

# **FOUNDATIONS OF EFFECTIVE MENTORING IN THE COOPERATIVE EDUCATION WORKPLACE: A REVIEW OF THE LITERATURE**

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*This paper reviews the literature exploring the mentoring relationship between students, their cooperative education workplace and their host supervisors. The literature review will focus on mentoring relationships generally, and consider the learning benefits from structured and informal mentoring. The literature review will form the basis of further research into "students" and "host supervisors" perceptions of the mentoring relationship, with a view to identifying key factors of a successful mentoring relationship.*

**Key words:** Cooperative education, mentoring, transformational mentoring.

## Introduction

*"The proper aim of education is to promote significant learning. Significant learning entails development. Development means successively asking broader and deeper questions of the relationship between oneself and the world. This is as true for first graders as graduate students, for fledgling artists as for greying accountants" (Daloz, 1986).*

Successful mentoring relationships have long been recognised as central to student learning in cooperative education courses (Ricks, 1997). When students commence their cooperative workplace experience and work shoulder to shoulder with colleagues in the workplace, one person stands out – the workplace mentor. This mentor has a significant influence on the activities, relationships, learning, development and often assessment of cooperative education students. The mentor has the opportunity to provide a creative and supportive environment for students to achieve "peak performance" (Gilson, 2000). They play an important role in creating an environment for fostering significant learning experiences for students.

When students enter the cooperative education workplace, they are hungry for a mentoring environment. This hunger is the same as that experienced by any degree or secondary school graduate entering the workforce for the first time. As young adults first experience work, there is potential to develop a mentoring environment to provide models and guides. (Daloz Parks, 2001).

## Benefits of mentoring in the workplace and cooperative education

Kram and Isabella (1985), described the benefits of mentoring in an organisation. They identified increased productivity through:

- individual performance planning,
- increased teamwork,
- cost effectiveness in training (as the mentors undertake their role in addition to their usual duties),
- improved recruitment programmes.
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In addition, Kram and Isabella identified that the organisation benefited from mentoring programmes that promoted development, learning and support of new employees. The new employees became a talent pool to be drawn upon by the organisation when the need arose. Another significant benefit was the opportunity for senior employees to share their knowledge and skills, and in the process "rethink" personal philosophies and methods.

Of all these benefits, the most important from an organisational perspective was improvement in organisational performance from developing trained and competent employees. This is where the link between mentoring and co-operative education becomes real. As a result, cooperative education students often take up permanent positions in their host organisation because of the skills they have developed and demonstrated in their placement. When the student's potential is recognised and valued by the organisation both the host organisation and the student win.

Another advantage of mentoring, is that it provides feedback for the student. Evers et al. (1998), considered how to equip graduates with skills for lifelong learning and employability in the new millennium. They identified crucial competencies graduates will need in the future. These include the ability to "manage self", to "communicate", to "manage people and tasks" and to "mobilise innovation and change" (p.135). Mentoring can provide feedback on each of these competencies, guiding the employee or the student to reflect on their successes and shortcomings. Ideally, students are developing lifelong skills to benefit both the organisation (at least short term) and their own career development.

Stump and London (1981), explored the crucial role of the mentor in career development. While they were not concerned with cooperative education, they drew attention to the link between mentorship and career success, development of leaders, and early socialisation into the workplace and career progression. Applying these research findings to cooperative education indicates early fostering of cooperative education students in the workplace may have long-term career benefits for them.

The benefits of a mentoring relationship for students, new employees and students are the provision of support, challenge and vision by the mentor. (Daloz, 1999).

1. "Support" enables the development of constructive relationships, at work and encouragement to students to meet and make the most of new challenges.
2. "Challenge" provides new opportunity and possible threats for the student. For challenge to be productive as a learning experience, it

needs to be just within the students reach. Students respond well to challenges that are "just about manageable". As Csikszentmihalyi (1996) explains, "just manageable" challenges are not too hard, and not too easy.

3. "Vision" is a key component of the mentoring environment, providing students with a view of the future and their place within it. It is essential for student to develop and understanding of the field or profession during their first exposure to the workplace. These three qualities are required to provide and environment for students to find Csikszentmihalyi's "flow".

The mentoring relationship is an effective tool to assist students to cross the bridge from the classroom to the workplace. Mentors can coach students to become effective members of a team, and provide opportunities to discover weaknesses, learn from their mistakes and emulate a role model (Gibson, 1997). Daloz Parks (1993), considers mentoring an essential feature for "fostering moral courage". Young adults, often unsure of their own "meaning system", are vulnerable to influences of authority. She writes, "A mentor's function is to recognise and affirm the emerging competence of the young adult, while beckoning forth the promise of the young adult life and making accessible a viable and desirable pathway into the future" (p.50). Mentors are teachers of ethical values and decision making, valuable skills for both the organisation and the student.

### **Types of mentoring relationships**

In the workplace and in cooperative education there are many and varied mentoring models. Levinson (Darrow, 1978), identified the mentoring relationship where the mentor is both a "teacher" and a "sponsor", a "host" and "guide" (p.98). The mentor welcomes the "initiate" into a new work and social world. In the process, he identified the role of the mentor as "acquainting him with its values, customs, resources, and cast of characters" (p.98). As Daloz (1999), explained, the role of the mentor is to "empower their students by helping to draw out and give form to what their students already know" (p. 206).

Crosby (1999) differentiated between a role model, a sponsor and a mentor. The "role model" is not a formal relationship, and many role models may not know they are acting as a mentor. The "sponsor" provides degrees of guidance, but this role tends to be informal and has no emotional investment. He identified the "mentor" as having both "emotional investment" and a "mutually trusting relationship" with the student. The structure of the relationship is formal and guided, and has at the heart of it the interests of the student.

### **Mentoring Processes**

Mentoring processes in the workplace include structured, unstructured, formalised and informal processes. Murray and Owen (1991), explored the

benefits of formal mentoring relationships in the workplace. These formal structures, they found, sought to develop skills and leadership abilities for students. "Facilitated mentoring" which is a formalised and structured process is used by organisations who want to foster "growth and development to happen and wants to know it has".

As noted by Van Gyn and Ricks (1997), in many workplace and cooperative education settings, mentoring relationships are formalised by the assignment of students and mentors, giving the relationship formality and structure. However, the relationship is at heart "an intentional, mutually demanding and meaningful relationship between two people" (Daloz Parks, 2001). It is interesting to note that the relationship does not appear to need to be voluntary for it to be meaningful for all three parties, the organisation, the mentor and student. There are numerous examples of successful mentoring by a person assigned the task rather than having volunteered. This appears to be a common experience for many cooperative education students.

### **Developing the adult learner**

Galbraith (1991), acknowledges adults and young adults new to work are highly pragmatic learners. "They have a strong need to apply what they have learned and to be competent in that application." Mentors and the host organisation provide that opportunity.

Stanley and Clinton (1992), refer to the work of Knowles (1980), who summarised the four principles of adult learners. He found that;

1. most adult learners have a deep need for self-directed learning,
2. adults appreciate learning takes place through experience,
3. adults need to accomplish tasks and solve problems in real life situations,
4. adults see the learning process as one in which they can raise their competence in order to reach their full potential.

They have a real "desire" to apply tomorrow what they learnt today. Cooperative education students are anxious to demonstrate and test their new knowledge in the adult environment. Many are hampered by insecurity and fear of failure. The mentor plays an important role in building confidence and facing fear.

Coffield (Eraut, 1998), concluded that learning at work takes place where there are distinct activities undertaken by the learner. Effective mentoring enhances all of these activities. They include a phase of "induction and integration", where the student is socialised into the workplace. This process may be formal or informal, but establishes important boundaries for the student. The second phase is "exposure and osmosis", where learning takes place by peripheral participation and the supervisor is largely passive. The third phase is one of "self-directed learning", where the learner takes an active role, experiments and takes risks. While the student is experimenting and taking responsibility for their own learning, there is room for a positively

supportive mentor. The final stage, and the one that is of most interest, is the stage of active performance management. In a successful model, this process will facilitate and encourage learning. At worst, it will fail to recognise learning and discourage students.

### **Finding Transformational Mentoring**

Van Gyn and Ricks (1997), adapted a model from Miller and Seller (1985), to establish a conceptual framework for the classification of mentoring relationships and identify transformational learning. Generally, there are three categories. At each stage, students are engaged in significant learning experiences. The first developmental stage of a mentoring relationship is "transmission", a process of modelling and concrete explanation imparting learning skills, knowledge and values to the student. Characteristics of this stage include hierarchical and respectful formal relationships. Some mentoring relationships will remain as transmission relationships but others will develop further to the second stage, "transaction".

The features of the transactional stage are addressing of dilemmas, dialogue between mentor and student, and reconstruction of knowledge and values. In this relationship, students learn a process of independent problem solving within their workplace. Many of these skills are transferable to other aspects of their life including social interactions. The significant quality of this relationship is equal participation between the mentor and student.

The third and most developed stage of mentoring is "transformation", where the student, with assistance from the mentor, creates a vision for their future, internalise, their learning and participate, in collaborative interaction in the workplace community. A strong feature of this developmental stage is the student's ability to engage in personal and social change. It is this aspect of the mentoring relationship, the transformational process, which deserves further study in cooperative education.

Summerfield (2002), observes two features of mentoring. The first is "acquisitorial", where the student acquires new or enhanced areas of knowledge, skill or behaviours, which he/she can use in a practical way. Secondly, there is "transformational" mentoring. This occurs when the student is working at a level or on a task that is challenging to them. In this process, the student may be "stretched", feeling vulnerable and insecure and needing emotional support and encouragement. A feature of transformational mentoring is movement by the student from previously held attitudes, beliefs and skills to new ones.

Mentoring relationships can be "synergistic" (Lick, 1999), a caring support system in which participants "genuinely and openly cooperate with each other to provide creative sharing, assistance and encouragement to build towards (our) common goals. (p.811). Transformational mentoring is more likely to occur in synergistic organisations, where openness, sharing, encouragement and trust are the norm. The mentors are most useful when they create an environment to experience Csikszentmihalyi's "flow".

## **Role of the mentor in transformational mentoring**

Stanley and Clinton (1992), identified some essential characteristics of successful mentors. They "take a passionate interest in seeing young people grow", are a "good intuitive judge of potential", and "knew the importance to young people of crucial formative experiences" (p. 116). Van Gyn and Ricks (1997) identified the characteristics of an effective or ideal mentor as "wise and experienced with regard to the needs of the protégé, accepting of alternate views, flexible in their behaviour, patient and unbiased" (p.88). Stanley and Clinton identify the mentor as an "influence networker", bridging the student into the organisation, and a "resource linker", matching the needs of the student with the workplace organisation.

The research of Van Gyn and Ricks, (1997) found three characteristics of a successful mentoring relationship. The mentor promotes the student as a whole person, responding to their intellectual, physical, social, emotional and moral development. Secondly, the student is the centre of the mentoring relationship. The mentor facilitates in a manner that allows the student to explore choices and make decisions. Thirdly, the mentor acknowledges the "uniqueness" of the student (p. 93). There is no one "catch all" formula to apply to the mentoring relationship. This research demonstrates all students need to be developed as people having unique needs and backgrounds.

Gehrkes (1998), identifies the greatest gift for the mentor to offer a student is "a new and whole way of seeing things. This gift of wisdom ... comes from having lived and thought deeply and it permeates all the mentor does with the protégé. It is, a way of thinking and living what is given ... through the gift of self as philosopher, the receiver, the protégé is awakened" (p. 192). It is through the mentor's gifts and skills, that the transformational learning opportunity is opened to the student.

## **Finding Flow**

Although it is clear that training new graduates and cooperative education students is a worthwhile activity for the organization, the focus of the organization remains on training employees in skills and knowledge to fulfil the tasks of the organisation. "Self-betterment" in a spiritual or philosophical sense is not the primary purpose of mentoring in organisations. However, there is evidence to suggest in the research of Csikszentmihalyi that well trained people have a better understanding of their own role and capabilities, and experience more satisfaction with self.

For students encountering work culture and challenge for the first time, a mentoring environment can be crucial in finding work "flow". As Csikszentmihalyi (1996), explains, flow tends to happen when the student is fully engaged in overcoming a challenge that is "just about manageable" (p. 30). When students reach a state of flow, they are completely focused, with little room for distractions and irrelevancies. Csikszentmihalyi (1996) found, "When goals are clear, feedback relevant, and challenges and skills are in balance, attention becomes ordered and fully invested" (p. 31).

Csikszentmihalyi, identified nine stages of "flow".

1. *Clear goals are set every step of the way.*  
The goals are a "vision through a dark glass" (p. 115). Goals provide vision of what can be achieved by the student in their placement. However, for students they will involve elements of unexplored territory. This "vision" can be both immediate and long term, but is an essential to the mentoring relationship.
2. *There is immediate feedback on one's actions.*  
The interesting aspect of feedback is that it is double sided. Although cooperative education students seek external feedback from their supervisors and colleagues, an essential aspect of their learning is for the student to feedback to themselves on their own performance. Students need to have self-critical skills to assess their own performance. Mentors can be valuable in helping students identify their own performance measures. This stage of "flow" echoes the "support" aspect of mentoring.
3. *There is a balance of challenges and skills.*  
Challenges stretch students, but not to breaking point. Wise mentors instinctively know the student's capabilities even if the student does not. Challenge is an essential aspect of a fruitful mentoring relationship.
4. *Action and awareness are merged.*  
Students are unaware of distractions, as their thoughts and actions are in union. Mentors assist students to find this level of focus by being actively involved in activities 1 –3.
5. *Distractions are excluded from consciousness.*  
The problem with distractions is that they stop "flow". Many creative people rely on a "buffer" to counter distractions, and the mentor may be useful in reducing distractions so that the student has a more productive environment.
6. *There is no worry about failure.*  
Students are so engaged in their activity and having success within it that fear of failure disappears. Mentors who provide support for "soft landings" for mistakes, and view them as learning experiences, reduce fear of failure. This demonstrates the provision of real "support".
7. *Self-consciousness disappears.*  
Creative students are completely absorbed by their activity, forgetting time, self and surroundings. They eagerly seek the next absorbing experience. Mentors encourage students to work as independent and self-accountable adults.

8. *The sense of time becomes distorted.*  
Creative students spend large amounts of time on their activities, not by design, but because they are completely involved with them and lose track of hours and minutes. Mentors allow the “space” for students to fully engage in their activities.
  
9. *The activity becomes autotelic.*  
The "activity" becomes an end in itself. For cooperative education students, it means they are driven by the need to solve a problem or create something new, rather than merely pass a course. Mentors empower students to become autotelic.

### **Summary**

There are many different types of valuable and supportive mentoring relationships. They occur in the workplace, cooperative education, for career development and in social situations. The relationships may be formal, structured and hierarchical or informal but at heart they are all mutually beneficial and student centred relationships. Mentors undertake their role for many different reasons, and they are not always voluntary responsibilities. However, whether trained or untrained, people in all walks of life can rise to the occasion to share their skills, and experiences with young people.

In cooperative education, mentors are a valuable resource, allowing the aims of significant learning and optimum student performance to be achieved by students. In this process, with guidance, support and appropriate challenges students experience flow and transformational learning. The mentor provides an environment for student learning, fostering learning and developing a unique person.

A following stage of the research will be the exploration of the perceptions of students, mentors and academics to find out how mentors create the environment for their students to experience "flow". The stories of mentors and students will be varied in nature and experience, but there will be some common characteristics that, once identified, will be invaluable to future mentors and students. The next stage of this research is to identify those characteristics and apply them to training mentors to achieve even better success in cooperative education placements.

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# **Learning expectations of different ethnic groups: An exploration**

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# **Learning expectations of different ethnic groups:**

## **An exploration**

### **ABSTRACT**

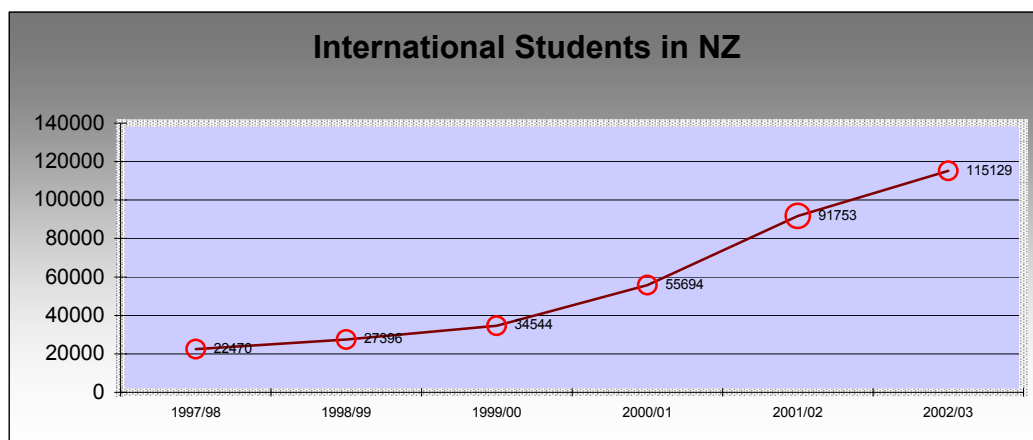
Much research has been carried out on issues of international students studying in New Zealand, and there has been a particular focus on cultural differences that are believed to lead to international students' learning difficulties. The results of this present research, based on quantitative research conducted in two New Zealand tertiary institutions, challenges the existing popular concept that the learning expectations of international students are fundamentally different from those of local students. The findings suggest that, apart from international students' language difficulties and lack of familiarity with Western academic conventions, there are more commonalities than differences between local and international students in terms of learning expectations. The study highlights the significance of commonalities, such as lecturers' teaching and academic competence, course structure, quality of delivery, fairness of assessment, and the institution's pastoral care and supportive learning environment. It is pointed out that over-emphasis on cultural differences can lead to the marginalisation of international students and to disengagement on the part of local students. It concludes that there are more commonalities than differences in global tertiary education, and that an institution's emphasis on overall quality teaching and pastoral care will benefit both local and international students.

