

**FUTURE STRATEGY FOR HIGHER EDUCATION
WITH SPECIFIC REFERENCE TO SCOTTISH
UNIVERSITIES**

**By
Karthigaesu Muthaya**

**A thesis submitted in partial fulfilment of the requirements of Napier
University for the degree of Doctor of Philosophy
May 2006**

DECLARATION

I declare that this thesis is my own work and has not been submitted in any form for a degree to Napier University or other institution of higher education. Information derived from the published or unpublished work of others has been acknowledged in the text and a list of references is given.

 -

Signature

31/1/07

Date

ABSTRACT

The developed economies are now considered to be entering the growth phase of knowledge-based economic activity. The universities are increasingly seen as a critical vehicle for knowledge creation and knowledge transfer in order to produce educated citizens that will facilitate economic growth. The secondary data on the pressures facing universities suggest that the universities need to be more competitive, flexible and efficient. Empirical data was collected from a series of student expectations and satisfactions surveys at one of the Scottish universities. Analysis of these suggests that generally students seem to demand for a wider option of delivery from the university. The students broadly do not seem to be content with massification of higher education that includes distance learning delivery. This raises a potential conflict with regard to culture in that the culture that best facilitates the students' acceptance of massification of higher education will include distance learning delivery. Therefore, this research has been conducted to explore and determine the current, future and desired culture of three Scottish universities. This research also determined how culture in these three Scottish universities may be structured to best meet the future requirements of knowledge-based economies. The Organisational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn was used to measure the current, future and desired culture in Scottish universities. From the OCAI, it would appear that the staff in these three universities consider the current culture to be a Hierarchy culture and that a Market culture will be emphasised in future in universities. The Delphi study also indicates that if a market driven culture can be developed then universities can exploit new knowledge in the economy in which they reside and this will enhance their international competitiveness. Thus, in the future, a Market culture will develop in universities that place emphasis on customer requirements and winning in the market place. However, the focus on a Market culture will be achieved by emphasising broadly on the large numbers of standardised procedures, rules and policies governing what people do, and which are strongly associated with "resistance to change", which is often confused with critical questioning of strategy. However, the desired culture is the collegiate culture (Clan culture) with a focus on ongoing commitment to excellence, increased flexibility, staff empowerment and cross-functional teamwork. This raises a potential conflict in higher education environments. The Delphi study indicates that other

stakeholders in higher education want universities to stimulate greater success in knowledge creation and knowledge transfer activities. The universities are expected to increase their economic contribution through collaboration. Scottish higher education should build upon its strength by addressing its weaknesses in order to realise its opportunities and avoid threats. Effective leadership and management are essential in universities. This intensifies the need for a desired culture that can best facilitate the development of universities in the future. Therefore, to address the two conflicts in the higher education environment and to best facilitate the development of universities in the future, it is proposed that there is a need for universities to devise flexible strategies to engage stakeholders to identify issues, propose solutions, and become partners in implementing the changes needed. The universities should cultivate a Clan culture to better facilitate knowledge creation and knowledge transfer activities, and consequently become more customer focused with regard to the likely future expectations from students in terms of programme provision, teaching methods and the whole experience as a student. To facilitate this, it is proposed that tools such as European Foundation Quality Management (EFQM) model could be used to focus activities.

DEDICATION

I dedicate this thesis to my loving family.

ACKNOWLEDGEMENTS

I would like to thank my supervisor, Dr. Robert Raeside, for his guidance, inspiration and assistance throughout my PhD. I am also deeply grateful to him for his invaluable advice, support and encouragement given to me in making this thesis a success.

I would like to thank Mr. John Sinclair, Dr. David White, Mr. Phil Darby, Dr. Jeff Dodgson, Professor Ron Masson, Dr. Judy Goldfinch, Dr. Moira Hugh and Ms. Elsie Horobin for their kind advice and support offered to me in this research. I am grateful to Napier University for their support.

My deepest appreciation and thanks go to my wife Dr. Isthinayagy S. Krishnarajah, for her love, sacrifice, encouragement and continuous support.

I would like to thank my parents, my sisters, grandparents, mother-in-law, my uncles and aunts for their support, love and encouragement.

Last but not least, my great thanks go to all my friends at Napier University, particularly to Ms. Debbie McCraw, Ms. Laura Iosif, Mr. Jesus Canduela, Mr. Phil Hancock and Ms. Isobel Ferguson for all the support offered to me throughout my PhD.

Karthigaesu Muthaya, May 2006

TABLE OF CONTENT

DECLARATION.....	2
ABSTRACT	3
DEDICATION.....	5
ACKNOWLEDGEMENTS.....	6
CHAPTER ONE: INTRODUCTION	
1.1 Introduction	11
1.2 Increasing Student Numbers.....	12
1.3 Academic Staff Numbers.....	14
1.4 Teaching and Learning	16
1.5 Quality in Higher Education.....	18
1.6 Research in Higher Education	20
1.7 Research Objectives	22
1.8 Research Design and Methods	23
1.9 Research Sample.....	25
1.10 Why Napier University.....	26
1.11 Structure of the Research.....	28
CHAPTER TWO: THE ROLE OF UNIVERSITIES IN THE 21ST CENTURY	
2.1 Introduction	31
2.2 Medieval Period.....	34
2.2.1 <i>Agriculture-based Economy</i>	34
2.2.2 <i>The Role of University</i>	35
2.3 Industrial Revolution	37
2.3.1 <i>Manufacturing-based Economy</i>	37
2.3.2 <i>The Role of University</i>	39
2.4 Post-industrial Economy.....	41
2.4.1 <i>Knowledge-based Economy</i>	41
2.4.2 <i>The Role of University</i>	44
2.5 Conclusions	45
CHAPTER THREE: DEMAND AND SUPPLY FOR HIGHER EDUCATION	
3.1 Introduction	48
3.2 Pressures facing Higher Education.....	48
3.2.1 <i>Demographic Change</i>	48
3.2.1.1 <i>Implications for UK Higher Education</i>	49
3.2.2 <i>Economic Change</i>	52
3.2.2.1 <i>Implications for Higher Education</i>	54
3.2.3 <i>Technological Change</i>	56
3.2.3.1 <i>Implications for Higher Education</i>	57
3.2.4 <i>Globalisation of Higher Education</i>	59
3.2.4.1 <i>Implications for Higher Education</i>	60
3.2.5 <i>Pressures on Funding</i>	62
3.2.5.1 <i>Implication for Higher Education</i>	63
3.2.6 <i>Social Inclusion</i>	66
3.2.6.1 <i>Implications for Higher Education</i>	67
3.3 Supply for Higher Education.....	68
3.3.1 <i>Number of Lecturers</i>	68

