Although students need to be competent in a wide range of work knowledge, skills, and abilities, they also need to be "capable" human beings to take their place as contributors to the Australian community. Capability has been described as having confidence in one's ability to acquire and apply knowledge, new skills, and understanding, with courage, creativity, intuition, and imagination. The responsibility for education lies with all levels of education, parents, and businesses. Education and training is merely one way of structuring time for young people. They also need ongoing training for living, such as preparation for family life, social life, and community life. Students must be prepared for community roles and roles in society and have professional, personal, and social skills to generate an income in the virtual world of work. Goleman's (1996) work on emotional intelligence highlights the need for a reemphasis on emotional and social skills in the schools and gives the performance criteria against which their attainment can be measured. For the current educational institutions to achieve all of these aims, the environment of teaching and learning has to adopt the approach of the learning organization, an interactive system that obtains ongoing feedback from its stakeholders and adjusts its way of operating to fulfill its mission—the education and training of people in Australia. (Contains 38 references.) (YLB)
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"RE-DESIGNING THE LEARNING ENVIRONMENT"

What are the Required Outcomes of Education -
Professional Competencies, Personal Attributes and Social Skills

YOUNG PEOPLE IN AUSTRALIA

Dr Kathryn Gow, School of Social Science
Queensland University of Technology

Dr Kathryn Gow
PO Box 268
RED HILL
Brisbane
Queensland
Australia 4059

Phone: (617)3864 4609
Fax: (617)3864 4995
E-mail: k.gow@qut.edu.au
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ABSTRACT

This paper addresses the nature of the knowledge, skills and abilities required of young people as they prepare to enter the world of work and the community. The author takes the position that while the students need to be "competent" in a wide range of work skills, they also need to be "capable" human beings to take their place as contributors to the Australian community. In order for the current educational institutions to achieve those aims, the environment of teaching and learning has to adopt the approach of the learning organisation, an interactive system that obtains ongoing feedback from its stakeholders and adjusts its way of operating to fulfil its mission - the education and training of people in Australia. It is a time for experimentation; and the permission to make mistakes should be factored into the teaching and learning environment, so that both teachers and students can grow and learn together.

PREAMBLE

Capability: a nature or nurture controversy

The title of this paper is "What are the Required Outcomes of Education - Professional Competencies, Personal Attributes and Social Skills". In this paper, it is not just competencies (knowledge, skills and abilities) that are addressed, but that something that our students will need to prosper in the 21st Century - capability.

Capability has been described by the Australian Capability Network as having confidence in our ability to acquire and apply knowledge, new skills and understanding, with courage, creativity, intuition and imagination. Goleman (1996) suggests that the personality requirements for capable people are persistence, initiative, zeal and motivation. He says that these are the qualities which mark people who excel. Their interpersonal relationships flourish, and they are the stars in the work place. The author's own Ph.D. research (Gow, 1992) identified these stars as the "high fliers" who are recognised and given more opportunities than the "middle-of-the-road" or the "not-up-to-scratch" recruits (Gow, 1995 a).

Capable people need to manage their own learning and believe in their own personal power to perform. Professor John Stephenson (1996) asks: "what about the qualities which help us convert competencies and knowledge into appropriate and effective action in a world of change? What about values, commitment, creativity, intuition, integrity and feelings of self-worth...?". He goes on to ask: "is there not a place in even the most hard-nosed working environment for skilled and knowledgeable individuals who are also worldly, cultured and interesting to know?" (1996, p. 60).

I'd just like to ask you a question before we go any further, about how you became capable? That is, to what do you attribute your ability to work, to think, to solve problems and to perform effectively in the work place? Did you have these skills as a tiny child, were you taught these skills by your parents, did you develop these skills in...
early or later primary school, did you learn these skills on your own outside school? Were they engendered in early or late secondary school? Or did you have to learn these skills on the job later, or at a tertiary education institution? Or were you always capable, adaptable, flexible, ready to transfer your knowledge from one context to another, ready to make use of all the skills that you have, and be open to learning new skills at any stage of your life?

**Education: Whose responsibility is it?**

If students are leaving year 12 without the skills that are necessary for life, for community linkages and for the work place, whose responsibility is it? Did they need to be exposed early in their lives to work and play on their own, so they could develop their own initiative, problem solving and entrepreneurial activity? Is it the responsibility of employers to teach them on-the-job skills, or is it the responsibility of the education department to ensure that, when they leave school after year 12, they have all the necessary work place skills, as well as a general education for life?

