth pursuing a little further. Just as there is a growing demand from consumers of supermarket products to know exactly what it is they are buying, students or customers of the training system are demanding to know what 'product' they are purchasing with their time, effort and often, money. Just as with the supermarket customer who when buying a can of beans cannot negotiate its contents, the student selects what is appropriate but cannot alter the product. What the supermarket customer can do is decide what products to put into the shopping trolley, and what to eat with the beans. In the same way the student can decide what mix of training most suits his or her needs.

An opposing metaphor with which many educationists would be more comfortable, and which might be used to point out the differences in the models, is that of education or training being likened to a voyage. The traditional education model is that there is a certain starting point to the voyage of learning, certain pathways and methods of travelling recommended, but no clear specification of where one is going and how far one will get. The voyage, or the process of learning, is what is worthwhile. If we take for example the study of history, the starting point might be no knowledge and the beginning of a study program; there are pathways such as primary and secondary research, analysis, essay writing and so on; but there is no definition of where one is heading and an indication of when one has got there.

What this can lead to in the worst case scenario is that students have very little control over the learning because they do not know what the objectives of the learning are. In some instances success depends on guessing what the teacher thinks is important. This is total teacher control as students are kept in ignorance. This model might be highly suitable in a primary school situation but becomes increasingly less so as the students become adults and can make

choices about what they want to learn and how they want to learn it. It is only when one knows what one has contracted to undertake that one is in a truly powerful position to be able to negotiate how best to achieve it.

The CBT model obliges the clear specification of the end point of the journey; it is where you have to be to be accepted by the industry. It does not specify the starting point nor the route one must take. The teacher is a facilitator or guide or even perhaps fellow traveller but not the holder of the secret knowledge of where one is going. The pathways of the journey are far more varied under CBT than ever before. One can reach the end point through classroom-based learning but also via skills acquired working in the home, rearing a family, other work experiences.

The final part of the metaphor is how the voyager knows when he or she has completed the journey. Under the traditional system it was when the time ran out; that is, at the end of a subject, semester or year. Students were then all 'clocked in' and measured against each other as to how far they had come. Considering that all students start from different points and the finish line is not identified, such a measuring device is of little use. What CBT requires is that the end point of the journey is clearly marked and that students are recorded as having reached it.

Teachers and competency-based training

The other major party to the training experience is the instructor/trainer/teacher. The diversity of terms reflects the diversity of roles such a person plays. While the role the teacher will play in developing CBT curriculum in practise is not yet clear, in principle it will be a much diminished one. The model clearly specifies who does what and there is less of a role for the teacher in curriculum development than in the past. It will be industry in the form of Industry Standards Bodies who will virtually write the syllabus.

What they, or curriculum developers, will not do is develop teaching materials or decide upon teaching methodology. While teachers will probably have a diminished course development role they will have an enhanced implementation role. No longer will syllabus documents make any mention of how a program is to be implemented; this will be left entirely to the professional expertise of the teacher.

A further shift in role may come about as a result of a more adult-learner-centred approach to implementation. For some years now we have seen the change in teacher role from one of provider of all information to one of facilitator of the learning process. With the CBT emphasis on self-paced

learning this trend is going to be accelerated. Some teachers, no doubt, will welcome the move while others will be very uncomfortable with it. What must be remembered is that vocational training has national objectives to do with raising productivity and enhancing national competitiveness which are much bigger than issues of teacher comfort.

Conclusion

Unlike previous years where the vocational education/training system has been largely concerned with practice at the expense of analysis and reflection, there is currently wide-ranging discussion of the changes the system is undergoing. Hopefully, this will result in a considered adoption of innovation, not merely the thoughtless copying of an overseas experience. The problems this country's training system was experiencing were very substantial and required some drastic action. The possible benefits resulting from a competency-based system are exciting and should fulfil their promise if implemented with due regard to previous experience, the requirements of a wide range of industries and a thorough understanding of the principles of a competency-based approach.

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PUTTING OURSELVES INTO PRACTICE: NEW PROSPECTS FOR PROGRAM PLANNING AND EVALUATION

MICHAEL COLLINS

Introduction

Within modern adult education practice, program planning and evaluation is of central concern. (Although the term is referred to here in the singular form, needs assessment, program planning, and evaluation are usually dealt with as separate functions in the literature of modern adult education practice.) It features prominently, in some form or another, as a subject of study in most academic departments of adult and continuing education. For the most part, program planning and evaluation in adult education focuses upon pedagogical practices in institutionalised settings. However, it does acknowledge the significance of learning that takes place in community-based and alternative, less formalised contexts. This acknowledgment of learning in non-formal settings and alternative pedagogical arrangements is in keeping with the discourse of modern adult practice which shapes program planning and evaluation (probably the best known text which exemplifies this kind of discourse is *The Modern Practice of Adult Education: From Pedagogy to Andragogy* (Knowles 1980) which is a revised edition of an earlier version, *The Modern Practice of Adult Education: Andragogy versus Pedagogy* (Knowles 1970)).

The range of pedagogical settings for which program planning and evaluation in adult education can be undertaken is impressive. Formal program planning and evaluation is enacted on behalf of the individualised learner; for groups of students in conventional classes, study circles, or workshops; for conferences and residential adult education institutes; and for

educational initiatives of all shapes and sizes, ranging from those that are based in a single institution, to others that are state-wide, nation-wide, or international in scope. The notion is that adult education principles can be brought to bear in program planning and evaluation across a wide spectrum of educational contexts which vary considerably in terms of structure, location, participants involved, mission, and pedagogical context. Modern adult education practice has staked out for itself a large terrain for the development of professionalised expertise.

The primary message of this essay is that there is a better way to approach program planning and evaluation than that which now predominates within modern adult education practice. This alternative approach entails giving up the current obsession with methods, models, and techniques in favour of putting ourselves into practice. An orientation towards theory and practice, it is suggested, holds out more promise than the prevailing mechanistic pedagogical strategies associated with program planning and evaluation. In this essay, particular attention will be given to the workplace, but what is to be said here is applicable to a wide variety of learning contexts. At this juncture, putting ourselves into practice includes critical discourse on modern adult education practice.

In part one of the essay, an account is given of conventional perspectives on program planning and evaluation. An analysis is then undertaken to show how the recent turn to critical discourse within contemporary adult education practice unsettles the obsession with technique which characterises conventional approaches. Though critical talk can be readily coopted by the technical rationality of the predominant paradigm it sets out to challenge ("O.K. Twenty minutes for critical discourse, then let's get on with the real agenda"), this essay contends that prospects for more dialogical and genuinely participatory adult education practices are attainable.

With regard to education in the workplace, the essay ends on a speculative note. Critical perspectives can highlight a need among ordinary people to determine collectively their own education. The realisation of such a need would be an important, if not sufficient, move towards greater worker control of the workplaces. Thus workers' participation in the design and assessment of their own education evokes dangerous knowledge. However, under prevailing economic conditions, employers' interests are also served by the enlargement of reflective practice among a significant proportion of workers (for a fairly recent text on workplace education which deals with the notion of reflective practice within the context of modern adult education, see Marsick 1987). There is already an understanding within the corporate sector that mechanistic training models are inadequate.

Conventional approaches and the functionalist technical paradigm

> The term programme has a variety of meanings in adult education. Technically the concept *program* is comparable to the term *curriculum* as used in ordinary educational parlance. In adult education, however, the term program is applied to three levels of activity, only one of which fits the term curriculum. First, it is frequently used to indicate all of the educational opportunities for adults existent in a community - that is, the total resources for the education of adults in a given community. Second, the term may designate the variety and extent of educational activities for adults carried on by a single institution, actually denoting the various *program* which an institution provides. Finally, the term describes the design of an educational activity for adults, which may consist of a single meeting or a series of sessions of such a class. (Verner 1964, p. 34)

> Program evaluation is the determination of the extent to which the desired objectives have been attained or the amount of movement that has been made in the desired direction. The definition of program evaluation encompasses only a limited number of the evaluative judgments that can be made about the program. (Boyle & Jahns 1970, p. 70)

Program planning and evaluation in modern adult education practice

To a large extent program planning and evaluation within modern adult education practice has been envisaged as two separate entities. You develop and implement the program, then you evaluate it. And it is advisable to complete a formal needs assessment before you get into development and implementation. This tendency to separate activities in a very clear-cut way exemplifies the functionalist orientation which shapes modern adult education practice as well as conventional schooling.

A concern for the functional is appropriate. People want things to work well and do the job for which they are intended. And who would want to deny the importance of economy of effort and efficiency? Yet an obsessive preoccupation with a functionalist orientation has harmful effects on the learning processes. An obsession with technique leads to excessive reductionism and artificial categorisation. Important aspects of everyday living, which includes our daily experience at work and in other settings, are left out of the account of what it is we do and what it is we are. This tendency to delimit a complete

understanding of human action for the sake of efficient explanation is sometimes referred to as psychologism. In this context psychologism refers to that branch of psychology which identifies its methodology with that of the natural sciences and is concerned with defining aspects of human behaviour in ways that are amenable to measurement.

Program planning and evaluation in adult education has relied heavily on psychology, behaviourism in particular, as its guiding discipline. In this regard, program planning and evaluation tends to incorporate the techniques and perspectives of that kind of educational psychology which claims to pattern itself on the natural sciences. This psychologistic orientation is very functional because it insists on a reassuring degree of control over the program planning and evaluation process. It paves the way for the deployment of authoritative models of program planning and evaluation, prescriptive statements of what is to be done, and in what order they are to be done. The widespread adoption of a psychologistic orientation has legitimised program planning and evaluation, most recently under the umbrella of human resource development, as a field of professionalised practice for designated experts. And these experts have access to a whole array of 'scientific' pedagogical techniques.

The psychologistic approach to program planning and evaluation is well entrenched as a feature of modern adult education practice in North America. At the same time it is clearly discernible in the discourse on program planning and evaluation in countries such as Australia and Britain which draw on the North American experience. In Australia and Britain, for example, a somewhat stronger inclination than in North America towards philosophical and sociological interpretations has not offset the effects of psychologism, and the functionalist paradigm, on contemporary adult education practices. On is no longer surprised to encounter reports about technocratic pedagogical strategies such as competency-based learning, formal needs' assessment blue-prints, learning contracts, and self-directed learning readiness scales in mainstream adult education texts of countries other than the United States where they originated.

An article on models of evaluation published over ten years ago in the British journal, *Studies in Adult Education*, came to the following conclusion:

> British adult educators have not felt the same need [i.e. as their North American counterparts] to develop evaluative expertize as a condition of employment. However, recent cut-backs in expenditure, increase in demands for accountability, and the need for adult education vigorously to demonstrate its cost-effectiveness to purse-holders, are likely to produce a greater adoption of systematic evaluation frameworks. (Brookfield 1982, p.99)

The same can be said of Australian adult education where the technocratic approach to program planning and evaluation has become all pervasive in the wake of growing demands for accountability and measurable outputs.

The literature of program planning and evaluation, like that of modern adult education as a whole, is very much influenced by humanistic psychology as well as behaviourism. And the former serves the purposes of the latter in that the emphasis is on the individual learner who becomes a candidate for the laying on of pedagogical techniques. The advocates of quite prescriptive curriculum formats readily espouse the concerns of humanistic psychology. Further, humanistic psychology as deployed in modern adult education practice neglects the significance of social context in its preoccupation with individual development. This tendency is reflected in conventional approaches to program planning and evaluation.

The uneasy marriage between behaviourism and humanistic psychology serves to reinforce the individualistic and individualising initiatives which characterise the program planning and evaluation process in adult education. Individuals are to be empowered, their deficiencies addressed, so that they are better able to compete in today's 'global economy'. Little is done within conventional programmatic formats to address the fragmenting effects of modern life on the learning processes beyond, perhaps, plugging in some life-skills training. For the losers—real and potential—who fail to acquire the necessary 'competitive edge', a relevant programmatic response would be to recommend 'coping skills'.

Within the discourse of conventional program planning and evaluation, the concerns of humanistic psychology have become psychologised. They are conventionally packaged into the categories of serialised pedagogical formats. The medium is technocratic. And the medium is the message. The metaphor seems particularly apt here. It refers us to M. McLuhan (1967), *The Medium is the Message*. Along with Alvin Toffler and Buckminster Fuller, McLuhan was among the prominent social commentators of the 1960s whose work described the move away from the nineteenth-century industrial mode to a post-industrial society.

Here is a neat encapsulation of the needs assessment model as represented by the two most influential North American academic adult educators of recent decades:

1 A possible educational activity is identified.

2 A decision is made to proceed.

3 Objectives are identified and refined.

4 A suitable format is designed.

5 The format is fitted into larger patterns of life.

6 The plan is put into effect.

7 The results are measured and appraised.

(Knowles 1980, p.133; Houle 1972, p.47)

This definitive set of statements is indicative of the conventional discourse on needs assessment, program planning, and evaluation. The discourse is systematically steered by the agenda of behavioural psychology, especially in the form articulated by Ralph Tyler (see Tyler 1949).[1]

The amount of writing on needs assessment along the lines set out in the above schematic is monumental. It provides all kinds of devices, varying in complexity, for collecting 'needs data' in numeric form. Hence, categories and statements are precisely defined in such a way that the data they yield are amenable to measurement. And there is no shortage of models which legitimise the technocratic ethos of conventional needs assessment by invoking 'the scientific approach' and the importance of 'objectivity'.

There is a recognition within the literature of conventional needs assessment that needs take different forms (for a useful commentary on the different forms of needs as conceptualised within modern adult education practice, see Monette 1977, pp.116–27). These different forms have to be managed so that they provide responses which are reducible to numerical data. First of all there are 'general needs' which refer us to comprehensive program initiatives such as state-wide adult education programs and broad-based institutionalised education projects. Then there are 'specific needs' on which data for curriculum design and individual learning activities have to be obtained. When individuals are asked to choose between, or rate, a number of predetermined options, they are said to be expressing 'felt needs'. 'Normative needs' are addressed by asking respondents to indicate a gap between a designated desirable standard and one that actually exists. Numerical data on 'normative needs' are often derived from *Yes/No/Don't Know* formats and Likert scales, but there are many variations on the typical strategies used to obtain responses in measurable form. Examples of forms designed to collect data on needs are readily accessible.

Conventional needs assessment is about managing consensus formation. Even where respondents, or potential respondents, are to have a say in formu-

[1] Although this text largely addresses the conventional public (state) school setting, it had an influence on Cyril Houle's work in adult education. Tyler and Houle were at the University of Chicago together. Houle was Malcolm Knowles's doctoral supervisor at that same institution.

lating the categories and operational definitions from which needs, in measurable form, are to be construed, the process is still systematically controlled. (For example, the Delphi Technique, and variations on it, are sometimes employed by adult educators as a mechanism for reaching consensus around learning needs. It was developed by the Rand Corporation in 1953. When systematically deployed, the delphi technique guarantees anonymity to respondents, iteration and controlled feed-back, and statistical reports on group response.) As already indicated, the medium of conventional needs assessment—an exemplar of technical rationality—is the message. Its precisely defined categories and operational statements are determined in a way to keep the process within institutionally approved limits. Economy of effort is very much part of the needs assessment ideology. Yet an enormous amount of energy is expended in the production of needs assessment instruments, many of which never lead to the development of educational programs. Whether or not it is 'acted upon' in developmental terms, the formal needs assessment process plays an important role in legitimising management decisions—often made ahead of time—to stall, deny, or go ahead with educational program initiatives.

Ralph Tyler's text *Basic Principles of Curriculum and Instruction* was first published in 1949. It is only a little text, but has had a significant influence on the way program planning is conceptualised within modern adult education practice. To a large extent, Tyler's work has been very instrumental in legitimising the further incorporation of Taylorism into the design of education since the Second World War. Frederick Taylor's schemes for greater efficiency in American factories and offices during the early part of the twentieth century entailed the systematic reduction of work processes to measurable components (for a thorough account of Taylor's project, see Taylor 1967). By the 1920s, Taylorism was being much invoked by educational leaders. Like many contemporary educational administrators they were enamoured with the cult of efficiency. Perhaps the best known critical analysis of Taylorism is contained in Braverman (1974).

The technical–rational approach to educational design advanced by Tyler, and other educational behaviourists, reinforces a positivistic orientation which shapes learning processes in modern institutions from prisons and workplaces to schools and families. Tyler subsequently expressed concern about the level of hyperrationality that has resulted from reliance, in formal educational settings, on measurable behavioural statements (Interviewer(s) 1973). But the positivistic and psychologistic tendencies associated with behaviourism remain prevalent within contemporary educational practice. Behaviourism plays an important role in sustaining the functionalist paradigm.

The range of program planning models emerging from the functionalist paradigm extends from very prescriptive instructional design formats to those

which advocate a notion of 'discovery learning'. While the former are determined entirely by behaviouristic orientations, the latter also draw on cognitivism or 'humanistic' psychology. In instances where sociological influences are brought to bear in program planning, they attribute significance to prevailing social conventions and contemporary social policy. The various program planning designs of mainstream adult education can be neatly characterised, in a positivistic manner, by the following specific stages of a 'general planning model':

- analysis of the planning context and client system(s) to be served;
- assessment of client system needs;
- development of objectives;
- selection and ordering of content;
- selection, design, and ordering of instructional processes;
- selection of instructional resources;
- formulation of budget and administrative plan;
- design of a plan for assuring participation; and
- design of a plan for evaluating the program.

(Sork & Buskey 1986, p.89)

There is a realisation within modern adult education practice that prevailing models of program planning are under-theorised (Sork & Buskey 1986, p.91). Yet the sequentialised, lock-step, programmatic orientations of the functionalist paradigm preclude any theorising about its presuppositions. These functionalist, under-theorised, models of program planning and evaluation serve an important purpose for modern adult education practice because they can readily include, as 'add-ons', ideological trappings of the 'andragogical' theme—self-directed learning, learning how to learn strategies, and so on—under 'selection, design, and ordering of instructional processes'. The 'andragogical' strategies, which are supposed to distinguish modern adult education practice from conventional schooling, become technicised and amenable to systematic management by the professionalised adult educator or, in the current argot of modern adult education practice, the 'facilitator'.

When it comes to evaluation, especially in North America, the influence of the educational behaviourists and Tyler is just as discernible. In this regard,

Tyler's article, 'General statement on evaluation', published by the *Journal of Educational Research* in 1942 is still a benchmark. Though there have since been variations on the Tylerian theme, especially by Tyler himself, his general statement legitimised a functionalist paradigm which keeps the predominant discourse on program planning within conventionally determined parameters. This regulatory tendency characterises the mainstream program planning and evaluation discourse of modern adult education practice. The prescriptive intent of conventional approaches to evaluation results in a consensual practice which defuses any transformative potential which might reside in fashionable concepts such as learning how to learn, self-directed learning, and facilitating adult learning in the workplace.

By invoking the natural sciences and enthroning claims to 'objectivity', conventional approaches to evaluation dovetail nicely with notions of 'scientific management'. Accordingly, it becomes feasible to incorporate educational evaluation into commercial, industrial, and public service settings as part of management's strategy to justify its current workplace practices. These practices sustain an ideology of enterprise—the cult of efficiency and the entire apparatus of enterprise culture—which calls for continuing legitimation both within and beyond the organisation. Without a full appreciation of their role in the legitimation process (after all, conventional evaluations are supposed to be 'objective' and 'scientific'), adult educators with little or no business or industrial experience are naively pleased to be wanted as evaluators within the world of commerce and industry. Yet, with a more critical understanding of what is at stake, this access to the workplace for the purpose of legitimising a corporate agenda does present adult educators with modest opportunities to widen the discourse around evaluation. The need for legitimation is indicative of the fact that there are contradictions which allow for carefully considered alternative approaches.