3.3.2 Universities	70
3.3.3 <i>Technology</i>	72
3.4 Conclusion.....	73

CHAPTER FOUR: STUDENT EXPECTATIONS

4.1 Introduction	77
4.2 Research Method	78
4.3 Sample	79
4.4 Limitations.....	80
4.5 First Survey Findings.....	81
4.5.1 <i>Demographic Background of Respondents</i>	81
4.5.2 <i>Personality of the Respondents</i>	82
4.5.3 <i>Students' Expectations of Learning Methods</i>	84
4.5.4 <i>Preference of Programme Organisation</i>	89
4.5.5 <i>Expectations of Assessment Methods</i>	91
4.5.6 <i>Respondents Expectations of University Reputation</i>	92
4.5.7 <i>Other Expectations besides Obtaining a Qualification</i>	95
4.5.8 <i>Comparison of Expectations of Learning Methods and Other</i>	98
<i>Expectations besides Obtaining a Qualification by Personality Type</i>	98
4.5.9 <i>Expectations of Computing Facilities</i>	99
4.5.10 <i>Expectations of Library Facilities (second survey only)</i>	101
4.5.11 <i>Discussion</i>	102
4.6 Comparison between the First and Second Surveys Respondent.....	103
Expectations.....	103
4.6.1 <i>Learning Methods</i>	104
4.6.2 <i>Programme Organisation</i>	106
4.6.3 <i>Assessment Methods</i>	108
4.6.4 <i>University Reputation</i>	110
4.6.5 <i>Other Expectations besides Obtaining a Qualification</i>	111
4.6.6 <i>Computing Facilities</i>	113
4.6.7 <i>Discussion</i>	114
4.7 The Students Views of the Likely Future of Napier University.....	115
4.7.1 <i>The Popular Subject Areas in the Future</i>	117
4.7.2 <i>Learning Methods at Napier University in the Future</i>	118
4.7.3 <i>Embracement of Technology at Napier University in the Future</i>	119
4.8 Students View on Issues that Napier should be addressing in the Future	120
4.9 Implementation of the Key Issues	121
4.10 Conclusion	125

CHAPTER FIVE: ORGANISATIONAL CULTURE

5.1 Introduction	127
5.2 Defining Organisational Culture	128
5.3 Levels of Organisational Culture.....	131
Figure 5.1: Manifestation of culture	132
5.4 Types of Organisational Culture.....	136
5.5 The Sources of Organisational Culture	141
5.6 Sub-cultures	142
5.7 Influence of Organisational Culture on Performance.....	143
5.8 Organisational Culture of University	145
5.9 Leadership in UK Higher Education	147

5.10 Measuring the Organisational Culture.....	150
5.11 Tool to Measure Organisational Culture	151
5.12 Conclusion.....	153

CHAPTER SIX: ORGANISATIONAL CULTURE AT SCOTTISH UNIVERSITIES

6.1 Introduction	155
6.2 Research Method	156
6.2.1 Tool Used to Determine Organisational Culture of Universities.....	156
6.2.2 Competing Values Framework (CVF)	159
6.2.3 Sample	161
6.3 Limitations.....	163
6.4 Comparison of Data Obtained at Two Different Times at Napier University	166
6.5 Culture Profile at Different Faculties within Napier University	166
6.6 Culture Profile for Faculties across Different Universities in Scotland	174
6.6.1 Comparison between the Faculty of Engineering at Napier University .. and Heriot-Watt University	175
6.6.2 Culture Comparison between the Business Schools at Napier University, Heriot-Watt University and Edinburgh University.....	179
6.7 Union View on the Culture at Napier University	183
6.8 Summary of the Findings	185
6.9 Discussion.....	188
6.10 Conclusion.....	191

CHAPTER SEVEN: THE LIKELY FUTURE OF SCOTTISH HIGHER EDUCATION

7.1 Introduction	193
7.2 Methodology.....	194
7.3 Sample	195
7.4 Interview Findings.....	196
7.5 The Future Purpose of Higher Education and the Rise of Human Capital.....	200
7.5.1 Challenges Faced by Higher Education in order to Increase Human capital	202
7.6 Promoting and Inhibiting Forces of Higher Education	204
7.6.1 Promoting Forces	205
7.6.2 Inhibiting Forces	207
7.7 SWOT Analysis in Higher Education	208
7.8 Future Demand and Competition	211
7.9 Organisational Culture of Higher Education	213
7.10 Likely future of Scottish Higher Education.....	216
7.11 Conclusion.....	224

CHAPTER EIGHT: CONCLUSION

8.1 Introduction	226
8.2 Discussion.....	228
8.3 Likely Future of Scottish Higher Education.....	230
8.4 Contributions to Knowledge.....	237
8.5 Recommendations to Academia and Higher Education	237
8.5.1 Recommendations to Academia.....	237

8.5.2 <i>Recommendations to Higher Education</i>	238
8.6 Future Work.....	240
8.7 Conclusion.....	240
CHAPTER NINE: REFLECTION OF THE PHD PROCESS	242
REFERENCE	248
APPENDIX 1: First Student Expectations Questionnaire.....	274
APPENDIX 2: Second Student Expectations Questionnaire	278
APPENDIX 3: Final Student Expectations Questionnaire.....	287
APPENDIX 4: Results of the Comparison between the First and Second Surveys..	290
Table 1: Comparison between the first and second surveys for the respondents expectations of learning methods by levels of study (mean score and p-value)	290
Table 2: Comparison between the first and second surveys for respondent expectations of programme organisation by level of study (mean percentage and p-value).....	291
Table 3: Comparison between the first and second surveys for respondent expectations of assessment methods and the students view on actual percentage delivered at Napier University (mean score and p-value)	292
Table 4: Comparison between first and second surveys for respondent expectation of university reputation by country origin (mean score and p-value).....	293
Table 5: Comparison between the first and second surveys on respondents expectations of other factors besides obtaining a qualification at Napier University by level of study (mean score and p-value).....	294
Table 6: Comparison between the first and second surveys on respondent expectations of computing facility by level of study (mean score and p-value)	295
APPENDIX 5: Organisational Culture Assessment Instrument.....	296
APPENDIX 6: Interview questionnaire	298

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The aim of this research is to forecast the future of higher education in order to devise appropriate strategies to facilitate the development of Scottish universities to meet that future. It has been long recognised that higher education is vital to the development of society and an important national asset to support and enhance economic performance. The contributions that UK higher education has made are as follows (DfES, 2003):

1. Its research pushes back the frontiers of human knowledge and is the foundation of human progress.
2. Its teaching educates and skills the nation for a knowledge-dominated age.
3. It gives graduates both personal and intellectual fulfilment.
4. Working with business, it empowers the economy and its graduates.
5. Wide access to higher education makes for a more enlightened and socially just society.

In recent years the relevance of higher education is judged primarily on its increasing contribution to economic development. Knowledge has gradually become a major driving force for economic development (Florida, 2002). Developed economies such as the UK are now considered to be entering the growth phase of knowledge-based economy (Florida, 2002). Hence, higher education is increasingly being seen as a critical vehicle to facilitate the emergence of a new paradigm for innovation and the advance of knowledge that will contribute to the growth of the economy (OECD, 2004). In the future the relevance of higher education to economic development will need to be demonstrated on an ongoing basis (Gibbons, 1998). Economic growth will occur in places that have highly educated people and learning societies which are committed to effective education and training, allowing them to adapt to the new paradigm for innovation and advance of knowledge (Dearing, 1997; Florida, 2002).

Thus, higher education is no longer the preserve of the elite but has expanded to a mass higher education.

Universities are central in delivering higher education that is relevant to economic development. In the UK, universities are autonomous bodies established by Royal Charter since the twelfth century. For example, the University of Oxford and University of Cambridge founded in the 12th and 13th century respectively. Three Scottish universities, namely St. Andrews University, Glasgow University and Aberdeen University, have existed since the 15th century. In 1992, a vast number of polytechnics were upgraded to take up university status under the Further and Higher Education Act 1992 (HEFCE, 2005). Napier University was one of these. The universities in the UK are diverse in terms of their size, mission, subjects offered and how they developed. Thus, how universities respond to the notion of relevant higher education in the future means further expansion of diversity across universities.