## 1.0 INTRODUCTION

Export education has become one of the key industries in New Zealand and as such it has become the 5th largest service export earner. According to the New Zealand Immigration Service (NZIS) statistics, the number of international students increased by 39% in 2002 and 20% in 2003 (55,694 in 2001, 91,753 in 2002, and 115,129 in 2003) (see Figure 1 below). Over 80% of these international students came from Asia, especially China, South Korea, Japan and Thailand. For the purpose of this paper, an *international student* refers to a person who is enrolled as a foreign student by a New Zealand educational provider; *local students* refer to all other enrolled students who are either New Zealand citizens or permanent residents (inclusive of all ethnic backgrounds).

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Figure 1



Source: New Zealand Immigration Service

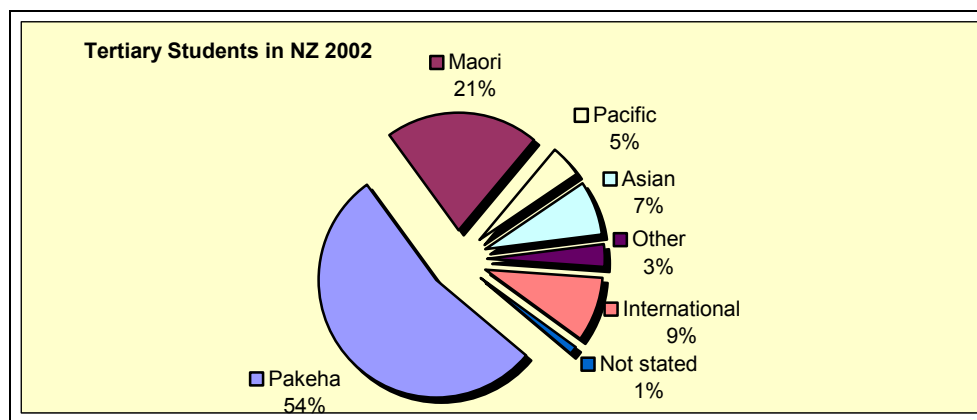
The export education industry in New Zealand has become so important and so lucrative that many schools and tertiary institutions have come to rely on the income from international student programmes (Pickering, 2001). In spite of the current downturn of the number of Asian students (in language schools in particular), there is still a huge global demand for tertiary education (Böhm, 2003) so it is important that New Zealand is seen as a desirable destination for international students.

The New Zealand tertiary landscape is undergoing considerable change, as the number of international students in tertiary public and private institutions is now 9% of the total student population. Tertiary institutions in New Zealand are faced with numerous challenges as a result of the significant increase in the number of international students and consequently much research has been done exploring these issues. Mismatched or unmatched learning expectations and difficulties in adapting to the culture of learning and teaching have been of particular interest to New Zealand researchers faced with the problem of integrating Asian and Western concepts of education. Local students, of course, are also faced with many similar issues so it is important to avoid polarization in relation to students' degree of familiarity with the cultural contexts of New Zealand tertiary education. It would be unwise to assume that all international students have similar problems as big differences exist among them, particularly among the Asian students. It would be equally unwise to generalise that New Zealand local students are a homogeneous body, that their learning expectations are different from those of international students, and that New Zealand educational institutions always meet these expectations.

Statistics shows that New Zealand's local tertiary students' ethnic groupings are as diverse as for international students. Local students make up 91% of all student population in New

Zealand: Pakeha 54%, Maori 21%, Asian 7%, Pacific 5%, other 3%, 1% unstated (see Figure 2). While acknowledging that there are differences between international and local students in terms of learning expectations, it is important that we recognise commonalities in relation to tertiary learning and teaching. However diverse these students' learning expectations and learning styles might be, both international and local students have to satisfy the course requirements of the syllabus and meet the course objectives. In this sense, both international and local students share common expectations and both are subject to the same educational standards and requirements. It is important to explore these shared expectations to avoid stereotyping and marginalizing a particular group of students in an attempt to enhance cultural understandings.

Figure 2



Source: Full-Year Tertiary Statistics 2002, New Zealand Ministry of Education

The aims of this research are:

- 1) To determine student learning expectations.
- 2) To identify if there are any commonalities and differences in the learning expectations held by different ethnic groups.

- 3) To identify any problems that might result from differing expectations and to suggest further action and/or research.

## **2.0 REVIEW OF THE LITERATURE**

A large body of the literature is concerned with international students' approaches to learning and the learning expectations that might affect the nature of classroom interaction. Early literature concludes that Asian students and Western students in English speaking countries often seem to be polarized. Asian students, students from a Confucian-heritage culture in particular, are often described as rote learners who are challenged in the Western-oriented learning environment in which problem-based learning, participation, and assertiveness are emphasised (Beaver & Bhat, 2002). Ballard and Clanchy (1997) described Asian students as unsuccessful learners who adopt a reproductive approach to learning that emphasises repetition, reproduction, and memorisation while Western students adopt a deep approach to learning that stresses independence, critical thinking, analytical abilities, and problem-solving skills. This polarisation, based on the Western value system, in Jones' (1999) view, is damaging to students' learning. This dyadic perception, Howson (2002) maintains, is derived from lecturers' lack of cultural understanding, acceptance of stereotypes and feelings of cultural superiority. Polarisation fails to acknowledge the fact that, while there exist cultural differences that shape students' learning expectations and approaches to learning, students within a given culture also differ significantly from other people of the same culture (Dunn & Beasley, 1994).

Recent literature challenges such polarised stereotypes. Smith and Smith (1999) argue that polarisation can only lead to illogical conclusions and inappropriate responses on the part of teachers. They suggest that Western teachers should avoid becoming "new colonists" who

directly transplant Western teaching approaches to the classroom where there are students from diverse ethnic backgrounds (p. 77).

Much of the recent research comparing the learning expectations of international students, especially those of Asian students with those of local students, has found that there are more commonalities than differences in both local and international students' learning expectations. Cortazzi and Jin (2001) found that there are many similarities in the ratings of aspects of a "good teacher" by students from China, Britain, Japan, Turkey, and Malaysia. These students believe that a "good teacher" should be patient, helpful, friendly, empathetic, responsible, and warm-hearted, have a thorough knowledge of the subject, have the ability to explain clearly and organise a variety of classroom activities, and use an extensive range of teaching methods.

The results from Chan's research (1999), which compared the learning behaviours of Australian and Chinese university students in various situations, show that although students from different ethnic backgrounds differ in their ways of learning, the differences are "more subtle than those represented by the polar dichotomies that many educators express" (p. 9). Chan points out that students from different cultural contexts may hold similar learning expectations, and that teachers play a critical role in shaping students' expectations and in determining students' approaches to learning. The findings in Chan's (1997) earlier research, which involved 150 university students in Hong Kong and 161 Australian students, suggest that the Australian and the Hong Kong students were more similar to than different from each other in their learning expectations, their beliefs about learning and their effort, the role of the teacher, attitudes to knowledge, modes of classroom interaction, and responsibility and self control over learning. Both groups held strongly that "learning is for becoming and being independent, analytical and critical thinkers."

Fisher, Lee and Birt's study (2002) indicates that there are no significant differences between Australian and Asian International Business students in relation to their expectations of group activities, group assignments, teaching practice, class informality, teacher availability, and mandatory class attendance. Berno and Ward's (2003) recent large-scale research in New Zealand suggests that all students experience a process of psychological, social and academic adaptation at tertiary institutions and that there are no significant differences in the process of adjustment of Asian and New Zealand students.

Sherry *et al* (2003) claim that while emphasising the accountability of teaching international students and trying to meet their needs and expectations, lecturers should not lose sight of the needs and expectations of the local students. They point out that both local and international students share common learning expectations, such as

- Accurate assessment of student work by the teacher
- Good understanding of students' learning needs and difficulties
- Lecturer's extensive knowledge of the field of learning
- Responsive and empathetic staff
- Responsiveness to students' learning needs and expectations
- Teaching of academic skills
- A range of support services
- A good and effective communication system.

Zepke, Leach and Prebble (2003) stated 13 propositions synthesised from 140 research items with regard to student learning expectations, which are applicable to both local and international students: welcoming and efficient learning environment; opportunities for students to establish social networks; academic counselling; teachers who are easily approachable for academic discussions; quality teaching and manageable workload;

orientation and induction programmes; good learning outcomes; an extensive range of support services and facilities; supplemental instruction; peer tutoring and mentoring service; absence of discrimination on campus; systems to cater for diversity of learning preferences; systems to identify and address diverse students' needs.

Similarly, Jones (1999, p. 9) points out that tertiary lecturers should focus on "good teaching for all students" rather than on cultural differences. All students, she suggested, expect their teachers and host institutions to spell out and make transparent their expectations so that all students can make an effort to match these expectations.

Biggs (1997) divided teaching in a cross-cultural context into three levels. Level 1 focuses more on students' differences than their similarities. This "inappropriate teaching" (p. 4) implements the one "correct" way of teaching by forcing all students to conform to Western expectations. Level 2 adopts a relativistic teaching approach which, based on myths, misperceptions and stereotypes, emphasises culture-specific issues. Biggs equates the relativist approach to the "deficit approach" which gives international students separate out-of-class remedial help to allow them to rejoin the mainstream. Level 3 is recommended as "good teaching" that focuses more on similarities than differences by engaging cognitive processes. Biggs reasons that

Good teaching is good teaching; all students benefit from it. Poor teaching means, conversely, that local and international students face similar problems. (p. 16)

It seems to Biggs that good teaching cares for the needs of special groups, such as international students, by involving them in the whole teaching system. Biggs believes that teaching from general principles can transcend particular differences.

Both local and international students expect quality education. Minority ethnic groups of students wish to avoid being negatively stereotyped and thus marginalised (Gorinski & Abernethy, 2003). They expect tertiary institutions to value diversity and inclusivity (Oslen, 2001). Equity and power-sharing are “fundamental to learning for all students” (Bishop & Glynn, 1999, p. 132).

This present research project aimed to test the conclusions of recent researchers and to explore the implications of identifying commonality and differences between different ethnic groups in two New Zealand tertiary institutions.

### **3.0 METHODOLOGY**

The questionnaire for the present research was constructed by the research group and sent to several staff at both The Open Polytechnic of New Zealand and Wellington Institute of Technology (WelTec) for comment. It was revised in the light of those comments and tested on a group of students from both institutes. The questionnaire was further revised in light of the student feedback.

It was then distributed to students at WelTec on the Bachelor of Hospitality Management and the NZ Diploma of Business programmes, and to the Open Polytechnic students on the NZ Diploma of Business, Bachelor of Business and Bachelor of Applied Science programmes.

Approximately 200 questionnaires were issued to the classes at WelTec at the beginning of a teaching session, the lecturers’ consent having been gained for this previously. Sixty (60) of these were returned.

Approximately 310 questionnaires were issued by the Open Polytechnic. Students were randomly selected from student groups with sufficient numbers to ensure that privacy requirements were not compromised. Only those resident in New Zealand were selected. Thirty-four (34) of these were returned.

The responses were collected in an assignment box at WelTec and were posted back to the Open Polytechnic. When they (94) were received they were numbered and entered onto an excel spreadsheet.

The spreadsheet was then analysed using SPSS (Statistical Package for Social Sciences, Version 11.5 for Windows), a statistical software package developed for use in the social sciences. Means were calculated for all questions to find out where the students agreed or disagreed. The scale used for the questionnaire was 1 (strongly agree) to 5 (strongly disagree). Any response between 1 and 2.5 was taken as agreement, 2.5-3.5 as neutrality, 3.5-5 as disagreement.

The data was also tested using the ANOVA and Tukey tests to see if there were any significant differences between the groups based on ethnicity, nationality, age or gender. Some significant differences were discovered.

The responses to the open-ended questions were also analysed. They were categorised under the headings: teaching, organisation, support, resources, and other factors. These were analysed to find common learning expectations, and then compared with the quantitative results.

There were eighty questions in the questionnaire covering the areas discussed in the literature review. The averages for each question are shown in the appendix.

Some of the respondents did not answer all the questions. The following table details the background questions and the number of respondents in each of the categories is given in the brackets. There were a total of 34 Open Polytechnic responses and 60 WelTec responses (see the following table).

<b>Age</b>	<b>Gender</b>	<b>Ethnicity</b>	<b>Nationality</b>	<b>Residence Status</b>
Under 18 (2)	Male (32)	NZ European/Pakeha (42)	Kiwi (59)	NZ (60)
18-20 (18)	Female (57)	Pacific Islander (3)	Fijian (2)	Permanent Resident (13)
21-24 (17)		Indian (11)	Indian (9)	International (18)
25-30 (15)		NZ Maori (13)	Samoan (3)	
31-39 (24)		Chinese (14)	Chinese (10)	
40 and over (18)		Other (9)	Korean (1)	
			Other (7)	

Note that these columns do not add to the total returns of 94 questionnaires, as respondents did not answer all the background questions. Please note also that the terms Kiwi and Pakeha are used in separate contexts.

#### **4.0 FINDINGS**

The findings from this study support the views held by Cortazzi and Jin (2001), Chan (1999), Fisher, Lee and Birt (2002), and Sherry *et al* (2003) that students from different ethnic backgrounds hold similar learning expectations. Our research suggests that there is a large area of commonality in the learning expectations of different ethnic groups in the New Zealand tertiary educational environment. The concept of the “good” teacher and effective teaching practices is similar across all ethnic groups surveyed. The current study also indicates that there are differences in the way these groups perceive extrinsic factors such as the use of textbooks, and that there are differences in attitudes towards multicultural student groups.

## **4.1 Commonalities**

Commonalities were in student perceptions of good teaching practices and helpful assessment. Learning support expectations were also similar in all ethnic groups surveyed.

### *4.1.1 Student perceptions of a good teacher*

There was overall agreement among students that good teachers anticipated the parts of the course that students might find difficult and provided timely help for them. They understood the learning needs of their students, had frequent contact with students, and involved students in the learning process. Good teachers, as identified by this research, used personal experiences to illustrate points made in class and ensured that students were given many examples to help their learning. Students surveyed believed that good teachers covered all the material that was to be assessed, clearly defined all technical language, gave accurate answers to student questions, made sure that students had good notes, and gave detailed feedback on assessments. There was also general agreement, though less strong, that good teachers used a mixture of teaching methods, marked assessments in a reasonable time, and knew how to teach students from other cultures. Twenty-six responses from the qualitative data commented on the importance of friendly accessible teachers and four commented on the need for teachers to keep control of disruptive students in the classroom. Five students mentioned that good teachers produced clear course outlines and kept to them.

The importance of lecturers being friendly and accessible was emphasised many times by students from all cultures and both institutions. It was clear that they responded positively to friendly staff and appreciated easy access to lecturers. One Chinese student commented that, “Not all lecturers are kind,” but many students noted the relaxed friendly relationship with lecturers that they felt helped their learning. “Nice, friendly, warm and helpful staff,” wrote one student. Some commented that it is sometimes necessary for the lecturer to be more

proactive in communicating with students; it is not enough just to respond to students' initiatives in asking for help.

#### *4.1.2 Good teaching practice*

There was overall agreement among students that good teachers structure their teaching sessions well. Of the students surveyed, eighty-six percent (86%) expected a teacher to make the lesson structure clear by stating the objectives at the beginning of the session and ninety-three percent (93%) wanted important points to be repeated during the session. It was considered important that teachers have a revision session at the beginning and end of each lesson, and that breaks be built into the structure of a lesson.

Helpful teaching techniques were identified as the use of many examples by the lecturer (personal examples were considered particularly helpful), the use of case studies, and the use of practice exams and marking schedules. Students felt that it was important to be given references for further study. It was of interest to note that seventy-seven percent (77%) of the students surveyed believed that participation in class helped their learning. Also acknowledged as helpful were the use of visual techniques by the lecturer, the opportunity to attend workshops and the opportunity to have contact with other students. Students believed that they learned better when they were encouraged to express their own opinions by participating in class, when they were encouraged to ask questions (and when other students asked questions) and when they made their own notes. They found model answers and seeing the best work of other students helpful and were positive about the benefits of understanding ideas rather than simply learning notes. Twelve students noted in the open-ended responses that badly organised teachers was the most significant factor making learning difficult for them.