Competency-based education (CBE)

The emergence of the CBE phenomenon during the past two decades or so has provided a curriculum model which virtually embodies the functionalist approach to needs assessment, program planning, and evaluation. Within workplace settings and post-secondary institutions concerned with technical–vocational education, competency-based education becomes competency-based training (CBT). Elsewhere, it is designated as competency-based instruction (CBI). In any event, CBE systematically combines needs assessment, program planning, and evaluation as relevant components of a scientific, objectives-based, orientation to education and training. It is instructive to consider CBE as an exemplar of this orientation.

The CBE model is characterised by systematic attempts to break down curriculum into measurable components. By learning the behaviour prescribed in each component, one acquires competence. In this regard, the logic of the CBE approach parallels that of Taylorism in the workplaces of the 1920s.

The Report of the *United States on Competency Education* briefly described the evolution of CBE:

> Beginning in the '60's the term became popular for many types of education. We had competency-based reading instruction, teacher education, etc. More recently, CBE has acquired a more specific meaning and has become associated with acquisition of skills needed by the general public to survive socially and economically in our society.(United States Office of Education 1978, p.1)

William Spady, a leading exponent of the system, defines CBE in the following terms:

> A data-based, adaptive, performance orientated set of integrated processes that facilitate, measure, record and certify within the complex of flexible time parameters the demonstration of known, explicitly stated and agreed upon learning outcomes that reflect successful functioning in life roles.(United States Office of Education 1978, pp.7–8)

An analysis of the perspective on learning, knowledge creation, and knowledge dissemination portrayed in Spady's compressed, though overarching, definition is beyond the scope of this paper. But we can note how the language of CBE, in terms of a preoccupation with control and its overall tenor, is aligned with the discourse of 'scientific management' in business and industry which Braverman linked with the impoverishment of work. The manipulative, and ultimately repressive, tactics brought to bear on educators who must surrender their teaching practices to CBE formats are reminiscent of those deployed by Frederick Taylor over sixty years ago in American industrial settings.

Human resource development (HRD)

Within mainstream adult education, particularly as it relates to workplace settings, the expanding field of HRD (Watkins 1989, p.422) constitutes an important context for the CBE model. While HRD is more all-encompassing and places less emphasis on formal curriculum as a primary area of concern, it incorporates many of the tasks and roles required of CBE. HRD *manages* to embrace CBE as well as other approaches to adult education. CBE emerged in the public education sector whereas HRD originated in business and industry.

The two developments combine within the nexus linking business and industry to education. HRD has a significant influence on the way program planning and evaluation is conceived. Learners are designated, objectively and without equivocation, as a major resource to be developed along with plant and machinery.

Leonard Nadler, a prominent American professor of adult education closely associated with the emergence of HRD as a distinctive field of practice, has described how HRD evolved from training and development (Nadler 1980b). He has also provided the rationale for the close interconnection between HRD and the modern practice of adult education. At first glance, the elaboration required to distinguish HRD from training and development and the conventional personnel function seems only to serve academic needs. But it is clear from examining the literature on HRD that more is at stake in terms of carving out for professionalised practice a burgeoning area of activity oriented to corporate interests.

In his model Nadler subsumes HRD, alongside 'human resource utilization' (HRU) and 'human resource environment' (HRE), under 'human resource management' (HRM) (Nadler 1980b, p.2). To all intents and purposes, HRU assumes the conventional personnel function while HRE deals with 'job enrichment', 'job enlargement', and 'organizational development'.

For Nadler the overlap between HRD and adult education is considerable. His minimal definition of HRD could be just as readily applied to the practice of adult education in general:

> HRD is concerned with providing learning experiences for people. (Nadler 1980b)

A distinction between HRD and adult education might be gleaned from this subsequent definition:

> Human resource development (HRD) is the career area within an organization that focuses on changing and improving the capacities of individual human beings to contribute to the success of the organization. (Nadler 1980a, p.1)

The second quotation more or less describes modern adult education practice in advanced industrial society.

In the 1990 *Handbook of Adult and Continuing Education*, adult education professor Karen Watkins suggested a broad definition for HRD which is somewhat less corporate in tone than Nadler's concept and more in keeping with some of the principles adult educators espouse:

> Human resource development is the field of study and practice responsible for the fostering of a long-term, work-related learning capacity at the individual, group and organizational levels of organizations. (Watkins 1989, p.427)

But we are left in no doubt that employer and management perspectives remain the paramount concern for HRD.

For Nadler and Watkins the *educational component* of HRD provides individual-related learning experiences. (*Training* deals with job-related learning experiences and *development* refers to organisational-related learning experiences.) Individual learning needs from the HRD perspective are envisaged as coinciding with organisational interests. HRD mediates between employees and employer in the interests of the latter, even to the extent of providing adult education for workers about to be laid off so that the organisation will be spared as much aggravation as possible. HRD might be a kinder, gentler form of Taylorism, but it still takes on the role of providing employers with a readily accessible surplus labour force under prevailing conditions of capital formation. This tendency is clearly discernible from Watkins's discussion on the 'externalization of the work force' (Watkins 1989, pp.431–2). It fits in well with a functionalist paradigm which defines how education for workers is conceptualised, designed and assessed.

Critical orientations: From the technocratic to the practical

Within modern adult education practice, concern about the way program planning and evaluation is being overly determined by technocratic criteria has led to an interest in alternative approaches (prominent texts which deal with alternative approaches, and which have to a slight extent informed modern adult education practice, include Guba & Lincoln 1983; Patton 1982).[2] There is a growing realisation that models of program planning and evaluation based on a preoccupation with aping the natural sciences will inevitably exclude important practical and ethical considerations from the development and assessment of educational processes. Practical questions about what is useful and feasible, and ethical questions about what is worthwhile, refer to qualita-

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2 A number of professional journals in education—for example, the *Journal of Educational Evaluation and Policy Analysis*—have given more attention to alternative approaches in recent years.

tive aspects of education and training that are not easily consigned to preordained categories or readily amenable to measurement. Clearly, an approach to program planning and evaluation that addresses qualitative aspects of education cannot fit comfortably within the functionalist paradigm.

Meaning in context

The focus on phenomenological investigations and hermeneutics has highlighted the theoretical grounds on which practical alternatives to the psychologism of modern adult education practice can be advanced. For example, a phenomenologically based theory of action can be invoked to demonstrate the artificiality and potential coerciveness of standardising models (Collins 1987). Phenomenological perspectives and the interpretive endeavours of hermeneutics emphasise the importance of deriving *meaning in context* (for the derivation of this term, see Mishler 1979). This insight places onus on adult educators themselves to design and evaluate, together with their students, educational programs that relate to the immediate situation and needs of people in that situation. It is the educational needs of the immediate context which determine what accessible pedagogical materials and strategies are to be brought in from outside. The role of the educator, relationships between educator(s) and students, and the nature of program planning and evaluation are, thus, quite different from that envisaged from the standpoint of functionalist educational design.

While bringing into question the appropriateness of the natural science model for determining and assessing educational practice, phenomenological investigations and the level of interpretation associated with hermeneutics call for careful, systematic analysis and the provision of evidence. Hence, phenomenology and hermeneutics, representing the human or interpretative sciences within the more recent academic discourse of adult education, provide the theoretical justification for practical approaches to program planning and evaluation which emphasise qualitative considerations about what is worthwhile over the preoccupation with efficiency of technocratic approaches.

The critical turn

With the recent slight turn to Critical Theory in modern adult education practice, the shortcomings of the functionalist paradigm become even more apparent (the capital letters 'C' and 'T' are used to denote Frankfurt School Critical Theory which has featured most prominently in the recent critical discourse of modern adult education practice—see Tar 1985; Bottomore 1989;

Arato & Gebhardt 1988; Bronner & Kellner 1989; Jay 1973). Critical Theory can be usefully characterised as critical phenomenology or the 'hermeneutics of suspicion'. It begins with the assumption that coercive and manipulating forces will be present to distort any communicative and, hence, educative process. Accordingly, a primary aim of Critical Theory is to identify vested interests, institutionalised structures, conditioning efforts of the mass media, and repressive strategies which prevent the realisation of genuinely democratic communication free from all forms of coercion. The Critical Theory agenda has significant implications for how program planning and evaluation is conceptualised within modern adult education practice.

For the most part, the slight 'critical turn' in modern adult education practice has been influenced by Frankfurt School Critical Theory—in particular that of Jurgen Habermas, its leading contemporary exponent. Unlike critical theory of the classical Marxian legacy, Frankfurt School Critical Theory abandoned—too presumptuously, some would claim—any notion of the working class as primary agent of revolutionary social change. As a result of their major empirical studies and theoretical work (see Horkheimer 1947; Adorno et al. 1950), which largely constitutes the foundational critique of technical rationality, the Frankfurt School theorists gave up on any prospects of identifying a privileged agency which embodied the necessary collective force and autonomy to transform industrialised society. Orthodox Marxist theorists accuse the major founding figures of the Frankfurt School, especially Theodor Adorno and Max Horkheimer, of giving in to bourgeois intellectual despair and of failing to understand the potential of working-class interests. No doubt there is some validity in these criticisms, but the conclusions of Adorno and Horkheimer were based on careful empirical work and theoretical analysis. Further, their work provides important critical insights into the way that conditions under modern capitalism—under corporate capitalism and the state bureaucratic capitalism of socialism as it has already been experienced—distort the learning processes in all aspects of everyday life. Hence the relevance of Frankfurt School Critical Theory to adult educators who seek a better understanding of the contexts in which they practice their vocation.

Jurgen Habermas has retrieved a transformative potential for Frankfurt School Critical Theory by positing speech communication as the ontological distinguishing characteristic of what it is to be human. It is around the theory of communicative action (Habermas 1984, 1987), especially the notion of an 'ideal speech situation', that Habermas's work tends to be invoked in the critical discourse of adult education. From his work can be derived an explanation of how coercive aspects of modern life prevent people from coming to *reasonably* agreed upon 'understandings in common' of what is at stake in making decisions about how we should be and act in the world. The imperative of

strategic action—based on instrumental, or technical, rationality—intercedes to impair the enactment of practical and emancipatory interests. At the level of communication, Habermas shows how technical rationality—characterised by an obsession with insinuating the natural science paradigm into the shaping and evaluating of human action—steers decision-making processes in ways that are contrary to the practical interests of ordinary men and women. And the depressing news is that modern life conditions us to accept the validity of the way decisions are made with us, and for us, even though they work against our practical interests. We are, in effect, the designers of coercive strategies which restrict our own emancipatory potentialities.

The good news to be derived from Habermas's Theory of Communicative Action is that the very act of speech presumes that there is among human beings an innate shared ability to arrive at reasonably argued agreements about what should be done. Thus, the rational grounds for genuinely democratic participatory decision-making are accessible within the realm of speech communication. And, for Habermas, it is on the basis of this inherent rationality in speech communication that prospects for decision-making, implementing decisions, and evaluating actions in line with practical and emancipatory interests can be justified.

Unlike his Frankfurt School predecessors, then, Habermas does hold out the possibility that through non-distorted communication (e.g. within educational processes) where technical rationality does not prevail, emancipatory interests can be fostered. Despite its rather abstract formulations, especially in the positing of an 'ideal speech situation', Habermas's version of Frankfurt School Critical Theory has considerable appeal among adult educators who view their work as contributing to a discourse on social change that is counter-hegemonic to the prevailing market-driven ethos of the corporate sector. For them, a major task of the process designated as program planning and evaluation within modern adult education practice is to facilitate 'communicative competence'. Clearly, their notion of 'communicative competence' differs from that of the CBE model.

Critical commentaries on CBE and HRD

CBE is virtually an exemplar of the way program planning and evaluation is enacted within modern adult education practice despite the emergence of practical and critically oriented alternatives. And the HRD phenomenon is also significant because it marks out a professionalised context, especially with regard to adult education for the workplace, where the CBE model and variations on the theme are able to thrive. The CBE model and HRD are relevant

to any account of how modern adult education practice serves the interests of business and industry. CBE, as an instance of how program development and evaluation is systematically organised, and HRD, as an overall strategy, have had an enormous influence on the way modern adult education practice in the workplace is envisaged.

At this juncture it would be instructive to review briefly the CBE model, and the HRD context in which it takes place, from a somewhat more critical perspective than that undertaken in the previous section. In the main, CBE curriculum is neatly prepackaged into standardised modules. Although the modules are still largely produced in print form, they are also amenable to computerisation. Either way, learners tend to spend much of their time responding to multiple choice questions and 'fill-in-the-blank' formats. The CBE curriculum model is deliberately prescriptive and consistently simplistic. It is, nevertheless, very much in vogue. In addition to its adoption in public schools and teacher education, CBE has been incorporated into professional education (nursing, in particular), university graduate level programs, adult basic (literacy) education, and technical–vocational education.

Competency-based education has not, however, escaped critical commentary. In adult education, the shortcomings of CBE have been addressed in terms of the excessive reductionism and artificiality that stem from its behaviourist origins. This critique suggests that the appeal of CBE has to do with the quest for certainty in educational curriculum and with the way that modules are designed to ensure learners are kept busily occupied responding to a vast array of simplistic questions. Exponents of CBE who eschew reflective inquiry in the curriculum formation process are alert to the appeal of the busyness syndrome.

Critical appraisal of CBE in adult education draws attention to how it supports greater bureaucratic control and centralisation of education. And, with regard to claims by advocates that CBE promotes individualised learning, the critique emphasises how individualisation, CBE style, reinforces the experience of anonymity and serial, one-dimensional thinking in learners. The capacities for acquiring communicative competence become impaired (Collins 1987, pp.41–2). A number of pedagogical strategies for unfreezing attitudes which block the way to communicative competence are described in Brown (1991).

The threat CBE poses to cherished adult education principles might be aptly portrayed by reference to Wilbur Hallenbeck:

> No adult education situation can attain its best possibilities on the basis of a predetermined recipe, for every situation is different and must be handled on its own terms. (Hallenbeck 1964, p.218)

And, in this regard, a quote from Eduar Lindeman's *The Meaning of Adult Education* remains instructive:

> The falsest view of life, as in the fable of the blind-folded men and the elephant, is one which rests on some particularism as its point of reference. (1961, p.172)

Lindeman understood the harmful consequences of attempting to deal with a complex activity like the learning process from a laundry list approach.

Although critical appraisal of CBE in adult education has shown how the model bears the stamp of the industrial–commercial nexus, CBE proponents have been unable to establish that their favoured pedagogical format is tied to significant improvements in reading, writing, and numeracy (employers are more inclined than ever to complain about deficiencies in these areas), and in workplace performance. However, the CBE phenomenon continued to gain momentum during the 1980s in Australia, Britain and North America despite the absence of any substantive response to the concerns of its critics.

There is an explanation for this persistence. CBE is *relevantly* located within current forms of capital accumulation in advanced industrial society. It is in line with government public policy formation which places a high priority on serving the needs of employers. From this perspective, curriculum formats of CBE habituate learners to the kind of low-skilled jobs most likely to be available despite misleading official rhetoric about newly emerging highly skilled work. The deployment of prepackaged, standardised modules reinforces a tendency towards the separation of conception from execution which is a central feature of de-skilled, fragmented, work. CBE's pedagogical logic and structure are antithetical to notions of skilful work and integrated occupations. While the CBE system cannot guarantee competent performance, it endeavours to instil attitudes employers find desirable in a readily accessible surplus labour force. Accordingly, it is not difficult to discern which interests are being best served by CBE.

Within educational institutions where CBE is deployed along the lines spelled out by its major proponents, the interests of administration are served at the expense of teachers. Administrators become increasingly separated from teachers. Their attention is focused sharply upon the task of managing the institution—corporate style—and away from educational issues. While CBE enables administrators to gain greater control over the institution, they become bureaucrats or corporate executives rather than headteachers or educational leaders. With the CBE system, the institution's communication processes are converted into rigidly formalised communication protocols and teachers come

under stricter surveillance to serve bureaucratic demands for greater accountability. These tendencies are particularly prevalent in post-secondary institutions concerned with technical–vocational education.

During the implementation phase of a CBE format, the autonomy of teachers is eroded as they are coopted or coerced into accepting their role as facilitators of a curriculum system imposed on them. Competency-based education de-skills educators as well as learners. Teachers become more easily replaceable.

As indicated in the previous section of this essay, the expanding field of HRD (Watkins 1989, p.422) constitutes an important context for the CBE model. While HRD is more all-encompassing and places less emphasis on formal curriculum as a primary area of concern, it incorporates many of the tasks and roles required by CBE. HRD manages to embrace CBE along with other approaches to adult education, as discussed earlier, and influences current ideas about program planning and evaluation. In connecting modern adult education practice more closely with the workplace, HRD has given a new lease of life to conventional notions of program planning and evaluation.

HRD subscribes to human capital theory. Education and training—and retraining—are required to prepare people for the new skilful jobs which are 'destined' to appear. This perspective claims to see a direct connection between education and training and the creation of jobs. In this regard, Karen Watkins's account of HRD invokes Perelman's study on *The Learning Enterprise: Adult Learning, Human Capital, and Economic Development*:

> Virtually the entire adult population needs retraining and new learning to be economically productive. A fifth of the present adult population is functionally illiterate. Most of the rest - including skilled workers, managers, and professionals - have knowledge and skills that technological change is rendering obsolete... The emergence of a knowledge-based economy requires a new synthesis of the functions of training, education, and other forms of communication and learning under the single umbrella of the learning enterprise. (Watkins 1989, p.430)

This prognosis augurs well for HRD, but no critical appraisal is advanced to challenge these assumptions. (Where are all the new highly skilled jobs to replace those which have disappeared? How much education and training is required to prepare people for low-skilled, poorly paid, temporary jobs available at the bottom end of the labour market? What kind of education is required to raise critical awareness about the facts of underemployment?) The discourse of HRD avoids critical analysis and reflection that would take it beyond the

ethos of corporate capitalism. It is in this light that we must assess well-meaning suggestions that critical reflection as an HRD pedagogical strategy can be developed within the workplace.

The term 'human resource development' itself must seem, at first sight, a little odd to adult educators who have no experience in business and industry. Are human resources people? Clearly, the intent is to designate employees as a resource along with physical and financial resources. This preference for corporate language is indicative. (At one time the term 'labour' was widely used, but now that has a connotation that is, perhaps, thought to be overly political for the purposes of HRD.) HRD, even more than CBE, signifies a move towards industry-driven education and training. The CBE model contrives to gauge and assess the needs of business and industry but, in the main, it still emanates from publicly maintained educational institutions. With HRD the prime locations for the shaping of discourse on education and training reside in business and industry, and various public service organisations other than education. In these settings education and training are deployed with increasing adeptness, thanks to HRD, in the interests of employers, managers, and the bureaucracy. The momentum gained by HRD, and its uncritical acceptance within modern adult education practice, is symptomatic of the extent to which the meaning of adult education is now constituted by corporate enterprise versions of education and training.

The role of education in maintaining and reproducing capitalist forms of organisation and social relations, especially its function in preparing people for the job market, is reasonably well understood (see, for example, Bowles & Gintis 1976). Views differ on the extent to which education does, or should, serve other ends. CBE and HRD represent interests which emphasise the reproductive dimension, particularly preparation for the employment sector, of education in advanced industrial society. Both CBE and HRD approaches gained ground during the neo-conservative ascendancy in Western economies where many traditional conservative, as well as liberal and socialist, views on education have been increasingly marginalised by a political ideology which defines education forthrightly in terms of its usefulness within current conditions of capital accumulation.

In failing to recognise that ethical and political choices have to be made about whose interests they should serve, many adult educators have embraced, without careful assessment, the aims of a political ideology which is antithetical to the pedagogical commitments they espouse. The advocates of HRD and CBE in adult education need to think hard about which side of the fence they are on with regard to the issues touched upon in this essay.