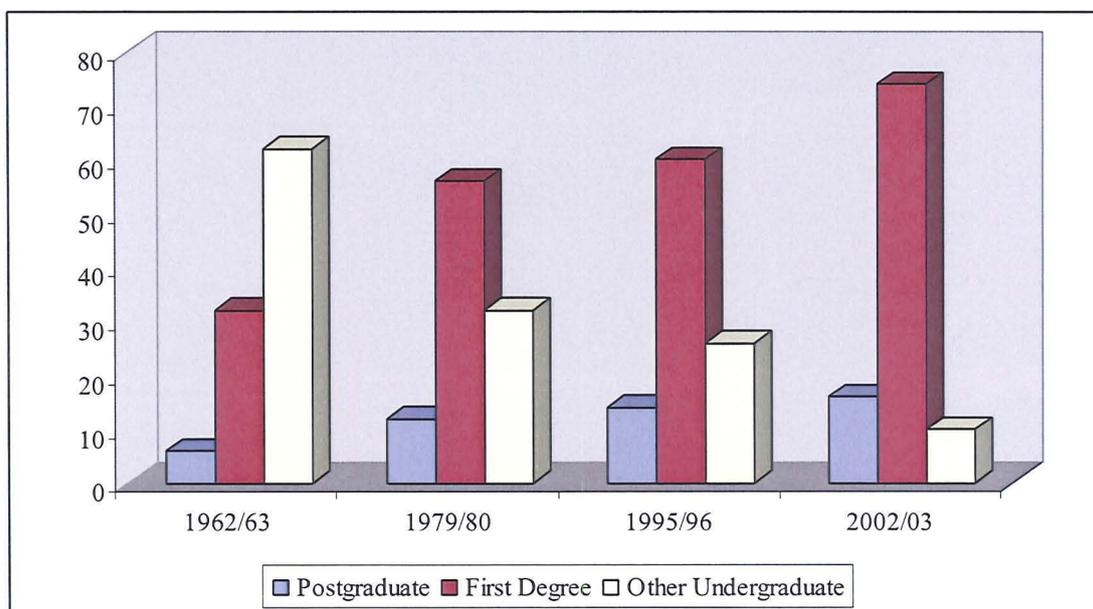
1.2 Increasing Student Numbers

The emergence of the knowledge-based economy increases demand for more people with higher education. The government has increased the number of universities and higher education provision that is now accessible to wider society. Thus, participation in higher education increased. Scotland in particular has a relatively high participation rate in higher education as measured by the Age Participation Index. Approximately 52 per cent of young people enter full time higher education before the age of 21. Participation in higher education in the UK has risen from approximately 200,000 students in 1960 to 1,859,600 in 2001/02 and to 2,170,000 in 2002/03 (Dearing, 1997; HESA, 2004).

The growth of first degree and postgraduate students' number has risen in recent years (Figure 1.1). The proportions of Postgraduate students have increased by approximately 11 per cent between 1962/63 and 2002/03. The proportions of First degree students have also increased by 40 per cent between 1962/63 and 2002/03. However, the proportion of other undergraduate students has decreased by approximately 50 per cent between 1962/63 and 2002/03. This shows that there is

more demand for higher qualifications. Perhaps this is among the government initiatives for the growth phase of knowledge-based economy.

Figure 1.1: The move towards higher qualifications in UK higher education by year



Source: Dearing, 1997; Higher Education Statistics Agency, 2004

The number of first year undergraduate mature students aged 21 and above have increased as shown in Table 1.1. In 2002/03 the mature students numbers increased by approximately 19.9 per cent compared to 1996/97. On the other hand, the full time first year UK domiciled entrants aged 19.3 per cent and below increased by approximately 16 per cent in 2002/03 compared to 1996/97.

The first year part-time UK domiciled student number age 20 and below increased by 138.7 per cent in 2002/03 compared to 1996/97. The part time first year UK domiciled student numbers, age between 21 and 24 increased by 77.2 per cent in 2002/03 compared to 1996/97. The part-time first year UK domiciled student numbers age 25 and above has also increased by 62.8 per cent in 2002/03 as compared to 1996/97.

Table 1.1: First year UK domiciled students in UK higher education by age group and mode of study

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Full- time							
under 20	251800	270662	272484	274750	278315	290425	300310
21-24	111440	113292	113671	113340	108780	119875	134310
25 +	106420	107430	106787	103690	108200	117805	126885
Total (1)	470568	492952	493928	492510	495780	528550	562035
Part time							
under 20	7814	8022	10355	10970	15810	18185	18650
21-24	27878	26768	31305	31450	40490	45605	49405
25 +	204221	191862	248409	251000	301215	332820	332460
Total (1)	249731	234672	297583	300060	368035	409175	414720

Source: Higher Education Statistics Agency, 2004

Another important change in higher education is the increased participation in higher education by female students, as shown in Table 1.2. Women make up 56.6 per cent of the entire higher education student population, being in the majority among both full-time (54.0 per cent) and part-time (60.5 per cent) students (HESA, 2005).

Table 1.2: Students in UK higher education by gender

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Female	921505	955338	994051	1012820	1109995	1171965	1230480
Male	834675	844726	851706	843510	880625	914115	944640
Total	1756179	1800064	1845757	1856330	1990625	2086075	2175115

Source: Higher Education Statistics Agency, 2004

The increasing diversity of students in universities in the UK may continue in the future (DfES, 2003). Students may demand improved and wider range of services from universities in the future.

1.3 Academic Staff Numbers

Table 1.3 shows the number of academic staff in the UK. The total number of academic staff has increased by 15.1 per cent in 2002/03 as compared to 1996/97. In 2002/03 the UK universities employed around 121,000 full time and around 26,000 part time academic staff (HESA, 2004).