#### *4.1.3 Assessment*

There was strong overall agreement that students expect detailed explanations of what teachers expect in assessments, that a detailed marking scheme should always be provided, and that detailed feedback should be given, preferably within two weeks. There was less strong agreement that written rather than oral assessment is preferable. Multiple-choice assessment was popular across all ethnic groups.

Students commented in the open-ended section of the questionnaire on the frequent lack of clear expectations in assessment instructions. “Lecturers do not always adequately describe what requirements they have for assessments e.g. format, level of detail,” was a typical comment. Inadequate instructions are even more of a problem for overseas students. One Fijian Indian student complained that current assessment practices were unfair: “ I don’t have an idea what the lecturer has in mind and what he is asking at times. But after finishing the final exam then we realise and it’s too late. It’s like we are given one shot in life and that is it.” Another Indian student recommended that, “Teachers should listen to the views of the students, especially overseas students. Tell them the way of teaching and learning in New Zealand, how to make the assignments etc.”

There were some comments disapproving of the current emphasis on examinations and recommending more assignment-based assessment. A few students commented negatively on the excessive number of assessments.

#### *4.1.4 Learning Support*

Support that students looked for from their lecturers and their institutions included help for students with differing learning needs. Students also appreciated being able to go to one particular lecturer for advice and expected extra tutorial time if they were having difficulty with their work. Eleven students from all ethnic groups commented on a Learning Centre being a positive factor in their academic success. It was interesting to note that one New Zealand/European student identified help with English being an important factor for Pakeha students as well as second-language students.

Resources that students expected to have access to were a good library and on-line resources. It was also found that many students (mean 2.1) considered the use of a good set text to be essential.

It is interesting to note that, while students from all cultures surveyed expect a teacher to provide them with written notes (mean 1.88) they also realise the value of making their own notes (mean 2.2). It is not perceived as an either/or option: a good teacher gives notes and also encourages students to write their own.

## **4.2 Differences**

The results of this research did, however, show some interesting differences between the student groups surveyed. These differences appear in the areas of allocating marks for class participation, and student comfort or discomfort with disagreement in the classroom. There were also significant differences in opinions on the value of workshops and seminars. The research also identifies more disturbing differences in student views of the value of cross-cultural student work groups and of the need for teachers to know how to teach students from other cultures.

#### *4.2.1 Classroom participation*

Although there was overall agreement in the value of class participation (mean 2.8) there was a significant difference between the responses of international (mean 2.3) and Kiwi students (mean 3.5) when they were asked to agree or disagree on a mark being given for it. This indicated that Kiwi students are less in favour of a class participation mark.

#### *4.2.2 Teacher - student interaction*

Students were asked if they felt comfortable disagreeing with a teacher. There were significant differences here between New Zealand Pakeha students (mean 2.55) and Chinese students (mean 3.93). There were also differences between the Chinese students (mean 3.93) and the NZ Maori students (mean 2.2). The NZ Maori group was the most comfortable disagreeing with a teacher and the Chinese group least comfortable.

#### *4.2.3 Workshops and seminars*

There was a difference here between permanent residents and international students, who felt that these enhanced their learning (1.46 and 1.61 means respectively), and Kiwi students (mean 2.4) who agreed, but less strongly.

#### *4.2.4 Textbooks*

Another difference was student rating on the importance of textbooks. Permanent residents (mean 2.2) and international students (mean 2.7) agreed that a teacher's major role was to transmit knowledge from textbooks, while the mean for Kiwi students was 3.4, indicating that they disagreed.

#### *4.2.5 Group work*

One question in the survey asked for agreement or disagreement on, “When I am doing group assignments I prefer to work in a cross-cultural group”. There were significant differences in the mean response from Kiwi students (mean 3.56) and from Indian students (mean 1.88) and Chinese students (mean 1.7). This indicated that Kiwi students preferred mono-cultural groups and Asian students preferred cross-cultural groups.

#### *4.2.6 Responsibility for teaching students from other cultures*

Permanent residents (mean 1.46) and international students (mean 1.5) agreed that teachers should know how to teach students from other cultures whereas Kiwi students (mean 2.4), while showing overall agreement, showed a significant difference in the degree of agreement. This indicated that Kiwi students considered a teacher’s main responsibility was to students from the host culture.

## **5.0 DISCUSSION**

This research shows that, for the students sampled, there is a high proportion of commonality in the learning expectations of different ethnic groups. While there were a number of differences between local and overseas students on comparatively minor issues, there was agreement among all groups in the crucial area of common expectations of good teaching. This is encouraging as it is easy to concentrate on the differences and to lose sight of what can be achieved by ensuring that all groups are given the quality teaching that is their entitlement.

There were some surprises in the results. It is encouraging to learn that the stereotype of Asian students who are uncomfortable with class participation, reluctant to offer personal

opinions, dependent on memorisation only as a learning technique, reluctant to make their own notes and reluctant to do any reading beyond the textbook is just that: a stereotype.

Asian students undoubtedly enter the New Zealand education system with different expectations of the learning environment (Li, Baker & Marshall, 2002) but this research suggests that these differences are not as great as might be expected and that, given the right teaching environment and adequate support, Asian students adapt well to Western practices. Core perceptions of good teaching practice appear to be the same across all cultures.

Some of the differences are minor. Students who received their school education overseas are often not used to participating in class; they will therefore naturally expect a mark for demonstrating to the teacher that they know an answer. Kiwi students just accept it as a learning technique not necessarily leading to marks.

The difference in the results showing that Chinese students were less comfortable disagreeing with a teacher than Kiwi students was predictable given the status of teachers in a hierarchical society and the cultural reluctance to cause another person to “lose face” (Cardon & Scott, 2003; Ingleton & Cadman, 2000). Teachers need to acknowledge this difference at the beginning of a programme, explain the Western approach carefully, point out the benefits of such an approach and, most important of all, model the skill of disagreeing with respect.

A significant difference was found in student assessment of the value of workshops/seminars. This is perhaps explained by the fact that international students, who in general agreed that they benefited from workshops and seminars, tend to use every opportunity to get help and advice while Kiwi students are sometimes too casual about additional learning opportunities. It is a challenge to New Zealand lecturers, of course, to ensure that all students see workshops and tutorials as a worthwhile use of their time.

There was another predictable difference in student views on the importance of a textbook. Students in general (mean 2.1) considered that a set text was essential. When the results were analysed in terms of residence, however, local and international students showed a clear understanding that a lecturer's major role was to transmit knowledge from the textbook, while results from Kiwi students showed that they saw a lecturer's main role as being wider than this. This again points to the necessity of making it clear to students at the beginning of the semester that New Zealand teaching and learning expectations go beyond the textbook.

These differences are not major and could easily be addressed by delivering a comprehensive orientation programme to international students prior to, or in the first few weeks of, a semester, and in ensuring that training in teaching international students is seen as an integral part of professional development programmes for teachers.

More disturbing differences relate to cross-cultural relations in a classroom. One of the research questions asked students if they preferred to work in a cross-cultural group or a mono-cultural group. There was a clear difference between the mean for Kiwi students (mean 3.56) showing that they preferred mono-cultural groups, and the mean for Indian students (mean 1.88) and Chinese students (mean 1.7), showing that their preference was for cross-cultural group work. This result is disturbing as the cross-cultural experience should be enriching for all participants but not all Kiwi students see it this way. Research carried out by Ward (2001) shows that many Asian students come to Western institutions hoping for more contact with Western students than in fact eventuates; cross-cultural group work is one way of achieving this. New Zealand students, many of whom will be going on to work in a global, multi-cultural work environment, should be using their tertiary study as a useful training ground for learning to work with colleagues from different cultures. Further research needs to be carried out on the reasons for Kiwi students' reluctance to work in multi-cultural

groups and what a classroom teacher can do to overcome this. Anecdotal evidence suggests that language is the main reason: English-speaking students resent the extra time spent explaining concepts and instructions to second-language group member and often end up feeling that they have done the major part of the work. If this is found to be the case, teachers should perhaps be concentrating on ways of ensuring that second language students have the necessary knowledge and language before the group is set up and that instructions to the group are worded in ways that are easy for second-language students to understand. It also seems to be important that international students are trained in group behaviour before they are put into totally unfamiliar learning situations where the natural response is to leave the decision-making to the more confident English-speaking students.

A related difference was that, although there was general agreement that teachers should know how to teach students from other cultures (mean 2.05), when the data is analysed by nationality Kiwi students (mean 2.4) differ significantly from permanent residents (mean 1.46) and international students (mean 1.5). This probably reflects New Zealand's historical distance from other cultures and will hopefully change over time. It would be worrying if this were an indication of racism but it is probably just a result of the mild irritation that students sometimes feel when a lecturer spends a lot of time repeating explanations for the benefit of –second-language students and a reflection of the “When in Rome...” attitude that is accepted by some. One student wrote, “As a New Zealander I feel that too much effort is put into other cultures compared to my own.” The student added, “I know this sounds racist but it isn't meant to.” On the other hand, typical comments from second-language students were, “The lecturer speaks and goes through work very quickly; [it is] difficult to follow...especially with their different accent” and, “Teachers should listen to the views of students, especially overseas students. Tell them the way of teaching and learning in New

Zealand, how to do assignments etc.” Some overseas students felt strongly that they should be given extra consideration by New Zealand lecturers. An Indian student wrote,

As we (International students) are paying heavy fees, we should be taken into consideration not only because we pay a heavy fee, but as we belong to a different culture and society, so we should be given time and extra care.

It is important that these feelings of mutual disadvantage are dealt with before there is real antagonism between different cultures in a classroom.

One of the limitations to this study was that the response rate to the questionnaire was low at 11% for the Open Polytechnic and 30% for WelTec. This is difficult to explain other than students are involved in numerous activities and it is easy for requests not directly related to their study to be overlooked. Other limiting factors were that two institutions only were surveyed, some respondents did not answer all the questions (for example, of the 94 returned questionnaires, 5 did not give an answer to the gender question), and, in hindsight, the number of questions asked was too high at 80. Even though the questions were tested by students from a variety of ethnic backgrounds there is also always the possibility that students whose first language is not English might not understand the questions.

This research project was a pilot study that identified several areas that would benefit from further research. The questionnaire used for this paper did not investigate student attitudes to group work. Given the current educational emphasis on group work and co-operative learning (Johnson & Johnson, 2000), it would be useful to identify student attitudes to working in groups and to explore any ethnic differences in these attitudes. The research did identify significant differences in student attitudes to cross-cultural group work but further research is needed to explore the reasons for these differences and to suggest ways in which the cross-cultural group experience could be made beneficial for all parties.

## 6.0 CONCLUSION

This study has found that tertiary students, whether they are Pakehas, Maoris, Indians, or Chinese hold converging views about “good teachers”, good teaching practice, quality teaching, and effective pastoral care. They believe that a good teacher should be approachable, friendly, supportive, empathetic, fair, and competent, have an extensive range of knowledge in the field, and adopt flexible and effective teaching approaches, understand and respond to students’ learning needs. They also expect the host institution to provide a welcoming and effective communication system, as well as pastoral care.

The study has also identified some minor differences in students’ learning perceptions about classroom participation, group work, workshops, seminars, and teacher-student interaction, differences which could be addressed by effective student orientation and teacher staff development programmes. A careful examination of the results reveals that Kiwi students are less likely to involve themselves in group cross-cultural interaction than international students and that Kiwi students place less importance on a teacher’s ability to teach students from other cultures.

The assumption that international students are fundamentally different from local students in their learning expectations is not supported by the results. When teachers have students from diverse cultures, therefore, it is more important that they focus on quality teaching than on cultural differences. International students could feel marginalised if they were singled out and treated differently. This study suggests that teaching that focuses on commonalities will be more successful in New Zealand educational institutions than teaching that focuses on cultural differences.

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## APPENDIX

Average marks for student responses to questionnaire items.

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not Applicable
1	2	3	4	5	NA

Q	Agree	Average result
33	I expect detailed feedback on my assessments	1.53
4	I understand better if the lecturer uses many examples	1.54
31	There should always be a detailed marking schedule for assessments	1.54
80	Students should have easy access to printed learning materials	1.57
30	I expect detailed explanations of what lecturers want in the assessments	1.58
78	Students should have easy access to library learning materials	1.59
46	I expect that what I learn will be useful in the workplace	1.6
22	I expect my text book to give me the correct answer	1.61
63	Lecturers should understand the learning needs of their students	1.66
3	All technical language should be clearly defined by the lecturer	1.68
73	It is important to provide students with easy access to online learning materials	1.68
79	Lecturers should provide adequate help for students' different learning needs	1.68
5	The learning objectives should be stated clearly at the beginning of each session	1.69
70	Good lecturers involve the students in the learning process	1.69
74	It is important to provide students with references for further study	1.69
52	Practice exams with marking schedules would improve my learning	1.7
77	Lecturers should provide timely help for difficult parts of the course	1.7
9	Repetition of the important points is helpful	1.73
21	I expect my lecturer to give me the correct answer	1.76
68	Providing best work done by other students as models/examples can be very helpful	1.76
29	A lecturer should teach all the material that will be assessed	1.77
71	Good lecturers use their personal experience in their teaching	1.79
58	Frequent contact with my lecturer will help my learning	1.85
59	Lecturers should be able to anticipate parts of the course that students might find difficult.	1.85
34	It helps my learning if I apply the concepts to a practical case study	1.88
72	It is important to provide students with written notes	1.88
6	The structure of the learning session should be clearly stated before it starts	1.9
2	There should be a revision session at the beginning and end of each new learning session	2
48	I need to have feedback on my assessment within 2 weeks	2.03
67	Lecturers should know how to teach students from other cultures	2.05
53	Participating in workshops/seminars can enhance my learning	2.08
15	A set text is essential	2.1
36	It is easy for me to access the computer.	2.13
42	Understanding ideas is more important than learning facts	2.17
23	Class participation helps my learning	2.18
38	More than one model answer helps my understanding	2.18
14	I like to make my own notes	2.2
16	The use of pictures in the learning session helps me learn	2.2
40	I would like to have one lecturer appointed to give me advice.	2.23

62	I do not like lecturers who expect students to explore on their own without giving the necessary help	2.28
43	I like multiple choice questions for assessments	2.29
47	I expect to do additional reading to understand a subject fully	2.3
65	I learn best when the lecturer uses a mix of teaching methods	2.3
32	I would like to be able to submit a first draft of my assessments for comment	2.33
57	Frequent contact with other students will help my learning	2.37
10	Breaks within a session are helpful	2.38
11	Extra tutorial time would help me understand topics	2.4
51	I prefer a written assessment to an oral assessment	2.4
19	When other people ask questions in class I learn more	2.43
37	It helps my understanding if I am asked for my opinion on topics	2.47
41	Memorisation is important in learning	2.48
	<b>Neutral</b>	
66	What is being taught should reflect the level of the students' ability	2.5
39	Study groups are helpful	2.53
7	Idioms and slang make the lesson more difficult to understand	2.57
44	I prefer questions that allow me to discuss a topic in more depth	2.58
8	I would like to be able to tell my lecturer to slow down or speed up	2.59
69	Overlapping teaching content by different lecturers should be avoided	2.62
17	The use of colour in the learning session helps me learn	2.67
28	I prefer to work on my own	2.68
12	I would read case studies if they were given out in advance	2.7
26	I benefit from group work	2.7
18	I like to ask questions in the class	2.72
13	I prefer the lecturer to tell me when to make notes	2.76
50	I am comfortable disagreeing with my lecturer	2.8
1	I expect each exam question to have only one correct answer	2.9
76	Distance learning suits me	2.98
54	The current assessment system does not reflect the actual knowledge I have acquired from the course	2.99
75	Where I am doing a group assignment I prefer to work in a cross-cultural group	3.04
64	Changing lecturers every semester can benefit my learning	3.09
60	A lecturer's major role is to transmit knowledge from textbooks	3.1
25	Changes to the agreed session structure are okay during the session	3.12
24	There should be an assessment mark for class participation	3.15
55	The current assessment system covers a very narrow range of the course	3.2
35	I prefer my communications with the lecturer to be through the computer	3.22
61	Strict classroom discipline will benefit my learning	3.36
	<b>Disagree</b>	
45	I only want to know enough to pass the assessments	3.59
27	I do not learn much from case studies	3.63
56	The current assessment system allows students to pass without ever reading the textbook	3.73
49	I do not care how long it takes to get my assessment marked	4.04
20	People asking questions in the class is a distraction	4.05

Open- ended questions were:

- What three factors have helped you most in your learning with our polytechnic?
- What three factors have made learning difficult for you at this polytechnic?
- How can teaching and learning be improved at this polytechnic?
- Please write any extra comments relevant to this research.

**METAPHORS FOR MANAGEMENT:  
USE AND ABUSE IN BUSINESS EDUCATION**

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## **Abstract**

Like it or not, metaphors are an integral aspect of management communication and business education and training. Rhetorically, we use them with little or no thought. Cognitively, we have the option of sending strong or weak messages. One way or the other they direct and restrict our thinking for, as stated by Burrell (1996: 645), they (as well as paradigms, discourses and genealogies) are “incised lesions on the body of organizational life”. Their associated analysis is “the death or at least the mutilation of that which is analysed”.