Does it mean that preschool and primary school teachers should change the curriculum to ensure that, right from the very start, as demonstrated by the studies from Wood (1995), Vangstad (1995) and Goleman (1996), these children can be taught a wide range of skills? Or do you really think it was the responsibility of the parents of each child to have engendered these skills in the first five or six years of their lives?

The answers to the questions have implications. For instance, if you really believe that it was the parents’ responsibilities, then should our society change our whole education system, such that we go back to the old system of tutoring from home and that schools are closed? Radical? Perhaps not if this Government continues to implement cuts to funding, because that’s what it may come to.

After all, the education department could put all educational material onto the Internet and utilise other Communication Technology to teach, give every child a computer and a modem, and then they could then be educated from home - which would be so much cheaper than the current education system. However, while the children may acquire a vast array of knowledge in this way, their access to social, verbal communication and interpersonal skills as we know them today, would be severely curtailed without the socialisation of school years. Or would it?

Having said all that, it is important that violent changes do not occur in the lives of our young people, as at the moment, they are battling uphill to make meaning out of their lives. At present schooling and work enable them to structure their time. Without such time structuring, we see them suffering from anomie - without meaning and purpose; and as non-contributors to the community, they are increasingly resorting to suicide; or acting out in drug taking, breaking and entering, prostitution and theft. Thus while there should be a radical overhaul of what is done in education and training, this has to be planned carefully, with the young people themselves involved.

If you don’t believe training children to be capable is the parents’ responsibility, but you
really do believe that primary school should at least engender many of the social and personal skills that are required, then are we prepared to witness the total primary school system change so dramatically that it is conducted on a team project basis, on a community coaching or on an individual tutoring basis?

If you don’t subscribe to any of those scenarios, what then do you envisage for secondary schooling which seems to be the system perhaps which is most under attack or scrutiny at this time. Is there any serious reason why secondary school students from year 8 onwards, cannot be involved in small business in the community? Is there any real reason why community coaches and industry coaches cannot come into the school, so that there is a regular interchange between school and employees which leads to enrichment both of the school place and the work place? Or more importantly, is there some way that students themselves, their parents and the community can operate different teaching methods (not just the idea of school-based management imported from the USA) and learning systems than are currently being conducted? If we could only just ask the students for their ideas and their initiatives! They are, after all, probably their own best resource in the preparation for work (Gow, 1994).

We have really talked so far about processes - but what about the content of subjects and about the coverage of topics that children and adolescents consider to be important? Why should not children and students have the choice of undertaking any subject that they wish to, within the school system? Why does it have to be that a teacher must be an expert in any of the subjects that they teach? Why can’t they simply be a facilitator or a coach in the learning of that material? Why can’t they be a learner, along with the individual student, along with a group of students, in exploring new areas of knowledge (as envisaged by Wood, 1995)? They can still apply well proven processes, as they encourage students to think of new processes of teaching and learning, and you can find many such initiatives, as demonstrated by many of the initiatives in the Eric database.

Why should we leave grandma and grandad alone in their homes in suburbs and in country areas when children are crying out for mentors, for people who will sit and listen, who will encourage them? Why can’t we link up the community, the young and the old? (See Gow on Community Links, 1995b).

THE PLACE OF YOUTH IN FUTURE COMMUNITIES

This address is set within the context of the future of work in the period 1998-2010. It is not possible for us to talk about the preparation of young people for entry into the work force in the years 1998-2010, without admitting that education and training is merely one way of structuring time for young people, albeit an essential component of earning an income. We need to expand our awareness of the wider context for young people, which is, that we are educating youth to take their role within the wider community. We need to have a mechanism whereby their social role is valued by the community, that is, they have social capital (as Eva Cox [1995] would say) over and above their economic capital in an under-skilled work force within a global environment of fierce economic competition.

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In the past 10 years (in a shrinking economy), too much emphasis has been placed on work skills and not enough on social and community skills that young people need to contribute to the general community. Indeed the whole direction of the Finn, Mayer and Carmichael reports on the development of competency based training and assessment for generic skills, resulted in preparation for work for a very good reason: it was because the OECD had detected that our Australian workforce was one of the most poorly educated work forces in the developed world.

You might remember that early on in this debate about the purpose of school education in the 1980s, that there was a huge education split among teaching professionals (see Gow, 1995c). There were those who believed that it was not, and never should be the role of schools to educate children for work. There were those who believed that schooling was becoming antiquated and that the curriculum was no longer suitable either to prepare children for the work force (and a changing work force at that) or for appreciation of cultural and artistic endeavours, or for a life in the Australian community.