Table 1.3: Academic staff in higher education institutions in the UK

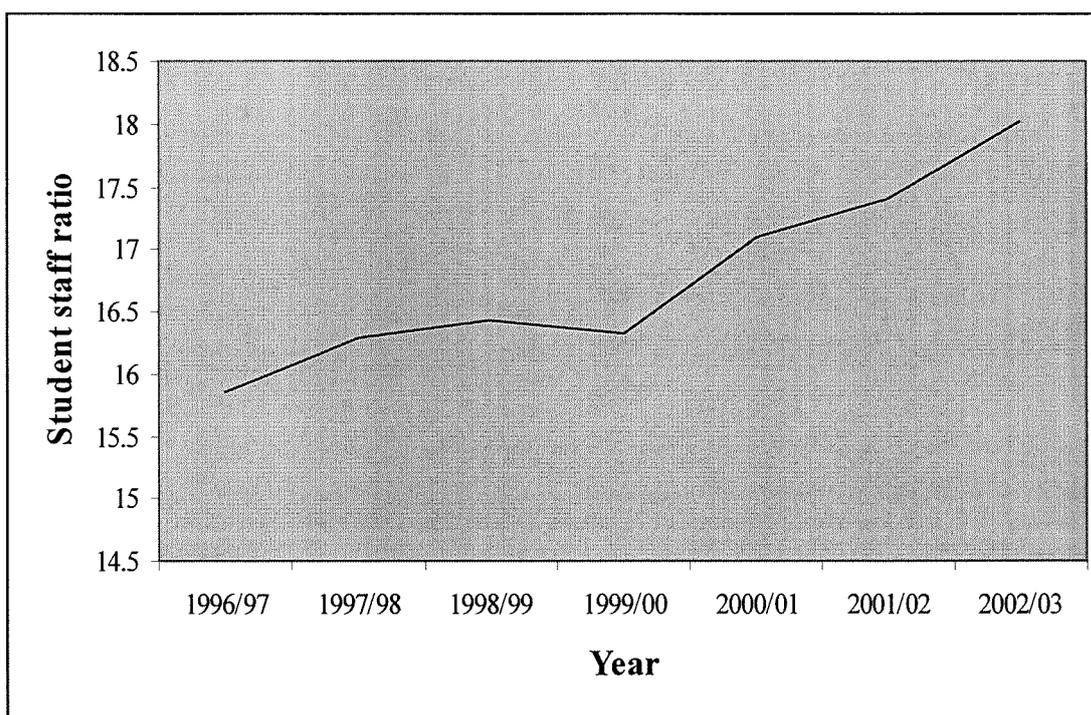
	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Full Time							
Professors	8997	9335	10187	11670	12535	12820	13165
Senior Lecturers & Researchers	19812	19518	19835	21510	22105	22720	23280
Lecturers	44007	43559	43185	41670	41955	41495	41110
Researchers	29695	30155	30964	31690	32445	35200	35630
Other Grades	8263	7917	8203	7260	7365	7665	7610
Total	110774	110484	112374	113790	116405	119900	120795
Part Time							
Professors	507	570	623	810	930	990	1055
Senior Lecturers & Researchers	1474	1580	1677	1790	1845	1910	2070
Lecturers	6188	6787	6930	7780	8220	8650	9235
Researchers	3786	3511	3969	5640	6555	5200	5805
Other Grades	4839	5144	5563	5940	5985	6500	7910
Total	16794	17592	18762	21960	23535	23250	26080
Full time							
Female	33326	34230	35727	37230	38985	41225	42407
Male	77448	76254	76647	76560	77415	78675	78385
Total	110774	110484	112374	113790	116400	119900	120795
Part Time							
Female	8640	9064	9907	11350	12225	12725	14615
Male	8154	8528	8855	10610	11310	10520	11465
Total	16794	17592	18762	21960	23535	23245	26080

Source: Higher Education Statistics Agency, 2004

Table 1.3 also indicates that the increase in female academic staff is greater than the male academic staff. The female academic staff (combining full-time and part-time) increased by 35.9 per cent in between 1996/97 and 2002/03. The male academic staff (combining full-time and part-time) only increased by 5 per cent in between 1996/97 and 2002/03.

The increase in the number of academic staff is not proportionate to the increase in student numbers which has resulted in greater student staff ratio. Figure 1.2 shows the increase in staff numbers along with the increase in total number of students in UK higher education.

Figure 1.2: Student staff ratio in the UK



1.4 Teaching and Learning

Teaching and learning are central to the purpose of higher education. The range of subjects offered in universities is becoming increasingly broad and more choices are available (Dearing, 1997). The expansion and importance of knowledge enables a whole range of new programmes, such as in social science, to be introduced in higher education. In addition, sandwich programmes incorporating an element of work experience have also been developed in higher education (Dearing, 1997).

The education reforms increasingly emphasize that the traditional transmission of knowledge from teacher to student is no longer sufficient for an educated society (Magolda and Terenzini, 1998). This is also supported by Cormack (1999) who indicated that a fundamental shift in educational thinking is required, moving from an organisation-unit focus to include a learner-centred approach. However, it should be noted that the learning paradigm which was informally carried out by students during the older paradigm of an institution existing to provide instruction, is changing to emphasise on facilitated learning (learning paradigm). In the learning paradigm

students are seen as self directed learners whereby they are facilitated to construct their own knowledge. At the same time maintaining quality of teaching and learning is essential (Law, 2000; Lomas and Nicholas, 2005).

Peer assisted learning has been identified as an additional strategy for teaching and learning activities (Goldsmith et al, 2005; Deese-Roberts and Keating, 2000; Wilkinson, 2002; Tin, 2003; Novins, 2003). According to Tin (2003), the use of group work and group discussion tasks is increasingly being adopted in universities. There are some examples to indicate that peer assisted learning is largely a success and students are pleased with the outcome (Soler, 2002; Tin, 2003; Novins, 2003). Thus, peer assisted learning may likely continue over the next ten years as an alternative strategy in order to address the issues of massification of higher education and the student staff ratio.

However, the argument is how well the students are able to learn from each other in the construction of valuable knowledge. Although students could engage in exploratory discussion universities should also consider that this exploratory discussion may not be triggered unless the expert knowledge required to solve the problems is already at the students' potential or development level (Tin, 2003). Hence, in considering using peer assisted learning as an alternative method of learning, universities may need to consider the use of peer assisted learning according to the level of students.

On-line learning has emerged as an alternative mode of teaching and learning (Gibson and Herrera, 1999; McCredie, 2003; Tallent-Runnels et al, 2005). Universities are increasingly incorporating the computer based learning packages and online learning packages into teaching and learning activities (Hill 2002; Hitt and Hartman, 2002; Masiello et al, 2005; Mazzolini and Maddison, 2005; Lee et al, 2005; Wresch et al, 2005; Jonsson, 2005). The importance of advanced electronic technologies, such as the internet, to higher education has increased significantly during the past few years (Cunasekaran et al., 2002). The technology has suggested itself as a means to spread teaching and learning beyond the physical and geographical confines of the campus, increasing convenience, and expanding educational opportunities (Hara and Kling, 1999; Hill, 2002; Hofmann, 2002; Rourke, 2001; Schrum, 2000).

The increasing number of online courses and programmes may continue to grow in universities. However, the on-line delivery method does not present empirical evidence that it is effective and beneficial for the learners as well as the instructors (Knipe and Lee, 2002; Robertson et al, 2005; Lee et al, 2005; Tallent-Runnels et al, 2005). The student's perceived quality of the learning experience of the online courses as compared to classroom based learning must be taken into consideration in order to enrich student's quality of learning (Wilson and Whitelock 1998; Vallejo, 2001; Lee et al, 2005; Song et al, 2004; Robertson et al, 2005).

1.5 Quality in Higher Education

The pre-1992 universities had the responsibility for maintaining and assuring the standard of their awards (Dearing, 1997). There was a wide practice of subject benchmarking in universities. With the emphasis on collegiality and the recognition of the international role of the university such desires have traditionally manifested themselves in numerous ways: professional associations, both academic and non-academic, meeting to share common interests; numerous visits by delegations from one higher education system to examine practice in another; professional bodies working collaboratively with institutions in supporting academic provision and mediating standards; and where formal quality assessment or accreditation systems exist, their ultimate dependence upon the maintenance of the goodwill of universities often by providing their own staff to take part as assessors of other institutions (Commonwealth Higher Education Management Services, 1998). The quality in higher education was characterised by a strong aspiration for academic freedom by the institutions.