A critique of HRD is not intended to imply that adult education should turn its back on the workplace. On the contrary, it suggests that within the nexus

linking modern adult education practice to the workplace reside some opportunities for designing pedagogical strategies that are more in line with the interests of ordinary working people. It makes sense to talk about prospects of an 'educative workplace' within the discourse of modern adult education practice, but a lot depends upon how adult educators in the workplace choose to put themselves into practice. The challenge is for us to work with the contradictions we identify—including the differences between what we espouse and what we are able to do—and avoid deceiving ourselves as best we can about whose interests we serve. In this way it is possible that our pedagogical interventions may have a modest role to play in effecting progressive (perspective) transformations. The term 'perspective transformations' was introduced into the lexicon of modern adult education by Jack Mezirow. It features as a central conception in much of his work since the late 1970s (see, for example, Mezirow 1978).

The extent of critical discourse in modern adult education practice

It is important to note that the recent critical turn in adult education has not been entirely driven by Frankfurt School, or Habermasian, Critical Theory. Postmodernist deconstructionist critique has also informed the way academic commentary is reviewing modern adult education practice. Combined with feminist analyses in adult education, which incorporate both critical theory and deconstructionist orientations, the emerging critical discourse within modern adult education practice serves to undermine the very notion of program planning as a formalised category separated out from theory and practice. At the same time, however, it should be understood that the postmodernist project and that of critical theory are quite different.

Postmodernism draws on Nietzschean philosophy which emphasises the overriding prevalence of power relationships and the will to power as the primary motivating force of both the individual and society. Through deconstructionist analysis a major task for postmodernism is to challenge all allegedly authoritative criteria for guiding how we should understand, and act in, the world. Accordingly, postmodernism acknowledges the potential authority of many points of view and many voices. Postmodernist critical discourse is about the struggle for power to be heard—about the empowerment of 'other voices'. It provides an analytical perspective for educators who seek to unsettle the dominant discourse of status quo interests so that disempowered groups and individuals in society have more chance to assert themselves. In these regards, the projects of postmodernism and critical theory (Frankfurt School Critical Theory and classical versions) tend to overlap. However,

postmodernist critique abandons the quest for identifying *rational* grounds on which to conceptualise and build 'the just society'.

Critical theory does not abandon the project of modernity. It holds out the possibility that *rationally* derived criteria of how human beings should be and should act in the world are still achievable. With regard to program planning and evaluation, in particular, and modern adult education practice in general, Critical Theory has been useful in showing how technical rationality is, in fact, *irrational* and unreasonable in the way it (mis)shapes the learning processes.

A satisfactory account of the fundamental differences between Frankfurt School Critical Theory and postmodernism is well beyond the scope of this paper. However, the distinction does have to be made because attempts to effect a rapprochement between the two blunts the cutting edge of critical discourse.

Falling between paradigms

In light of interpretative and critical discourse there has been a growing realisation within modern adult education practice that the natural science paradigm is not that *practical*. Technocratic formats defining conventional approaches to program planning and evaluation now appear to an increasing number of adult educators as overly determined and artificial. Rhetoric about accountability, efficiency, and objectivity does not mask the fact that authoritative planning and evaluation models, and narrowly defined operational definitions, fail to give an account of everyday reality. Hence there is a discernible movement, even while technocratic formats like CBE still hold sway, to support pedagogical strategies which emphasise creative and practical aspects of the educational endeavour. (The practical dimension refers to action guided by ethical and political—normative—considerations.) These vital aspects of teaching and learning can only be realised adequately with educational initiatives emanating from a paradigm based on human action rather than the natural sciences.

Unfortunately, the articulation of a discourse drawn from humanistic psychology with Tylerian influences is not sufficient. In any such attempt to effect a rapprochement between the concerns of humanistic psychology and technocratic pedagogical innovations derived from the 'natural science paradigm', technical rationality wins out. For example, the humanistic intent of modern adult education practice is impaired by an aspiration to instruct adult educators on how to design learning contracts. The learning contract is an embodiment of technical (instrumental) rationality. It effectively forecloses on learning processes by steering them into a legalistic negotiation format. As an instrument for directing and evaluating an individual's educational program,

the learning contract relinquishes prospects for improving the quality of communication through collective decision-making about what should be learned and taught.

The ideology of technique permeates the entire discourse on self-directed learning which includes the learning contract as a major pedagogical device. Through SDL adults are given directions on how to manage, and how to be, self-directed learners. It is reduced to a pedagogical strategy for enabling us to be what we already are. There is now a standardised 'self-directed learning readiness scale' available on the North American education market, which suggests that some people are just not ready to get into being what they already are, at least, not until they receive their SDL quotient. Even the notions of learning how to learn and critical thinking are now conceptualised as methodologies for implementation by experts within a field of professionalised practice. Critical thinking is to be *facilitated* in the form of *skills*. It is ready for prepackaging as competency-based critical thinking (CBCT?).

Yet educational practice informed by a paradigm based on human action (sometimes referred to as the 'naturalistic paradigm') has the potential to demystify professionalised domains such as program planning and evaluation and the pedagogical techniques they sustain. At the level of needs assessment, for example, a practical orientation entails simply asking people what they need. Christian Bay describes the practical task in the following terms:

> The task is not to make decisions about what most people need at variance with what they say they need, but to activate public discussion about what is needed; the task is to activate ourselves and one another in continuing discussions of our values and their policy implications. (Bay 1981, p.93)

But what this insight calls for is not easy to enact. From the perspective described by Bay, the adult educator is confronted with the challenge of identifying, and dealing with, obstacles which prevent people from clearly expressing their needs. These obstacles to a free expression of real needs are constituted by conditioning factors which are not readily apparent to ourselves.

One of the important contributions of Critical Theory has been to reveal how the expression of needs, even in relatively non-subordinating situations, tends to be predetermined by the vested interests of those who have the most effective control over our institutions. In this regard the works of Eric Fromm (1965), Herbert Marcuse (1966), and Jurgen Habermas, whose Theory of Communicative Action is the culmination of his theoretical project, are particularly helpful to adult educators who seek to distinguish between 'real needs' and those already determined for us by the imperatives of an overly managed society. Marcuse has this to say about the situation:

> The political needs of society become individual needs and aspirations, their satisfaction promotes business and the commonweal, and the whole appears to be the very embodiment of reason. (Marcuse 1966, p.IX)

According to Marcuse, techniques deployed to assess needs are part of this system of social control.

While Marcuse's brilliant analysis of the way the expression of needs is systematically distorted leaves us with only the prospect of defiance and protest against vested interests, the works of Jurgen Habermas and Eric Fromm hold out more optimistic possibilities. The analyses of these prominent theorists point to ways by which human needs can be rationally determined in line with the emancipatory interests of ordinary people. Such interests can be fostered, if only at a minimal level, in even the most unpromising situations. In workplace settings, where the 'bottom line' profit motive typically takes precedence, an institutional need for legitimation beyond 'bottom line' criteria provides occasional opportunities for introducing alternatives to management-endorsed educational programming.

Care should be taken not to exaggerate the potential emancipatory effects of alternative approaches. What Frankfurt School Critical Theory, as the primary source of inspiration for the slight critical turn in modern adult education practice, reveals is the extent to which the institutions of industrialised society have acquired an autonomy largely independent of human needs. And from an orthodox Marxist standpoint, which views the working class as the agency for revolutionary social change, officially sanctioned formal education within the workplace can hold out only limited possibilities for enhancing the emancipatory interests of workers. Where the notion of *communicative competence*, derived from the work of Jurgen Habermas, becomes relevant in this context is in establishing a theoretical touchstone for adult educators who want to generate a more critically informed discussion among workers about the work process. This kind of enlarged discussion can attend to educational needs that are not typically incorporated into programs sponsored by employers or trade unions.

From a practically oriented approach, which involves participants in discussion about the nature of their learning, a clear-cut distinction between needs assessment and program development becomes artificial and dysfunctional. The hiatus between the two, which might seem to serve the professionalised interests of the educator, has a tendency to frustrate meaningful discussion on the question of needs. Where this formal separation prevails, it can be made deliberately problematic as a means for encouraging students and teachers to reflect carefully about the reasons for the positivistic categorisation of needs assessment, program development, and evaluation. This approach should lead to the clarification of how the models and ritualistic

paraphernalia of a natural science paradigm serve institutionalised interests. Yet, at the same time, a critical approach confirms that people have the competence to come to a practical agreement about educational needs, taking into account the effects of institutionalised strategic interests, without formal direction from experts.

The realisation that people already have the competence to discuss educational needs in a rational way, and that they have the ability to participate in the design of their own educational programs, is not out of line with the conventional discourse of modern adult education. Adults can learn. And adults can plan their learning.

So it is all right to let go of the standardised methods and techniques, and the talk about 'facilitating adult learning'. Adult educators will still be needed if only because the practical task of teaching and learning is so devilishly difficult. It may be helpful to dispense with the weasel term 'facilitator' (and its gerundive form—'facilitating') which has replaced the terms 'educator' and 'teacher' in the conventional parlance of modern adult education practice. An impression is conveyed that 'facilitators', with appropriate methods and techniques at their disposal, are not expected to make judgments, to inspire, to create, and to teach. But in view of the continuing obsession with technique and method, the practical dimension of participatory democracy in any formal learning context will have to be *taught* and *retaught*, and *learned* and *relearned*.

A decision to push aside the plethora of techniques and models in favour of practical participatory approaches means working between paradigms. But the risk entailed is not that unreasonable. The realisation of a more participatory approach in learning situations in most settings—the schools, hospitals, and prisons, as well as the workplaces—does not serve to undermine fundamental institutionalised interests. What actually occurs is that learners and teachers in participatory learning processes get a more critical understanding of the nature of their own learning, the matrix of power relationships within which their learning takes place, and their roles within the institution. Teachers, in particular, gain a more acute sense of whose interests they are serving, and to what extent. This understanding may or may not be 'empowering'. It could be disempowering.

Overall, though, the challenge to technocratic educational programming and the emergence of participatory approaches, especially those linked to theories of human action, can be viewed as a slight move in the direction of a more emancipatory pedagogy. But 'facilitators' of reflective practice (which is associated with alternative approaches to formal education in the workplace), should be clear about how their work is systematically incorporated within wider management-oriented strategies. There is a tendency for adult educators to exaggerate the emancipatory potential of the discourse around reflective practice.

It is in the area of program evaluation that the most systematically defined alternatives to the delimitations of technocratic designs have been advanced (see Guba & Lincoln 1983; Patton 1982). In the alternative genre the discourse is about 'practical', 'responsive', and 'naturalistic' approaches. And there is a sustained emphasis on relating the task of evaluation to an assessment of what is worthwhile. The 'human sciences' are clearly intended to constitute the guiding paradigm. A wide variety of methods (interviewing, participant observation, textual analysis of documents, non-verbal cue analysis, and so on) are incorporated into practical evaluation in order to gain a more complete understanding of the educational process than is forthcoming from technocratic evaluation designs. While emphasis is on the 'practical' dimension, care is taken to demonstrate how practical evaluation, free from the stipulations of technocratic formats, can be *systematically* enacted.

Practical evaluations of a formal kind are intended to be larger in scope than conventional approaches, and set out deliberately to give those affected a more substantial stake in the process. The increased level of participation by stakeholders means that systematically planned practical evaluations are more time-consuming than technocratic initiatives. However, practical evaluations, emphasising 'responsive' and 'naturalistic' approaches, are now legitimised within a wide variety of institutional settings which include schools, hospitals, and prisons as well as the conventional workplace.

The necessary negotiations between the evaluator, as an 'instrument' of the evaluation, and key stakeholders involve a more explicit acknowledgment of constraining factors that are normally taken for granted in conventional technocratic formats. ('Key stakeholders' represent the interests of those who are in a position to authorise the evaluation.)

Although responsive approaches allow for more freedom of expression and creative initiative, they are ultimately governed by technical rationality rather than practical emancipatory interests. The broader scope of systematic practical evaluations (which include the collection of relevant numerical data), and the deeper level of interpretation associated with them, can effect a better understanding of educational procedures and learning processes. However, practical evaluations sanctioned in the workplace and other institutionalised settings are usually positivistic and ultimately governed by technical rationality rather than practical and emancipatory interests. Only where some significant movement in the direction of more genuinely democratic participation is already under way can formal evaluations of the practical kind have any effect on existing relationships of power.

The same limitations with regard to affecting status quo relationships of power apply to phenomenological approaches in educational evaluation. Phenomenological investigations in educational evaluations associated with

the work of Elliot Eisner (1985), are more rigorous in the way they eschew the effects of positivism and technical rationality, and are very instructive on that account alone. They are initiated from the personal viewpoint of the evaluator who tends to focus attention on selected aspects of the educational enterprise in any given institutional setting. Accordingly, phenomenological investigations can be helpful in providing careful descriptions about important constituents of the learning processes within workplace and other institutional settings. Phenomenologically based evaluations in education tend to be oriented, at this time, towards academic rather than worker or management interests.

The tendencies which favour more practical over technocratic approaches to program planning and evaluation are now somewhat in evidence within the HRD enterprise, especially where it operates under the rubric of workplace learning. Further, there is a growing acknowledgment that CBE-type formats and other Taylorist initiatives, however much they contribute to management control, are no guarantee of competent performance. So HRD and its offspring swing between the technocratic and the pragmatic, between the paradigm of natural science and that of the human sciences.

The growing rapprochement between modern adult education practice and HRD may have lent weight to the human side of HRD even while adult education has increasingly assimilated a business corporate-style ethos. It is unlikely, however, that the HRD label itself (is 'human resource' the same as people?) will be abandoned while it marks out a growing field of professionalised practice.

Perhaps the term HRD will be taken over eventually by the notion of workplace learning, which already sits more comfortably with academic commentators. The literature on workplace learning that has recently emerged within modern adult education practice is clearly a further development of HRD, which itself stems from a combination of education and training in the workplace and the personnel management function.

The literature on workplace learning has introduced a somewhat more sophisticated dialogue about the nature of participatory approaches to education and training. It incorporates the discourse on reflective practice which highlights the importance of reasoning rather than focusing on behavioural objectives. Yet this new emphasis on learning in the workplace *manages* to fall between the natural science paradigm and that of the human sciences. It starts off from the assumption that the latter has significant limitations as far as workplace education is concerned. In this view, workplace learning is still unavoidably shaped by instrumental rationality. At a theoretical level, then, educational programming in the workplace may be operating between the natural science paradigm and that of the human sciences but it is still firmly anchored in the technical rationality which sustains the former.

There is considerable ambivalence in the literature on workplace learning about whose interests are being served, especially when the talk is about reflective practice. But the situation becomes clearer when an account of workplace education leaves aside its focus on learning processes in a particular classroom setting. Then workplace education is envisaged as a corporate 'strategic initiative' to ensure that knowledge gained by employees will sharpen the organisation's competitive edge.

The growing involvement of adult educators in HRD and the new workplace learning initiatives have coincided, during the past decade or so, with the most massive lay-offs and incidence of deskilling since the 1930s. There is, of course, a role for adult educators to play in preparing adults for available jobs at the lower end of the job market and for some of the relatively few newly emerging 'up-skilled' positions. Yet it is still relevant for us to ascertain whether greater participation by (employed) workers in the design and assessment of workplace learning can be more than a gentler means of rationalising the workforce.

Surely this is a relevant problem for adult educators intent on introducing ethical and normative concerns into workplace learning to pose for themselves.

Putting ourselves into practice and participatory approaches

The overall guiding question for adult educators in the workplace, as well as other settings, is of an ethical–political nature (see Bernstein 1992, who endeavours to link the project of modernity with insights of postmodernity). It is about "What should we do here?" ("What is our role?") given the progressive principles we are supposed to espouse. This orientation calls for *care-ful* practice which deals with contradictions (hard realities which run counter to espoused principles), conflicting interests, relationships of power, and instances of oppression rather than accepting them in a taken-for-granted way. Such an orientation to practice precludes a technocratic approach to program development and evaluation which begins with a concern for how effectively a particular planning model can be deployed in a given situation. It is important for adult educators in the workplace to resist the deployment of pedagogical strategies which impoverish their own work. In this way adult educators signal their views about the stake people have in the work they undertake.

It should be clear that the kind of workplace educational practice envisaged here does not coincide with that which emanates from a graduate business school ethos. The task of the adult educator in the workplace should not be

merely to *re-present* management and employer interests. (This function can be readily performed by non-educators.) Nor does it have to be limited to a concern for effecting consensus formation among workers through the deployment of top-down pedagogical strategies. Inevitable contradictions, crises, and shifting objectives emerge in all organisations as a result of internal and external adjustments. Besides reinforcing the need for consensus formation, such occurrences provide significant opportunities for adult education practice in the workplace to influence learning processes in ways aligned to an ethical–political commitment which differs from that embodied in the cult of management efficiency.

At a theoretical level, an explanation of why prospects emerge within organisations for alternative, counter-hegemonic, practice is accessible from critical discourses referred to in the previous sections. In everyday practice, though, theoretical insights need to be accompanied by sensible strategies. If CBE, for example, is the order of the day, it might not make good sense to oppose it directly and immediately in workplace settings. A more subtle approach might be feasible. In many instances, CBE's inherent shortcomings as an 'all-encompassing' technocratic design provide space for the alternative approaches which find general acceptance—even official sanction—from CBE advocates who can claim new initiatives as variations on their theme. It is feasible, then, for adult educators in workplace settings to guide their practice by principles which differ from the prevailing management ethos without risking their jobs on a daily basis.

The adoption of a perspective on workplace education which differs from that defined from the standpoints of CBE and HRD does not call for mindless activism. Nor does it entail an exaggerated sense of what is immediately achievable in fostering alternatives and resistance to technocratic approaches. As for putting one's job at risk, the state of the economy and institutional downsizing are more important factors in this regard than a predisposition to adopt a view of workplace education which does not overlap conveniently with that of the corporate sector.

Planning and evaluation as theory and practice

A strong focus on the role of the adult educator and the relegation of methodology are not intended to do away with recourse to established methods and materials prepared outside the immediate educational context. The point to be emphasised is that methodology and standardised materials should not be allowed to define the educational context. When identified to meet contextually determined needs, however, they can be relevantly incorporated without

dominating the learning processes and the nature of participation. The process as a whole should not begin with the deployment of *a* method and *a* particular standardised package of materials.

Marvin Farber's appeal in *The Foundations of Phenomenology* for a diversity of approaches and for an attitude of open-mindedness as a worthwhile orientation is particularly apt in this context:

> A diversity of methods is required by the endless diversity of problems. If methods are instituted to solve problems or to answer questions, we must be prepared to enlarge our conception of methods accordingly. (Farber 1968, p.10)

And this quote from Paul Feyerabend's *Against Method* strikes a responsive chord:

> The change of perspective makes it clear that there are many ways of ordering the world that surrounds us, that the hated constraints of one set of standards may be broken by freely accepting standards of a different kind. (Feyerabend 1984, p.218)

In the case of evaluation, a relevant practical approach which eschews technocratic designs, and the notion that assessment takes place after the fact, still acknowledges the need for careful assessment of performance. However, this form of evaluation is an integral part of the educational process. Similarly, the identification of learners' needs and educational planning are integrated in ways which render artificial any attempts to separate needs assessment, program planning and evaluation into separate entities. These distinctive categories become redundant except as part of an endeavour to justify a professionalised field of practice. The endeavour, in any case, is flawed because it cannot hope to realise professionalised status, in the conventional sense, for adult educators (Collins 1992). There is no need, then, to retain the mystification surrounding the techniques, models, and prescriptions which characterise program planning and evaluation as a clearly defined field of practice.

The toppling of method as a fetish in program planning and evaluation, and within modern adult education as a whole, places more responsibility on the adult educator. It makes the role more difficult, envisaging a vocational practice that requires ongoing assessment and reassessment. Careful reflection on the educational process calls for a predisposition to *create* strategies, a willingness to *modify* them when appropriate, and the *courage* to identify where they are going wrong. The approach is theoretical but it is not the result of first learning about a theory from a textbook or in the classroom, and then putting

it into practice. (Some academic adult educators still talk about 'putting theory into practice' as though properly qualified practitioners carried around theoretical tool-boxes from which to draw on appropriate occasions.) Rather, the committed adult educator engages with theoretical work on a continuing basis and puts herself or himself into practice.