What are they? What role do they play in business education? What role might they play? What are examples of abuse? What are examples of appropriate usage? Drawing from the extensive literature on the topic and its rich array of examples, such questions will be explored and commented upon in this paper. Additionally, stemming from the considerations, tips will be provided on appropriate training and education in the use of metaphor in the business context.

## **Introduction: Possibilities and Preferences as Wide, Broad and Deep as the Human Imagination**

Management is a military operation? It is a matter of symbiotic partnerships? Its organizational structures are pyramid shaped? Or they are better seen as global and cellular, changing and pulsating in dynamic fashion?

The use of metaphor in literature on management and organization is rife. This usage has been accompanied by numerous books and articles of analysis and comment (for example: Bolman and Deal 1984; Brink 1993; Burrell 1996; Deetz 1986; Deetz and Mumby 1985; Fiol 1994; Koch and Deetz 1981; Krefting and Frost 1985; Manning 1979; Morgan 1980, 1983, 1986, 1993; Pepper 1995; Pinder and Bourgeois 1982; Pondy 1983; Putnam et al. 1996; Stohl 1995; von Glyczy 2003). Clearly, the topic is taken seriously.

Morgan's book, *Images of Organization* (1986), stands out as a classic in the field. As indicated by Burrell (1996: 652), "its influence in teaching has been considerable, for the text and the notion of metaphors generally has become a key organizing principle for many courses". Morgan indicated in his book that key categorisations of metaphors for management include machines, organisms, cultures, psychic prisons, brains, political systems, and instruments of domination.

Often, in management education and practice, the metaphors have been macho. Bierck (2000) has identified three types of such metaphors: expeditionary, military (or martial), and sports. For example, in achieving a goal we might "knock the bugger off" (like Sir Edmund Hillary with Tensing Norgay in relation to Mount Everest), or "win a battle if not the war", or "hit a competitor for six".

Also from a macho or masculine perspective, metaphors can be instrumental and precious as indicated in the title of Murphy's book, *Studs, Tools, and the Family Jewels: Metaphors Men Live By* (2001).

Despite an apparent proliferation of macho conceptualisations, feminine metaphors for management and organization have held some sway. For example, pet projects are sometimes conceived of as “my baby” or “your baby” and Rosabeth Moss Kanter trips the light fantastic in various ways in her well-read and highly regarded book *When Giants Learn to Dance* (1989). Occasionally, too, people and firms are “seduced” into partnerships and there is a “nurturing” of relationships.

Some authors and managers plead for (or at least lean towards) metaphors that are biological rather than military (James, cited by Fung 1999), organic (or garden-based) rather than inorganic (Pang 2002), and natural rather than artificial (Ashton-Warner 1980). The possibilities and preferences are as wide, broad and deep as the human imagination.

What are metaphors (or what is metaphor, for they can be seen as scatterings or groupings of items or a single part of speech)? What role do they play in business education? What role might they play? What are examples of abuse? What are examples of appropriate usage? Drawing from the extensive literature on the topic and its rich array of examples, such questions will be explored and commented upon in this paper. Additionally, stemming from the considerations, tips will be provided on appropriate training and education in the use of metaphor in the business context.

## **What They Are**

Examples of definitions are: “A metaphor is a way of seeing a thing as if it were something else” (Lakoff and Johnson 1980); “A metaphor is the application of a descriptive form to an object or action to which it is not literally applicable” (Flood 1999: 125); and metaphors involve “the transfer of images or ideas from one domain of reality to another” (von Glyczy 2003: 88).

In each case there is an indication of a *target domain* (management of change, for example) and a *source domain* (Darwinian evolution, for example, as described in detail throughout his article by von Glyczy 2003).

Metaphors, in terms of type, can be seen as *rhetorical* or *cognitive* (von Glyczy 2003: 88). The former are conveyed (and received) with little thought and are typically well-used figures of speech like, indeed, “figures” of speech or, for example, taking a “broad brush” approach to an activity. The latter require deeper thought. For example, in *Gods of Management: The Changing Work of Organizations*, Charles Handy (1995) uses Zeus (the leader or king of the gods), Apollo (the god of order and reason), Athena (the warrior goddess) and Dionysus (the god of wine and song) to symbolise different ways of managing the cultures that exist in organizations. The cultures that attach to each god in turn are the “club” or entrepreneurial culture (typical of a small business), the “role” or bureaucratic culture (typical of a hierarchical pyramid-structured corporation), the “task” or project-based culture (typical of a matrix-structured problem-solving culture such as an opportunistic advertising agency or information technology consultancy), and the “existential” or professional organization (such as a legal firm or university). The relatively profound message stemming from the cognitive metaphors is that different gods and cultures are needed for different tasks.

Cognitive metaphors are “food for thought for” (a rhetorical metaphor), and the “real business of” (another rhetorical metaphor), management training and education.

## **Key Considerations**

The reason that the focus should be on cognitive rather than rhetorical metaphors is that they provide us with an eye to discovery and learning. In addition to Handy’s example above, let us explore the example of the strategic process in business being akin to the deliberations and activities that go into wine making. As explained by Eccles and Nohria (1992: 111):

Expert wine makers are the world’s most underrecognized strategists: they deal with contingencies from start to finish, they make an enormous number of different judgments – and yet, when all is said and done, they produce a wine with distinctive identity almost year after year. How do they do it? To begin with, good wine makers think in terms of situations rather than formulas.

There are unending, path-dependent decisions that wine makers must manage with good situational judgment as their main strategic weapon. In fact, Michel Lafarge, one of the most respected wine makers from France's Burgundy region, has been described as liking to change his entire strategy of fermentation in order to meet the specific conditions of each growing season: "You must ask yourself each year, 'What type of vinification will bring quality?' Each year we vinify differently and may change the length or vary the temperatures."

Eccles and Nohria's message is that approaches to wine making and strategic decision-making in business are much the same. In both cases there are many factors to be taken into account and the decisions depend on particular sets of circumstances. Trial and error is very much a part of both processes. They state (op. cit.): "Choices are constantly made, each one adding in some way to an identity that, like individual identity, is always a work-in-progress." Such is the substance of meaningful business education.

It is suggested by von Glyczy (2003: 90-91) that it is important to look for "fault lines" while mapping target and source elements. These indicate points of difference between the two sets of elements. For example, if we revisit Handy's metaphors above, we can agree that it is useful to compare Greek gods with leaders or managers but also that Greek gods are *not the same* as modern-day leaders or managers. Zeus, Apollo, Athena and Dionysus had powers and privileges that will never be shared precisely by the authority figures and administrative facilitators of today's enterprises and cultures. Zeus could throw real thunderbolts; a metaphorical equivalent is the best real-life leaders and managers can offer. In the words of von Glyczy (2003: 90, 88): "Metaphors can be good or bad, brilliant or poorly conceived, imaginative or dreary – but they cannot be 'true'." And: We should look for "troubling differences" rather than "reassuring parallels" – "cloudy metaphors to explore rather than clear models to follow".

Of critical importance is the recognition that a metaphor is not a model. "The model represents closure at the end of a search for validity; the metaphor is an invitation to embark on a road of discovery" (von Glyczy 2003: 90). For example, Kolb (Kolb et

al. 1976) has developed a model of the *experiential learning cycle* in which there is a process of four stages – concrete experience, reflective observation, abstract conceptualisation, and active experimentation. Metaphorically, we might suggest that the stages fit the attributes and preferred organizational cultures of the Greek gods selected by Handy – perhaps in the matching order of Apollo, Dionysus, Zeus, and Athena. In the case of a model, the aim would be to find a perfect fit between behaviour studied in real environments. If it were less than perfect, we'd look to change the model. In the case of a metaphor, the aim would be to test the fit and recognise both the good aspects and the discrepancies. If the fit were “good enough”, most likely we'd stick with the metaphor. If it were really bad (and that could well be the case in the example of the Greek gods and Kolb's model), only then would we feel the need to seek a new metaphor.

In terms of business education, a key teaching point is that “Models and metaphors don't compete with one another for relevance; they complement each other” (von Glyczy 2003: 90). However, it is important to keep in mind that the situation is dynamic, not static. The use of metaphor may question the relevance of a model and lead to a new conceptualisation. Also, a bad fit of metaphor to model might demand a new choice or set of choices.

Another point of note is that binocular vision can be used as an integrating metaphor. “Two metaphors taken together can provide a better picture of the reality under investigation than a single metaphor” (Morgan, cited in Burrell 1996: 652). For example, Mintzberg (1998) compares managers of professionals with the conductor of an orchestra. Based on the conclusion that knowledge workers and orchestra members respond to inspiration and not supervision, he surmises, “Maybe it is time for conventional managers to step down from their podiums, get rid of their budgeting batons, and see the conductor for who he or she really is.” In another example, Sergiovanni (1995: 127) sees a manager of professionals (a school principal, specifically, in this instance) as “a leader of leaders, follower of ideas, minister of values, and servant to the followership”. His metaphor is “leader as servant” or “leader as minister”. By comparing and contrasting the metaphors of orchestra conductor and minister (source metaphors) with manager of professionals (target metaphor) we provide ourselves with the opportunity of developing an integrated and

holistic conceptualisation of the manager. (It may lead, also, to different views of the conductor and minister. The former may be seen, for example, as less dictatorial and the latter as more directive.)

Finally, in recognising that the power of metaphors lies in their communication between people, it is suggested that education in their use be presented as two phases involving a shift from an individual to a group perspective. First, a good cognitive metaphor exists as the oscillation between two domains within a single mind. As put by Hirsch and Andrews (1983) this can be understood as a system of beliefs about figure and ground relationships which serve to highlight certain features while suppressing others. In the second phase, as the cognitive metaphor matures, it takes the form of an oscillation of ideas among many minds.

## **How Metaphors Should *Not* Be Used in Management Education and Training**

Keeping the key considerations in mind, metaphors shouldn't be paraded in business education and training as exemplars when:

- They are simplistic or silly. For example, von Glyczy (2003: 87) suggests ballroom dancing as a source of leadership lessons fits this categorization. (This does not mean, however, that the images conveyed in Kanter's *When Giants Learn to Dance* (1989) need be seen in this way.)
- They are no more than a jumble of ornaments to decorate language. String a number of rhetorical metaphors together and this "makes the point", "sets the scene" and "paints the picture"!
- They have become clichés. Military metaphors often fit this description. Weick (cited in Peters and Waterman 1982: 7) supposes that inflexibility of thinking and action by employees stems from the clichés and mechanical pictures of organizations they carry in their heads. He states: "Chronic use of the military metaphor leads people repeatedly to overlook a different kind of organization, one

that values improvisation rather than forecasting, dwells on opportunities rather than constraints, discovers new actions rather than defends past actions, values arguments more highly than serenity and encourages doubt and contradiction rather than belief.”

- They are too easy to dismiss by busy executives with a singular focus on the bottom line. For example, metaphors (like models) that are more complicated than life won't attract people with influence in organizations. If your metaphor (or model) fits this description, change the metaphor (or the model). Make it cognitive *and* magnetic.
- They are inappropriately and too quickly pressed into service as models. For example, in the field of training and education, the term *blended learning* has become popular in recent times. It sounds good. However, close inspection suggests that what is really meant by training and education providers is *blended delivery*, from an organizational point of view, and not blended learning, from the perspective of the learner. What is more typically appropriate to the learner, metaphorically, is a “smorgasbord” of options and not a single-choice “smoothie”.
- Their potential is unlikely to be realised. As mentioned above, trying to match Handy's Greek gods to Kolb's experiential learning cycle may well be an example of this. Again, if it's not working, change the metaphor.
- Overall, they operate at a surface level of analysis and, in consequence, add little or anything to our understanding of organisational life (Putnam et al. 1996: 377).

## **How They Should be Used In Management Education and Training**

In line with the literature on the topic, metaphors should be offered in business education and training as examples of good practice when:

- They are an invitation to embark on a road to discovery. For example, a well-chosen metaphor might see a context of management as “permanent white water” rather than a tranquil environment. Vaill (cited in Sergiovanni 1995: 43) indicates that such a metaphor was suggested to him by a manager who observed:

Most managers are taught to think of themselves as paddling their canoes on calm, still lakes. They are led to believe that they should be pretty much able to go where they want, when they want, using means that are under their control. But it has been my experience that you never get out of the rapids! There are lots of changes going on at once. The feeling is one of continuous upset and chaos.

- They can tie the familiar to the unknown (Hawkes 1972). The familiar in this instance is the source domain and the unknown the target domain. For example, March (cited in Peters and Waterman 1982: 7), introduced the “garbage can” as an organizational metaphor. As stated by Peters and Waterman:

March pictures the way organizations learn and make decisions as streams of problems, solutions, participants, and choice opportunities interacting almost randomly to carry the organization toward the future. His observations about large organizations recall President Truman’s wry prophecy about the vexations lying in wait for his successor. “He’ll sit here,” Truman would remark (tapping his desk for emphasis), “and he’ll say, ‘Do this! Do that!’ And nothing will happen. Poor Ike – it won’t be a bit like the army. He’ll find it very frustrating.”

- They can link abstract constructs to concrete things (Ortony 1979). For example, creative decision-making (the target domain) may be linked to a supermarket of ideas (the source domain).
- They can legitimate actions, set goals, and guide behaviours (Lakoff and Johnson 1980). For example, from the metaphorically organic perspective of a teacher, Ashton-Warner (1980: 197) justified her approach to teaching when she stated:

By “organic” I mean that way of growth where the strongest thing pushes up ahead of the less strong. I think of trees growing in a clump. The strongest get to the light. In speaking of a child’s mind I mean the strongest impulses push up, irrespective of whether or not they should, at a given time. Making the behaviour of the children anything but an ordered one in the conscious meaning of the term “order”. I call it the abstract order because the pattern it makes is so mixed up, so unpredictable. That’s how I come to relate the terms “abstract” and “organic”. They are associative. “Natural” includes them both.

- They can facilitate the creation and interpretation of social reality (Putnam et al. 1996). For example, organization was (and is) conceived by Australian aborigines as “a maze of one-dimensional lines that were [and are] sung” by members of the group in turn (Chatwin, cited in Peters 1992: 373). Also, cultural anthropology can be used as a way of understanding the adoption of new technology (Clarke, cited in Davenport and Prusak 2003: 46).
- They can shape how we see and make sense of the world. This involves an orientation of our perceptions, conceptualisations, and understanding of one thing in light of another (Putnam et al. 1996). For example, employees use metaphors such as families, zoos, savage tribes, and sporting games to depict their own organizations (Deetz 1986; Koch and Deetz 1981).
- They are powerful catalysts for generating new strategies. Eccles and Nohria’s (1992: 111) consideration (described above) of the strategic process in relation to wine making is an example. Another is the perception that “organizational design is more like locating a snow fence to deflect the drifting snow than like building a snowman” (March, cited in Peters and Waterman 1982: 107). Yet others are thinking about networked intelligence as insect colonies (von Glyczy 2003: 87) and about organizational structure and communication channels as a spider’s web (Quinn et al. 1996).

- Overall, they facilitate theory building by examining images at multiple levels of analysis (Putnam et al. 1996: 377). For example, Stafford Beer developed theory relating to organizational purpose, function and structure in terms of the human mind and body in *Brain of the Firm* (1972), *Heart of the Enterprise* (1979), and *Diagnosing the System for Organizations* (1985).

## **Tips for Education and Training**

Flood (1999) is a strong proponent of educating and training people in the use of metaphors so that they apply them better. He sees little difference in this facilitation of learning to that involving an athlete being prepared for top competition. A step-by-step process (adapted from Flood 1999: 126) for training in the use of metaphor is:

1. Choose any metaphor. (For example, in line with a situation described by Hirsch and Andrews (1983), envisage prospective organizational mergers as ‘ambushes and shootouts’ that highlight surprise attacks, hostile takeovers, winners and losers, and hired guns who are contracted to orchestrate the deal.)
2. Work out the attributes and characteristics of the metaphor and the dynamic it represents. (Clearly, it is consistent with an aggressive stance in an environment seen as competitive but in which an empire needs to be built.)
3. Reflect on how the attributes and characteristics may represent stakeholders and the way they behave and interrelate. (For example, will the owners agree that an aggressive approach is appropriate? Have they bought into the idea that bigger is better? What will customers think of the mergers and the way they have occurred? What will be the perceptions of other players in the industry? How will government view the situation?)
4. Check that you are inspired by the images you create. (This will involve making a tentative decision about what you think is happening using

images and insights generated by the metaphor. Ask yourself why you think this is happening. What part, for example, is cold reason playing? What part the heart? Consolidate your thinking with a most plausible option about issues and dilemmas that need addressing.)

5. Compare the images and insights surfaced by different metaphors. (For example - consistent with an alternative offered by Hirsch and Andrews (1983) - you may try a courtship metaphor involving wooing, matchmaking, and the resolution of compatibility issues. Consider other possibilities as well. Perhaps there might be an overarching metaphor that is consistent with government policy. It might be an image of social responsibility or meritocracy. Ask if the insights generated by each metaphor are equally helpful. Ask how successful each metaphor is in creating an image that resonates in your mind with the context of inquiry.)
6. Choose a most plausible account of events. (Yes, it's decision time.)
7. Think through what this implies in terms of improvement strategies that might be implemented. (Importantly, it's not just a decision but a critically reflective, informed decision.)