However, the above mentioned practice is seen as weak practice for maintaining national standard as such standards differ across the sector and that this is an inevitable consequence of a mass system of higher education (Dearing, 1997). Thus, the Quality Assurance Agency (QAA) was established for the maintenance of quality and standards in higher education in the UK. QAA developed a "code of practice" seeking the maintenance of standards. The Code of practice for the assurance of academic quality and standards in higher education was designed to ensure

consistency through the universal acceptance of the various subject benchmarks. Harvey and Newton (2004), argue that the accountability, compliance and control are much more frequent rationales for external quality evaluation. It is argued that quality in higher education is much concentrated upon systems and processes rather than learning outcomes of students. According to Gibbs and Iacovidou (2004), the notion of quality in higher education was derived from a business notion of quality.

However, it should be noted that there is a wide range of stakeholders to consider and certain stakeholders have diverse views on quality in higher education. There are some interesting studies that have proposed a broader view of quality in higher education (Harvey and Green, 1993, Srikanthan and Dalrymple, 2003). Harvey and Green (1993) argued that, given the difficulties in defining quality in higher education, it is necessary to define as clearly as possibly the criteria that each stakeholder uses when judging quality. Thus, according to Srikanthan and Dalrymple (2003), there are several stakeholder perspectives about a quality system in higher education. These are as follows:

1. Providers (funding bodies and community at large): To provide an effective way to ensure an optimum utilisation of resources for providing an acceptable level of quality in the delivery.
2. Users of products (e.g. both current and prospective students): To provide evidence of the comparatively high standards as this would ensure a relative advantage in career prospects.
3. Users of outputs (e.g. the employers): To provide assurance of comparatively high levels of capability of graduates to handle the job complexities to ensure competitive advantage.
4. The employees sector (e.g. both academics and administrators) are looking for a different set of outcomes. They require deep levels of job satisfaction through successfully meeting the challenges. This is required to manifest itself by comparatively high levels of respect, as evidenced by remuneration and recognition.

Achieving the “code of practice” required by the QAA is the responsibility of the individual universities. Thus, quality has become a central concern in universities

(Taylor and Hill, 1993; McCulloch, 1993; Sayed, 1993; Harris, 1994; Hosie, 1995; Hill, 1995; Owlia and Aspinwall, 1996; Yorke, 1999; Cullen et al, 2003; Lagrosen et al, 2004; Lomas, 2004; Tan and Kek, 2004). It is argued that the concept of quality in universities broadly tends to be about exercise of bureaucracy, control and power (Yorke, 1994; Harvey, 2002; Srikanthan and Dalrymple, 2003; Cullen et al, 2003; Gibbs and Iacividou, 2004; Strydom, et al, 2004; Harvey and Newton 2004). This may raise potential conflict in higher education environment. The hierarchical processes may raise potential conflict in terms of organisational culture of universities and change, as a result of the requirement to meet the quality assurance system in universities in the UK. The staff in higher education may resist complying with rules and regulations, and may critically question the bureaucratic environment. Thus, it is argued that there is a need to cultivate appropriate organisational culture for the staff to accept the massification issue and consequently the need to be more accountable.

1.6 Research in Higher Education

Research in the UK is fundamental to the development of knowledge and to wealth creation (Boaden and Cilliers, 2001; Ruffles, 2004; HEFCE, 2005). Research lays the long term foundations for innovation, which is central to improved growth, productivity and quality of life, and these apply not only to scientific and technical knowledge (DfES, 2003). Research in the social sciences and in the arts and humanities can also benefit the economy, for example in tourism, design, law and the performing arts, enriching our culture more widely (DfES, 2003). In the UK it could be argued that the strong tradition of research during the medieval period and beyond has been continuously adopted by many higher education institutions in numerous academic subjects. This provides the expertise to keep up with international developments, and the “clout” to join international partnerships (DfES, 2003).

The interaction between knowledge and society is altering the way in which more new knowledge is produced. In the early days, science contributed to the discovery stage and the industrialists could apply the results (Gibbons and Gunmmett, 1984). The academic community was supported by their own resources and working more or less independently without being seen to be too closely involved with industrial activity

(Gibbons and Gunmmett, 1984). However, the political and economic modes of interaction between science and society have taken place today in the context of a fully professionalised scientific community supported entirely by industry or government (Gibbons and Gunmmett, 1984).

The government see the requirement for the universities to be accountable to the public funds that each university receives. The Research Assessment Exercise was created to assess the quality of research and to inform the selective distribution of public funds for research by the UK higher education funding bodies and the research councils. The selectivity of research funding is illustrated by looking at Research Assessment Exercise ratings. About 75 per cent of funding council research funding goes to the top institutions, and research council grant funding follows a similar pattern (DfES, 2003). This may encourage academics and departments at the top institutions to prioritise research at the expense of teaching and vice-versa (Jenkins, 1995). This has led the university sector to divide into research-intensive universities and teaching-intensive universities. This divide between the research-led university and the teaching-led university may present a strong challenge for universities in the future. Academic staff in the teaching-intensive universities may not accept that they have to conduct teaching activity at the expense of research. This may raise issues of organisational culture of universities in the future.

As a result funding allocation based on the RAE rating may indicate a culture that is more bureaucratic. The universities may be forced to follow the benchmarks provided by RAE in order to obtain a better rating. The improved research rating for individual universities may mean increased allocation of research funding. However, this is not the case for teaching-intensive universities. Teaching-intensive universities may have to focus on teaching more at the expense of research in order to obtain more funding.

Universities are dealing with larger numbers of students, with fewer resources. In this situation new modes of teaching and learning are being adopted. Linking teaching and research may support these endeavours (Thomas and Harris, 2000). The link between research and teaching activities may allow for the development of new programmes in universities. In addition, the link between those activities is likely to enrich the learning experience of students. Academic departments are central in developing these

links and they may strive to find ways to increase the link between research and teaching. This may develop new organisational cultures in universities.

1.7 Research Objectives

The relevance of higher education and the contribution it makes to economic development are increasingly seen as critical to support and enhance economic growth in the UK. There is a need to increase human capital in order to support economic development. This has resulted in massification of higher education and has led universities to adopt new modes of teaching and learning, and change the approach to knowledge production (research). In addition, quality assurance became a central concern for higher education. The government is not entirely convinced that the self-regulation of higher education will be sufficiently rigorous (Yorke, 1994). All these factors will affect the future development of Scottish higher education.

The general aim of this research is to forecast the future of higher education in order to devise appropriate strategies to facilitate the development of Scottish universities with regard to the likely future requirements from students and other stakeholders.