There was no acknowledgment that the move into Competency Based Training and Assessment to educate young people for work was erroneously based on the assumption that there were, and would be, plenty of jobs for young people in the traditional workplace. Within 10 short years from 1987 to 1997, there are grounds to rotate the direction of education back 90 degrees to a more balanced position (see Figure 1), so that neither position as was originally held, that schooling was for general education only or for work education only should be entrenched, but rather that education must embrace both of those principles.

It is a fundamental tenet of our acknowledgment of the globalisation of the economy and massive technological change, of the ramifications of a changed education and training provider environment, that we add yet another node to this position, which is that of training students to participate outside of work in the general community - to take their place in the sports arena, in the recreation field, in the community through service to others and artistic endeavours. They need ongoing training for living, such as preparation for family life, social life and community life.
ROLE OF EDUCATION: Structuring of Time in A Compulsory Role

Figure 1: Preparing Students to Structure Time

Just as the Southern Cross constellation is set within the wider universe of stars, so too do we need to prepare students for the virtual world of work and a network of local and global communities.

THE WORKPLACE OF THE FUTURE

The "work force of the year 2000 will be smaller, more highly skilled, more mobile, and more diverse" (VanHuss, 1995, p. 21). Such a dramatic change (along with other major work force changes) has been driven by (1) technological advances and innovations; (2) intense global competition and (3) corporate downsizings and restructurings (Csoka, 1995).

According to Charles Handy, there is already undoubtedly a great squeeze-out resulting in there being only a core of people left in organisations who will do very well; there will be "half as many people on the payroll, paid twice as well, producing three times as much" (1996, p. 25). He calls these the inner ring, whereas there will be an outer ring who are disposable workers, because they will be unable to add value to their organisation. Charles Brass (1995), the President of the Foundation of the Future of Work believes that there will be more people in the middle and outer rings, than in the inner ring. The middle ring will work into the organisations from outside as consultants - the portfolio people, who will have many different roles in society and be managers of their own assets. This middle ring will become more or less independent actors in the
business's contractual support network, as jobbers, pieceworkers, consultants, accommodators, 'temps' of all sorts and degrees, all plying their different trades and skills (Handy, 1996, p. 24).

Csoka confirms that there will be a fundamental change to the employer-employee contract, or as the Special Report (1994) sums up, in the future employees will be responsible for their own career management.

However even for the inner ring, rather than reporting to a superior in a traditional hierarchy of authority and control, an employee will be more likely to move in and out of work teams. The western workplace is generally shifting to a teaming paradigm - that is, more and more employees will work in autonomous project teams (Fleming, 1995) which may disband at the completion of a project. Some team members will then form new work teams for other projects.

Charles Savage (1996) sums up the vision of the new organisation as being self organising, self teeming, self aligning and self reconfiguring. Because the new organisations will have mastered the art of temporary alliances, and will be expert at virtual teaming, the dynamic teaming process and virtual enterprising will be the chosen way of operating. "Jobs are gone, as are managers. In their place are competencies, teams, and leaders and learners. Instead of boxes and lines on an organisational chart, we see ever-changing circles, clusters of capabilities teaming and reteaming to seize ever-changing business opportunities. Our leading companies have become 'communities of competencies' (Savage, 1996, p. 13).

Talk of the virtual office place has become reality, as large private and public organisations have downsized (Littler, Bramble & Dunford, 1996) and now call on vendors and independent contractors to get the job done. This creates more virtual organisations - fluid, dynamic enterprises that adapt quickly to customers' needs (Snell, 1994). "Changes in work patterns are inevitable, as technology means that everything and everyone becomes more connected on a global scale, and less defined by location" (Arthur, 1994, p. 35).

Preparing the "capable" student

Sharon McCoy Bell (see Stephenson, 1994), a leading educationalist in the USA, has identified several baseline competencies that will form part of the solution. McCoy Bell suggests that students will need skills in accessing, analysing, integrating and presenting information. (These are the same competencies outlined by Finn [1991]). The new Virtual corporations will mandate specific personal and interpersonal attributes, as well as information handling and specialist competencies (see Wood & Gow, 1996).

The importance of opportunity finding skills is emphasised by Dan Kotter from the Harvard School of Business who indicates that such skills are likely to differentiate between successful and unsuccessful graduates, irrespective of their academic abilities. Opportunity finding skills relate to the ability to locate areas in which a person can provide worthwhile input (Wood & Gow, 1996).
Dave Upton (Harvard) and Ian Taylor (creator of a Virtual corporation called Words and Images) and also the Internet reports suggest that trainers and educators will need to coach students to apply their skills in ways that give value to others.