Greater reliance on one's own competence as an adult educator does not mean that idiosyncratic or whimsical strategies are to be adopted. *Contextual relevance* determines which strategies, methods, and materials are appropriate in a particular situation. The needs of relevant stakeholders, and the analysis of institutionalised constraints and possibilities are not determined by the adult educator alone, but *intersubjectively* (Collins 1987, pp.46, 76–7) along with other participants in the learning process. The conditions for intersubjective understanding to emerge are akin to those required in the development of communicative competence. They characterise an educative situation where, through critical inquiry, participants advance their views on the topic at hand and reconsider their viewpoints in the light of what others have to say. This process represents a committed endeavour to understand the experience of others in a given situation and have one's own experience understood in a *reciprocity of perspectives*. The challenge for adult educators, then, is to create an educative environment along these lines which allows for genuine democratic decision-making about what is to be learned and how it is to be learned.

Without a predetermined set of directions or statements of objectives, the adult educator has to ensure, in conjunction with others, that decisions are made about how far a particular phase of the educative process should be carried for the purpose at hand. In the ascertainment of needs, the organisation of educational content, and the assessment of performance, relevant parameters can be systematically discerned from the requirements of a particular situation. In the case of assessing needs, for example, the level of investigation should be taken up to the point where its adequacy for deriving strategies appropriate to the situation at hand becomes apparent. This may appear to be a statement of the obvious, but it calls for judgment based on past experience and careful analysis of what is at stake. It emphasises the need for a degree of autonomous action and the importance of competent performance on the part of the adult educator. These are attributes which the imposition of standardised prescriptive formulations tends to undermine.

Adult education and the workplace

The workplace constitutes an important site for learning even without the interventions of educators. So adult educators who now want to strengthen the link between education and work need not be so concerned about developing

an 'educative workplace'. For better or worse, it is already 'educative'. A lot has been learned from the initiatives of Frederick Taylor and his many successors in the area of management efficiency, for example. (Presumably, most adult educators are not intent on joining that particular line of succession.) Accordingly, before embarking on a mission to develop the 'educative workplace', there is an onus on adult educators to reflect on (evaluate)—and to determine—what it is we can bring to the workplace that differs from conventional HRD practices.

Unfortunately, the nature of the relationship between modern adult education practice and the workplace during the past two decades looks suspiciously like the gift-wrapping of adult education for management and employers. It is time for adult educators to evaluate this relationship in a more critical light before committing on a broad front to developing an educative workplace. After all, what significant difference can Adult Education, Inc., as an information and delivery service industry, really make to what is already under way in the corporate sector? It would be helpful to acknowledge the extent to which the corporate ethos has influenced modern adult education practice. By incorporating a critical analysis into the evaluation of adult education's formal involvement in workplace settings, we will be better placed to understand how this practice might be transformed to serve the interests of ordinary working people.

To serve these interests as a prime commitment, careful planning of educational initiatives is required and sophisticated approaches have to be found for justifying their relevance in workplace settings. Adopting the standpoint of ordinary workers is feasible, for the most part, because employers and workers do have a shared interest in improving performance, and in providing ways to make work more interesting, at the conventional points of production and service provision. Thus, much of the current content of the educational provision in the workplace makes sense from the perspectives of both management and workers. Therefore, there is no suggestion here that an identification with workers' interests as a primary commitment necessitates a perpetually antagonistic relationship with employers and management. Yet it is important to be clear about where the interests of employees diverge from those of employers. And clarity about the nature and significance of these divergences evokes the need for an appropriate educational response. It is within an ethical–political context associated with this response that the distinction between adult education in the workplace and conventional approaches to education and training becomes apparent.

It would be naive, dysfunctional even, to work on the assumption that formal adult education in the workplace will not be largely accommodative to the interests of employers for some time to come. But this acknowledgment

does not have to be reinforced by another mistaken assumption that conflates the interests of employees and employers in the modern workplace. Accordingly, one of the immediate challenges for adult educators in the workplace (and this includes the unions) is to place labour history on the educational agenda, emphasising workers' struggles and the contributions ordinary working people have made to the common wealth of the economy.

Thomas Hodgskin, co-founder of the Mechanics' Institutes which became the first nationwide movement in secular education in Britain, had this to say in *The Mechanics Magazine* of 11 October 1823, about education for working people:

> Men [sic] had better be without education than be educated by their rulers; for then education is but the mere breaking in of the steer to the yoke. The education of a free people will always be directed more beneficially for them when it is in their own hands. (cited in Collins 1972, p.37)

Hodgskin's aspirations were dashed well before the movement began its rapid decline in the mid nineteenth century, but they are still relevant to adult educators who envisage pedagogy within the workplace.

Prospects for participatory practice

A significant contradiction which provides opportunities for alternative initiatives in workplace education is evident from the fact that top-down, standardised approaches exemplified by CBE are not doing *their* job. The extent to which technocratic educational formats serve the purposes of management control is not without limit. Limitations on any systematic formulation for establishing surveillance and control become apparent, especially to those whose practice stems from a 'human science' paradigm, allowing for the emergence of changes 'from below'. Henri Bergson's philosophical insight on the nature of this phenomenon is instructive:

> In life, a multitude of useless things are said, many superfluous gestures made, there are no sharply drawn situations; nothing happens as simply or as completely or as nicely as we should like; the scenes overlap; things neither begin nor end; there is no perfectly satisfying ending, nor absolutely decisive gesture, none of those telling words which give us pause; all effects are spoiled. Such is human life. (Bergson 1946, p.249)

Even within the prisons, it becomes possible to undertake progressive educational initiatives which are not totally accommodative to the system of

surveillance and control (Collins 1988, pp.101–10). Accordingly, it is not unreasonable to posit that the panoptic effects of the workplace are insufficient to determine entirely the course of formal and non-formal education.

While standardised prescriptive pedagogical formats are consistent with prevailing vested interests which promote deskilling and a separation between the conception and execution of work (see Braverman 1974; and for a more philosophical analysis, see Lukacs 1968), the contemporary workplace does require an undetermined number of up-skilled employees. Up-skilled work requires a more creative and autonomous orientation on the part of the worker. It is less amenable to management control. Since the reductionistic and fracturing effects of technocratic educational innovations impede the realisation of aptitudes associated with up-skilled work, there is an opportunity to begin some relevant restructuring of workplace education in ways which prefigure a more autonomous workforce.

It is important, however, not to exaggerate how much up-skilling has occurred, is occurring, and will occur. The phenomenon has been clearly overstated within the prevailing neo-conservative ideology. Further, observers on workplace education in the 'post-industrial' era seem to be overly imbued with an enthusiasm for the discourse on up-skilling. It serves to strengthen the case for professional interventions in formal and non-formal workplace learning processes. Yet, even though the deleterious effects of deskilling are more significant than the consequences of up-skilling, educators in workplace settings need not downplay the possibilities any discernible trend towards up-skilling provides for creating more emancipatory educational initiatives on behalf of workers.

In the final chapter of a recent book on cultural studies and education, Richard Johnson comments on the prospects for a transformed workplace:

> Employers may choose to go for routinization of labour and attempts at tight control, or give more or less real powers of initiative to workers. The hierarchical divisions of labour may be kept as they are, or modified in the direction of the self-determination of labour. (Johnson 1991, p.317)

And Johnson's following suggestion gives support to the role envisaged by this essay for adult educators in the workplace:

> Perhaps we all have to learn to work on hostile ground, seeking out the contradictions, concessions and other spaces in official requirements, fortunately far from seamless. Attention to detail in official documents is required as well as the resistant mentality. (Johnson 1991, p.308)

Learning to work between the seams will not come up with much to challenge status quo arrangements if the process is confined to individualistic initiatives. Individual efforts are readily headed off, coopted, or made to seem idiosyncratic. The kind of support and solidarity that can characterise participatory approaches are far more likely to yield progressive alternatives to technocratic learning formats. However, unless those who are committed to participatory approaches remain alert, the facilitation of participation itself becomes methodised. A tendency to instrument the process is already discernible in participatory literacy in workplace education where the adult educator's task becomes one of facilitating joint planning and collaboration between labour, management, and teachers. As a *method*, participatory literacy education in the workplace has no critical awareness of 'contradictions, concessions, and other spaces' which allow for opportunities to alter significantly prevailing perspectives on learning.

Despite the pervasiveness of a trend to methodise all progressive pedagogical strategies, the potentiality of participatory approaches has been witnessed at the margins of modern adult education practice. The best known examples include the work of Brazilian educator, Paulo Freire (1973, 1974, 1978, 1985) and participatory research which, to a very large extent, invokes Freire's pedagogy (see Hall 1979).[3] Emanating largely from community-based developments in 'third world' settings, Freire's emancipatory pedagogy and participatory research are frequently homogenised and prepackaged for deployment by adult educators in advanced industrial nations. The smoothing out effects which result from uncritical deployment of these approaches can be avoided by viewing them as relevant ways to enlighten practice, not as authoritative methodologies. It is not necessary, then, to talk in terms of actually using Freirean or participatory research methods in the conventional workplace.

Participatory research, and the Freirean pedagogical processes which it incorporates, is very much concerned with the daily round of work—but in communities outside the conventional workplace. The approach is eminently practical and involving, intent on demystifying the elitist notions typically associated with academic research. A professionalised discourse around needs assessment, program planning and evaluation is not on the participatory research agenda. Instead, a concern for uncovering real needs through face-to-face interaction becomes an integral part of the participatory research project which is evaluated on a continuing basis in the form of collective analysis. The problem of needs, the project at hand, and evaluation are part of the interweav-

3 The International Council of Adult Education (ICAE) in Toronto has published a number of papers on participatory research projects and an annotated bibliography of 100 articles, books, and essays covering Africa, Asia, Europe, Latin America, and North America.

ing of theory and practice. In this process of *praxis*, the success of educational endeavours is very much dependent on how closely the adult educator's interpretations of the learners' work approximate to reality. The emphasis is on working with, and within a group, not on *dealing with* individuals in isolation as part of an aggregate.

A well-established tenet of participatory research is that the paramount problem around which a project forms should originate within the group. Throughout the entire process, full and active participation of group members is regarded as an important indicator of success. As for individual and collective competence, a primary aim of participatory research is to make people aware of the potency of their own resources, encouraging them to develop greater self-reliance. These developments, in turn, foster a confidence in people to analyse (evaluate) the learning processes as well as the institutional and social contexts in which these processes are embedded.

No single method is favoured above all others in the participatory research approach. A wide variety of methods is recommended. Like action anthropology and action research (see, for example, Tax 1964; Kemmis & McTaggart 1987), participatory research can be grounded in social theory. These approaches share similar ethical commitments regarding the primary importance of genuinely democratic participation in decision-making about the learning processes. The insights they provide, and the ethical–political principles they embody, make these approaches particularly relevant to the development of *a theory and practice for education in the workplace.*

The *study circle* features prominently among several ways of organising and assessing participatory education. Variations on the study circle which do not shortchange the principle of democratic participation can be useful in supporting the kind of workplace education envisaged in this paper. The ascertainment of needs, the location of relevant materials, and ongoing assessment are all identifiable as constituents of a study circle approach. Study circles are a prominent feature of Sweden's social democracy where they are officially sanctioned as an appropriate educational strategy for a wide range of community settings, including the workplace. In other countries they have been adopted—with some enthusiasm—by many adult educators, but on a less massive scale (see Oliver 1987).

The teacher's role is transformed significantly within the study circle context, and may be allotted to different members of the group on a fairly regular basis. Martin Heidegger's view of a teacher's role would seem to fit nicely with the study circle concept:

> Teaching is more difficult than learning because what teaching calls for is this: to let learn. (Heidegger 1968, p.15)

A problem that arises with study circles is that they can become too preoccupied with the collection and dissemination of information. At the other extreme, study circles sometimes encourage a level of conversation that is way off the topic at hand. Further, study circles, too, have tended to become methodised with the adve' ' of prepackaged study circle programs. There is significant evidence of these shortcomings in the Swedish model (Blid 1990). Perhaps of even more concern is the fact that study circles can be coopted by authorities which sanction them while masking vested interests behind the language of participatory democracy. Nevertheless, it is critical awareness of these pitfalls which adds to the significance of the adult educator's role. A crucial aspect of putting oneself into practice entails creating a relevant context for agenda setting on content and process, and making sure that the rules which are decided upon are made explicit.

Within modern adult education practice, there has been a tendency to spurn the lecture as overly didactic, boring, and an obstacle to participation. These criticisms are no doubt on the mark in circumstances where the lecture method prevails above all others. Yet the scheduling and time parameters set for lectures do not have to be standardised. Nor does the delivery of lectures have to be the prerogative of any one member of the group. Lectures do not have to be boring, and they can be most appropriate at certain phases of any participatory group learning project. The taboo on formal lectures in modern adult education practice in no way makes up for any failure to foster the kind of communicative competence adult educators espouse.

In setting the stage for participatory approaches, great care is required to avoid a tendency to methodise and enthrone any specific pedagogical strategy. This pitfall can best be circumvented in workplace settings by envisioning the adult educator's task as putting oneself into practice. An orientation such as this is no panacea, of course, but it becomes a means to developing a theory and practice of workplace education which is serious about the notion of genuine participatory democracy.

Conclusion

Putting ourselves into practice as a way to offset irrational effects of the preoccupation with technique is not merely an academic notion. (The author of these commentaries on workplace education has experience in business and industry and as a lecturer in a technical college.) It is true that much of what has been said in this paper has a normative thrust. But the attempt has been made to show that decisions about what we should do, and about how we should go about assessing our practice, can be arrived at in a rational way without

recourse to an ideology of technique. The act of teaching, and education in general, necessarily involve us in the normative (ethical–political) dimension of everyday life (see Collins 1991).

An approach to putting ourselves into practice which is tied to the development of a theory and practice of education in the workplace removes the need for a positivistic, professionalising, category defining 'program planning and evaluation'. The deconstruction of formal program planning and evaluation that this claim implies is accompanied by an orientation to workplace education very much in line with that advanced by John Dewey:

> The kind of education in which I am interested is not one which will adapt workers to the existing industrial regime; I am not sufficiently in love with the regime for that. It seems to me that the business of all those who would not be educational time savers [sic] is to resist every move in that direction, and to strive for a vocational education which will first alter the existing industrial system, and ultimately transform it. (cited in Dale 1985, p.3)

It is not a call for radical confrontation. On the contrary, it affirms the need for thoughtful, pragmatic strategies. The pedagogical task envisaged is difficult but very worthwhile, because workplace education is about working at the centre of things rather than on the margins. A great deal of hope is pinned these days on the emancipatory potential of adult education associated with 'the new social movements' away from the conventional workplace. But, in reality, the workplace still remains a potentially critical site for a transformative practice of adult education.

Training is an important aspect of education in general, and workplace education in particular. Unfortunately, the distinction between education and training has been overly determined, separating out the latter and consigning it to an inferior status. In largely ignoring the distinction between the two in this paper, the intention has not been to deny the descriptive relevance of the term 'training', or the significance of training as a crucial aspect of education. Yet the distinction has become artificial and dysfunctional. In *The Aims of Education*, Alfred North Whitehead described the nature of the problem in forthright terms:

> The antithesis between a technical education and liberal education is fallacious. There can be no adequate technical education which is not liberal and no liberal education which is not technical. (Whitehead 1929, p.74)

A critically informed practice of adult education in the workplace would avoid the kind of antithesis identified by Whitehead. Rather, it provides a

rational basis for understanding that ordinary working people possess the individual and collective competence to participate effectively in the design and assessment of their own education. Is it too far-fetched, then, for a theory and practice of adult education to be guided by an assumption that working people can learn how to run their places of work?

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IF COMPETENCE IS THE ANSWER, WHAT IS THE QUESTION?[1]

NANCY S. JACKSON

Introduction

> Although there was a consensus that something urgent needed to be done, there is less agreement about whether the government proposals will actually solve any of the problems.
>
> (Hyland 1992, p. 29)

The story of competency-based education and training (CBE/T) poses a dilemma which is all too familiar to critics of educational policy. That is, there exists nearly two decades of scholarship, including theoretical critique and empirical research originating in philosophy, psychology, linguistics, education and sociology, which argues in various ways that the competency paradigm has not and probably will not 'improve learning' in most of the educational contexts where it has been applied (see, for example, Ashworth & Saxton 1990; Collins 1987; Short 1984; Grant et al. 1979; Wise 1979; Hall & Jones 1976; Smith 1975; MacDonald-Ross 1972, 1975; Travers 1973; Ruth 1972). To borrow words from Henry Giroux, it appears to 'begin with the wrong problems ... misrepresent the problems it endorses and ... advocate the wrong solutions' (1984, p. 188).[2] Recent British critics have called it a 'theoretically and methodologically vacuous strategy' for upgrading the vocational education and training

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2 This cryptic comment by Henry Giroux was originally aimed more broadly at what he called the 'new public philosophy' of education in the United States.

system (Hyland 1992, p. 35) and one that a 'careful educator would be well advised' to avoid (Ashworth & Saxton 1990, p. 18). Yet the paradigm persists, indeed proliferates on several continents, as new generations of the competency model are introduced, all claiming to benefit from the 'mistakes of the past' (Collins 1987; Gamson 1979), all claiming to be the new panacea in education and training reform.

This paper explores the paradoxes and contradictions of the competency movement in Great Britain and North America, and points to implications for contemporary policy developments in Australia. I will review some of the major criticisms that have been levelled against the competency framework by both practitioners and theorists. But my primary concern is to go beyond these familiar debates, to understand why so many cogent critiques have not been very successful in dampening enthusiasm for CBE/T as a framework for education and training provision. To answer this question, we need to understand not where and how it has failed, but rather why and for whom competency measures continue to appear as an intelligent and rational choice. Only then can we account for the remarkable persistence of the competency approach and/or devise a more effective strategy to oppose its growing hegemony across the industrialised world.

In this paper I will argue that competency-based curriculum measures need to be understood primarily as a tool of administrative rather than instructional reform. That is, they provide a means of setting educational objectives and organising program delivery that promises 'efficiency', 'effectiveness' and 'responsiveness' to the needs of industry; all this in a political climate where these goals have come to be seen as the essence of good management practice in educational institutions. However, the effects of these arrangements are complex and contradictory. Curricular decisions are made accountable to a policy process concerned with short-term, performance requirements on the job. But whether learning is increased or individuals are made more 'competent to act' in the workplace remain questions nobody cares to ask. This paper explores these arrangements primarily with the postcompulsory, vocational education and training sector in mind, although it draws on debates about its use and effects in other sectors as well. I draw partly on my own research experience within career/technical programs of the two-year college system in Canada.

Scientism, behaviourism, and social relations

In North America, there is nearly a century of experience with efforts at systematic or 'scientific' curriculum-making in general and at least two decades

of experience with various innovations identified as 'competency-based'. The upshot of all this activity is a fury of controversy and contradictions. Use of the terms 'competence' and 'competency-based' is widely recognised to be rife with ambiguities, inconsistencies and contradictions.[3] Such measures are accused of failing to achieve their intended results, and of being the cause of 'profound, unanticipated, and unexamined changes in the conception and operation of education' (Wise 1979, p. ix). These charges arise with remarkable similarity from experience across the compulsory and postcompulsory sectors, from institutions offering general or liberal studies as well as vocational education and training, and from both administrative and pedagogical perspectives.