More specifically the aims of this research are as follows:

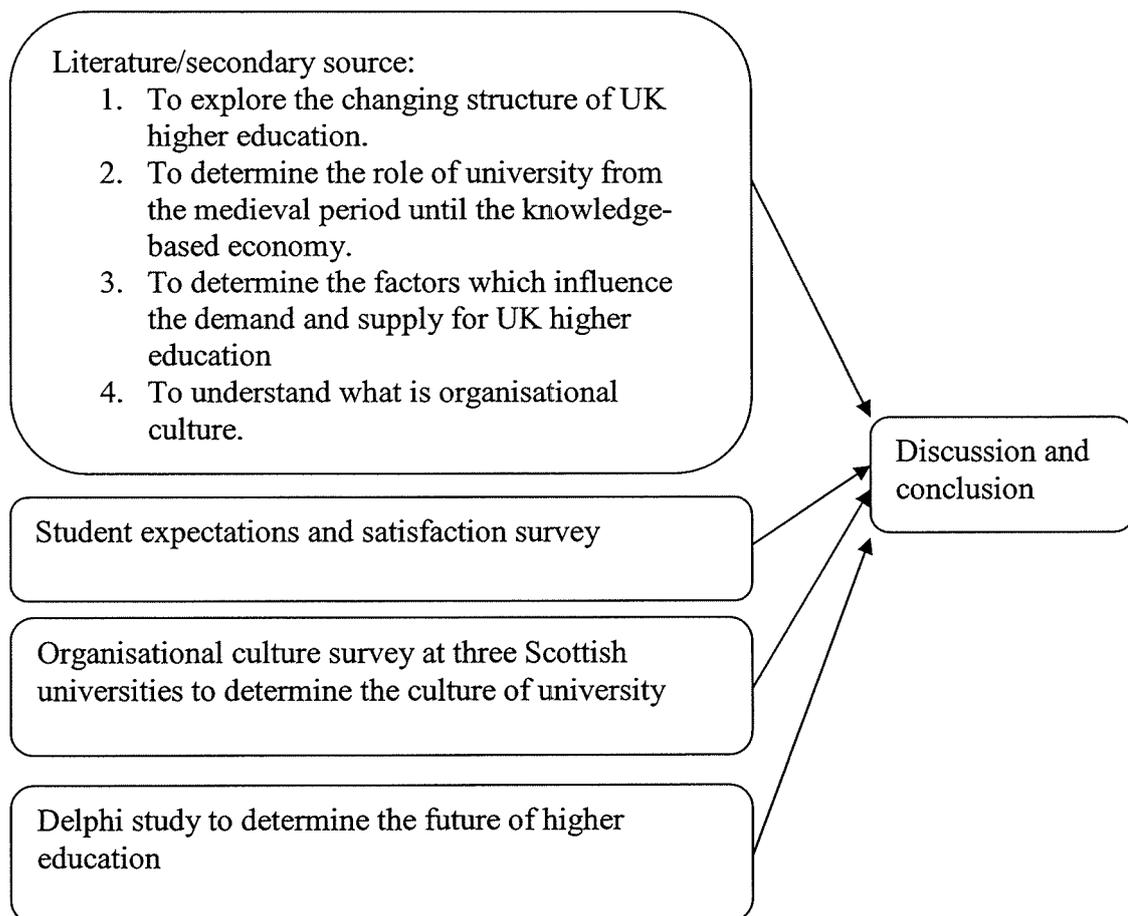
1. To determine the role of higher education from the medieval period until the knowledge-based economy.
2. To determine the factors that influences the demand and supply for higher education.
3. To determine the student expectations and satisfaction.
4. To explore the organisational culture of university.
5. To explore the difficulties in changing culture.
6. To devise and use a method to understand the future and make projections as to the likely future.
7. To consider how to implement a strategy to secure the future.

1.8 Research Design and Methods

A review of the research design literature indicates that a case study approach provides an appropriate framework for the collection and analysis of data for this research (Robson, 1993; Bryman and Bell, 2003; Saunders, et al, 2000; Sekaran, 2003). In this research, a single "deep case study" followed by several small case studies will be conducted. Two forms of techniques will be adopted namely, survey and interview.

The approaches that will be adopted for this research are as shown in Figure 1.3.

Figure 1.3: Research approach



Firstly, the changing structure of UK higher education will be examined by reviewing the literature and secondary sources such as government websites. The exploration of the changing structure of UK higher education will be in relation to massification of

higher education, academic staff numbers, mode of teaching and learning, quality and research in higher education. This will be followed by determining the evolution of the role of higher education from the medieval period to the current knowledge-based economy. In order to forecast the future of higher education, an understanding of the role of higher education will be fundamental. This will be followed by determining the factors which influence the demand and supply of higher education. This is important to raise fundamental issues that may affect the future of higher education. In addition, the organisational culture literature will be reviewed in order to understand what constitutes organisational culture and how one can uncover the culture of an organisation.

In order to determine the role of higher education (first objective) and to determine the factors that influences the demand and supply for higher education (second objective), a variety of resources ranging from books such as “Companion of Scottish Culture” to independent committee reviews on higher education such as “The National Committee of Enquiry into Higher Education” and government publications such as the “White Paper: Future of Higher Education” will be reviewed.

Student expectations will be determined by administering the Student Expectation Survey. Determining student expectations and satisfaction will be important given that the students will be a key members of knowledge-based economy. This should facilitate the universities to prioritise their response to students’ needs and address them more effectively in the future and consequently help to improve higher education provision. This survey will be in a form of questionnaire. This survey will be administered in three different phases. The group of students that will be participating in the first phase will be followed through to the third phase. All three surveys will be administered during a regular lecture session. The respondents will receive instruction from the researcher who will be physically present in each session to administer the survey and to answer commonly asked questions. The respondents will be given the first 15 minutes of the class session to complete the survey and returned it to the researcher.

The cultures of Scottish universities will be explored using the Organisational Culture Assessment Instrument. This is to indicate the culture of Scottish universities and

consequently determining the difficulties in culture change is important. This instrument was developed by Cameron and Quinn (1999). The Organisational Culture Assessment Instrument is in the form of questionnaire which requires the staff of a university to respond to six attributes of organisational culture. The Organisational Culture Assessment questionnaire will be distributed among the members of staff, both academic and administration staff.

The Delphi method will be employed in order to forecast the likely future demand on higher education in Scotland. This approach to forecasting was developed by Helmer (1966) at the Rand Corporation. This will be conducted in the form of semi-structured interview. The responses will be then analysed and the results and conclusion will be drawn. A summary of the key findings on the likely future of higher education in Scotland will then be sent to the respondents asking to confirm the content of the summary.

Finally, a Meta approach and all the separate streams in this research will be integrated and from that predictions will be made on the most likely future of Scottish higher education. Recommendations will be made that there is a need for higher education institutions to devise flexible strategies to engage stakeholders to identify issues, propose solutions, and become partners in implementing the changes that will be required to facilitate the development of universities to meet the future requirements of society. Recommendation will be made that tools such as the EFQM Excellence Model are useful to achieve this change in order to avoid a pessimistic view of the future of higher education.

1.9 Research Sample

Napier University will be used as the main case study institution in this research, especially for the organisational culture survey and student expectations survey.

In order to determine student expectations the students from the Business School, the Faculty of Engineering and Computing, Faculty of Arts and Social Science, and

Faculty of Health and Life Sciences will be selected to participate in the student expectations survey.

In order to explore the organisational culture of university in Scotland, three universities will be selected based on their history of development (Napier University - modern; Heriot-Watt University – a “red brick” university formed in 60’s; and Edinburgh University - traditional). Napier University will be used as the main organisation and Heriot-Watt University and Edinburgh University will be used for comparing the cultures across different universities in Scotland. An organisational culture survey will be carried out to explore and track views on the organisational culture of university.

In order to predict the likely future of higher education in Scotland using the Delphi techniques, a group of senior managers will be identified from the senior management level within the group of stakeholders in higher education.