"Virtual coaching may include teaching remote students professional skills that they need, such as skills in information technology, graphics or information searches. Alternatively, a student might find opportunities to import valuable knowledge and skills from remote groups or may have to work with remote students to prepare project bids and solutions" (Wood & Gow, 1997).

In the future, students may form into satellite groups along the lines of Margaret Reil’s Learning Circles and work in task-focused "Virtual" teams. The group may set up the facilities within their Internet server or in managed internet services to allow the group to create presentations of their work, or to provide forums for discussions of project ideas, data or research strategies (for more information on this, see Wood & Gow, 1997).

Many schools in the Western world are adopting technologies such as the Internet. However it will be the ways in which this technology is used that will determine whether graduates thrive in the fluid and flexible era of Virtual corporations.

The shift towards contract project-based employment and engaging with multiple employers or multiple project innovation is a recurring theme in the literature. Specialist skills and networking are seen as vital career competencies due to continual innovation or re-engineering of the work place. Many authors suggest that big industries will be creating change and helping others deal with change.

SKILLS NEEDED BY STUDENTS OF THE FUTURE

The Rand Corporation (Bikson & Law, 1994) indicates that graduates will need four major overall competencies to meet the future work place requirements: (a) domain knowledge, (b) cognitive social and personal skills, (c) prior work experience and on-the-job training, and (d) cross-cultural competence.

The cognitive, social and personal skills that the Rand Corporation points to for entry level workers are: problem solving ability, decision making, knowing how to learn, interpersonal skills, negotiation, compromise, cooperation, collaboration, cross discipline teaming, innovative, entrepreneurial skills including calculated risk taking, and being able to handle uncertainty.

The Rand nominated social skills are: the ability to work effectively in groups of diverse backgrounds (both cultural and professional); the ability to communicate effectively in writing and speech. The personal skills are those of flexibility, adaptability, openness to new ideas and practices, empathy with other’s perspectives, commitment to quality work and innovativeness. Cross cultural competence includes knowledge about other cultures as well as social skills and personal traits that enhance cross cultural communication and cooperation.
In order to achieve these required competencies, the Rand Corporation suggests that colleagues should make better use of the cultural diversity to which they already have access, seek close relationships with corporations and insure that new initiatives are given incentives for the development of new courses so that existing courses can address globalism. They further recommend that students can improve their generic skills through group projects and work experience during school.

With respect to globalism, international domain knowledge can be accessed through specific courses or projects or even paper topics on this area. In addition to this, the student should undertake foreign language courses that are applicable to their career directions and should read foreign newspapers and professional periodicals, as well as works of literature relating to other cultures. Students should seek opportunities to interact with non-Australian citizens by going abroad or associating with other non-Australian born citizens.

Colleges should seek close relationships with corporations. Such ties will enable colleges to understand better the emerging human resource needs and to explore the feasibility of joint programs to help meet those needs (Bikson & Law, 1994, p. 13).

Preparation for community roles

Regardless of what the researchers and business magnates report, there are some fundamental components (See Figure 2) in the preparation of the student for their role in the work place and for their role in the community.

![Figure 2: Model of the prepared student](image)

As we begin to unfold the model of the prepared student we note that there has to be a dynamic, effective process of teaching students who are ready to learn, that is, they demonstrate learner readiness, as depicted in Figure 3.

Kathryn Gow (Dr)
Figure 3: The Process of Teaching Ready students within varied contexts

Overall both teachers and learners need to envision the goals for which the student is being prepared: work place, life, basic survival and general skills, social interactions, community involvement, family life, sporting and artistic endeavours. Because the income generation for young people has changed so drastically in the past 10 years, students must be prepared for a wide variety of workplaces: small business, government jobs, private corporations, not-for-profit organisations, co-operatives, their own business, virtual consulting teams, as well as further tertiary study and preferably a propensity for life long learning (Figure 4 refers). While some of the skills they need to deal with such a flexible scenario have been alluded to thus far, they are dealt with in more detail later in this paper.

Figure 4: Preparing students for future roles in society

In Figure 5, a number of descriptions of the teaching processes involved in preparing students for life after formal education are listed. Some of these processes are seen to be
outside schooling parameters and one hopes that parents have attended to: developing, enlightening and raising the youth of Australia. To date in Australia, no formal recognition has been given to other training functions displayed by many teachers, such as coaching and mentoring. Overall the coaching process has not played a large role in secondary education outside the sports grounds and the family/neighborhood. However all these functions are part of the teaching processes of young people.