From an administrative vantage point, critics of the competency approach in the public schools sector in the US have long argued not only that the approach 'fails to do justice to the complexity of the educational enterprise' (Smith 1975, p. 1), but also that it is 'dysfunctional' (Guthrie 1976) even 'dangerous' (Holt 1987; Ruth 1972). One of the bases for these claims was a painstakingly detailed analysis of a large-scale, federally funded, competency-based program of education for disadvantaged children which concluded that, after seven years and more than $52 million, the approach had 'failed to meet the expectations of reformers or even to serve the self interest of federal program managers' (McLaughlin 1975, p. viii). Yet, the same framework was used to shape educational legislation in over thirty states, marking the beginning of what came to be called the competency 'bandwagon' (Spady 1977).

In the postcompulsory sector in both Canada and the US, critics charge that initiating and maintaining a competency system has put a heavy burden on instructors, creating additional faculty duties which are largely unanalysed and unrewarded by the administration (College–Institute Educators' Association of British Columbia 1988; Gamson 1979). Instructors lacking experience with the principles and mechanics of the competency format complain of 'unspeakable jargon' and arduous, time-consuming curriculum preparations which leave them 'ragged and exhausted' (Gamson 1979; Grant et al. 1979). Programs are

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[3] By those seeking stable definitions, the following are widely quoted. The first is from the US Fund for the Improvement of Post Secondary Education (FIPSE): 'Competence is the state or quality of being capable of adequate performance. Individuals are described as competent if they can meet or surpass the prevailing standard of adequacy for a particular activity (quoted in Wise 1979, p. 197). The second is from William Spady, a leading proponent of the competency approach: '[CBE is] a data-based, adaptive, performance-oriented set of integrated processes that facilitate, measure, record and certify within the context of flexible time parameters the demonstration of known, explicitly stated, and agreed upon learning outcomes that reflect successful functioning in life roles' (Spady 1977, p. 10).

said to require a degree of cooperation and coordination among individuals and institutions that has not been readily forthcoming, making the systems sluggish and burdensome. An enormous volume of paperwork has been generated, putting a strain on support services. All these problems in implementation have been blamed in the past for mass resignations of faculty, a high attrition rate among students, and a high program mortality rate (see Grant et al. 1979).

The systematic character of these organisational processes under the competency paradigm is dismissed by the critics as 'scientism' and 'hyper-rationalisation': 'the misapplication of legal, scientific and managerial rationality ... a pernicious concern for quasi-legal procedure, arbitrary rules, measurable outcomes, and pseudoscientific processes' (Wise 1979, p. 192). Where such rationalised rules and regulations have been introduced, they report that 'no provable case can thus far be made that higher education is in any way better ...' (Wise 1979, p. 191). On the contrary, governance processes are reported to be increasingly misguided. Institutions are caught in a reductionist circle of 'goal displacement' in which they can afford to promise only what can be pursued without risk of failure. They set as goals only what can be clearly agreed upon and define as objectives only what can be specified in measurable terms. Thus, '... abstract and salutary goals are reduced and trivialized and only those goals which can be measured are implemented' (Wise 1979, p. 58). Ironically, under this system, the more programs seek 'high quality evidence' as a basis for their own justification, the more their goals become narrowed and simplified (Spady & Mitchell 1977). According to the critics, the problem is that this approach to governance of institutions is premised on a 'non-existent educational science' (Guthrie 1976, p. 274) and at the end of the day, gives us something that is 'not worth having' (Grosch 1987, p. 161).

From a more pedagogical perspective, the controversy over competency measures has traditionally centred on behaviourism, including a great deal of discussion of what is or should be meant by this term. Though a full discussion of these issues is not within the scope of this paper, I will comment on a few key points.

Some advocates of CBE/T are anxious to dissociate themselves from behaviourist principles in the narrowest sense, a position currently gaining ground in recent developments in both Great Britain and Australia (see Wolf 1989; Mayer Committee 1992). This stems from the longstanding critique that behaviourist principles are narrow and reductionist (Collins 1991, 1987), lead to a 'prefabricated' concept of knowledge with emphasis on 'routine, unimportant, even trivial material' (Cantor & Roberts 1986, pp. 63–79) and to an impoverished version of instructional interaction (Short 1984; Nunan 1983).

However much agreement there may be on these points, it is my view that the influence and significance of 'behaviourism', more broadly conceived, is not eliminated simply by remedying these worst excesses of narrowness and reductionism. On the contrary, the centrepiece of the competency paradigm remains an emphasis on 'performance-based' objectives and criteria that are observable, measurable and clearly specified in advance. In this general sense of the term, 'behavioural specifications' are still said to be essential in setting instructional goals and objectives. They provide a 'clear' statement of what is to be mastered, and a 'rational', instrumental link between the needs of the employer and the learning activity of individuals.[4] It is the problems arising in pursuit of this general framework which interest me in this paper.

So, even if we take the behavioural specification of objectives, in the sense outlined here, to be the point of competency arrangements, there are still several problems and contradictions to address. Although prescribed workplace 'behaviours' are treated by proponents as 'intrinsically unproblematical' (Moore 1987, p. 239) or given by the nature of tasks (Short 1984), critics argue that this simple equation is more apparent than real. Even in industrial settings where tasks are commonly thought to be relatively simple to identify, thoughtful observers point out that the problem of ambiguity of objectives remains 'irremediable' (Macdonald-Ross 1975), despite official rhetoric to the contrary. Thus, even when scrupulously implemented, behavioural objectives can never be achieved in practice with the precision they offer in theory. Instead, they have an ideal, even 'fictional' quality, always just out of reach (Short 1984; Nunan 1983; MacDonald-Ross 1972). Participants at all levels know that what goes on in classrooms is not always done 'by the book', and that this is more than a problem of 'stages of implementation' (Hart 1987; Nunan 1983).

This last criticism in particular draws attention to several points I want to pursue in this paper. That is, experienced teachers know all too well that the behavioural approach to curriculum fails to impose systematically, from the top down, a particular form of classroom learning; teachers simply 'close the door'. It also seems to be true, as Nunan (1983) points out, that this failure turns out in practice to be relatively unimportant, or at least not important enough to

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4 The definition of competence which has been adopted by the Australian National Training Board, after much debate about 'breadth' and being 'holistic', is as follows: 'The concept of competency focuses on what is expected of an employee in the workplace rather than on the learning process, and embodies the ability to transfer, not apply, skills and knowledge to new situations and environments' (The National Training Board 1992, p. 29). The attempt to build in breadth here is clear. However, I hope it will become apparent that this innovation does little to rescue the Australian competency framework from the broader perils of 'good management practice' with which I am concerned in this paper. Thanks to an anonymous reviewer for this reference.

undermine faith in the whole approach. The question is, how can we understand this apparent contradiction? Why believe in something that does not deliver?

One important answer to this question begins to emerge by exploring the contribution of competency measures to what Moore (1987) calls the 'institutional arrangements' that govern instructional activity. Examined in this light, the significance of the competency approach appears in a larger context as part of the production of the 'micro-structure' (Nunan 1983) for a rational–systematic approach to the delivery of education and training. What is essential in this context is the production of an objectified form of knowing and acting—specifically of teaching and learning—which can be externally defined and controlled. Behaviourism has in the past provided the vehicle for this achievement, but today a wide variety of broader and apparently more humanistic approaches to 'outcomes-based' instructional management can serve the same purpose. What matters is the power of the approach to organise not the practical activity of instruction *per se* but rather the social relations of instruction, in particular to redistribute the power to make decisions about the goals and outcomes of instruction. I will try to illustrate this dynamic below through some examples from my own research.

Implementation of competency-based measures in an institution of education/training most often begins with the use of a task analysis or functional analysis process to establish a new and external definition of 'need' against which every aspect of curriculum content will have to be justified anew. When this is undertaken in a strict competency-based framework (see Adams 1975; Sinnett 1975), it provides a highly structured framework through which the knowledge of job requirements provided by employers (or sometimes job incumbents) is translated into specific performance objectives for learners, for example, the ability 'to write a business memo or report'. Once these 'skill profiles' are developed, adequacy of instruction is meant to be justified only in relation to these end goals, and not in terms of the mastery of basic educational building blocks such as grammar, punctuation, and composition, or in terms of broad education ideals like 'understanding the business environment'. Thus it forces a shift in the reference point for the work of instructors from their discipline as educators (e.g. maths, English, business) to the workplace, as the context in which appropriateness and adequacy of learning is determined. It also achieves a fundamental reorganisation of the relations of instructional design. That is, under the new arrangements, teachers are no longer the official source of decisions about either the ends or the means of the instructional process. Their role instead becomes a 'support function', as facilitators of objectives and implementers of instructional models determined by others.

The significance of this reordering of institutional relations is not only about a loss of authority for teachers, though indeed it has been widely

criticised for that effect (Reid 1992; Walker & Barton 1987; Connell 1985; Apple 1982, 1980). It also accomplishes a broader shift in the domain of 'needs' and interests to which educational practice is responsive. Traditional concepts of skill development or educational achievement are subordinated to objectives related to job performance. Long-term public policy commitments to investment in 'human capital' are subordinated to 'flexible' programs that address short-term skills requirements. In this process, the instructional process comes to be governed by the logic of corporate balance sheets and political promises, and learning becomes 'the province of corporate, non-educational interests' (Moore 1987, p. 236).

In this context, I want to argue that competency measures are about a great deal more than making instructional 'goals explicit' or assessment 'objective'. They are about organising instruction in an objectified form in which it can be made—and made to appear—'responsive' to external decision-making. As an instrument of reform, this mechanism is not primarily concerned, in the first instance, with the achievements of the learner, despite all the rhetoric to this effect. Its aim instead is to render more accountable the daily decisions of a host of other actors in education and training institutions, as I will try to show below.

Good management practice

Making educators accountable is an increasingly attractive proposition to administrators and politicians alike in the present political and fiscal climate. For this purpose, CBE/T is a seductive tool, despite its recognised tendency to be 'narrow' and 'reductive' and to generate considerable local opposition (Maclure 1991, Grant et al. 1979). As one government official said to me, it offers 'all the administrative jelly-beans you could desire'.

Among the 'administrative jelly beans' available through CBE/T is the capacity to deal with what college administrators call 'curriculum creep'. They argue that hiding behind the principle of 'academic freedom', instructors tend to teach whatever they have a 'passion' for. Thus the curriculum gets loaded down with a lot of 'baggage' that does not suit 'any bloody purpose', and curriculum content gets decided on the basis of 'job security'. One administrator described this as a problem of having 'wolves in charge of the chicken coop'. By contrast, competency measures give these administrators what they call 'a totally objective statement of needs' against which all aspects of the curriculum have to be justified anew. It provides them with systematic information to support routine aspects of program monitoring and budgeting, and when non-routine changes are required, it gives them the means to make and to justify

difficult and unpopular decisions. Rather than 'shooting in the dark' or 'leaving things to chance' competency measures are a means of making decisions that will be seen to be 'objective' and organisationally warranted. Decisions taken in this manner are evidence that you are 'doing a credible job' as an administrator. It has become the standard of 'good management practice'.

Leaving things to 'chance' is more of a problem in some areas of instruction than others. For instance, in some fields, instruction is tied to regulatory processes of the state, such as the licensing of practitioners in social and health care fields, where, as one government official put it, 'there is a real or an apparent health or human safety problem'. Such cases are said by these officials to call for 'competency-based training in its purest form' where the object is to ensure that graduates have a 'standard set of skills' so 'we can feel comfortable when they ask about your licence'. Such standards are said to ensure that a person who has been trained and assessed is 'capable of taking specific actions in a safe and effective fashion'.

Here again, competency-based curriculum is seen as an especially important resource when trouble arises. As the same government officials explained to me, the competency approach is an essential safety net should 'the people in our training institutions get hauled into court' in a malpractice suit of the kind that is now occurring in educational settings in the US. In such situations, competency measures have the institution 'covered'. They allow lawyers and administrators to check the curriculum, determine what was taught and when, and to establish that the performance of a student was assessed and certified on a certain date on the activity in question.

This point demonstrates an important aspect of the competency paradigm as a set of institutional arrangements. That is, in practice it tells more about the adequacy of an organisational course of action—i.e. instruction and assessment—than it does about the performance ability of individual students. So, in the case of the malpractice suit, the legal responsibility of the college or the ministry stops at establishing that the procedures for safe and legal practice were accountably taught, and that the performance of the individual was demonstrated to be adequate in that context. Thus, demonstrating 'competence' is a matter of making teaching and testing accountable to a standard through a warrantable set of procedures. Technically, it is not the competence of the individual but the competence of the instruction and the liability of the institution which can be assured by these means.

In this context, administrators report that competency measures allow them access to many things they need to know, to the degree they want to know them. It makes selected aspects of the curriculum process reportable/accountable, creating a form of documentary vision, through which they can 'see' and 'know'. They can 'see' that the proper steps have been followed, that

the employer group has been consulted so that the program's goals have been 'validated by the field', that the required items have been taught and assessed, and so on. This form of 'seeing' and 'knowing' comes to stand in for reality for all practical, administrative purposes.

Such textually mediated (Smith 1984) activities create an 'actuality' for organisational purposes which is one step removed from the ground of experience and action of individuals. What counts is not what individuals do *per se*, but what individuals can be shown to have done. This epistemological disjuncture in the constitution of the 'actual' is an essential ingredient in what Macdonald-Ross (1975) lamented as the 'weak' form of systematic procedures.[5] It is the same moment identified even by early proponents of scientific management who describe it as 'a method characterized by its spirit quite as much as by its accuracy' (Spaulding 1913, p. 260). What counts as 'actual' is a socially constructed abstraction, omitting many aspects of the social process which it claims to represent. This form of organisation allows for a certain amount of slippage or absence of precision in its renderings of the social reality, where some questions are neither asked nor answered. Administrators call it an 'arm's length relationship'. It means, for example, that they know the programs they administer do not follow the curriculum to the letter, but this is information they 'don't necessarily want to know' so they 'don't ask'.

These observations warrant close attention if we are finally to grasp the scope and significance of competency-based curriculum measures and their popularity with policy makers. That is, their practical utility may not lie in their power to make individuals more competent to act in the workplace, despite all the assurances to the contrary. Nor do they need to control exactly what goes on in courses. Rather, what they achieve is a transformation in how existing responsibilities of education and training institutions are discharged, and reported-as-discharged, and, significantly, whose interests are inscribed in these procedures. What is imposed is a system for making curriculum decisions and making them reportable as 'responsive to the needs of industry'. Adherence to these required methods and procedures organises the relevances of action

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5 Macdonald-Ross (1975) posits two approaches to the behavioural/systematic approach to education: hard and soft. The 'soft-line' approach describes those who are satisfied with 'weak rules' for deriving objectives—'better than nothing but not leading to powerful prescriptions'. Macdonald-Ross argues that the 'weak rules' position is inconsistent with many of the 'ambitious and demanding schemes' derived from behavioural premises in recent years, such as 'payment by results or mastery learning' (1975, p. 361). He furthermore objects that it is not clear whether 'weak' procedures can 'deliver the goods: that is, whether the outcomes of education can be brought in line with the initial aims. And that surely was the purpose of the whole enterprise' (Macdonald-Ross 1975, p. 361). In my view, what he fails to question in all of this is whose 'initial aims' are being addressed and thus what it means to 'deliver the goods'.

and decision-making of individuals at every level of the institutional process. Thus even decentralised, local decisions are articulated, through a bureaucratic and political framework of accountability, to the interests of those who are neither teachers nor learners, but rather sit in the offices of government and industry, where the goal is to secure 'a better return on educational investment' (Gamson 1979).

Panacea or Pandora's box?

To summarise briefly, then, I have argued here that competency-based curriculum is significant in today's policy climate because it provides an infrastructure for determining how and by whom educational goals and standards will be set. It constructs an objectified and objectifying organisation of social relations through which successive moments in the educational enterprise can be defined, measured and evaluated in the interests of employers, administrators, and policy makers. It is for this reason that competency measures, even when only loosely or 'weakly' practised, are the constant companion and faithful tool of the new wave of social reformers. However, in the shadow of this elaborate infrastructure of reform, a host of questions remain unexamined. In concluding this paper, I will attempt only to deal with two such issues, and only in a very preliminary way. The first, and perhaps most commonsense question, is whether there is any reason to think that CBE/T will, in practice, be any better at serving the 'needs of industry' or the interests of employers than previous systems of public provision. The second, and perhaps more compelling question from a social perspective, is to ask how this approach to reform of education and training fits into a broader agenda of public policy and in which direction it will carry us.

On the question of serving the needs of industry, the evidence so far is not at all encouraging, even from the perspective of employers themselves. First of all, the notion that competency measures will make public institutions 'flexible' and 'efficient' flies in the face of experience to date on any continent. On the contrary, evidence is overwhelming that institutional processes become more bureaucratised, more cumbersome, more time-consuming, more costly, more frustrating and put 'more power in the hands of those who are the furthest removed and know the least' about education and training (quoted in Wise 1979, p. 191). Persistence in the face of this track record is surely a 'triumph of faith over experience' (Holt 1987).

Secondly, the idea that employer input leads to a 'totally objective statement of needs' as the basis for program planning is becoming visible as an

elaborately staged myth. Detailed examination of the procedures for task and functional analysis used with employer groups or lead bodies reveal a myriad of problems (Field 1992; Debling 1989; Jackson 1988). Employer input on instructional goals and objectives is highly mediated by the work of curriculum specialists using tools such as DACUM (see Adams 1975; Sinnett 1975) or functional analysis. This commonly results in a very short-term range of 'needs' being eligible for consideration and a lot of frustration on the part of some employer-participants. In addition, problems of representative-ness within employer groups are persistent. Since different sizes and types of firms have a very different organisation of skill requirements, this leads to legitimate concerns about the lack of generalisability and/or the abstractness of performance standards in skill profiles developed by lead bodies as the basis for curriculum design (Debling 1991; Wolf 1989; Jackson 1988). All of these are problems in the much touted 'responsiveness' of CBE/T to the requirements of the workplace. They contribute to the lingering need to 'foster a sense of ownership' (Debling 1989) of the process among employers. These troubles suggest that to describe the competency system as 'employer-led' may be at best a 'half truth' (Field 1992).

In fact, upon closer examination it is very clear who is actually 'leading' CBE/T initiatives in the US, Canada, Great Britain and Australia. All are actively driven by governments, or as John Field (1992, p. 7) put it so nicely, 'selective coalitions between (parts of) capital and (parts of) the state'. In Australia, of course, labour has been an active partner in this coalition. Governments, whether pro-labour or pro-business, are pushing CBE/T precisely because it provides them the means to present an appearance of serving the needs of industry at a time when their political survival depends on doing so. Furthermore, it claims to do so in a way that is 'market-led' and 'decentralised' (Wurzburg 1989), conforming to the economic orthodoxy of our time. Meanwhile as a day-to-day matter, the practical utility of CBE/T to these same state bodies is their power to put in place the infrastructure for a highly regulated form of provision (Field 1992). This is increasingly visible in the British experience, for example, in the way the government is starting to use the NVQ framework to determine which courses colleges and schools are permitted to offer to students pursuing vocational options (Hyland 1992). In the Australian case, the regulatory potential of the approach is far greater, in the form of an elaborate, vertically integrated system of labour market management extending from occupational standards to skill-based career paths and pay, all based on competency principles. While it is clear how these regulatory mechanisms serve the needs of government bureaucrats, it is becoming less apparent that they will satisfy the concerns of business (see Business Council of Australia 1992) or anyone else (see Probert 1992; Jackson 1992).

Finally, we come to the question of the place of CBE/T measures in a broader agenda of public policy. Here the evidence is also quite compelling. The logic of reform being applied in education and training is not isolated or idiosyncratic. On the contrary, it is part of an increasingly uniform management discourse being applied across national boundaries to fields of public social provision including education along with health, welfare, and transportation, as part of their rationalisation and articulation to market forces (see Bates 1992; Codd & Gordon 1991). This process of managerial capture replaces the public purposes and social vision of education and other social institutions with the logic, and the social relations, of competitiveness and private wealth creation (Horne 1992). Humanistic values underlying professional practice are systematically subordinated to narrowly instrumental 'efficiencies' and measures of 'effectiveness'. The official discourse surrounding these changes is so seductive and hegemonic that those who object come to be labelled as 'out of touch' or unprofessional, leaving little room for discussion or debate (Stevenson 1992). The result is a profound and fundamental shift in where and how, and in whose interests, these institutions are controlled and managed (Walker & Barton 1987; Wallace 1992).