## **A Critical Matter of Mixing**

Like it or not, metaphors are an integral aspect of management communication and business education and training. Rhetorically, we use them with little or no thought. Cognitively, we have the option of sending strong or weak messages. One way or the other they direct and restrict our thinking for, as stated by Burrell (1996: 645), they (as well as paradigms, discourses and genealogies) are “incised lesions on the body of organizational life”. Their associated analysis is “the death or at least the mutilation of that which is analysed”.

Metaphors for management can and should be mixed! As indicated by von Glyczy (1993: 94), “While it may be bad literary style to mix one’s metaphors, no such stricture exists in cognitive pursuits.”

The mixing of metaphors is consistent with pluralist perspectives (Morgan 1986), binocular vision (ibid.) and the suggested training process of Flood (1999). It fits, also, with an ongoing critical perspective. Fulop and Linstead (2004: 5) emphasise that learning about management requires such a perspective and is guided by four key processes of inquiry:

1. identifying and challenging assumptions;
2. developing an awareness of the context in which management ideas have evolved historically, culturally and socially;
3. always seeking alternative ways of seeing situations, interpreting what is going on, understanding why an organization is configured the way it is, and speculating about the way the organization could be managed differently and in ways that disrupt routines and established order;
4. being appropriately sceptical about what one hears and reads about management.

Cognitive metaphors – through appropriate reflection, education and training - can and should inform all four processes. They have a pervasive and influential role to play in business education.

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# **An economic and historical analysis of New Zealand university income and student numbers**

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## **Abstract**

This paper considers the social and economic benefits of tertiary education and investigates trends in New Zealand university revenue and student-staff ratios from 1980 to 2002. Data were obtained from the Ministry of Education, Statistics New Zealand, The Vice Chancellors' Committee and individual university annual reports. A price index was constructed and used to derive a real revenue series. Between 1980 and 2002 Ministry of Education funding (in 2002 prices) per domestic EFTS (equivalent fulltime students) fell by 35% from \$11,293 to \$7,367 and total EFTS per FTE (fulltime equivalent) academic staff member increased from 12.5 to 18.3. Growth in the proportion of revenue from tuition fees and other sources replaced the share of revenue lost from the Ministry of Education. While economic theory suggests that government intervention is required to improve allocative efficiency and equity the selection of the policy mix and subsidy levels are value judgements. Any change to tuition subsidies, student loan subsidy rates or tuition fees will cause changes to both efficiency and equity. Further research is required to evaluate the equity impact of rising fees payable by domestic students and to estimate the external benefits of university education in New Zealand. The growing reliance on international students from a narrow range of countries has increased the financial risk to institutions.

*Key words:* Public policy, economics, education, university, human capital.

## **Introduction**

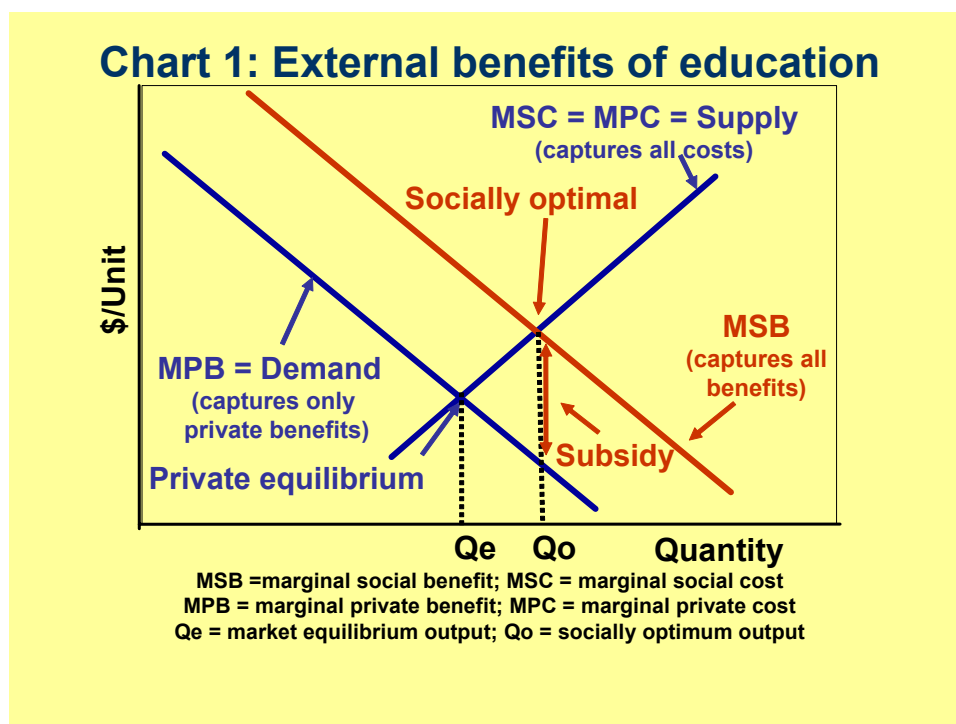
This paper first discusses the social and economic benefits of tertiary education and then investigates trends in New Zealand university revenue and student-staff ratios from 1980 to 2002.

Improving the economic and social wellbeing of a country is dependent upon the accumulation of productive capital of all forms including technology and human capital, and on social capital (Cooper & Rayner, 1981). *“Sustained economic growth requires a substantial and continuing investment in human capital. One major form of this investment is education.”* (Cheek, 2001).

Government documents have articulated the need to improve New Zealand's economic performance and the importance of human capital, technology and innovation (Cullen, 2001, p 9; 2002a, p 1; 2002b, p 8). "All the evidence from New Zealand and elsewhere indicates that the single most important prerequisite for lifting our productivity and economic growth rates is increasing human capital." (Cullen, 2000, p 6). Crocombe et al in 1991 noted that New Zealand had not invested enough in high quality human capital and education. (Crocombe, 1991, p 100).

Adam Smith likened the accumulation of education and skills to that of machinery, and the economic returns from educated workers to the benefits derived from investment in capital goods (Smith, 1991). The current catch phrases such as the "knowledge economy, knowledge-based economy, knowledge society" (Cullen, 1999, p 4; New Zealand Ministry of Education, 2002, pp 1, 2, 4) are essentially the same as the concept of human capital introduced by Adam Smith in 1776 (Woodhall, 2001).

When an individual buys tertiary education the purchase and resultant consumption of education services benefits not only the recipient but has positive externalities that benefit the rest of society. However, individuals (or families) will usually pay only for the benefits that directly affect them (private benefits), and do not consider and would normally not pay for benefits to others (external benefits). Resource allocation decisions made on the basis of private costs and benefits of education will not result in allocative efficiency, which is the optimum solution for society (see Chart 1). Where external benefits are present (as with education) there is a case for a government subsidy to improve allocative efficiency (Fitzsimons, 1997). Government subsidies should reflect the external benefit of education, and private fees the private benefits. However, striking the "right" subsidy level is a value judgement as the relative magnitudes of the private and social benefits are unknown.



In our society education is regarded as a merit good that all individuals should be able to access regardless of their ability to pay. Therefore, we could use this attribute to argue that government (acting as an agent for society) should contribute towards the cost of education.

This idea is also shared by the Ministry of Education “*The Government has a goal of making tertiary education more affordable for students*” (New Zealand Ministry of Education, 2003, p 22). Thus education has an economic and a social value and government funding of education can be justified on both equity and efficiency grounds.

Until the 1990s universities received a quinquennial block grant and this evolved into an equivalent full time students (EFTS) based system. Student tuition fees during this period were minimal. In 1991 the government introduced the tertiary EFTS bulk funding system whereby all public sector tertiary institutions received funding on the same basis. EFTS cost categories were established according to the cost of delivering different programmes and funding was determined by the numbers of EFTS each institution attracted in each cost category (New Zealand Ministry of Education, 1990). All operating expenses (including research) and capital development were jointly funded out of EFTS payments. The EFTS funding system together with the development of degree programmes in institutions other than universities led to the blurring of the differences between polytechnics and universities, to the proliferation of both courses and private tertiary providers, and to intense competition for students.

The Education (Tertiary Reform) Amendment Act 2002 established the Tertiary Education Commission (TEC) and created a new funding system (the Integrated Funding Framework) in 2004. This system has three funding components, (1) teaching and learning, (2) research and (3) strategic development. Research will no longer be funded primarily out of EFTS allocations but funds will eventually be allocated on the basis of performance from the Performance Based Research Fund (PBRF) (New Zealand Ministry of Education, 2002).

## **Method**

Funding data, numbers of students, and prices and wages for New Zealand were derived from the Ministry of Education, Statistics New Zealand, the Vice Chancellors’ Committee Statistical Collection, and university annual reports. Where possible these data were cross-checked from two or more sources.

Government grants represent all government funding excluding research contracts, that is, EFTS funding, plus other grants related to teaching. This funding is primarily from the Ministry of Education but may include some finances from other government agencies. Tuition fees income is from both domestic and international students, and other revenue includes research funding and other income.

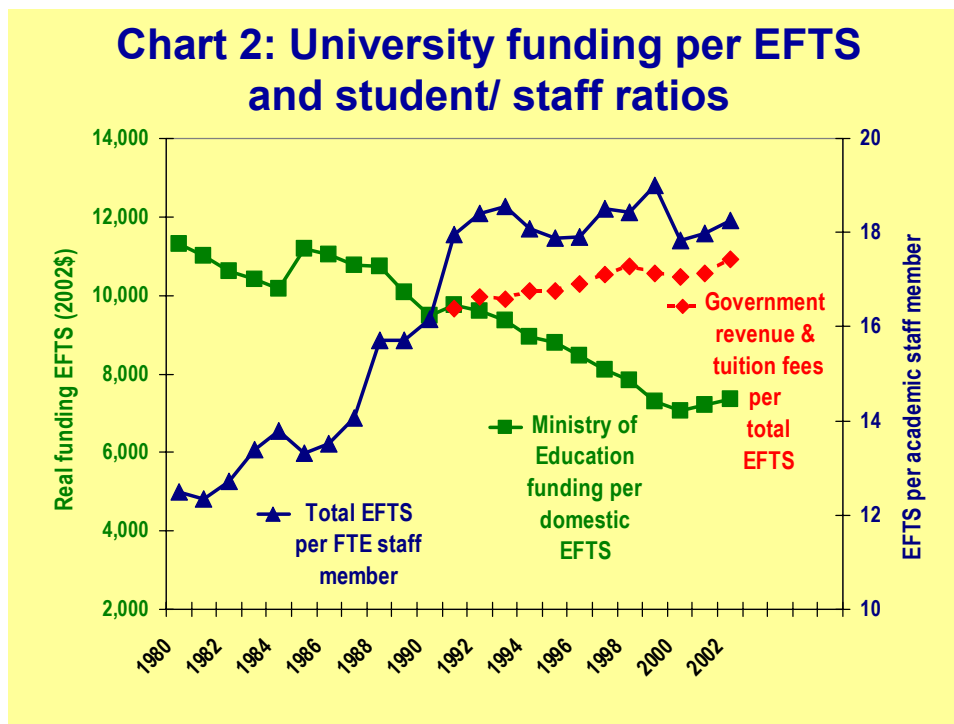
In calculating the ratio of EFTS to full-time equivalent (FTE) academic staff, research-only staff (because they are not involved in teaching) were excluded and EFTS were total EFTS, that is, Ministry of Education funded domestic students plus all others.

A university input price index (UPI) was constructed by combining and weighting the most appropriate wage and non-labour cost indices available from Statistics New Zealand. A number of official indices were linked as no single index for wages and no single index for the non-labour cost component traversed the whole period. The UPI was constructed by calculating a weighted mean of the education wages index and the education non-labour input costs. Weights were the respective proportions of operating expenses accounted for by wages (64%) and by other costs (36%). Nominal funding was converted into real funding using the UPI. Data spanned the period 1980 to 2002 and were the most up-to-date available at the

time of this study. SPSS and Microsoft Excel were used to analyze data. More detail on the methodology and results used may be found in the technical report (Scott & Scott, 2004).

## Results

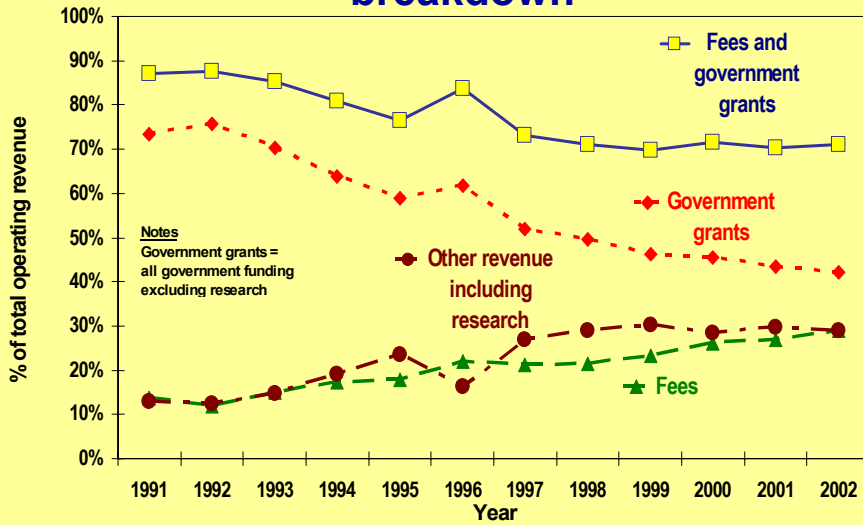
Over the period 1980 to 2002 real Ministry of Education funding per domestic EFTS steadily declined until in 2002 it was 65% of its 1980 value, at the same time the total number of students per academic staff member rose from 12.5 to 18.3. (See Chart 2).



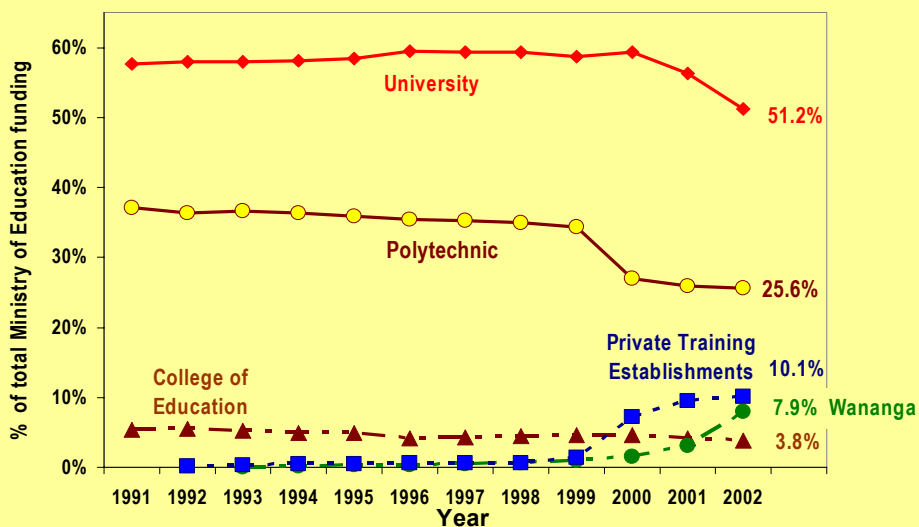
We were able to study the period 1991 to 2002 in greater detail. Government grants made up 73% of total operating revenue of universities in 1991 but by 2002 had fallen to 42%. Over this period income from fees (domestic and international) rose from 14% to 29% while other revenue (which included research) rose from 13% to 29%. Between 1994 and 2002 international EFTS as a percentage of total EFTS rose from 4% to 13%. (See Chart 3).

In 2002 the relative shares of EFTS funding were: universities 51%, polytechnics 26%, colleges of education 4%, wananga 8%, private training establishments (PTEs) 10%, and other tertiary education providers 1%. Proportions of EFTS funding to tertiary institutions remained fairly static between 1991 and 1999, but between 1999 and 2002 the combined share of EFTS funding for universities, polytechnics and colleges of education fell from 98% to 81%, and PTEs and wananga increased their share from 2% to 18%. (See Chart 4)

**Chart 3: University operating revenue breakdown**



**Chart 4: Ministry of Education funding by provider type**



### Discussion and conclusion

Some increase in student-staff ratios and reduction in funding could be justified if the mix of courses changed from more staff intensive and high cost (such as science and engineering) to less staff intensive and lower cost courses (such as arts and business). The reduction in Ministry of Education funding per domestic EFTS was caused in part by this gradual shift in the mix of students from higher funding categories (and higher cost courses) to lower funding categories. Data supplied by the Ministry of Education (New Zealand Ministry of Education, 2004) for the period 2000 to 2002 indicated that if this shift had not taken place total

university funding would have been 0.5% higher (than it actually was) in 2001 and 0.6% higher in 2002. We were unable to extend this analysis because of difficulty in obtaining the required historical data.