Figure 5: Descriptions of types of teaching processes

None of these processes can produce effective recruits unless the learner is ready (Figure 6 refers), intellectually, motivationally, emotionally and physically for the task at hand (Buckley & Caple, 1991). Young people need to be given opportunities to be exposed to a wide range of learning experiences in a safe environment. They should be able to feel free to explore and make mistakes without criticism, but with care-filled monitoring. They need affirmation from their mentors, that they are intrinsically worthwhile citizens, just as they are and they require feedback on task performance by their coaches, so they can correct the direction of their aim and get back on track.

Professional, personal and social and skills

To generate an income in the virtual world of work, students will need to have professional, personal and social skills, such as those outlined below. Some of these KSA’s (knowledge, skills and abilities) have been published in the Australian Training Review (Wood & Gow, 1996). They have been derived from many sources, including personal research (see Gow, 1992, 1993, 1995d), the ERIC data base, the Education, Management, Human Resource and Social Science literature, conversations with leading organisational analysts and practitioners in the UK, USA and Australia. The lists follow:
Figure 6: Learning Readiness

Professional Skills

- opportunity finding skills (locating areas where a person can provide valued input;
- maintenance of a knowledge/skill base that is of value to others;
- acquisition of specialist knowledge and skills as needed (including abilities to locate skill providers and acquire high value skills strategically, or as needed);
- skills in identifying and keeping up with emerging trends in knowledge or skills (possibly brain-storming with others to create new directions, ideas or opportunities [information edge]);
- skills in evaluating the effectiveness of strategies and finding better ways of achieving goals;
- skills in accessing resources needed to achieve goals;
- business/financial management skills (including capital, pension, contracts); and entrepreneurial skills and the mind-set to translate knowledge into ideas, products and services that add value to others and to effectively market self and their own ideas.

Personal Skills

- self-esteem and confidence to develop own ideas autonomously or explore boundaries of new ideas and resources;
- motivation and demonstrated commitment to achieving results;
- vision/creativity (abilities to envision new ways);
- flexibility and adaptability to new tools, tasks and social environments;
- creativity; and
- valuing of education as a continuous, routine part of career and self-development beyond school.

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Social Skills

- relationship building/team management skills (particularly geographical distributed teams of experts who work together to generate ideas and solutions);
- group working skills (ability to adopt roles including expert, co-ordinator or facilitator and identifying group dysfunction such as group-think or excessive risk-taking);
- group orientation to work with local or remote individuals to identify opportunities and imminent changes that will need to be prepared for;
- effective negotiation skills;
- cross-cultural sensitivity and an awareness that local actions can have global effects;
- fostering bonds with professional societies or other community group who can help locate work; and
- potentially fostering skills and attitudes to work together as a virtual family business.

It is important to acknowledge that the seven key competencies as outlined by Finn and Mayer are basic building blocks and will always remain as essential components of preparing students for work.

Additionally in many jobs, basic clerical and computer skills will still be required: office procedures, teamwork, people skills, PC operation, word processing, accounts, research, records, visual aids and logistics (Webb, 1994, p. 17). Webb goes on to remind us not to forget that there are two aspects to the computer revolution; 1). computer skills; and 2). convergence to information technology type jobs. Each requires different skills.

Educators are realising that students need to be trained in networking skills (Carbon, 1996), teamwork skills (Hicks & Leicester, 1995); entrepreneurial risk taking (Vangstad, 1995), as well as having facility in cyber space thinking and advanced skills in information technology. "Awareness of the global marketplace and information technology skills appear to be essential competencies for the students of to-day, so that they can be prepared for to-morrow’s workplace” (Wood & Gow, 1997).

EMOTIONAL INTELLIGENCE

Daniel Goleman’s book on emotional intelligence suggests that smart young people should have social skills. These social skills include self-awareness (whose personal space am I invading?), impulse control (what is my impact on others and self?) and empathy.

Private schools and Tafe have always understood that social skills are important and some of these skills were imparted in extra curricula activities. Many teachers have integrated such skills within the curriculum activities, whether or not they have been directed to do so.