The question of 'whose interests' are served is of course at the heart of the matter. On the one hand, competency-based systems of education and training have been sold to tax-paying working people, in Australia as elsewhere, as an orderly mechanism for skills recognition, career development, and pay progression. On the other hand, it has been sold to the business community as the way to get a 'dollar's worth of value' out of every dollar spent in public sector learning. The tension between these claims brings the achievements of the competency regime sharply into focus, and returns us to the problem with which we began. That is, competency measures are an 'intelligent and rational choice' for policy makers who want to ensure that the ordinary individuals who pay the piper for public sector learning will not get to call the tune. It is a familiar refrain.

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WORKING KNOWLEDGE: INTELLIGENT DESIGN OF WORKPLACE EDUCATION

RICHARD C. PIPAN

Introduction: From the personal to the professional

As I write these words, it is my birthday. Today, I turned 42. I do not know what 42 is supposed to feel like. My spouse and I have been together for 20 years; we are expecting our first child this mid-July. Perhaps we are 'slow-learners'? Everyone says: "Your lives are about to change". I expect they will, but I also think that we have been changing all along. In fact, in my peculiar view of reincarnation, it appears that one need not have died to begin another life. Because of career changes, relocating from one place to another in the United States, maturation, and shifts in understanding, it seems like some of my past experiences were from former lives. To be honest, the prospect of being a parent has altered my perspective on day-to-day matters. New meanings emerge as one considers time and its measure, one's fitness as a parent, one's place in a complex web of life. How does the near-at-hand and the far away relate? What does the future hold for this child, for this family, for all humanity?

It is not as if these questions have not been asked before; rather, it is just that they are now being attended to differently. While the above may seem mundane or off the subject of work and learning, an important principle is embedded in the tale—paraphrasing Gregory Bateson (1979): we perceive by recognising *differences*. Just as my spouse's and my pregnancy has developed 'beyond the point of deniability', so have some recognitions of differences developed in my understanding of human knowing.

It would be more convenient and simpler to deny some of the recognitions described in this paper, but they, too, have developed beyond deniability. I say that it might be more convenient and simpler because some of the perspectives, orientations and analyses that I have become aware of run contrary to popular

and even thoughtful views concerning learning, knowledge and work. But I believe that the invitation extended to me to draft my current 'curricular perspective on workplaces' was genuine. During the time since the publication of my last substantive writing on the topic (Pipan 1989; Kornbluh, Pipan & Schurman 1987), some of the thoughts in those papers have demonstrated their durability, others have dissolved. In this paper, I will highlight the durable, but more appropriately offer some 'thoughts in progress' and commentary on learning and work.

It has been a number of years since I worked at the Labor Studies Center of the Institute for Labor and Industrial Relations at the University of Michigan. More recently, I have been on the faculty in the School of Education and a research associate in the Institute for Action Research and Professional Development at Oakland University (one of the public universities of the state of Michigan) located twenty miles north of Detroit. From this geographic location, it is not difficult to attend to the changes that are occurring in the automobile industry, in urban versus suburban communities, and in larger international relations. Unemployment is painfully high among workers in Michigan, the large automobile manufacturing corporations are continuing to build facilities and employ workers in Mexico, China, and other developing countries while laying off and firing thousands of American auto workers; de facto racial segregation characterises most of our residential communities; homicides by hand gun and assault weapon are grimly reaping lives daily in all major cities across the United States (as the world most recently witnessed in the riots in Los Angeles); the drug epidemic, lack of affordable housing, and the high cost of health care erode the fabric of this society. Some have said, and I suspect there is truth in the view, that the United States has become the first post-industrial Third World country.

Much of my professional interest focuses on the 'world of work'. Most of the students in the courses I teach are prospective teachers. I offer courses in Social and Philosophical Issues in Education (in which questions of social class, race, gender, and human values are explored) and courses in Human Development from an educational psychology perspective. From time to time I also teach courses on curriculum development and educational research.

Most recently I have been focusing on educators' experiences in their workplaces, whether these workplaces are elementary schools or universities. With colleagues from universities and K–12 public schools, I have been examining and participating in various efforts described by some as attempts to 'restructure' or 'reform' the educational system. One of the emphases in these efforts to improve education has been creating new institutions and organisational structures that promote ongoing professional development of those working there, and ultimately improve the quality of education for adults and

children. Much of what I wish to address in this paper has been drawn from extended inquiry and reflection on the process of adult learning, professional development and organisational change. From what I have witnessed so far, we have a long, long path to travel before our workplaces will reflect intelligent, just, and humane practice.

Conceptual map: Locating human knowledge

This paper is an exploration as much as it is a report on what has been found. In the interest of promoting an understanding of human development in the context of work, I wish to describe some of the more significant concepts that have illuminated the relationships between lived experience and knowledge. Therefore, I shall draw little distinction between 'work experience' and a broader more expansive sense of human experience.

> **Puzzle No.1: As one makes the transition from outside to inside the workplace, what is left (physically, behaviourally, or metaphorically) outside the door?**

Too often, it appears to me, a false dichotomy is drawn when personal and professional lives are viewed. Inevitably, working life seems to be depicted in narrower terms: roles, functions, responsibilities, skills, accountability, and so on. When we are 'outside' the workplace, we are more. This dichotomy, false or true, will be examined later in this paper. For now, however, Puzzle No. 1 may help us gain additional perspective and critical awareness of sociology of knowledge at work. Program development and evaluation of learning in the workplace can be enhanced by critically analysing the sociological and normative structures reflected in and created by the processes and boundaries of 'content areas' (subject matter) of our educational design.

> **Puzzle No. 2: If you were to stand outside a workplace and no one was present in the building, would there be any knowledge inside?**

It is not uncommon for human beings to think about knowledge as being 'out there', or contained in books, or available at a workshop or training centre. The perspective that I wish to offer here is one that was advanced by Michael Polanyi (1966). Polanyi suggested quite simply and quite revolutionarily, that there could be *no knowledge without a knower*. 'Knowledge' is more accurately portrayed when 'it' is *located in the awareness of human beings*. In Puzzle No. 2, taking a cue from Polanyi's thinking, one might look at the workplace (or school, or library, or home, or government office), and make the following observation: if there are no human beings present in the setting, it is safe to say

that no knowledge is present there. True, there may be the records, accounts and representations of what human beings have come to know, and there may be the means of accessing human beings (via, for example, phones, telemetry). But what is there is only ink and fibres, magnetic media, artefacts, graphic designs and hardware. None of these materials 'contains knowledge'. Unless there is a human being capable of decoding the symbols, reading the text, interpreting the records, all of the media and materials are meaningless, knowledge-bereft! The following example might make Polanyi's idea more graspable: a library might contain the most complete collection of manuscripts written in an ancient language. It is a most impressive and important historical archive. The only problem is no one presently living *knows* the ancient language, and therefore no one can translate and interpret the texts. Do these texts 'contain knowledge'? I think not. Do they 'represent knowledge'? Perhaps. Until a human being has within his or her experience the meaning of this language, we are left with merely the *potential* for constructing it with the archive as a resource.

The Italian author and semioticist Umberto Eco clearly describes how semiotics can be an ally in our efforts to learn about and within workplaces. Eco describes what he does in this work as a semioticist:

> I concern myself with the problems of language, communication, organization of the systems of signs that we use to describe the world and to tell it to one another. The fact that what I do is called 'semiotics' should not frighten anyone. I would still do it if it were called something else ... I try to interpret and to help others interpret some 'signs'. These signs are not only words, or images; they can also be forms of social behavior, political acts, artificial landscapes. As Charles S. Peirce once said, 'A sign is something by knowing which we know something more'. (1986, pp. x–xi)

Thus, Eco's work is pertinent to our understanding of what the 'texts' are for our inquiry (for example, not merely the technical manuals for skill acquisition, but the social and political dynamics surrounding the 'learning situation') and the 'process' of our inquiry (that of interpretation and meaning making). In terms of program development and evaluation, participants are inevitably engaged in processes of codification and decoding, symbolic communication of meaning and interpretation, creating knowledge through the recognition of systems and patterns. The question then arises: Are we designing and evaluating learning interactions with these processes in mind?

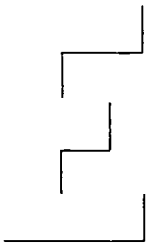
I do not wish to belabour this point. However, unless this concept of human knowledge is grasped and understood, I believe that dialogue about learning in the workplace is impossible. Put another way, if we operate under the assumption that knowledge exists independent of knowers, then we will

continue to overlook the role that teachers and training and development professionals actually serve: that of *facilitators of human experiences through which knowledge is created*. Again, according to Polanyi, all knowledge is personal knowledge—just as all experience is personal. We may have had similar experiences to others; we may say we 'shared the experience', but ultimately each of us knows uniquely.

> **Puzzle No. 3: If all knowledge is 'resident' within human knowers, and if there is a 'from–to' relationship between the tacit dimension and the world, then where does the tacit dimension come from? And furthermore, why should we give a damn?**

Polanyi's ideas on personal knowledge are based upon his understanding that there exists a 'tacit dimension' of human awareness that serves as a 'ground' from which we come to perceive and recognise similarities and differences, patterns of association. Polanyi maintained that this tacit dimension '... shows that all thought contains components of which we are subsidiarily aware' (1966, p. x). This means that there is a *from–to relationship* between what we anticipate and what we perceive. Put another way, human perception is not simply a passive reception of sensation; rather, we unconsciously shape perception according to a tacitly held cognitive organisation. Perhaps a graphic example might serve to bring this point home. Below, you will see a design. Please make note of how you come to make sense of it.

Figure 1 What is this?



(adapted from Block & Yuker 1984)

The lines and angles in Figure 1 depict a symbol, but only partially. In order for you to recognise and thereby 'come to know' the symbol in its entirety, you were required to draw upon, to perceive from an unconscious, but active and tacitly held repertoire of meaningful patterns. From this exercise, I hope you have come to understand how you 'solved the problem' by already having

within your knowledge a repertoire of possible solutions! Moreover, once you *saw* the letter 'E', you could not not see it. Thus, moving from the tacit or proximal to the explicit or distal, shares features of a developmental paradigm. Normal human development suggests that one truly 'cannot return to innocence'. However, someone 'coming to' this problem of identifying Figure 1 without having tacitly held the image of an alphabetical capital 'E', would, in all likelihood, not have been able to identify 'E' as a possible solution as you did.

Why is this important? If we are to gain a sense of how human beings' knowledge comes to be, we need to understand from whence knowledge comes. It should be apparent that your 'knowledge' of what Figure 1 represents did not come from the figure; it came from the interaction of what you brought to the figure and what the figure offered as a visual field. Polanyi maintained that most of our tacit dimension comes from unconscious influences, pre-rational experience. Other thinkers have similarly described human experience as being constituted of various levels of awareness. Freud's psychoanalytic model of the human psyche is one that often comes to mind as discussions about conscious and unconscious aspects of human personality are described. Piaget described how human knowledge expands through the use of *cognitive schema*. Without getting into technical details, what Polanyi helps us understand is that there is a huge ground of human experience that precedes our identifying that which we know. He maintained that this tacit dimension was acquired through years of socialisation. Moreover, much of what we continue to hold as 'true' and 'important' we learned as pre-rational expressions of belief and faith. For example, most children share (at least initially) the religious and political orientations of their parents. Most children adopt some manifestations of nationalism, of ethnic identity, of class consciousness. D.H. Lawrence, writing in 1931, describes eloquently how the establishment of a tacit dimension of knowing takes place:

> From earliest years right into manhood, like any other nonconformist child I had the Bible poured every day into my helpless consciousness, till there came almost a saturation point. Long before one could think or even vaguely understand, this Bible language, these 'portions' of the Bible were *di uched* over the mind and consciousness, till they became soaked in, they became an influence which affected all the processes of emotion and thought. So that today, although I have 'forgotten' my Bible, I need only begin to read a chapter to realize that I 'know' it with an almost nauseating fixity. And I must confess, my first reaction is one of dislike, repulsion, and even resentment. My very instincts *resent* the Bible.
>
> The reason is now fairly plain to me. Not only was the Bible, in portions, poured into the childish consciousness day in, day out, year in, year out,

willy-nilly, whether the consciousness could assimilate it or not, but also it was day in, day out, year in, year out expounded, dogmatically, and always morally expounded, whether it was in day-school or Sunday school, at home or in Band of Hope or Christian Endeavour. The interpretation was always the same, whether it was a Doctor of Divinity in the pulpit, or the big blacksmith who was my Sunday-school teacher. Not only was the Bible verbally trodden into the consciousness, like innumerable foot-prints treading a surface hard, but the foot-prints were always mechanically alike, the interpretation was fixed, so that all real interest was lost... The process defeats its own ends... And this is the condition of many men of my generation. (1958, pp. 3–5)

Lawrence identifies how the formation of tacit knowledge 'soaks into' consciousness. It is not through the conscious and intentional activity of the 'learner' that the tacit dimension is formed; rather, it is encountered in the taken-for-granted structural and cultural systems of a society. This topic will be further developed later in this paper when the 'hidden curriculum' is discussed.

Polanyi would suggest that it is *from* tacitly held beliefs that we begin to go out *toward* the world to make sense. Thus, if our knowledge is personal, and if the formation of our knowledge moves from the tacit to the explicit (proximal to distal as both Polanyi and Vygotsky (1978, 1986) suggest), and if most of our cultural beliefs are transmitted tacitly (meaning, in unspoken ways via a hidden curriculum), then how might we better understand the ground of our knowing? One way this process can be uncovered is by exploring the concept of a 'hidden curriculum' and tracing its origin in cultural differences observable among diverging social class contexts.

Social class and the hidden curriculum of work

Regardless of the kind of workplace we are associated with—or rather because of the great variety of workplaces we find—there are some concepts that, when applied to any environment in which human beings interact, shed some light on the possibilities for human development. In a very brief and insightful article entitled 'Social class and the hidden curriculum of work', Jean Anyon offers an ethnographic study which provides 'illustrative examples of differences in student *work* in classrooms in contrasting social class communities' (1980, p. 67). Anyon's critique draws heavily on the concepts of (1) social class (2) political economy and (3) sociology of knowledge. In fact, Anyon offers one of the clearest (if abbreviated) explanations of social class that I have encountered:

> One's occupation and income level contribute significantly to one's social class, but they do not define it. Rather, social class is a series of relationships. A person's social class is defined here by the way that person relates to the process in society by which goods, services, and culture are produced. One relates to several aspects of the production process primarily through one's work. One has a relationship to the system of ownership, to other people (at work and in society) and to the content and process of one's own productive activity. One's relationship to all three of these aspects of production determines one's social class; that is, all three relationships are necessary and none is sufficient for determining a person's relation to the process of production in society. (p. 68)

Anyon examined a small sample of public elementary schools: two 'working-class', one 'middle-class', one 'affluent professional', and one 'executive elite'. Occupations characteristic of each of the social classes represented above are: working-class—'platform, storeroom, and stockroom workers; foundrymen, pipe welders and boilermakers; semiskilled and unskilled assembly-line operatives; gas station attendants, auto mechanics; maintenance workers, and security guards'; middle-class—'skilled, well-paid workers such as printers, carpenters, plumbers, and construction workers ... women in office jobs, technicians, supervisors in industry ... firemen, policemen ... school teachers'; affluent professional—'cardiologist, interior designer, corporate lawyer or engineer, executive in advertising or television ... a partner in a prestigious Wall Street stock brokerage firm'; and executive elite—'top executives (e.g. presidents and vice presidents) in major ... multinational corporations ... top executives in financial firms on Wall Street ... "general counsel" to a particular corporation ...' (Anyon 1980, pp. 71–2).

The social class categories and their corresponding samples of occupations of the parents of the children attending schools in each of the category communities are offered to provide a background for observations that Anyon made in the research sites. Anyon appropriately cautions the reader not to generalise too widely from the findings; after all, the sample was extremely small and the data collection was time-limited. Anyon's findings, however limited or tentative, are worthy of regard. It must be clarified here that each of the schools was public and each was ostensibly guided by state-devised curricula; some of the same textbooks, and curriculum materials were found in all the schools. Where Anyon found the most divergence was in the 'hidden curriculum', that which was *not* explicitly articulated in curriculum guides or lesson plans. Rather, the hidden curriculum is the unspoken, sometimes intentional, but more often than not unintentional messages, the sometimes conscious, but more often than not unconscious actions that reflect deeply held

beliefs and values (the 'traditional' or taken-for-granted assumptions about the rules of the game by which we live). While workers and workplace educators may or may not be familiar with the term 'hidden curriculum', all seem to know what a 'hidden agenda' is!

So what did Anyon find? The findings were not all that shocking, but they are disturbing: children in the working-class schools were evaluated 'not on whether it [the work] is right or wrong, but according to whether the children *followed the right steps*' [this author's emphasis] (Anyon 1980, p. 73). It was not uncommon for the teachers to demand rote behaviour, mechanical actions, routine, and to place considerable emphasis on control of classroom behaviours and obedience. In the middle-class school a different pattern emerged: 'work is getting the right answer' (1980, p. 77), answers lie within the authorised text materials, work is directed toward other likely rewards (e.g. a good job or college), goodness and neatness count. The work found in the affluent professional school was characterised as 'creative activity carried out independently' (p. 79), 'individual thought and expressiveness, expansion and illustration of ideas, and choice of appropriate method and material ... Moreover, one's work should attempt to interpret or "make sense" of reality' (p. 82). 'The products of work in this class are often highly valued by the children and the teacher.' And finally the executive elite school was where 'work is developing one's analytical intellectual powers ... A primary goal of thought is to conceptualise rules by which elements may fit together in systems, and then to apply these rules in solving a problem' (p. 83).

The work of Jean Anyon has been cited above, not because it is unique in its findings, but because the implications for learning at and through work are so unavoidable. We, and those with whom we work, have almost certainly experienced schooling in which class and cultural values were manifest. Moreover, whatever our socioeconomic class, we bring to our occupations and work organisations beliefs, attitudes and values formed through years of exposure to and participation in educational activity that 'packaged' not only the overt curriculum such as maths, science, languages and history, but the hidden curriculum which was communicated through signs and gestures, through sanctions and rewards, through the asymmetrical relations of power and influence. This was not 'left up to chance'. This was too important for us not to have learned. We continue to participate in human interactions where the agenda *says* one thing, and the *real meaning* is often quite another. Further discussion of the implications of Anyon's work will appear later in this paper.

Perhaps one of the most obvious characteristics of human experience in workplaces is that some of us are expected to know, are required to know, are prevented from knowing, or are forbidden to know certain things. From a

perspective of sociology of knowledge, one can detect patterns in who is expected to know what; that is—Who has access to what information? Who is able to interpret what signs? Who is responsible for making the signs? Where are you able to go with what you know?

One of the ways that tacitly held normative structures can be revealed is by examining our beliefs and assumptions about human intelligence. If we are ostensibly promoting learning in the workplace, and if learning is identified by how human beings, individually and collectively, are able to act in more intelligent and competent ways, then how we conceptualise intelligence and competence is integral to our work in designing educative environments.

Multiple intelligences: Knowing multidimensionally

One of the most powerful portrayals of human capability I have found that challenges conventional thinking (others' as well as my own) about human development, learning and skill, is Howard Gardner's theory of multiple intelligences (1985). Gardner, an educational psychologist at Harvard University, has written persuasively about why we need to re-examine how we view human intelligence. It is, perhaps, not unfair to characterise popular or conventional depictions of human intelligence (whenever it is considered) as representing a fixed quantity, largely attributed to genetic background, residing in an individual. Intelligence is often thought of as being measured by IQ tests. Many seem to follow the belief expressed by the American humorist and storyteller extraordinaire, Garrison Keillor, as he described the residents of a fictional small town called Lake Woebegone: 'Where all the women are strong, all the men are good looking, and all the children are above average'. It is a terrific concept, but it does not hold much water.