There are a number of reasons why this drift may have occurred: “... *the shift from higher cost science and technology courses may have been caused by reduced funding and reduced ability of students to meet the increased fees. Students may have chosen to optimise their chances of obtaining work (with their qualification) and at the same time to minimize costs of their education (by seeking qualifications which offer the most favourable prospects for employment)*”. (Scott, 2003, p 227). The New Zealand University Students’ Association in a recent survey of seventh formers found that the level of fees influenced the choice of institution and courses of study. Forty-seven percent of students said that fees influenced their decision of where to study and 40% said tuition fees influenced their choice of length of course (New Zealand University Students' Association, 2003).

Over the period studied there has been an increase in student fees and other revenue including research. However, there has been a corresponding decline in the proportion of funding from government grants (primarily for teaching purposes and exclude research contracts). We were unable to separate domestic from international fees or separate research income from other income prior to 1999 because data were unavailable.

Between 1999 and 2002 the income from full-fee paying students has more than tripled from \$53 million to \$185 million. This rise in the number of full-fee paying (mainly international) students as a proportion to total students and the growing reliance of universities on the revenue derived from these students increases the commercial risks for universities and thereby reduces job security for staff. If the revenue from full-fee paying students was to fall sharply some courses and the staff teaching these courses would have to be reduced. This risk is intensified as one market, China, now contributes about 50% of all international students (New Zealand Ministry of Education, 2003, pp 47, 209). On the other hand, international student fees also spread the risk and ensure the retention of some staff who may have been laid off if the number of domestic students fell.

In 1991 the EFTS funding system opened the opportunity for PTEs to access government funding but it was not until 2000 that they were funded on the same basis as universities and polytechnics, that is, on the number of EFTS they were able to attract. Because the funding was uncapped the total pool grew and PTEs and wananga increased their share of funding. A partial cap limiting PTE funding to the number of EFTS places funded in 2001 was applied in 2003 (New Zealand Ministry of Education, 2003).

Participation rates in tertiary education for the 18-24 years age group have risen and much of this increase has resulted from growth in wananga. However, had funded student numbers been capped, and the student loans scheme did not exist, rising tuition fees may have reduced participation rates.

Under the EFTS bulk funding system there was evidence of inefficiencies caused by both government failure and market failure. There was intense competition for students by competing institutions (universities, polytechnics and private tertiary providers) leading to wastage (unnecessary duplication of some courses, closure of socially desirable courses with low numbers of students, and additional costs of marketing), and increased risk when

investing in expensive equipment and infrastructure (Tertiary Education Advisory Commission, 2001).

Expanding the revenue from non-Ministry of Education sources and increasing the numbers of students per FTE staff member offset the reduction in real Ministry of Education funding per EFTS. However, it was outside the scope of this study to determine whether the above changes have impacted on the quality of teaching and research.

Knowledge of the magnitude of the external benefits of tertiary education would make it possible to calculate the breakdown between government subsidy and tuition fees that would maximise allocative efficiency. Any change to tuition subsidies, loan subsidy rates or tuition fees will cause changes to both efficiency and equity. All policy options will exclude some students who would otherwise have attended university but each option will exclude a different mix of students.

While economic theory suggests that government intervention is required to improve allocative efficiency and equity the selection of the policy mix and subsidy levels are value judgements. Further research is required to evaluate the equity impact of rising fees payable by students and to estimate the external benefits of university education in New Zealand.

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**Measuring Information Technology (IT) Practices, Knowledge and Attitudes of  
150 Computer Concepts Students (2004)**

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## **Measuring Information Technology (IT) Practices, Knowledge and Attitudes of 150 Computer Concepts Students (2004)**

### **ABSTRACT**

This paper describes a study of IT skills, practices and attitudes of 150 Computer Concepts students enrolled in the New Zealand Diploma in Business (NZDipBus) at Unitec, New Zealand. Varying levels of student computer literacy in introductory computer courses provide challenges to instructors who teach courses with a computer component. Previous studies have indicated that students are becoming more computer literate. The main aim of this study is to determine students' access to IT, what software applications students have access to and use, and how confident students feel using IT. Most importantly this study investigates students' actual knowledge of the Internet, e-mail, word-processing, spreadsheets and databases to see if the variance in computer literacy among tertiary students is diminishing.

**Keywords:** entry level computing skills, IT skills, software knowledge, undergraduate business students

## **Introduction**

The purpose of this study is to gain further understanding of IT skills, practices and attitudes of students enrolled in 150 Computer Concepts.

The structure of this paper is as follows: a literature review discussing the findings of others is presented including a discussion of gender issues relating to students' knowledge of computers, the aims of the project; the statistical methods used in this survey; the results from this study and a discussion of the results obtained.

## **Literature Review**

A number of previous surveys have been completed on computer literacy at the tertiary education level (Stein, Craig & Scollary (1995, 1996, 1997, 1998); Stein & Craig (1999, 2000). The main aims of these studies were to discover whether entry-level student IT practices and skills were changing with time. Results of these studies showed an increasing level of computer competency, certainly by 1999 Stein et al. were reporting that access to a home computer had peaked, home Internet usage was escalating, the gender gap in IT practices and skills was closing and there was a dramatic increase in the use of the Internet, e-mail and chat. This prompted Stein & Craig (2000) at the beginning of the new millennium, to question whether or not the IT skills taught and used in university subjects were becoming obsolete because young students had been brought up with computers. In their study of "The Dot.Com Generation" (students born after 1981), they found that this particular group of students reported significantly higher measures of computer knowledge.

In their study of university undergraduates enrolled in a first year paper, Lim & Lee (2000) were concerned that there was an expectation in Australian society that school leavers were computer literate. Lim & Lee (2000), Lim & Kendle (2001) set out to identify the level of IT skills their students possessed. They found that although most students had some reasonable computing skills at the start of their university study, the skill level was not uniformly high. For example, out of the 85% of students who said they knew how to use e-mail, 45% of them did not know how to use e-mail attachments. This study highlights the need to not only ask the students what they think they know, but to actually confirm what they do know. These researchers were surprised at the lack of research in this area and recommended other Australian Universities carry out similar studies.

A study at Victoria University of Technology (Turner, 2003) questioned the assumption that youth of today are IT literate on exit from school. Turner found that although survey results suggested high levels of skill in word processing and to a lesser extent in spreadsheets, results on assignments in these areas led the researcher to believe that students' perceptions of their skills were better than their actual performance. Turner (2003), found no evidence to support a reduction in emphasis placed on teaching common MS Office applications such as word processing at tertiary level.

## **Gender Differences**

Teasedale & Lupart (2001), in responses from 1400 grade 7 and 10 students found a significant difference in the way male and female students perceive their personal computer abilities. Male students rated their own computer abilities higher than the ratings of their female peers. The males also indicated that they liked computers more than their female peers, they spent more time on the computer, and whilst the females spent more time using the computer tools (e-mail, assignments) the male students reported being more computer fluent (programming).

Craig & Stein (2000) also found differences in the length of time male and female students used their home computer in an average week and also the purposes for which they used the computer. They discovered that males play far more computer games but found no difference between males and females on their self-rating of their computer confidence and computer knowledge.

Rowell, Perhac, Hankins, Parker, Pettay & Iriarte-Gross (2002), however, found that 71% of the 651 Middle Tennessee State University students in their survey were computer confident. These researchers found no significant difference between males and females who were classified as computer confident.

## **Aim Of Project**

The status of students' computer literacy is of special importance to instructors who teach introductory computer courses. Due to the varying levels of computer literacy among tertiary students, instructors who teach courses with a computer component have, in the past been faced with the difficult task of teaching students with a wide variety of ability levels and experience. The research literature indicates that students are becoming more computer literate; it is therefore important to determine to what extent students in tertiary education already have the IT skills employers are requiring, in an effort to enhance learning rather than repeating skill sets.

The main aim of this study is to determine students' access to IT, what software applications students have access to and use, and how confident students feel using IT. Most importantly this study will investigate students' actual knowledge of the Internet, e-mail, word-processing, spreadsheets and databases to see if the variance in computer literacy among tertiary students is diminishing.

## **Method**

172 students enrolled in 150 Computer Concepts classes within the New Zealand Diploma of Business were surveyed in the first week of Semester 1, 2004 using a non-probability or convenience sampling method (Zikmund, 2000). The students were requested to fill in a 60-question survey form that gathered demographics, computer access, time usage, personal views, and knowledge level of the Internet and email, database, spreadsheet and word processing. Using both descriptive and inferential statistics these results were then analysed using SPSS. The descriptive statistics employed a univariate analysis; frequency tables, averages, percentages, and standard deviations. Bivariate analysis in the form of cross tabulations and

correlations were used to determine the relationships of students' self-perception of computer knowledge and actual knowledge. The results of this analysis are reported in the paper.

### **The Questionnaire**

The questionnaire has seven sections. For each question students were asked to respond to either pre-selected options or a five point Likert continuous scale. Section A gathered general demographic information about each student, including gender, course of study, ethnicity, and age. Section B gathered information on how students were coping with the rapid developments in IT. This section focuses on student access to computer technology, use of computers and self-rated computer skills. Section C is concerned with students' attitudes to computers and consists of 20 questions. Respondents were asked whether they agreed or not with a statement from a Likert type scale of 1 to 5.

Sections D, E, F and G aimed to measure the students' depth of knowledge about E-mail, the Internet, Microsoft Word, Excel and Access, which are the core software applications taught in 150 Computer Concepts. Ten multi-choice questions ranging in complexity from beginners' tasks (questions 1-4) through to an intermediate level (questions 5-7) and finally an advanced level (questions 8-10) were asked in each of the four areas.

## **Results**

### **Demographic results**

Introductory computing classes for business students are an international mix. 62% of students are from China, 14% New Zealanders (both Pakeha and Maori), 4% from India, 2% from Europe and 6% from the Pacific Islands. The remaining 12% classified themselves as 'other'. 55% of the students were female and 45% male.

The majority of students were in the 21-30 age range – 68%. 23% of students were under 21, 6% between 31-40 and 3% over 40.

### **Computer access**

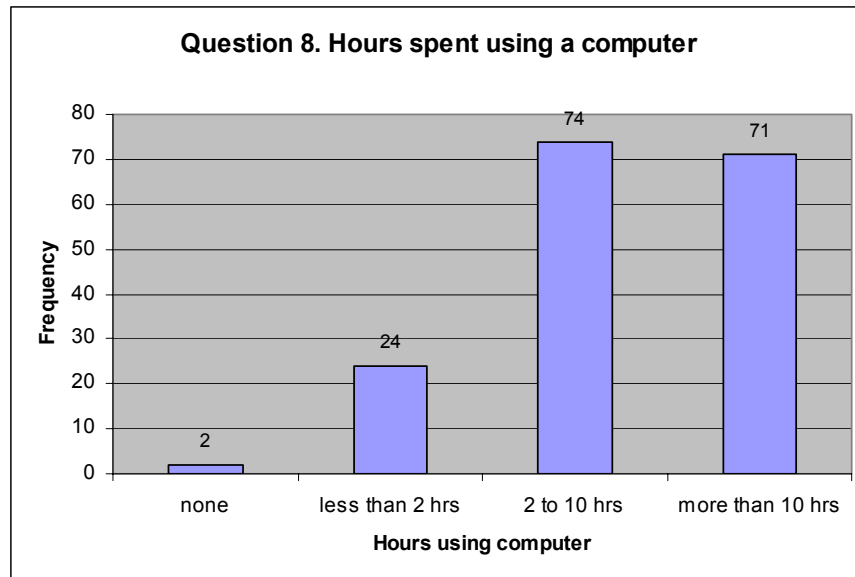
A very large number of students had access to a home computer (89%), and 34% of students had access to computers through their work. Whilst 66% reported no access to work computers, these students are not in a work situation. Of those with access to computers, 89% reported that they had access to the Internet.

### **Computer characteristics**

The majority of students (72%) were using Windows XP as an operating system, followed by 12% using Windows 98, and 12% Windows Me while only 4 % reported that they did not know what operating system they were using.

Just under half (42%) of students reported that they used a computer for more than 10 hours a week and 43% of students between 2-10 hours. Only 14% of students reported that they used a computer less than 2 hours and only 1% stated that they did not access a computer at all.

**Figure 1: Hours spent using a computer**



## Computer Attitudes

### Reliability

The attitudes survey was tested for reliability. The items in each dimension were analysed for co-efficiency using Cronbach's Alpha Correlation in the SPSS program. The resulting scores of reliability indicate a reasonable conformity of items to each dimension (Table 1).

**Table 1 Alpha Reliability**

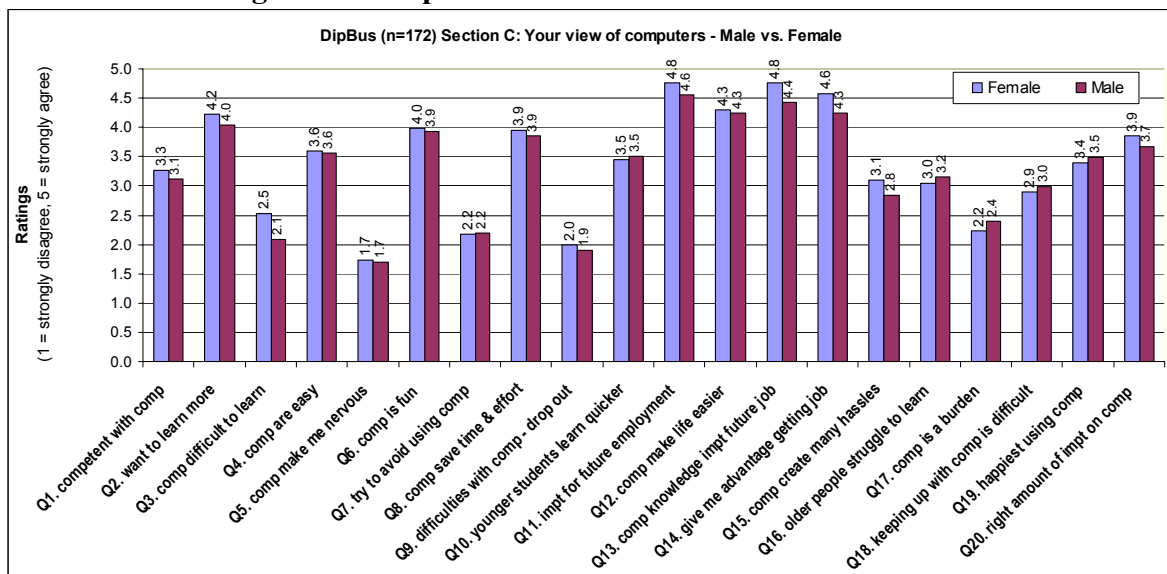
Positively phrased questions		Negatively phrased questions	
No of Items	Alpha	No of Items	Alpha
7	.7264	7	.7480

Significant differences were found between males' and females' confidence and competencies in using technology in only four out of twenty questions (Table 2). Female students scored significantly higher on the questions of the importance of computers in their future. Females thought that computers create as many hassles as they solve, and computers seem very complicated and difficult to learn.

**Table 2: Computer Attitudes**

		Mean	P<.05
Computer knowledge will be important in my future job.	Male	4.42	.004*
	Female	4.75	.006*
My computer knowledge will give me an advantage in getting a job	Male	4.25	.005*
	Female	4.58	.005*
Computers create as many hassles as they solve	Male	2.84	.045*
	Female	3.11	.048*
Computers seem very complicated and difficult to learn	Male	2.09	.008*
	Female	2.53	.007*

**Figure 2: Computer Attitudes – Male vs. Female**



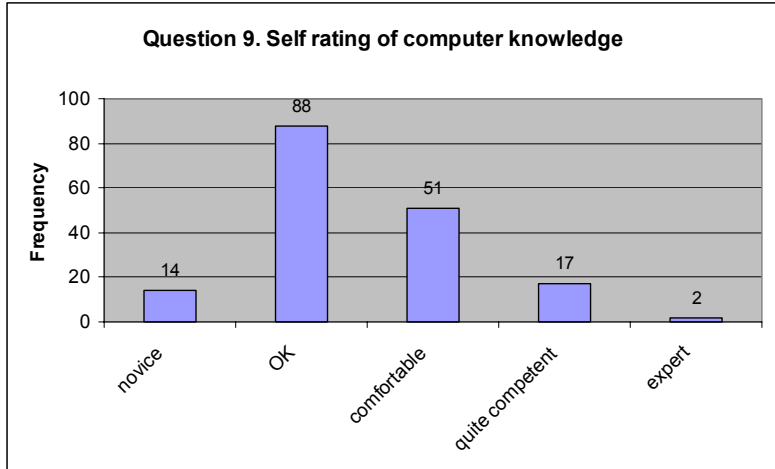
### Prior experience with computers

The majority of students (60.5%) reported that they were self-taught, while just less than half (48.1%) learned about computers at school, 45.3% learned from family or friends. 33.7% of students attended classes to learn, 22.1% learnt from manuals or books and 1.7% from work training.

### Self rating computer knowledge

The majority of students (51.2%) believed that they were getting by with their computer knowledge, 29.7% rated themselves as fairly competent, 9.9% as quite competent with 1.2% rating themselves as expert. Only 8.1% considered themselves to be novice users (Figure 3).