Goleman’s book has been popular because he labels emotional, cognitive and behavioural skills as emotional intelligence (pp. 301-302). Much of the population who have been
expert at people skills, but who have never had those skills labelled and valued monetarily, welcome that recognition. His suggested emotional, cognitive and behavioural competencies are enumerated below:

Emotional Skills

* Identifying and labelling feelings
* Expressing feelings
* Assessing the intensity of feelings
* Managing feelings
* Delaying gratification
* Controlling impulses
* Reducing stress
* Knowing the difference between feelings and actions

Cognitive Skills

* Self-talk: conducting an "inner dialogue" as a way to cope with a topic or challenge or reinforce one's own behavior;
* Reading and interpreting social cues: for example, recognizing social influences on behavior and seeing oneself in the perspective of the larger community;
* Using problem solving and decision making: for instance, controlling impulses, setting goals, identifying alternative actions, anticipating consequences;
* Understanding the perspective of others;
* Understanding behavioural norms (what is and is not acceptable behavior);
* A positive attitude toward life;
* Self-awareness: for example, developing realistic expectations about oneself.

Behavioural Skills

* Nonverbal: communicating through eye contact, facial expressiveness, tone of voice, gestures, and so on;
* Verbal: making clear requests, responding effectively to criticism, resisting negative influences, listening to others, helping others, participating in positive peer groups.

GOLEMAN’S PERFORMANCE CRITERIA

Goleman (1996, pp. 283-284) highlights the need for a re-emphasis on emotional and social skills in the schools: emotional self-awareness, managing emotions, harnessing emotions productively, empathy; reading emotions, and handling relationships; and gives the performance criteria against which their attainment can be measured.

Emotional Self-awareness

* Improvement in recognizing and naming own emotions
* Better able to understand the causes of feelings

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* Recognizing the difference between feelings and actions

**Managing Emotions**

* Better frustration tolerance and anger management
* Fewer verbal put-downs, fights and classroom disruptions
* Fewer suspensions and expulsions
* Less aggressive or self-destructive behavior
* More positive feelings about self, school and family
* Better at handling stress
* Less loneliness and social anxiety

**Harnessing Emotions Productively**

* More responsible
* Better able to focus on the task at hand and pay attention
* Less impulsive; more self-control
* Improved scores on achievement tests

**Empathy - Reading Emotions**

* Better able to take another person's perspective
* Improved empathy and sensitivity to others' feelings
* Better at listening to others

**Handling Relationships**

* Increased ability to analyse and understand relationships
* Better at resolving conflicts and negotiating disagreements
* Better at solving problems in relationships
* More assertive and skilled at communicating
* More popular and outgoing; friendly and involved with peers
* More sought out by peers
* More concerned and considerate
* More "pro-social" and harmonious in groups
* More sharing, cooperation and helpfulness
* More democratic in dealing with others

Margaret Reil (1993) provides other valuable components of social and collaborative skills in her concept of "Learning Circles", although she does not identify other important attributes that will need to be engendered in students if they are to succeed in the workplace of the 21st century.
WHAT CAN BE DONE TO HELP YOUNG PEOPLE

While the traditional education system has been expert at instilling: (1) critical thinking skills; (2) intellectual context; (3) values formation; and (4) communication skills, across the board they have not generally been proficient at imparting work place skills. Marginson emphasises that an "academic list of generic skills are not the same as work-related lists of generic skills, even if many terms (communication, problem-solving, creativity, etc.) are common. The terms spring from differing contexts and often take subtly different meanings to each other. One important difference is that in higher education, these skills are usually understood in terms of knowledge" (1993, p. 36 in Webb, 1995)

Educational Institutions as learning organisations

To undertake action learning in the traditional primary, secondary and tertiary education systems means confronting the nature of the organisational systems in which educators and employers work. Webb (1994) provides the following table of comparisons between education and work which impact on approaches taken to skill development.

Table 1: Approaches to skill development.

<table>
<thead>
<tr>
<th>Education</th>
<th>Professional Work Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrow jobs</td>
<td>Broader jobs</td>
</tr>
<tr>
<td>Managerialism</td>
<td>Entrepreneurship</td>
</tr>
<tr>
<td>Single discipline</td>
<td>Multidisciplinary</td>
</tr>
<tr>
<td>Committees</td>
<td>Individual accountability</td>
</tr>
<tr>
<td>Bureaucratic control</td>
<td>Consumer decision</td>
</tr>
<tr>
<td>Government</td>
<td>Private sector</td>
</tr>
<tr>
<td>Public funding</td>
<td>Income generation</td>
</tr>
<tr>
<td>Slow decisions</td>
<td>Faster decisions</td>
</tr>
<tr>
<td>Tenure</td>
<td>Job insecurity</td>
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</tbody>
</table>