1.10 Why Napier University

Napier University founded in 1964, has approximately 40 years of history of development and originated as Napier Technical College with about 100 academic staff teaching around 800 full time equivalent students, mostly studying part time City and Guilds or National Certificate courses. Napier Technical College offered a range of courses including coopering, cabinet making and boat building, as well as courses in chemistry and physics, mechanical and electrical engineering, and building. The institution was renamed Napier College of Science and Technology. Napier offered its first degree course, BSc Science with Industrial Studies. Others, including BSc Industrial Design and BSc Technology with Industrial Studies, soon followed. Another transformation took place in 1974, during which Edinburgh College of Commerce and Napier College of Science and Technology merged to become Napier College of Commerce and Technology. At this point it began offering five degree courses.

Approximately twelve years later 1986, the institution was renamed Napier Polytechnic and became the first institution in Scotland to gain full accreditation from the Council for National Academic Awards and to receive permission to validate and monitor its degree courses. At that time, the Scottish Education Department took over control of Napier from Lothian Region and bought the magnificent buildings of the former St. Andrew College at Craiglockhart for Napier. Further transformation followed shortly when the Further and Higher Education Act was passed in March 1992, and Napier Polytechnic officially became Napier University. In 1996, to further strengthened the institution, the former Lothian College of Health Studies and the Scottish Borders College of Nursing were merged with the Life Sciences studies at Napier University giving rise to the Faculty of Health and Life Sciences.

Currently, Napier University is based upon fourteen schools which are grouped into four faculties, and 13 support services which fall under three support groups (Napier University, 2005). The four faculties are namely, the Faculty of Arts and Social Science, the Faculty of Engineering and Computing, the Business School and the Faculty of Health and Life Sciences. The three support groups are namely, University Secretary's Group, Learning Support Group and Academic Development Group. The four faculties at Napier University offers at least 300 undergraduate and postgraduate programmes, which can be studied in a number of flexible study modes namely full-time, part-time and distance learning (Napier University, 2005). Napier University is committed to providing lifelong learning opportunities and offers credit towards a degree for work experience gained from employment (Napier University, 2005).

The Transport Research Institute and Employment Research Institute at Napier University have teams operating across the university with a reputation for working closely with industry and business (Napier University, 2005). Commercially Napier University has developed a number of successful spinout companies through the Knowledge Transfer Partnerships attracting substantial funding, which include Cardio digital, Micro Emissive Displays, Surfactant Solutions and Free Light Systems (Napier University, 2005).

Napier University has developed strong partnerships arrangement with a number of organisations. Napier has developed strong links with the further education sector in

Scotland to allow students to progress from certain colleges to degree programmes; international organisations, through articulation agreements and partnerships to deliver courses with universities in China and Hong Kong; professional bodies (e.g. ACCA, CIMA, CIPFA, CIM, DMA) to deliver their accredited qualifications; employers to enable students to undertake work placements; and community groups to widen accessibility for non-traditional learners to higher education.

Even though Napier University has approximately 40 years of history of development, it is significantly new to the higher education sector compared to other traditional universities in relation to the history of development. During this time Napier University has long been known for the relevance of the provision to the stakeholders, for engagement with business and the applicability of its research to key societal changes and economic growth in Scotland. However, Napier University is, perhaps more than ever, confronted with significant drivers to change. This may be due to massification of higher education, demographic change, changing teaching and learning method, changing structure of knowledge production and the quality management agenda. As such, it is important for Napier University to determine the appropriate organisational culture that may facilitate the future expansion of Napier University.

1.11 Structure of the Research

This research was structured into eight chapters and the summary of each chapter is presented below.

Chapter 1: The structure of higher education in the UK is discussed in relation to the changes in terms of student numbers, academic staff in higher education, teaching and learning methods, quality and the research in higher education. This will be performed through document analysis, such as government publications and journals.

Chapter 2: The role of a university will be determined and how universities responded and positioned themselves along with the economic change will be examined.

Chapter 3: The factors that influence the demand and supply for higher education will be elucidated. How these factors will evolve in the future will also be considered, which will possibly result in reshaping the future of Scottish higher education.

Chapter 4: Student expectations from university will be determined through the student expectation survey. Student views on the possible future of higher education will also be determined. This will facilitate the universities to prioritise their response to students' needs and address them more effectively in the future

Chapter 5: The definition of organisational culture, the importance of organisational culture, the source of organisational culture, the levels of organisational culture, and the influence of organisational culture in the general functioning of an organisation will be discussed. An overview of organisational cultures of higher education will also be considered and discussed. Some available tools to measure organisational culture will be discussed. Finally, managing organisational cultures will be considered and discussed.

Chapter 6: The current, future and preferred organisational cultures at three Scottish universities will be explored using the Organisational Culture Assessment Instrument developed by Cameron and Quinn. The six attributes of organisational culture considered were the dominant characteristics, organisational leadership, management of employees, organisational glue, strategic emphasis, and criteria of success. The difficulty in changing the organisational culture will also be considered.

Chapter 7: Applying the technological forecasting method, namely the Delphi method to glean general consensus towards the likely future of higher education. Anticipation of the most likely future of Scottish higher education will be discussed.

Chapter 8: Devising flexible strategies to engage stakeholders to identify issues, propose solutions, and become partners in implementing the changes needed to facilitate higher education institutions with regard to the likely future requirements from students and other stakeholders in higher education. To facilitate this, we will propose tools such as the European Foundation Quality Model (EFQM) that could be used to focus activities in universities.

Chapter 9: Reflection of my PhD journey will be made.

CHAPTER TWO

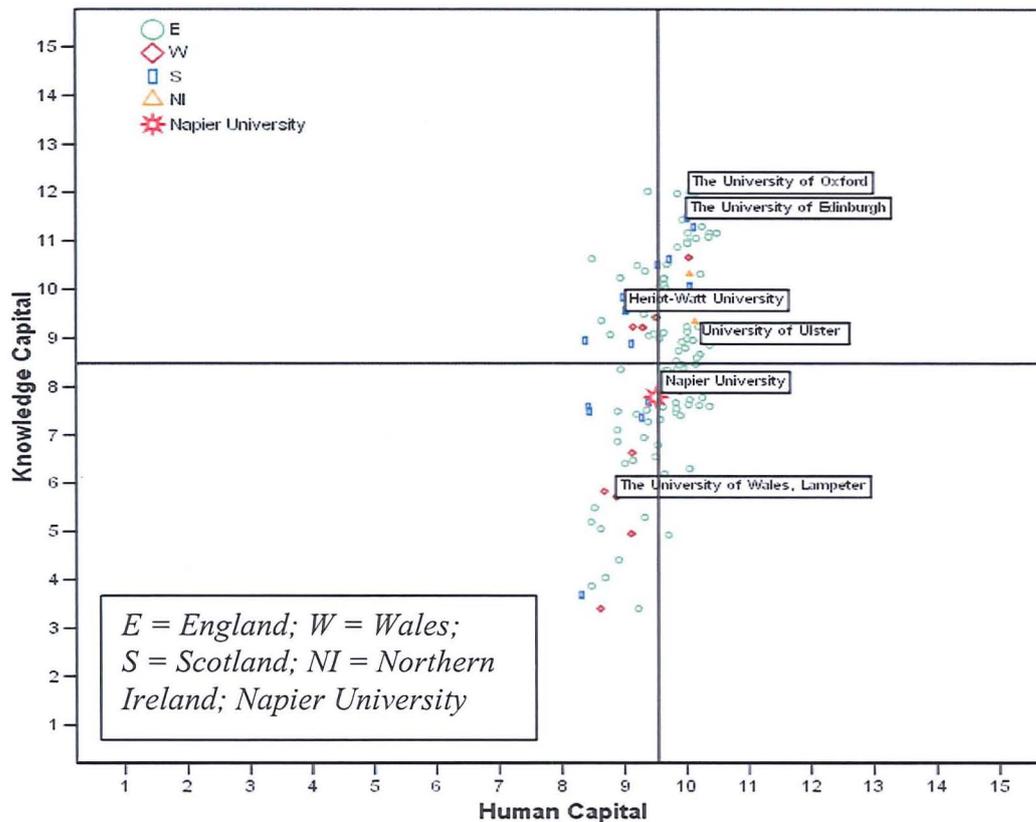
THE ROLE OF UNIVERSITIES IN THE 21ST CENTURY