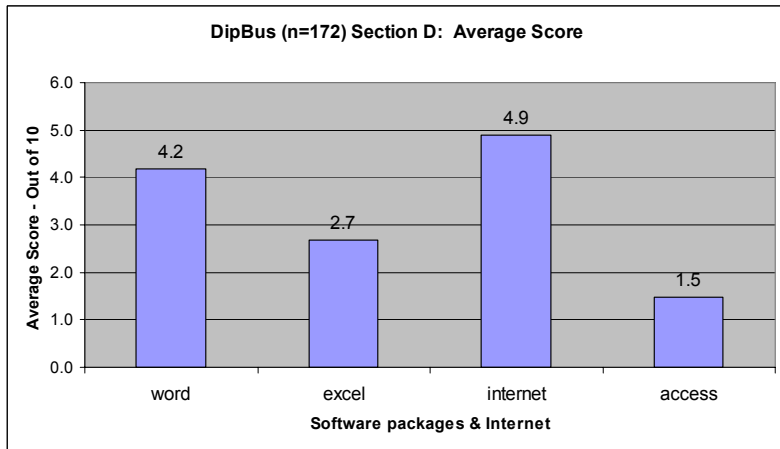
**Figure 3: Self rating of computer knowledge**



**Test scores**

It appears that students’ belief in their own knowledge is higher than their actual scores. The highest average score for computer knowledge was 4.9 out of 10 for the Internet, followed by 4.17 out of 10 for Word. The average score for Excel was only 2.69 and MS Access knowledge rated only 1.47 out of 10 (Figure 4).

**Figure 4: Average test scores**



**Table 3: Test Scores (%)**

	0	1-4	5-7	8-10	Average score
MSWord	5.2%	50%	36.6%	8.1%	4.17/10
Excel	23.8%	50.7%	23.3%	2.3%	2.69/10
Internet	2.3%	34.3%	56.4%	7%	4.9/10
MS Access	49.1%	42.7%	7.6%	.6%	1.47/10

A t-test (Table 4) revealed a significant difference between ESOL students and main stream students on the MS Word, and MS Excel scores, and although the average

score for main stream students on the Internet and MS Access were higher than the ESOL students, they were not significantly higher.

**Table 4: Main Stream and ESOL students' scores**

		Mean	P<.05
Word	ESOL	2.68	.000*
	Main Stream	4.69	.000*
Excel	ESOL	1.95	.016*
	Main Stream	2.95	.011*
Internet	ESOL	4.55	.115
	Main Stream	5.02	.148
Access	ESOL	1.28	.426
	Main Stream	1.54	.413

### Student Scores on Word, Excel, Access & Internet

Spearman's Rank was used to establish whether a relationship exists between students' self-rating of computer knowledge and their actual knowledge of MS Word, MS Excel, MS Access and the Internet (Table 5). A weak positive relationship was found between the variables.

**Table 5: Correlations**

	MS Word	MS Excel	Internet	MS Access
Self-rating computer knowledge	.317**	.291**	.185*	.229**

\*\*Correlation is significant at the 0.01 level (2-tailed)

\*Correlation is significant at the 0.05 level (2-tailed)

An Independent Sample t-test found no significant difference between male and female students' results on the MS Word, MS Excel and MS Access tests. There was a significant difference on the students' scores for the Internet test with the males scoring higher than the females.

**Table 6: Gender Differences Applications**

		Mean	P< .05
MS Word	Male	4.08	.587
	Female	4.26	.584
MS Excel	Male	2.61	.656
	Female	2.77	.654
Internet	Male	5.25	.021*
	Female	4.63	.024*
MS Access	Male	1.38	.536
	Female	1.55	.536

### Access and use of Software Applications

The most common tool accessed and used by this cohort of students was MS Word with only 21.9% of students having no access to this software application. Just under half (48%) of introductory business students had never accessed MS Excel, 64.1% had not used MS Access and 50.9% had not used PowerPoint. Only 9.4% of students did not surf the web.

### Computer usage

Males and females students reported similar amounts of time spent on computer activities with the exception of e-mailing, word processing and computer games. Females spent significantly more time e-mailing friends and family than males, while males spent more time e-mailing for work related reasons than females. Females spent more time word processing, while males spent more time playing computer games.

**Table 7: Time on Activities**

		Mean	P<.05
1. E-mailing friends	Male	2.05	.000*
	Female	2.44	.000*
2. E-mailing family members	Male	1.84	.002*
	Female	2.17	.001*
3. E-mailing for study-related reasons	Male	4.21	.039*
	Female	3.98	.036*
4. E-mailing for work-related reasons	Male	1.47	.259
	Female	1.62	.243
5. Looking at specific Web pages	Male	3.14	.263
	Female	3.30	.262
6. Surfing the Web	Male	2.94	.398
	Female	2.79	.398
7. Building Web pages	Male	4.87	.557
	Female	4.90	.562
8. Research for course papers	Male	2.12	.280
	Female	2.29	.279
9. Research for work	Male	4.41	.202
	Female	4.24	.196
10. General information (directions, news)	Male	2.62	.619
	Female	2.55	.615
11. Word processing	Male	1.91	.001*
	Female	2.40	.000*
19. Playing computer games	Male	2.65	.000*
	Female	1.90	.000*

## DISCUSSION

Results indicate that the majority of students now have access to a computer at home (89.5%) and most of these students have access to the Internet (88.8%). Nearly 72%

of the students had an up to date operating system (Windows XP). Unlike Craig & Stein (2000) and Rowell et al. (2002) who found no significant differences in computer attitudes of males and females, this study found a significant difference in computer attitudes on two important questions. Females find computers more complicated and difficult to learn and they also feel that computers create as many hassles as they solve. Although students were almost unanimous on the importance of computers in their future, (see Figure 2) females in particular recognised the importance of computer knowledge in their future employment and felt that computer knowledge would give them an advantage in acquiring employment more so than males.

Students' prior experience with computers is extremely varied with 60.5% reporting that they are self-taught. Only 48% of the students reported that they had learned computing at school. These findings support Turner's (2003) premise that students are not necessarily IT literate on leaving school. Like Turner's study this research also found that students' perceptions of their skills were better than their actual performance as the students' perceptions of their own abilities did not correlate highly with their actual test scores.

A significant difference was found in the MS Word and MS Excel scores for the main stream and ESOL students. Main stream students scored significantly higher than the ESOL students. The mean MS Word score for the main stream students was 4.69 compared to 2.68 for the ESOL students and 2.95 and 1.95 respectively for MS Excel. This may have some implications for the sequence of topics taught in the 150 Computer Concepts paper as the ESOL students may struggle with spreadsheets concepts (such as formulae) if they have not first learned the basic functions common to all Microsoft programs (cut, copy, paste, undo), more easily taught in MS Word.

With the exception of Internet skills, the expected literacy levels were not displayed in this cohort, supporting the findings of previous studies. The gender gap has mostly closed in this cohort and both males and females have similar levels of self-perception and skill with the exception of the Internet. This study confirms the findings of Lim & Lee (2000) that found that students have some basic computing skills, adequate MS Word and Internet skills but their Excel and Access skills are not adequate for business students for qualification requirements or for their future employment. Males prefer to play games, and females prefer to communicate with others.

## **CONCLUSION**

In this paper further understanding has been gained about the levels of IT skills, practices and attitudes of students enrolled in the New Zealand Diploma in Business, 150 Computer Concepts course at a New Zealand tertiary institution.

One of Turner's (2003) aims for his research was to "seek evidence that the time was approaching where it could be assumed that students starting tertiary study had certain IS skills (word processing and spreadsheet) and that these skills no longer needed to be formally taught at a tertiary level" (Turner, 2003, pg 840). Turner found that his aim was not strongly supported and likewise the evidence presented in this study found no evidence of a uniformity of skills among students entering tertiary education; as 52% of the students surveyed scored below average on the word processing test, 81% scored below average on spreadsheets and 92% of the students could not even answer two questions correctly on that database test (see Table 3). The author therefore recommends that more research is needed to determine the level of students' computer skills before the 150 Computer Concepts prescription is altered.

This study adds to the growing pool of knowledge gained on the rise in computer literacy skills of entry level skills for diploma level business students.

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**Now you see it; now you don't - retail out of stock.**

**Have we improved customer service?**

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## **Now you see it; now you don't - retail out of stock.**

### **Have we improved customer service?**

**Abstract** Traditionally customer service in distribution has been measured by product availability. Distribution has been dynamic affected by many changes, including structural, in operations, retailing, competition, infrastructure and technology. The impact of the changes is examined for the effect on incidence of out of stock the basic measure of customer service. An examination of the literature shows that over the years there has been little improvement in product availability. An explanation is sought for limited progress towards optimal customer service levels. The problem of out of stock, its causes and possible solutions are examined. Major areas where improvements can be made are in retail management and practices to increase stock availability.

**Key words** retail distribution, customer service, stock availability, store management

### **Introduction**

Arriving in New Zealand has been a whole new experience visiting the unfamiliar stores, but recognising many familiar brand names, and making first acquaintance with others as yet unfamiliar. Armed with a shopping list, or better described as a wants list some brands are available in one store and not another. Over time experience is gained and with it there is a growing realisation that on successive visits the shopping wish list is only partially met. Sometimes it is just the selection of pack sizes that doesn't match the wish list, sometimes the specified variety, sometimes the whole brand is absent. Had these items, or stock keeping units (SKUs) been deleted by the store group or by the individual store manager? On a subsequent

visit HP sauce, Bisto, Colmans original mustard or Imperial Leather would be on the shelves. That answered the initial question, the items have not been deleted, and they are merely out of stock at the time of the shopping trip. However, a product new to me, which I trialled, Arnott's Royals – dark chocolate mallows, has permanently disappeared from all the supermarket shelves in the area in which I live. A check on Arnott's website confirmed that it is still manufactured, not only that, it is a highlighted and featured product. Maybe it just doesn't appeal to local tastes? All these questions gave me pause for reflection. Thinking back to my earlier years when employed by a marketing research agency that had recently acquired retail audit services, I recalled we used to measure incidence of out of stock. In those days in the 1960's it was a serious problem showing up clearly in the data collected and the reports provided to clients. Field visits to panel member stores also confirmed the generally chaotic nature of some retail operations at a time when computers required their own separate building and air conditioning system, long before the advent of PCs, laptops, Palms and the Internet.

Since those days there have been tremendous developments and progress; advances in technology, in management and a reduction of distribution channels levels. The effects of globalisation and concentration serve to intensify the level of competition between channel members and within channel structures (Davies & Ward, 2000). It appears that despite the developments and progress during intervening years, out of stock still remains a serious problem. It prompted me to visit the literature to see if it is still a serious problem, the extent of the problem, the causes and the effects on sales and consumer behaviour and to consider what could be done to alleviate the problems and the consequences. A glance at a range of textbooks in distribution, logistics and supply chain management immediately available to me indicated that the topic was not worthy of mention let alone discussion. There are standard formulas for determining economic order quantities, and rules for re-ordering for stock replenishment. Most

texts take a purely quantitative approach, an approach that is suggestive that if you use the formulas everything will be fine. Customer service level is then defined as the level of out of stock that is acceptable. Availability approaching 100% is considered impossible without rapidly escalating costs that would destroy any possibility of profit. No clear expectations are given as to an acceptable or achievable level of stocking, nor of any of the factors impacting on achieving high levels of product availability through a distribution system. I recall my first encounter with distribution as an area of study, and could well appreciate Peter Ducker's description of distribution as the 'economy's dark continent'. Distribution was, and still is a major cost area representing opportunities for delivering substantial benefits to an organisation's bottom line from increases in efficiencies.

The relative neglect of distribution is due to a number of reasons, in particular its cross-functional nature, its extension beyond the individual business to the supply chain and distribution channel. The distribution channel includes a multiplicity of organisations that are participants. A traditional view of optimisation was that it could only be achieved by one organisation at the expense of others. Winners have to be matched by losers in this scenario. Thankfully this view is disappearing with the realities that a successful supply chain or channel of distribution requires co-operation, not competition and conflict. Business processes have to be integrated along the supply chain, with the aim to have synchronised movement of products and information. Supply Chain Management is the entire process of raw material supply, manufacture, packaging, transportation and distribution to the end customer. Often forgotten is that the consumer and consumer behaviour drives the supply chain and distribution process. "Materials and finished products only flow through the supply chain because of consumer behaviour at the end of the chain" is a point emphasised by John Gattorna (1998) when considering best practice in strategic chain alignment.

A look at the academic literature is more rewarding than a perusal of current texts. Although there are few reports of academic research there are reports of industry sponsored research into the incidence and causes of out of stock.

### **Is out of stock still a problem?**

Back in 1968 a study for the retail industry estimated lost revenues from out-of-stock (OOS) at more than 11% of gross sales (Progressive Grocer 1968). Corsten and Gruen (2003) report on an industry supported research study that found several trade associations and joint trade-industry bodies have sponsored or released reports in recent years. Coca-Cola Research Council in conjunction with Anderson Consulting (1996) found in their laboratory study of eight product categories an out of stock rate of 8.2%. Other studies reported a similar overall average out of stock with a high of 12.3% and low of 4.9%. Efficient Consumer Response Europe (ECR) survey in 2003 reported an out of stock rate of 7-10% in their on-shelf-availability study. From these studies, therefore, there is little evidence of major improvement in product availability of fast moving consumer goods (FMCGs) at the consumer point of purchase over the last 30-40 years. My initial observations of New Zealand product availability in retail stores are supported by industry studies showing that globally out of stock is a continuing problem, and still remains a serious problem. The optimum achievable level of out of stock is considered to be 2-3%, or a stock availability rate of 97-98%, sometimes called the optimum customer service level. Loss of revenue from the reported average of over 8% out of stock is very substantial (Charlton & Ehrenberg, 1975; Progressive Grocer, 1968). This is the tangible component of the loss, the contribution margin of items that would have been sold. The intangible component, the effects on consumer behaviour are more difficult to measure (Schary, & Becker, 1978; Zinn & Liu, 2001).

In the past the larger number of suppliers and levels of intermediaries in the supply chain increased the risks of OOS occurring. With application of Just in Time supply and lean thinking in organisations linked by electronic communications and processes, the problems of OOS logically should be less. There is a reduction in risk by relying less on forecasts and using time based advantages, reducing production time, forecast periods are shorter reducing OOS, obsolete stock and reducing the amount of goods in distribution, and freeing up capital. Introduction of all these improvements in the distribution system should be capable of reducing the occurrence of OOS. It can be shown that OOS levels reported in trade studies do have serious implications for sales revenue and for brand loyalty. When faced with an OOS situation the consumer is unable to purchase the preferred product and that will lead to a change in anticipated behaviour that is likely to result in less satisfaction with the eventual outcome of the shopping experience.

### **What do consumers do in response to OOS?**

It may be asked if the incidence of OOS is really so important to consumers, retailers and manufacturers. It is, because both manufacturers and retailers use resources in marketing their products and services to consumers. Efforts are being directed towards encouraging consumers to buy their products and services rather than those of their competitors, thereby increasing brand preference and brand loyalty. By not having the preferred products available the strength of brand loyalty to the store and the product may be reduced, making it more likely that a switch will occur to substitute brands or stores. It has been shown from a series of studies (Campo et al 2000, Corstjens & Corstjens 1995, Emmelhainz et al 1991, Fitzsimons 2000, Zinszer & Lesser 1981) that consumer response to OOS is positively related to the importance of the item that is OOS, and is inversely related to the change in decision difficulty. Strong

loyalty to a missing item substantially reduces the likelihood of switching to an alternative or substitute item. By being forced to consume something other than the favourite item there is a higher disutility and the 'costs' of searching and switching to a substitute item are higher. The result is that purchase of the favourite brand is deferred, and sales could be permanently lost. Similarly if the retailer has successfully built strong store loyalty the loyal consumer will be less likely to switch stores if preferred items are unavailable and sales again will be lost.

An attempt is made by Fitzsimons (2000) to understand and predict consumer response to OOS. A theory of psychological reactance is invoked which postulates that when an individual's freedom is restricted through the elimination of the preferred item, an increase in aggression occurs toward the source of the restriction (Clee & Wiklund 1980). A consumer becomes more committed to an option, and is then more likely to respond negatively if this option is removed. This magnified response is seen to be similar to the 'endowment effect' in that the consumer's loss is larger the more commitment to the item that is OOS. These findings take on more importance as studies have found that items that have been subject to promotion are more likely to be purchased and are likely to increase store traffic (Hardy, K.1986; Kumar & Leone, 1988; Neslin, Henderson & Quelch, 1985; Sethuraman & Tellis, 1991). Products subject to promotion were found to have higher levels of OOS averaging 15% (Anderson, 1996). By promoting an item, the consumer is encouraged to purchase, and is visiting the store having a strong anticipation of the satisfaction of consuming the promoted item with a strong commitment to the act of purchasing. Could it be that product promotions are doing harm to the brand when a consumer faces higher OOS and experiences psychological reactance? Consumers' experience a choice in the retail buying situation and a psychological response to the removal of choice is only severe if there is a prior belief that the item will be available. Taking away an option due to OOS will lead to a less severe response if the consumer had not

been thinking about the choice. When the item is promoted the consumer will have a more acute response.