Can such a fundamental change in the approach to managing education be obtained? Is it desirable? Whatever your response is, it is clear that we need a new learning environment in which risk taking is factored in. After all, this is the environment in which we are saying that school leavers need to prosper. So educational and training institutions have to be prepared to allow mistakes on innovations. The Education Department needs to conduct three to five year experiments and to use real life curricula and combine this with
history, theory and practice. We need to be able to use other countries’ experiences and to learn from them, not just blindly copy them. Apart from initiating some of those new risk taking endeavours, we need to be able to monitor them, check the goals, review them and reward initiatives. We need to be able to take the stress out of the educational environment and bring the community into the schools and colleges. Everyone needs to be able to learn, to have fun and to explore in new and different ways.

The Eric database is full of programs that have been conducted in primary and secondary schools in the USA. Dean Wood, with the help of British Telecom in the UK, involved geographically distributed primary school students in information technology and video conferencing projects and both students and teachers learned new skills from each other. Claudia Vangstad (1995) in Oregon, USA, conducts special programs for year 5 students who are difficult to handle in the normal class setting. She has managed to teach these children formal meeting skills, has encouraged them to start their own businesses and within a very short period of time has had these youngsters raising $4,000 in just one project. Some programs have already been implemented in Australia, but not a lot of them have been written about on the Eric database. That should be a challenge to Queensland educators.

FUNDAMENTAL CHANGES REQUIRED

How can we do all this, you might ask in the present climate and with in the existing context. The stakeholders in this re-engineering of education and training need to be involved. Figure 7 depicts just a few of the stakeholders who need to be involved if changes are going to take place effectively.

*Figure 7: The Stakeholders in preparing students for their role in the community*
Basically teachers (other than parents) are the greatest real life motivators and leaders that individuals are ever exposed to. The dedication and creativity of teachers has been demonstrated across the decades, but it has not changed the system.

The massive changes that are required in the Education Systems in Australia can only come about by a supportive education environment which is itself supported. Not only does it have to be innovative, it has to be informed (see Figure 8).

Part of that informing occurs from key players in the funding of education. Figure 9 nominates some of those key players. You will note that the four players on the left hand side of the figure are depicted as having one way interactions, while those on the right hand side of the diagram are drawn as having two way interactions with the education system. Two way interactions are more indicative of learning organisations than one way interactions.

Figure 8: Teaching institutions as learning organisations
Figure 9: Key Players in the funding of Education

Education Management. Changes are required at the top of the education systems. Management must be supportive of risk taking and give feedback to the employees initiating activities. We need to build in a percentage of errors to allow for mistakes to be made in the learning process.

Parents. Parents in the community must be involved in more than fundraising and administration. School based management should not be used as an excuse for the government to drop the responsibility for education into the lap of parents, local industry, principals and teachers, as has occurred in the USA. While there are some remarkable achievements recorded in the ERIC data base on school/community/industry links in the USA, the overall message is one of economic struggle.

Students. Students must be involved as they already have ideas on how to solve some of these global education to work link problems. They need a system of reality checks with new initiatives, but not as a means of blocking their creativity before it has been expressed.

Industry/Employers. We need industry/employer and educational linkages because it is not just young people who are bearing the brunt of global economic change, it is anyone who is still fortunate enough to have a means of generating income. Those links will help share the load and spread the gold.

Teachers. We need new and experienced teachers to work collaboratively on different ways of involving parents and the community in this fundamental education of young people in income generation and community contribution.
**Government.** The government legislation must provide fundamental education for all. Without it, we will fall into the category of a third world country as we are no longer rich because as a nation we have decided to no longer exploit the wealth of our primary resources.

**Tertiary institutions.** Both private and publicly funded tertiary institutions must link up with schools, employers and the community in order to deliver lifelong learning packages to their students of all ages.

The question is posed here about whether there is any need for children to go on to years 11 and 12 when they can go immediately to a TAFE college and pursue associate diplomas and gain an early qualification, before going on to university or to work?

**Social responsibility.** It is often considered that it is only big business that must demonstrate corporate responsibility. However, in the rapidly changing environment, it is also government and politicians who need to demonstrate their social responsibility, as well as schools and educational institutes.

**Environment for learning.** The environment for learning must be changed. We need to open up the schools to all ages and then a mixing of ideas and experience with creativity and innovativeness can occur. The Learning processes themselves need to be changed. We need to develop an attitude of lifelong learning, such as that engendered by the old TAFE system which was squeezed out by what now appears to have been a failed agenda of the National Training bureaucracy of the previous government. That this government could so indiscriminately slash the funding support for programs which gave our young people, and not so young people who are between jobs, hope for the future is a betrayal of the Australian psyche.