Gardner offers a refreshingly humble and insightful perspective on human intelligence. He is not doctrinaire; he tends to avoid prescription. His views are intriguing, inviting, and illuminating. Of 'multiple intelligences', Gardner states: 'These intelligences are fictions—at most, useful fictions—for discussing processes and abilities that (like all of life) are continuous with one another' (p. 70). But lest we sit back and say "Well, if these are fictions, who needs 'em? I deal with real life and fiction has little to offer. I want to know what works", Gardner's 'fiction' is no more fictional than those 'real' terms we encounter daily: 'quality', 'competitiveness', 'progress', or 'certainty'. The language and terms we use take on 'reality' as they are associated with expressions of power and strength. To whom do we need to speak this way? Whose definition of the terms is made to 'stick'? When does a 'commitment to

quality' shift from an honestly held belief to a hollow platitude? We have all seen this happen.

All language is a socially constructed reality. Because of its social construction, it is as much the product of human creativity as fiction is. The only difference that I discern is that those who write non-fiction pretend to write about reality; those who write fiction do not feel the need to pretend.

Before we return to Gardner's 'useful fiction', I would like to offer a rationale for *why* his theory makes sense to apply to learning in the workplace. Firstly, it offers an expanded perspective on *human potential and capability;* secondly, it offers avenues to explore as we try to find *measures of performance;* thirdly, it identifies often unrecognised culturally *influenced prescriptions* for human behaviour; and fourthly, it *challenges conventional thinking.* Returning to earlier discussion of Polanyi's tacit dimension, we often find what we were not consciously seeking. If we can shift our search to look for that which we previously had not sought, then new potentials are brought into possibility. For this reason alone, Gardner's 'useful fiction' should be welcome.

Gardner maintains that human intelligence is not singular, nor static, nor finite. Despite folk wisdom and some academic research to the contrary, human intelligence is fluid, multidimensional, expansive and beyond our current depictions. What is at issue here is that we tend not to recognise nor value the richness of human intelligence. We see this everyday as we encounter social institutions that unnecessarily constrain human potential. We see it in job categories that are ill-suited for the people who occupy them and for the work that really needs to be done. In effect, we already 'know' what Gardner has to say, just as we already knew what Polanyi had to say. We may say: "Hey, I didn't know that!" but in fact, we already tacitly knew enough to recognise that this was worth knowing.

Gardner has seen that human beings exhibit remarkable capabilities. Some are extraordinarily able to work with others, some are persuasive speakers, some are world-class athletes, others can understand maths so easily that we may envy their ability, others seem to be adept at solving problems, others do not seem to have a clue. What is going on here? Gardner has carefully observed human behaviour and has seen a wide spectrum of evidence of intelligent action. Gardner defines intelligence as '... the ability to solve problems, or to create products, that are valued in one or more cultural settings'. (p. x) This definition is very interesting for a number of reasons. Firstly, because it directly links intelligence to value; secondly, because it situates intelligence in a context; and thirdly, because it ascribes intelligence to actions in the world.

Gardner was alert to recognise that intelligence is intimately linked to *context*. Closely tied to context is *value*. If nothing else should be clear, cultural and socioeconomic class identity are reflective of and sources of values.

Therefore, human intelligences, as Gardner described them, are differentially valued across social class and cultural background. Whether or not we are *receptive* to class analysis, to depictions of cultural difference, to unitary versus multidimensional accounts of human intelligence, is largely influenced by the cultural context in which we have come to know. Have we come to value similarity over difference? Autonomy over membership? Orderliness over flux? Predictability over indeterminacy? Stability over change? Agreement over conflict?

In all of the abovementioned contrasts (and many more) values are reflected. Each of our reactions to Gardner's (and anyone else's) ideas about human potential will be 'greeted' by our held meanings, our world view. Given all of this, what is it that Gardner has to offer?

The human intelligences that Gardner identifies are:

- Linguistic intelligence
- Musical intelligence
- Logical-mathematical intelligence
- Spatial intelligence
- Bodily-kinesthetic intelligence
- Personal intelligences

Without doing a disservice to his theory, I hope to describe these intelligences in ways that one might see them more vividly in the workplace. Each of the intelligences that Gardner identifies is *present in everyday human affairs*. Once we understand them, I believe that we adult educators will be better prepared to reconceptualise what we do to plan, design and conduct workplace education activities.

Often, when we have been involved in some participatory or team activity, we need to report to others what our team discussion has been about. More often than not (unless this role has been decided beforehand by some process which precludes what I am about to describe) team members 'volunteer' someone on their team whom they believe will be able to articulate well the work of the group. This person is perceived by team members to possess valuable communication skills, great facility in either oral or written reporting or both. In this case, consistent with Gardner's model, this individual could be characterised as exhibiting well-developed linguistic intelligence. This individual's actions are valued highly in this cultural setting. However, let us take this same individual and situate him or her in a different setting. In this second context, let us envision an adversarial negotiating session between contesting factions of an organisation. In this setting, the articulateness and persuasive-

ness of the individual might very well be negatively valued by his or her opponents. Rather than being seen as capable and skilful, the linguistically intelligent individual may be viewed as an obstacle or threat to the interests of the opponents. The cultural values of the opponents might well contribute to a setting where the linguistic ability of the team's spokesperson poses problems rather than solves them, creates a product (such as a critically penetrating argument) that is not welcome, not valued favourably. The point of this discussion, therefore, is that intelligence is culturally grounded and there is a dialectical or reciprocally confirming quality between intelligence and culture. A culture rewards those who 'solve problems' the culture wants solved and who create products meeting the evaluative criteria characteristic of the culture.

The second intelligence Gardner identifies is musical intelligence. Musical intelligence may, at first consideration, seem quite far afield from day-to-day adult education or training and development programs in workplaces. Unless we happen to be involved in musical performance, why should this form of intelligence concern us? I will try to give a concrete example of how this intelligence is present and needs to be attended to and cultivated in the workplace. I do not think that this example is far-fetched. In conversations with highly skilled machine operators, one might learn that one of the first 'signs' of trouble that a machinist discerns is that 'the machine just doesn't sound right'. None of the instruments monitoring the operations of the machine indicates a problem, but the machine operator senses a change in tone, timbre, pitch, resonance. Gardner maintains that this faculty is most certainly a form of intelligent behaviour. To return to Umberto Eco's ideas about semiotics, the aurally acute machinist has an uncanny ability to interpret the 'audible signs' of a machine in operation and find meaning in differences that are detected. In like manner, a skilful cardiologist hears and interprets the sounds one's heart makes. Both the cardiologist and machinist share musical intelligence. Neither may be able to play a note on a musical instrument nor carry a tune in a bucket. This is not the point. Rather, both have powers of discrimination in the analysis and appreciation of sound that may make them highly 'valued in one or more cultural settings'.

Logical-mathematical intelligence is one form that tends (along with linguistic) to be disproportionately highly valued in bourgeois society and in corporate cultures. It should be apparent that the executive elite school as described by Anyon was one in which logical, mathematical, linguistic performance was very highly valued and cultivated. These forms of intelligence are dominant forms in the cultural capital of advantaged classes. The ability to manipulate the abstract symbolic codes of modern society is often rewarded in bureaucratic and technical organisations. Without going into detail, in this form of intelligence (primarily because it is one form most familiar to us, I believe)

one can see the powerful presence of logical thought and mathematical process in the world of work. Computer programming is logic driven. Statistical Process Control draws upon logical analysis and data collection and analysis. Flow charts, organisational charts, cost-benefit analyses, various protocols, all reflect the value of logical-mathematical ways of knowing. Again, some individuals (and cultural groups) seem to be quite adept or 'gifted' in this form of intelligence. Certainly those who exhibit this form of intelligence are more often rewarded financially. Financial planners, economists, investment bankers, lawyers, and many entrepreneurs can be characterised as having demonstrable logical-mathematical intelligence. In 'post-industrial' settings, information is king and the symbolic managers are on the king's court.

Perhaps another intelligence that may seem outside the central preoccupations of workplace education is that of spatial intelligence. Quite unlike the logical-mathematical intelligence discussed above which, as it advances moves on to greater and greater abstraction, spatial intelligence is tied more directly to relationships among concrete, physical matter. A child who stacks blocks from the largest to the smallest in sequence is exhibiting spatial discrimination. A shadetree mechanic who looks at a nut on a manifold bolt and judges that the socket needed is a 17mm is likewise demonstrating spatial intelligence. An architect who designs ergonomically sensitive workspaces may also be spatially attuned. A grocery clerk who deftly packs a large quantity of oddly shaped items into a paper sack is also exhibiting spatial intelligence. The examples can be extended *ad infinitum*. The point I wish to make here, however, is that spatial intelligence is vitally important in day-to-day activities. The fact that tens of thousands of commuters drive their speeding cars along roadways and create as few crashes as they do is a sign of extraordinary spatial intelligence! What an awesome, collective and cooperative accomplishment! While it might not seem like this at the time, perhaps upon reflection, we might come to appreciate—at least on one dimension—what a remarkable feat this rush hour tide of traffic really is. Certainly, I would prefer more 'ecologically intelligent' forms of transport, but that goes without saying (and may represent a different form of intelligence than the one at hand). In any event, each of us exhibits spatial intelligence to some degree. The question is, do we afford opportunities for its development in our workplace education programs? Does or could work activity itself, and workplace education efforts in conjunction, draw upon this form of intelligence?

Bodily-kinesthetic intelligence is perhaps one of the most taken for granted forms of intelligence. It is also met with widely diverging and contradictory 'valuing'. On one hand, it is not uncommon for us to see professional athletes earn millions of dollars in a relatively short time by demonstrating their extraordinary physical prowess in their workplace—the professionally organ-

ised basketball court, boxing ring, or football field. On the other hand, we often see physical effort or labour looked down upon by those who equate physical labour or strength with brutishness. Needless to say, the bodily-kinesthetic form of intelligence is differentially valued.

But to take this form of intelligence out of the rarefied area of world class athletes, a more mundane example might suffice. If I were to ask you to explain how you tie your shoelaces, I would predict that many of you would close your eyes and act out the movements of tying shoes with your two hands. True? What this exercise reveals to me is that *'the body knows'*. The actions (solving the problem of the untied shoe) have become so *embodied* that the complex act is encoded in neurological patterns largely removed from conscious awareness. Driving a car also requires bodily-kinesthetic behaviour. Shifting a manual transmission car 'becomes automatic' because the body learns the movements required to produce smooth shifts. Typing at a keyboard requires physical coordination and fine motor skills. Concentrating on the keys and finger placements merely slows down the keying process. There are countless other examples.

One further example that bears discussion is one that Gardner, himself, did not include in his discussion. What I wish to describe are the ways that one's biophysical condition serves as graphic evidence that bodily-kinesthetic knowing/intelligence exists. Additionally, this example might relate to the issue of how we are to evaluate the effects of our efforts to promote human development in the workplace. To return to the idea that ergonomic factors influence human experience, it might also be seen that by interpreting the physiological and psycho-social condition of workers, we are attempting to identify bodily-kinesthetic intelligence. If one's body is racked by pain, if injuries are incurred in the course of working, if health is enhanced in the course of one's activities on the job, then we might conclude that different forms of bodily-kinesthetic intelligence are being promoted in the workplace. Said another way, the body knows what the work entails. In addition to being logically and mathematically and linguistically cognisant of what our work entails, other (many other) forms of intelligence can be brought to bear on the analysis. We may have been informed (via research data, manufacturer descriptions, and others' testimony) that such and such a solvent is harmless, but our bodies may discern otherwise. Not to include this intelligence in our consideration, or in our educational purview, is professionally incompetent and is unconscionable.

The seventh and last intelligence delineated in Howard Gardner's theory is called personal intelligences. These intelligences are most directly derived from the recognitions that human beings, as they live through the course of their lives, demonstrate different capabilities and potentials at various points of time. The capabilities of a healthy infant are quite different from those of a healthy

adult. Physical maturation and development give rise to differing ranges of behaviour and experience. Thus, personal intelligences refer to the life cyclical path of potentials.

Personal intelligences contain two interweaving strands of human development: intrapersonal and interpersonal. The first refers to the capability of an individual to come to know and understand the self, his or her personhood. The second refers to the capability of the individual to establish intersubjective knowledge with others. These two forms are among the most complex and difficult to study empirically. What is at issue here is the process through which identity is formed, how individuals come to experience the cultures of which they are a part, how meaning is constructed. While the bodily-kinesthetic and spatial intelligences are closely tied to physical and concrete objects; and while linguistic, musical and logical-mathematical intelligences are most closely tied to human relationships to symbolic domains; personal intelligences are most closely associated with the interplay between cultural meanings and subjectivity. It is in these dimensions of personal knowledge that questions about autonomy and obligation are raised, that questions about critical consciousness and ideological hegemony are considered. Let us return briefly to Anyon's study of the hidden curriculum of work in order to link it to the fostering or inhibition of human intelligence.

In the working-class school, control of bodily functions (obedience) was prominent, language was conforming, order was predetermined. With the possible exception of bodily-kinesthetic intelligence (through confinement of the body and routinisation of behaviour) other forms of intelligence were minimally cultivated. In the middle-class school, correctness (and agreement) was admirable, greater latitude of movement and interaction was permitted, future-oriented goals and rewards were acknowledged. One can see that some increase in activities to promote linguistic and logical-mathematical intelligence was present. In affluent professional schools, expressiveness was valued (linguistic and otherwise), deliberation and choice were highlighted, meaningful action was fostered, products were valued (therefore, the process of valuing was validated). Increased emphasis on negotiation, interpersonal interaction, formal and symbolic analysis, and self-direction was observable. In executive elite schools, analysis and conceptual/intellectual activity were rewarded, relationships between phenomena and symbolic systems were explored and manipulated. Virtually all forms of human intelligence were attended to, to some degree, often with great vigour. From the superb playing fields for athletic activities, to well-provisioned laboratories for science and maths exploration, to advanced programs in the performing and fine arts, the students in these settings were offered well-paved avenues for the cultivation of multiple intelligences.

In terms of program development and evaluation in work settings, it should not be difficult for us to transfer from Anyon's analysis how our design of environments, distribution of resources and organisation of human interactions likewise mirror a hidden curriculum of work. It is through such configurations of human and environmental interaction that not only is work accomplished, but the limits of and possibilities for human potential and competence are established. As if all of the above were not enough to consider as we attempt to uncover what is going on in our work (and non-work) settings, a perspective provided by Dwayne Huebner, a curriculum theorist, is also worthy of examination.

From the technical to the ethical: Values-guided educational practice

In previous writing on the topic of learning and the workplace (1989), I referred to the work of Dwayne Huebner (1966). I would again like to outline briefly his contribution to the importance of human values for learning in any setting we might consider. In 'Curricular language and classroom meaning', Huebner suggests that five value frameworks may be seen as informing the curriculum (or agenda) in learning environments. While he refers specifically to classroom environments, it does no violence to his analysis to apply this orientation to workplaces. After all, as work is described more and more in terms of continuous learning and change, perhaps we might analyse the directions along which learning is being guided. Let us turn to the five value frameworks to map out how knowledge is constructed and evaluated.

Huebner identified the following five value frameworks:

- technical
- scientific
- political
- aesthetic
- ethical

Technical values are reflected in concerns about methodological matters, whether a process 'works', whether information is 'useful', whether an action accomplishes what it was intended to accomplish. Learners may be evaluated upon their technical competence in any area. Can the pilot technically handle the aircraft? An important question. An important value framework.

Scientific values are reflected in our interest in uncovering new relationships between phenomena, in providing more adequate explanations for why something happens, in pursuing new information about processes or materials, in discovering new knowledge. Simply put, whenever one says, "I wonder what would happen if ..." one is exhibiting scientific curiosity. As above, this value framework is active in workplaces as new methods and processes are tested and evaluated. Have we learned something by doing this work process in this manner?

Political values are not necessarily what they might first appear to be. Political values, as Huebner articulated them, have less to do with electoral politics and more to do with the process through which human beings attempt to influence the actions of others. This is 'politics with a small "p"'. Needless to say, in workplaces as in virtually every other context in which human beings interact, persuasion, influence, power inequalities and negotiation are omnipresent. 'Office or shop floor politics' are but one manifestation of this value framework. Cooperation, collaboration, and adversarial relations are also reflective of political values. What do our workplace education programs offer in terms of promoting learning about how human beings influence each other?

Aesthetic values are reflected in human interest in pleasure, beauty, wonder and awe. Some may deny the presence of these in the workplace. I believe that they may not be a high priority, and may not be publicly acknowledged, but that they are there just the same. Aesthetic values are reflected in human concerns that an action or process or product be something of beauty, a 'work of art'. Whether it is a fried egg artfully flipped by a cook, or a report crafted with pride by the authors, or a crankshaft that is turned to gleaming perfection, aesthetic values are central to how human beings experience work. It might be said that one of the clearest signs of alienation in one's work is that there is only ugliness and disharmony present; beauty and the thrill of accomplishment are absent. One additional dimension of aesthetic experience is that of a sense of awe or wonder. Perhaps this sounds melodramatic or naive when applied to something as 'mundane as work'. But I do not think that it is either melodramatic or naive to recognise that human beings are capable (if only too rarely) of powerful fulfilment through their efforts. Whether it is profound meaning in the completion of some task, whether it is the experience of unbridled joy in some accomplishment, whether it is some momentary recognition that what one does affects the lives of others in profound ways (for example, when a part one makes is used in a machine that may save the life of its user), these experiences go beyond, transcend, the technical accomplishment. Sometimes a product or activity becomes a sign of something more meaningful. Seeing something of the symbolic within work is part of an

aesthetic value. Are we designing work environments to reflect and cultivate aesthetic experience?

The fifth value framework that Huebner identified is the ethical value framework. I would hope that this value framework is not foreign to us as we consider human development in work settings. Ethical values most simply defined are those values we reflect when we treat other human beings as persons and not objects, when we see human beings not as means towards accomplishing some end, but as ends in themselves. When we wish to be treated as an individual with particular personal needs and qualities instead of being treated as a 'category' or stereotype or some kind of functionary, then we are asking to be treated ethically. Thus, ethical value frameworks may be discerned by how human beings in work settings (and all other settings) regard each other, and how the processes and products of an enterprise impact upon the workers, the broader society and the environment.

Huebner maintained that *all of these value frameworks are present in all human endeavours at all times*. Some value frameworks may appear to be of minimal importance, at one time or another (just as some of Gardner's intelligences may be overlooked) but each affords a perspective through which activities at work might be examined, interpreted, critiqued, understood and transformed. When all of these value frameworks (and no doubt there may be many more) are attended to in the design of a workplace as a learning environment, a richness for human experience and valuing can be attained. These value frameworks are, I believe, extremely useful as we examine educational program development, evaluation methods and measures, and organisational change. When we are planning an educational activity, are we designing in technical, scientific, political, aesthetic and ethical 'content'? If not, why not? If we believe that any of these frameworks is 'outside the scope' of our work, perhaps we need to reconceptualise the scope. Towards this end, I will now turn to a brief consideration of how our 'scope' can, indeed, be expanded.