An early empirical study in the UK by Schary and Christopher (1979) measured the response to OOS of shoppers by interviewing them at the supermarket checkout. The options included were (with percentage responses n = 434)

**Table 1: Shopper response to OOS at supermarket**

Buy same brand, different size	4.8%
Buy different brand	5.0%
Buy different product	12.4%
Postpone purchase until next visit	11.1%
Lost sale, no purchase	18.8%
Search for brand at another store	47.9%
<b>Total</b>	100.0%

Results indicated that managerial and professional respondents were more likely to have suffered OOS and more likely to search in other stores. An analysis was done of the action taken to see if there were differences between the brands OOS that were own label or other brands. Not surprisingly where there was no opportunity to buy own label brand at another retailer's outlet there was a much higher rate of postponement or non-purchase, rather than searching another store (46.5% versus 16.2% for other brand!)

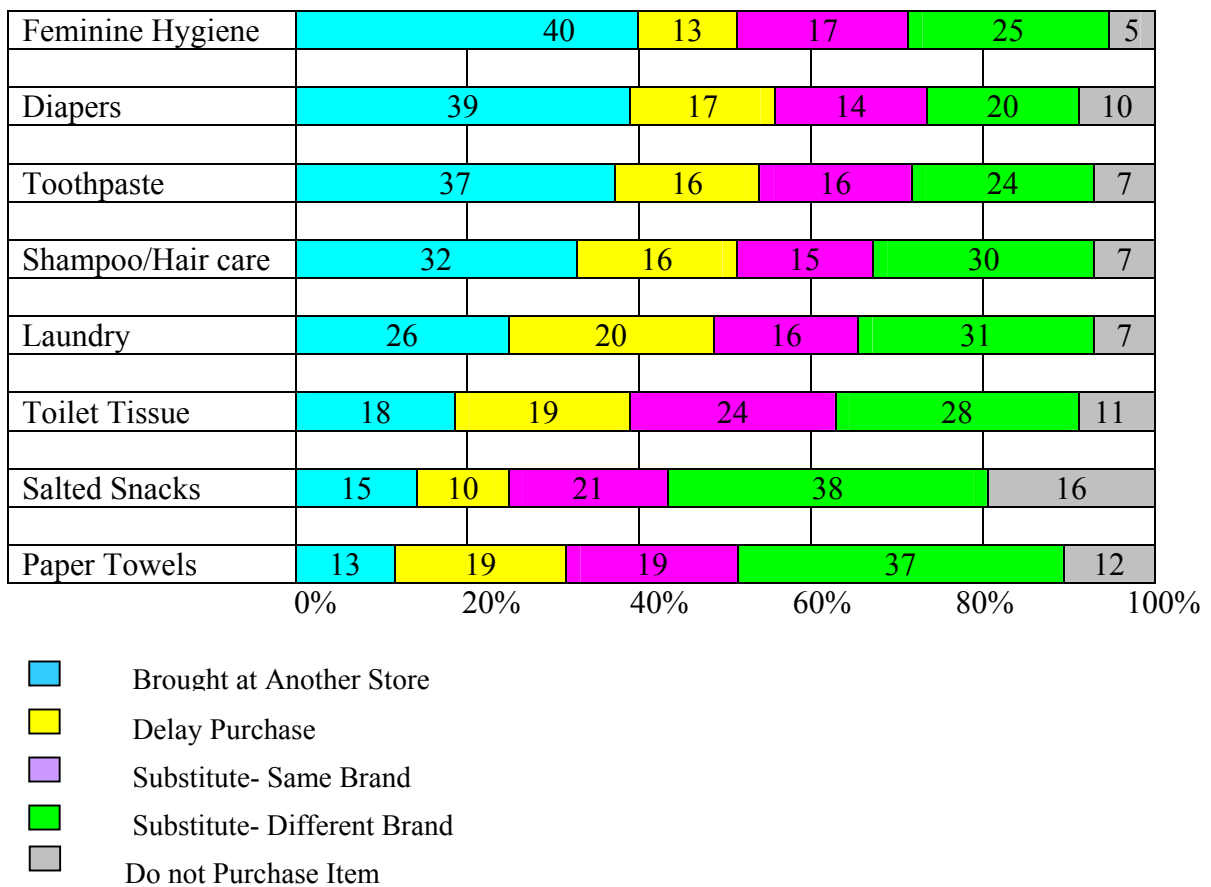
An experiment was conducted by Emmehainz et al (1991) to measure consumer responses to OOS by removing items from store shelves (a different SKU each day of the survey) and interviewing consumers at the check-out. They identified 15 possible actions, extending the model reported by Schary and Christopher. Results indicated that 27% of the consumers delayed purchase and 14% purchased from another store. The remainder substituted a different brand 32%, or purchased a different variety, keeping size and brand the same (18%), or substituted a larger or smaller size of the OOS item. Substitution of an item was more likely to occur if it was intended for regular use. Their conclusion was that factors influencing specific substitution action taken included repeat brand purchase and product type. Strong repeat brand purchasers were more likely to substitute within brand, rather than across brands. Store loyalty was also examined and non-store loyal customers were more likely to buy elsewhere, whereas store-loyal customers would more likely delay purchase.

Most of the studies reported in the literature measure consumer reactions to hypothetical rather than actual OOS for preferred items. Corsten and Gruen (2003) were able to look at a worldwide study and measure actual behaviour of over 71,000 consumers across 20 countries. Although they found global differences, delay in purchase and lost sales are similar, but US consumers show less willingness to switch brands. Responses vary considerably by category.

Losses as a result of OOS affect sales venue and customer satisfaction and loyalty. Not only does the retailer suffer loss of revenue as a direct consequence of deferred purchase, but also there is a risk that the customer switches stores. Its likely those retailers that are able to maintain higher levels of item availability will attract more customers and gain customers from competitors. But effects are felt beyond the retailer. The customer may decide to substitute a brand for the preferred item that is not available. It may result in less satisfaction for the

consumer; but it may lead to a reduced preference for the preferred item and lead to a switch to a competitor's brand. The sales loss is of little consequence to the retailer, but will be of importance to the manufacturer with the loss of future and ongoing sales. The implications for the manufacturer are the immediate loss of sales, and the possible defection to a competitor's brand for future purchases.

**Table 2: Average Worldwide Consumer Responses by Category**



It can be seen that the effects of the loss are interdependent. If OOS is reduced, the risk of sales loss to the retailer, loss of customer to other stores, loss of manufacturer sales and loss of customer to competitors are all reduced. Further the problems in incomplete fulfilment can be felt through though the supply chain with a 'bullwhip effect' where small deficiencies at retail

level become exaggerated as they are transmitted up the supply chain. Consumers encountering OOS on favourite items are likely to increase safety stocks and stock up on large amounts as the item returns to stock. This phenomenon is most clearly demonstrated when announcements are made of impending shortages – a sure way to create an immediate shortage. The overall effect of OOS is to create an artificial demand situation, where sales are more volatile, and forecasting sales and optimum order quantities become more difficult and further OOS or over supply are more likely to occur. Demand uncertainty is the driver of the need for higher levels of safety stock.

### **Why do we still have a retailer OOS problem?**

There are three major causes of OOS: ordering practices, replenishment practices, and planning practices. Ordering too little or too late results in late delivery and OOS, and ordering correct quantities depends on accurate retailer forecasts. Particular problems occur when there are special promotions, and the retailer can be affected by insufficient quantities in the supply chain. Replenishment practices refer to in-store replenishment. The retailer may have stock, but the shelves have not been replenished before an OOS occurs for an item. Planning practices covers several possible causes, for example production problems at the manufacturer, or distributions production and delivery of items but information is not communicated to the retailer.

An example of a successful retail chain is UK's Tesco, which has 646 stores. It has 40,000 SKU's, supported by 2,000 suppliers who are required to provide 'service levels' of at least 98.5%, that is correct quantities and delivery at the correct time – Tesco expects delivery within half hour time 'windows'. Logistics is all about creating value for customers to earn their life time loyalty, that is Tesco's core purpose, and is supported by wide product range and high on-shelf availability. Rationalisation of distribution centres and delivery points enabled cost-effective daily delivery service to all stores. Each distribution centre serves 50 stores and

has three-temperature zones- frozen, chilled, and semi-ambient. Delivery vehicles similarly operate with temperature-controlled chambers, and ambient goods are delivered through separate systems. At store level EPOS systems, update cumulative sales every 4 hours, using Internet technology to communicate with suppliers. For fast moving products the aim is to ‘pick to zero’ that is leaving no stock in the distribution centre once orders have been fulfilled. Orders are delivered to stores in waves through the day, allowing the same space at the distribution centre to be used several times. (Harrison and Van Hoeck, 2002 p 4-5)

Not all retailers, or distribution channel and supply chains are so efficient and effective in matching supply with customer demand. To achieve such levels of operational efficiency requires collaboration and substantial financial commitment between manufacturers, suppliers and retailers. Similarly investment has to be made in information technology to provide accurate and timely information about all sales and stock movement along the supply chain. To answer the question of where in the supply chain does the OOS problems arise, reference to Corsten’s (2003) report of the results of the global study apportions source of OOS mainly to the retailer. The sources given and incidence of each are:

**Table 3: Sources and incidences of OOS**

Store forecasting	13%	} store source 72%
Store ordering	34%	
Store shelving	25%	
Distribution centre	10%	
Retail HQ or manufacturer	14%	
Other cause	4%	
<b>Total</b>	100%	

With widespread implementation of EPOS and IT systems that automate transactions track merchandise, optimise inventory levels and other decisions, it could be expected that OOS problems emanating from among suppliers and distribution centres would be reduced leaving the retailer as the major source. Two specific problems are inaccurate inventory records and misplaced SKUs.

These causes are discussed by Raman et al (2001) who found more than 65% of inventory records were inaccurate at SKU level, with an average 35% discrepancy between actual and target level of stock for each item. This was derived from an analysis of a sophisticated and leading retailer with hundreds of stores, and with sales scanned electronically. The impact is severe for the retailer as inaccurate inventory records are used for automatic stock replenishment. Items OOS, recorded as in stock may never be reordered, and demand forecasts will be rendered inaccurate for other items. In one grocery chain it was found that sales of medium tomatoes had been 25% higher than stock received. Checkout staff routinely registered sales of medium tomatoes even if it was organic, vine-ripened or other specialty tomatoes. As a clerk said "If it's red and soft it's a tomato at the check-out counter". Speed is of the essence at the check-out and so spending extra time looking up codes risks upsetting the customer (Fisher et al, 2000).

Misplaced SKUs, identified as a problem of store shelving by Corsten, accounts for 25% of all OOS. At one retailer 16% of the items in a store were not available to consumers due to having been misplaced in a storage area, shelves had not been replenished, or were put in the wrong location. All these represent lost sales opportunities and reduced customer satisfaction.

Estimates given by Raman et al are of 10% of current profits lost due to inventory record inaccuracy at one retail group and 25% of profits at another retailer due to misplaced SKUs. Given that these retailers were considered excellent, and that they had sophisticated IT support

to manage the supply chain, inventory and ordering it was found that individual store differences were great. Between individual stores for example the incidence of misplaced SKU's varied from 0.2% to 10%, and was consistent from year to year when annual audits are carried out while the stores are closed. All this pointed to the problem of execution at the store level.

### **Solutions**

It is evident that the opportunities are at the store level, and with store managers to bring about significant improvements through in-store processes and in staff training. Managers and employees need to be aware of the OOS problem and its causes. Procedures for counting and inspection can be improved. It may be staff at check-outs are unaware of the problems created for automated inventory replenishment systems by inaccurate recording of products, scanning orange and lemon varieties as multiple purchases of orange only. The knock-on effect is OOS of lemon flavour and excess stock of the orange flavour. In training emphasis may have been placed on speed, and not stressing the role of scanners as vital sources for gathering data. Greater awareness can be created and a culture encouraged that focuses on availability of items. Somewhat surprisingly Corstens (2003), found that higher inventory correlates with higher OOS rates. Retail stores with higher inventory levels also had more misplaced SKUs. Higher inaccuracy of inventory records will require higher levels of safety stock to be maintained, so that it's important to focus on the cause and improve the records. When faced with OOS consumers may take the opportunity to restock, buying much larger quantities than needed, creating a "bullwhip" effect throughout the supply chain (see Simchi-Levi et al, 2003, p102).

To escape from vicious cycle of OOS leading to forecasting and recording errors, there is much that can be done at store level to increase awareness of the problem and its sources. If EPOS

data is known to be inaccurate steps can be taken to increase accuracy and compensate for the discrepancies between stocks recorded and stocks on shelves. Software systems also need a capability to allow corrections. Ordering and inventory models assume that inventory records are accurate. The zero balance walk each day is a simple approach to identify OOS items, and a stock out card is generated. At busy times there is more likelihood of OOS occurring and in supermarkets Thursdays, Fridays and Saturdays are busy days when everyone is occupied on the check-outs. This is the time when attention should be paid to maintaining stock availability. Planning staff allocation to ensure restocking is carried out prior to the peaks rather than replenishing stocks after OOS has occurred is the answer although generally too little shelf space is allocated to the fast movers and too much for slow moving items.

Retailers have the greatest opportunity of improving profitability through better inventory control to ensure stock availability. But some of the problems lie with the planned systems that fail to optimise the supply chain and customer service. The system of integrating all members in the chain will determine the efficiency achieved, but must not be at the expense of intermediaries. An example that does affect the retailer is where suppliers insist on reaping cost savings from shipping standard packs, which precludes customising assortments by store and results in retailer over stocking of some items and the need to return surplus stock with resultant additional costs. There remains the divide in planning systems; where management information systems (MIS) specialists are not experts in products or merchandising. One retail CEO reported “the only time MIS managers communicate with me is when they ask me for \$30 million write-off on some previous [software] project that has to be abandoned”. (Fisher M, et al, 2000, p123).

Although this paper is written in the context of supermarkets and FCMGs, the problem is even more dramatic in fashion goods where product life cycles are short and ever shortening. The term fashion goods apply to an ever-widening range of products, including consumer

electronics. It is here that forecasting models have a vital role to play together with rapid supply chain replenishment. E-businesses were established to cut out the chore of visiting the retailer and picking the products and also reduce the number of channel levels in the distribution system. The impact of the Internet on consumer purchases has been muted, not least by the same problems that plague real retailers – OOS. As Simchi – Levi et al (p128), say “E-business strategies were supposed to reduce cost, increase service levels, and increase flexibility and of course profits... in reality these expectations have frequently gone unmet, as many of the new e-businesses have not been successful. In many cases the downfall of some of the highest profile Internet businesses has been attributed to their logistics strategies.” Bulk shipment to stores is replaced with the complexity of individual shipments to consumers, together with the added complexity of reverse logistics.

A final thought is that there is increasing rationalisation of production facilities, with multinationals locating production in low cost countries. Some products can sustain the added costs of air transport, but many will arrive by sea. Perhaps this is an important cause of why I see so many of my preferred brands unavailable from time to time on the shelves of stores in New Zealand. Brands manufactured overseas will be subject to the volatility caused by ‘whiplash’ effects exaggerated by the very considerable time lag effect between store ordering and time products spend in the distribution channel. Forecast demand will always be inaccurate despite the most sophisticated system, but with time lags between overseas manufacture and delivery by sea, any volatility in demand will result in oversupply or OOS without the benefit of excessive safety stocks. Despite the apparent high cost it is another reason why so many products are being shipped by air.

## **Conclusion**

In answer to the question posed, have we improved customer service, there is some improvement as measured by incidence of OOS/stock availability. Today the consumer is a little more likely to find products available at the point of sale at the time of a visit to a retail store than during the 1960s. However, given all the changes, developments, improvements, investment and integration in the last thirty to forty years it could have been expected that stock availability would have moved further towards optimum levels of customer service. So many aspects of distribution have changed especially transportation and channel infrastructure, application of information technology, concentration in channel ownership, rise in multiple retailers and application of management science techniques and all run by better trained managers. It is therefore surprising that so little improvement has occurred in product availability at the point of final purchase. Other aspects of customer service may have improved as a result of the changes in distribution, for example the quality and freshness of food and economies of scale have brought productivity improvements passed on to the consumer as price reductions. But a consumer with a shopping list is going to be disappointed, and more so if that list includes promotional items or the visit is made at a busy time of the week. We should expect at least one in ten items to be out of stock.

In response to stock unavailability consumers have a range of options, but overall the manufacturer, supplier and retailer will all be hurt by a loss of sales. Brand loyalty to both the store and the brand will be negatively affected. Attempts made to strengthen brand awareness and build brand loyalty using advertising and promotion will be wasted if the increased demand cannot be met at the retail level. Faced with empty shelf-space there could be a strong and enduring adverse reaction against the brand.

Evidence from the literature points the responsibility at the retailer for the continuing problem of less than optimum stock availability. with much due to deficiencies in store ordering and store shelving. Although deficiencies have been apparent in software used for inventory control, much of the responsibility must rest with store managers to better utilise and train staff. Studies within multiple groups have shown wide discrepancies between individual store performance within each of the multiple retail groups. Better management of customer service levels is a source of competitive advantage among retailers.

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