The concept of organisational learning is not new. Argyris and Schon in 1978 commenced the impetus that was to lead to what is known in Australia today as action learning and organisational learning. Field and Ford (1995) state that in a learning organisation, there is (a) a well developed capacity for double loop learning; an ongoing attention to learning how to learn; and (c) support learning (p. 11). In double loop learning, there is a restructuring of the organisational theory of action, and errors are noted and new norms are established as a result of exploring that error experience.

Vince and Martin (1993) believe that action learning is about real work problems and that the learning is a costly process in which individuals learn with, and from, each other. This takes a real willingness to face what is actually happening in the organisation and to be prepared to make the necessary adjustments. The feedback loop has to stay open and there are ongoing adjustments.
What's required in this new model for change? Can anyone learn adaptability to change? Is it innate? What competencies are involved? How do we measure capability? What sort of performance criteria are we going to use to measure whether someone can satisfactorily perform a task, conduct a process, run a business or indeed create a business, a program or a process?

**Responses to change**

Training for the new world of work is not just about making the transition from education to work smoother, it is about training to live in a readily accessible global village, where those who have had nothing for so long, need to share what others have taken for granted for decades.

The global competencies required of professionals when we think of our students working within a multicultural work place are cross cultural competencies, intercultural understanding and expertise in languages.

Australia is demonstrating that it can have work-based learning accredited both at TAFE and university level. This is an enormously different educational and accreditation system from that which has been in place for the last hundred years or so.

The internet and vast advances in communication technology mean that we are going to face some of the most dramatic changes to education that the world has ever seen, and all this will occur within the next 5 to 10 years. We still have not sorted out the fundamental argument about the role of education at primary and secondary school levels. The perennial argument about the need for a general education for life still abounds, while politicians, who suffer from tunnel vision in the economic downturn, seem to value only education for work skills to be utilised in jobs that are in short supply. What we
need to be able to do is blend both of those needs into a new, dynamic, flexible, global educational system.

THE WAY AHEAD

Massive change is being forced on educational systems at a point in history when we need time to explore. If the system is to adjust, it must do so as a learning organisation. Thus exploration and creativity need to be valued within a safe environment, because risk taking is involved and those risk takers need to be given scope and latitude within defined parameters to solve these new problems. We need a certain kind of performance appraisal which rewards the occasional failure because it indicates that people have at least been trying new modes of learning, educating and training. We need a feedback loop such as outlined by Argyris and Shon (1978) to indicate what mechanisms in the educational training system are working, and what is not working. We need to know how soon to intervene to bring new initiatives and new explorations back on track (towards the desired goals). We also need to be able to do this with a clear mind, without panicking. Thus we need a bigger, broader picture of education and training for the future, and at the same time we need control mechanisms set in place, so that everything does not erupt in chaos, or collapse in ruin.

We need to ascertain what the current values of the education system are and how these match with the values of society, of employers, of the visionaries, of the philosophers and of the children. We need the innocence and truth of children to see the solution clearly. We need reflection, and action, less fear, less apprehension, more clarity and calmness; and we must do something as a community. So you personally can light a lantern and reflect, or you can run with the torch - both roles are necessary.

We should encourage new teaching processes and include and adapt coaching and mentoring processes, where they have been proven to be effective in overseas initiatives. We have to assess the learning readiness of individual students, so that they can continue to learn at appropriate stages and levels. In the end we must have need an evidence guide to indicate how well we’re performing in implementing these new initiatives.

All of these actions have to be carried out, so that the individual characteristics of students, teachers and trainers can be valued within a more social learning environment that is preparing the way for the new teamwork approach in income generation. We need assessors who will determine whether these skills, knowledge and attributes, that the students are continually accessing and upgrading, are transferable to the workplace.

Moreover, let’s not leave it there. We should know how some of these young people who are coming through our educational system can contribute to the community in social ways, in artistic ways, in service, in religious and spiritual contexts and in sporting arenas, as well as in social justice areas and the construction and maintenance of our communities.

Those objectives should structure our time sufficiently, so that we can truly answer when we arrive at the pearly gate, that we have responded in conscience to the directive: Unless
you become as effective coaches, they will not enter into the realm of committed workers and valued contributors to the community.

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Kathryn Gow (Dr)