Social and behavioural ecology: Units of practice, identity and solution

Guy Steuart was Professor and Chair of the Department of Public Health at the University of North Carolina from 1970 until 1985. His contributions to the field of health education were many and magnificent. As an iconoclastic scholar, an anti-bureaucrat, an ally of community activists, and an advocate for far-reaching health education in the public interest, Guy Steuart developed a curricular model for health education that incorporated adult learning theory and a very sophisticated and critically informed understanding of community

development. While many of Steuart's ideas are relevant to a discussion of learning and work, I wish to draw upon some of his perspectives on education *per se*, and more specifically, his ideas on motivation, identity and professional practice. As workplace educators explore ways to improve their practice, I believe that it is vital that we draw upon the contributions of theorists and practitioners from many disciplines. The field of health education, like any other field of educational practice, is composed of a wide variety of orientations including those who specialise in individual behaviour change, and various 'categorical' areas such as smoking cessation, nutrition, and occupational health and safety. Additional orientations are those based upon action research, participatory research, environmental concerns ranging from toxic and nuclear waste to poverty and unemployment. It is my hope that the ideas Steuart contributed in the area of health education and community development will be of direct and significant benefit to those of us committed to improving the educative possibilities of people's working lives.

In 'The people: Motivation, education, and action', Steuart (1975) stated: 'The American faith in education as the great healer of human frustrations and as the *mode d'entre* to the b[illegible]er things of life, to health and to happiness, seems to remain unshaken in spite of its relative failure to meet these expectations' (pp. 176–7). I do not believe that it is only Americans who hold such a faith. Workplace education is advocated by those who likewise share in the belief that through education the individual, the organisation and ultimately the society will 'progress'. Steuart's assessment of the adequacy of the educational system was less than flattering. He had long seen that 'education' was too often practiced as the transmission of information to learners, and the vigorous exhortation to learners that they change for the better. While this may be a severe oversimplification of Steuart's critique, it still represents his frustration and outrage at well-meaning but blundering practice.

In the context of public health and health education, Steuart reconfigured the educational question to read not 'How can we educate in order to influence motivation and action?' but 'By what means (any means) may health-related social and behavioural change be accomplished?' If we were to substitute the word 'workplace' for 'health-related', we might better see the parallel that I wish to draw here. Steuart was not interested in a narrow scope of 'education'; he knew (as we do) that information alone will not necessarily (nor often) change people's behaviour. Citing tobacco smoking as one example, Steuart claimed that smokers are not unaware of health risks; however, in spite of knowledge of some of the hazards, many maintain attitudes towards or relevant to smoking that result in their continuing the behaviour of smoking. If information gained through education is not 'the answer', what is? Steuart put it this way: 'The latter question addresses itself, not to what people ought to

know or how well they should be educated in health matters, but rather to issues of *social and behavioral ecology*—therefore, to a broader range of determinants of change' (p.177). It is Steuart's alert and unflinching recognition of social and behavioural ecology that makes his work so appropriate for adult educators in the context of work. One question that then arises is: 'Are our efforts in the practice of workplace education guided by an understanding of social and behavioural ecology?'.

As discussed earlier, Anyon's study of the interrelationships between social class and the curriculum of work in schools is one example of how social and behavioural ecology is constituted. Social norms, human relationships and structural and organisational systems are integral parts of social and behavioural ecology. Likewise, Huebner's portrayal of value frameworks helps us identify how human ecology is not merely biophysical (the relationship of human organisms to physical environment) rather, Huebner recognises that the normative context in which human beings are situated powerfully affects their lived experience. Similarly, Gardner's critique of social and cultural determinants of how intelligence is conceptualised demonstrates that human development cannot be decontextualised.

Steuart was interested in the means through which social and behavioural change might be brought about. I believe that many workplace educators are similarly interested. We are certainly interested in how individuals acquire the skills to perform the tasks they are responsible for in their work roles; we are interested in the coordination of individual human expertise so that organisational effectiveness is achieved; we are interested in the transformative possibility that intelligent human actions have on the future of work; we are interested in how we get from where we are to where we would like to be (see Schurman (1992) and Carr & Kemmis (1986) for excellent discussion on these points). All of these interests can be considered from an ecological framework which recognises the presence of systems of interaction.

There are three concepts that Steuart articulated that I would like to apply to workplace education. The first he termed '*units of practice*'. In our professional activities, we find that our work tends to be conducted in characteristic configurations with others. An educator may work with individuals one-on-one to assist their learning. Apprenticeships, 'mentoring', and tutorials all are based predominantly on the individual as the unit of practice. More frequently, we may instruct small groups, work in teams, engage in collaborative efforts; in these cases the units of practice are small groups. At other times, workplace educators may give presentations or develop materials that are shared with large groups (perhaps at a conference or disseminated via a network—either electronic or through published newsletters and journals). Again, the unit of practice is defined differently.

The educational methods and techniques we use are (or should be) appropriate for the units of practice we encounter. Depending upon the units of practice in which we function, we need to develop methods of planning, interaction, assessment and evaluation suitable for each unit. If the individual is the primary unit of practice (for example, when each individual in a class is tested to see if he or she has learned some specific 'content'), the evaluation process and 'measures' are designed for individual completion. If the individual is the unit of practice, 'help' from others may be viewed as 'cheating' or a contamination of the assessment process. Similarly, if the units of practice are small groups, assessment and evaluation are designed to identify whether or not the group has achieved some degree of competence. Knowing what each member of a group is capable of (as assessed by individual measures) gives us little information about the competence of a group. The group dynamics and interactions may be so ineffective that even a 'team of experts' may not function effectively. Thus, recognising the units of practice characteristic of a workplace educator's efforts is important. It is important not only to help us identify and select appropriate methods and techniques, but it is important as we analyse—in social and behavioural terms—whether the units of practice we are using are appropriate for what it is we are attempting to accomplish.

The second concept Steuart advanced is that of *'units of identity'*. Steuart described these as 'units with which an individual feels himself to be associated' (1975, p. 179). These units are 'functionally defined and do not have a universally similar structure' (Steuart 1975, p. 179). By this Steuart means that these units are identified via an individual's personal meaning structure; they are unable to be identified 'from the outside'. Each of an individual's units of identity is defined by the strength with which an individual identifies with that unit, or what kind of personal significance the unit holds for that individual. While all individuals are members of a family, how an individual *associates* with family members or to the family as a whole will vary—some individuals may maintain close relationships, others may be distant, estranged or alienated from their families. We may define our identity in terms of the relationships we have to other social units. For example, an hourly worker who is 'promoted' to a salaried supervisory position may identify more closely with his or her colleagues on the shop floor than with his or her new management associates. One may identify more closely with a loose and far-flung network of progressive educators or environmentalists, than with those with whom one interacts daily. As we attempt to develop workplace education opportunities and resources that are more meaningful for those involved, knowing more about our respective units of identity can help us draw upon significant and supporting interpersonal relationships. This again is part of the social and behavioural ecology operating in any work (and non-work) setting.

The third concept Steuart identified is that of *'units of solution'*: '... those units appropriate or essential for the solution of particular problems'. Steuart goes on to say that 'In contrast to the units of identity, units of solution may best be defined by professionals because of the technical knowledge and strategic position they bring to the situation' (1975, p. 182). Units of solution are those configurations of resources, competencies and influence that can and should be brought to bear on a problem. We have long recognised that many problems have been 'solved' without consulting those who may have been affected by the 'solution'. We have also learned that often these 'solutions' generated more problems exactly *because* those affected had not been consulted and involved in the solution. Many forms of participatory practice are based upon a clear recognition of the importance of carefully cultivating appropriate units of solution. I find it remarkable that the preponderance of educational programs are developed without the involvement, or with only token involvement, of those for whom the programs are intended. Whether it is at a university, elementary school, labour union, or workplace, 'armchair curriculum development' is perilous.

One of the problems, then, that Steuart's social and behavioural ecology model helps us address is the reciprocal relationship between workplace educators and those whom they serve. If education in the workplace is conceptualised and conducted in an expert–client, hierarchical, 'deficit model' (e.g. the learners lack some ability and therefore are seen as having a deficit), the skills and competence of the 'client' group (learners)—Steuart referred to this as *'indigenous expertise'*—are likely to be overlooked or undervalued. While the professional educator may have technical expertise in specific areas, those with whom the educator works could be better understood in terms of their units of practice, identity and solution.

An example of how social and behavioural factors translate into effective educational practice can be seen in the work of Myles Horton of the Highlander Center. When Horton was asked in an interview (Horton & Freire 1990) where education fits within the broader context of social and political change, he replied as follows (while the quotation is lengthy, I believe that it reveals much about units of practice, identity and solution):

> I think all of us at Highlander started out with the idea that we were going to do adult education. We've called our work adult education. We thought of ourselves as educators. We deliberately chose to do our education outside the schooling system. At that time, there was a lot of discussion about whether you should try to reform education, which is what we were concerned about, by working inside the system, because if you worked outside the system, you couldn't influence the system. The argument was that you could change the system. We concluded that reform within the

system *reinforced* the system, or was co-opted by the system. Reformers didn't change the system, they made it more palatable, and justified it, made it more humane, more intelligent. We didn't want to make that contribution to the schooling system. But we knew if we worked outside the system, we would not be recognized as educators, because an educator by definition was somebody inside the schooling system. Nevertheless, we decided we'd work outside the system and be completely free to do what we thought was the right thing to do in terms of the goals that we set for ourselves and the people we were working for. Whether we had any recognition or even if we had opposition, that wouldn't affect our position. We said we could go further in trying to experiment. We were going to experiment with ways to do social education, and we could carry on that experiment outside with more validity than we could inside the system, because we didn't have to conform to anything. Nobody could tell us what to do. We could make our own mistakes, invent our own process.

It wasn't surprising to us that we were not considered educators. We were condemned as agitators or propagandists, the most kindly condemnations, and mostly we were called communists or anarchists or whatever cuss words people could think up at the time. Interestingly enough, the people inside the school system almost unanimously said Highlander had nothing to do with education. They said we did organizing, we did propaganda. Even the people who financed and supported Highlander didn't claim we were doing education. They just liked what we were doing, but it wasn't education. And the truth about the matter is that very few people in the United States were calling what we did at Highlander education. Practically no educational institutions invited any of us to talk about education. We were invited to talk about organizing, civil rights, international problems — but education, no. We were not educators. (pp. 199–201)

If we examine this quote from Myles Horton by using Steuart's concepts of units of practice, identity and solution, we might see how the struggle for social, political and educational change might be contextualised. Horton's (and Highlander's) units of practice were not students in classrooms in schools; rather, Highlander staff saw their units of practice in terms of civil rights movements, voter registration workers, community action groups, labour organisations, the poor, and small farmers. Some of these units were well organised at local, regional and/or national levels; some were loose associations or networks; some were individual grassroots leaders. The point here is that the work of adult education became defined and identified by the units of practice perhaps even more than by the processes and activities Highlander engaged in. The implications for workplace educators should be evident: depending upon how the structural and systemic organisations view and

interpret the units of practice with which the workplace educator is associated, the 'education' may well be seen as either conforming to institutional and organisational norms, or may be viewed as 'outside' the parameters of acceptable practice.

In terms of units of identity, Horton and his Highlander colleagues may have identified with other progressive educators, may have been committed to social education, but their identity groups were, by and large, outside formal schooling settings. Those with whom Highlander staff affiliated were radicals, progressives, outcasts from the establishment, those who shared an identity as change agents.

In terms of units of solution, again, we can see how the 'inside' versus 'outside' definition was extremely important. If the interpretation of the social and behavioural ecology was such that working within the system was deemed to be ineffective and counterproductive, then the strategies that were developed were consonant with this view. In fact, the selection of a unit of solution to any particular problem may serve as evidence of the (1) adequacy of interpretation of the situation (social, political, cultural, historical); (2) technical expertise in devising action strategies based on the interpretation; and (3) critical abilities as they are applied to systemic and structural constraints.

Inevitably, adult educators, workplace educators, labour educators, and others of various designations, are faced with problems of identity, practice, and solution. Depending upon how each of these is addressed, an educator's function and personal experience will vary.

If nothing else can be drawn from this kind of analysis, one must ultimately find a personally meaningful relationship to her or his work in social and cultural contexts. To do less than this is to be reduced to a cog in an apparatus. To do at least this is to be engaged in a process of humane, intelligent, transformative living.

Hard stones in the streamed: Beyond reason, without pretence

> I'd rather be a lightning rod than a seismograph.
>
> Ken Kesey (quoted in Wolfe 1968, p. 8)

In the pages that have preceded this section, I have attempted to offer reasonable and helpful guides for considering the nature of the work one does as a professional educator. I use all of these concepts and frameworks as best I can in my own practice. It seems to be the only conscionable thing to do. There is something to be gained through critical, interpretive and practical work. One

can be helpful. One can avoid discredit and shame. And then, there is ambition for recognition, for being needed, for being useful, for making a difference, for power. And loftier goals than these are spoken. What follows are some points of view that I have encountered that dissolve the evangelical zeal that sometimes comes with knowing so little:

> The free man always has time at his disposal to converse in peace at his leisure. He will pass, as we shall in our dialogue, from one argument to another; like us he will leave the old for a fresh one which takes his fancy more; and he does not care how long and how short the discussion may be, if only it attains the truth. The professional, or the expert, on the other hand, is always talking against time, hurried on by the clock; there is no space to enlarge on any subject he chooses, but the adversary, or his editor stands over him ready to recite a schedule of the points to which he must confine himself. He is a slave disputing about a fellow slave before a master sitting in judgement with some definite plea in his hand; and the issue is never indifferent, but his personal concerns are always at stake, sometimes even his salary. Hence he acquires a tense and bitter shrewdness...
>
> *After Plato*, Theaetetus
>
> (Feyerabend 1991, p. 49)

The contrast between a free man (and free woman) and a professional has never been more starkly portrayed than in the quotation cited in Paul Feyerabend's book *Three Dialogues on Knowledge* (1991). The social and behavioural ecology in which we live our professional lives is fraught with tensions between freedom and constraint, autonomy and conformity, community and bureaucracy, between resistance and complicity. Efforts to promote participation among workers, to reduce hierarchical relations, to democratise, to humanise work organisation, remain situated in a calculus that often subsumes personal interests under the contract of professional obligation. When we are 'on the job', we may often wonder whose time this is. The meting out of time becomes a judgment upon us: mandatory overtime? furlough? flexi-time? swing-shift? It is clear, our time is not only our own. And it is in the face of such judgment that the curriculum of the workplace, according to Theaetetus, teaches us 'a tense and bitter shrewdness'. Is this mere hyperbole? Or is there evidence of this learning in the eyes of those with whom we work, in the eyes that stare back at us from the mirror, in the eyes of our children as they return home from a day at school? What must we learn to 'succeed' in the world of work? It all depends on what kind of world it *is*.

If the world in which we are living is becoming monochromatic, if routine obliterates spontaneity, if agreement glosses over deeply held differences, if the

quest for certainty denies paradox, then we will be living shadow lives. In Arthur Miller's play *Death of a Salesman*, written in 1949, Willy Loman returns from a near fatal work assignment. He says to his wife: 'I'm tired to the death. I couldn't make it. I just couldn't make it, Linda'. Continuing, he says: 'Suddenly I realize I'm goin' sixty miles an hour and I don't remember the last five minutes. I'm—I can't seem to—keep my mind to it'. Continuing, he says:

> I was driving along, you understand? And I was fine. I was even observing the scenery. Can you imagine, me looking at scenery, on the road every week of my life. But it's so beautiful up there, Linda, the trees are so thick, and the sun is warm. I opened the windshield and just let the warm air bathe over me. And then all of a sudden I'm goin' off the road! I'm tellin' ya, I absolutely forgot I was driving. If I'd gone the other way over the white line I might've killed somebody. So I went on again—and five minutes later I'm dreamin' again, and I nearly—*He presses two fingers against his eyes.* I have such thoughts, I have such strange thoughts". (Miller 1958, pp. 13–14)

The audience is left to ponder what 'strange thoughts' Willy Loman was having. But what thoughts might one have when the world of work he has known for forty years is being transformed by people he does not know, by people whose interests seem to ignore him, by people who demand of him the unendurable? What must Loman learn? Strange thoughts. The familiar dissolves. The future unfolds as if in a dream, a nightmare.

What are we to do, as workplace educators? Feyerabend (1991) offers one scenario:

> By a proper education however I understand an instruction that tells people *what is going on* while at the same time trying to protect them from being overwhelmed by the tale. For example, it informs them that there is something like humanitarianism but it tries also to strengthen their ability to see the limits of this idea. (p. 80)

What is going on? Is it the creation of a tacit dimension in personal knowing? Is it the creation of a stratified society by means of hidden curricula? Is it the appropriation of human intelligence by technical elites? Is it the narrowing of the horizons of our professional practice causing us to view time and distance as enemies or scarce resources: 'time is money', 'we have to cover this content in this time', 'we are competing against those workers over there'.

HURRY UP PLEASE ITS TIME
'The Wasteland', T.S. Eliot

How do we make sense of a world that seems to deny us the satisfaction of knowing it sensibly? Perhaps we may know it 'otherwise'. At one time, professors in medieval Germany were described as 'those who think otherwise'. Today in the United States (and elsewhere), professors are criticised from the Left and the Right in terms of 'political correctness' (PC). From the Left, PC means that individuals are challenged to think otherwise (oppose the status quo); from the Right, individuals are challenged to think otherwise (to oppose the opposition). Strange thoughts.

Strange thoughts. I am asked by those situated in positions of bureaucratic authority over me to function as an expert, to demonstrate my knowledge of the 'knowledge base', to contribute to research and service to the profession. My students too often ask me to 'tell us what we need to know'. On both requests I try to find a balance. I demonstrate my knowledge by asking questions. I attempt to reconceptualise the 'knowledge base' from its present portrayal as a body of factual information and professional technical practices to a configuration of and set of communicative relationships among people who are identified within an organisation. I ask the students in my classes: "Where does 'need' come from?". I am discarding certainty; I only know in the context of a vast not-know-yet.

I taught in a summer English language institute in south central China during the summer of 1990. From my Chinese students I learned a new meaning of 'compulsory'. I learned to see freedom as conditional. I learned that reason is conditional. I learned that distance is conditional. I learned that humanity is conditional. What are the conditions under which we live? Remembering also Polanyi's statement: 'Thought can only live on grounds which we adopt in the service of a reality to which we submit' (1966, p. xi).

> What does it mean that success is as dangerous as failure?
> Whether you go up the ladder or down it,
> your position is shaky.
> When you stand with your two feet on the ground,
> you will always keep your balance.
>
> *Tao Te Ching*, Lao Tze (1988, p. 13)

When the American avant-garde music group Talking Heads made an album entitled *Stop Making Sense*, they were not advocating nihilism, rather, they were making problematic the conventions through which all events were subsumed under a dominant historical authority. It is not that there is no sense; it is that the sense there is, is too limited, too constrained, too authoritarian, too doctrinaire. Western rationalism with its reliance on orderliness, logic, reason and prediction fails to account for life as it is, succeeds only in suffering a hernia

as it lifts the stuff of the world and tries to cram it into a sausage skin of containment. The obsession with 'quality' blinds workers as they are pitted against each other: Will the GM plant in Ypsilanti, Michigan survive or will the one in Arlington, Texas? Will the quality of the car they produce be the measure by which this decision is made? Arlington won. Three thousand auto workers in Ypsilanti will lose their jobs. But the new CEO recruited from a rival Big Three automobile manufacturing corporation comes on board and proposes sweeping changes. The car, the 'Caprice' (some cosmic irony in the name?), is rumoured to be discontinued. The Arlington workers, the winners, are likely to be eliminated. Stop making sense.

W.B. Yeats wrote in 1920–1 'The Second Coming'. In this poem he penned the lines:

> Turning and turning in the widening gyre,
> The falcon cannot hear the falconer;
> Things fall apart; the center cannot hold....
> And what rough beast, its hour come round at last,
> Slouches towards Bethlehem to be born?
>
> (Yeats 1968, 1962, p. 1582)

The beast is indeterminacy. The God of Reason has sired a new generation. Faith confronts a demon. Work. Education. Intelligence. Knowledge. Freedom. Meaning. Time. Limits. Truth.

> Learning is not the accumulation of knowledge. Learning is movement from moment to moment.
>
> J. Krishnamurti (quoted in Fields 1984, p. 22)

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