2.1 Introduction

The aim of this chapter is to determine the role of higher education from the medieval period until the knowledge-based economy. Today's economy is fundamentally a knowledge-based economy in which creativity plays an important role (Florida, 2002). The developed nations are shifting from a manufacturing-based to an information-based knowledge-driven economy. During the industrial revolution labour and capital were recognised as the basic economic resources for production (Florida, 2002). However in the knowledge-based economy, knowledge is replacing capital and labour as the wealth-creating assets (Florida, 2002). It could be argued that knowledge, individual innovators and information could be treated as capital and these may be the key factors of production. According to Florida (2002), the driving force behind this transformation is the rise of human creativity as the key factor in our economy and society (Florida, 2002). Thus, in the future every industry such as automobiles, fashion, food products, education and information technology, may require more new knowledge, information and individual innovators. As such, universities may be expected to contribute to the development of more new knowledge, information and human capital.

In order to show the investment in the human capital in the UK universities, a simple plot based on the amount of research grant (knowledge capital) a university receives against the number of students (human capital) was plotted as shown in the Figure 2.1. This was assumed based on the number of students being educated at each university and based on the research grant received by those individual universities. The first assumption made was that more student numbers means more emphasis on human capital. The second assumption made was that more research grant obtained means more contribution in terms of knowledge creation.

Figure 2.1: Amount of research grant received (knowledge capital) plotted against the number of students (human capital), in thousands



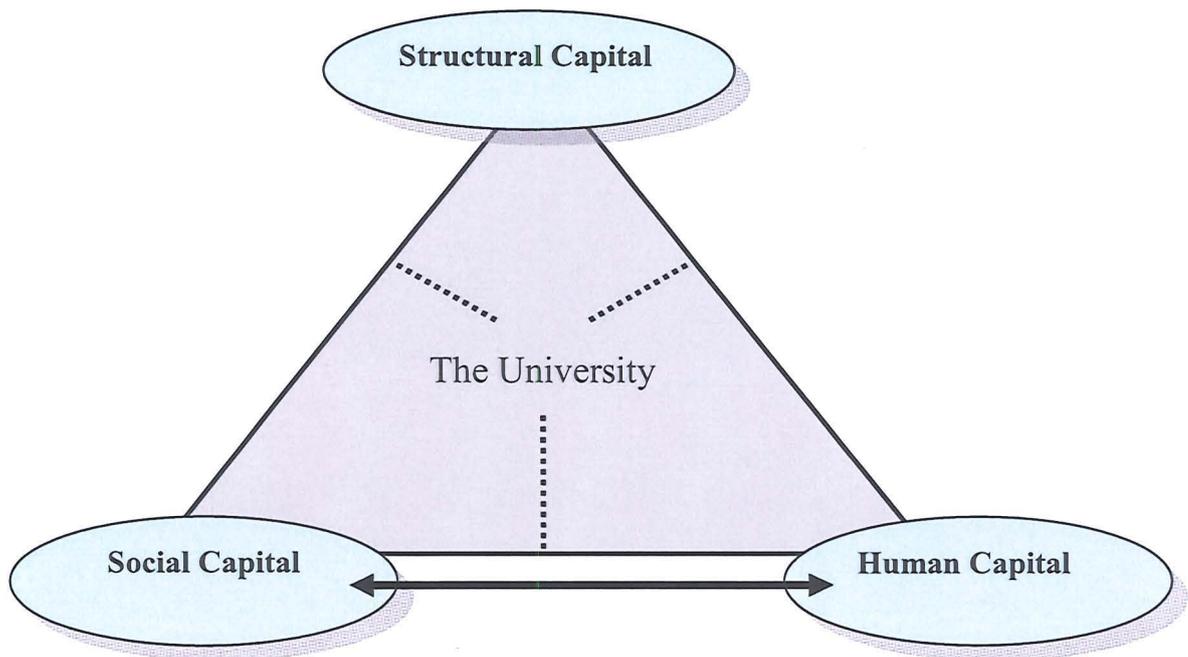
Source: Higher Education Statistics Agency, 2004

Based on Figure 2.1, it is argued that Napier University strives to increase the population of students. This is to enhance the contribution to knowledge dissemination and transfer activities. Napier University should increasingly focus and build its strength in teaching activities in order to produce more human capital to support and enhance economic activities in the future. In addition, Napier University should also maintain its research activities, but emphasising more on applied research.

Universities have always been recognised as the producer and transfer agent of knowledge. Examining the three dimensions of capital (Figure 2.2) may help to understand the interrelationship between the services required in higher education (Hayward-Farmer, 1988). At the apex is the infrastructural dimension which includes material components, systems, processes and procedures. The base of the triangle represents the human capital domain and the social capital domain (Consortium for Excellence in Higher Education, 2003a). According to them the social capital dimension includes the real but often tacit determinants of excellent performance and

a service culture such as people's beliefs, values, trust and discretion, attitudes, understanding, behaviour, learning and interpersonal skills. The human capital dimension identifies the cognitive and professional skills, knowledge and information necessary for people to perform their tasks.

Figure 2.2: Three dimensions of capital in a university



Source: Consortium for Excellence in Higher Education, 2003a

The mission of higher education requires a university to provide for both social and human capital in a balanced way (Consortium for Excellence in Higher Education, 2003a). With regard to this, UK higher education may be under increasing scrutiny in its role within the knowledge-based economy. A university may be expected to offer relevant higher education in order to develop the social capital and human capital.

2.2 Medieval Period

2.2.1 Agriculture-based Economy

During the medieval period agriculture was the basis of the Scottish economy. The agricultural produce of land was the sole source of the wealth of every country (Smith, 1910). The three different orders of people who contributed to agriculture are: firstly the class of the proprietors of land; secondly the class of the cultivators, farmers and country labourers; and thirdly the class of artificers, manufacturers, and merchants (Smith, 1910). The nature of agriculture did not have many subdivisions of labourers in the early stage of the agricultural era (Smith, 1910).

Life was highly organised with rules. In Scotland the leaders were particularly interested in strengthening the church in Scotland, by opening new monasteries and convents across the country. Their purpose was to help people find out more about God and encourage them to lead good lives. But one could also argue that it is helpful for the leader if he ruled by hierarchy and authority. Life was more settled and much of the decision-making was based on religion. However, in the 11th century, economic revival had taken place in the towns and cities (Bolgar, 1954). The trade in agriculture was organised through the guilds system.

In the early eighteenth century and early nineteenth century, the agricultural revolution saw the rise in organised agriculture and a new way of farming was put into practice (Daiches, 1981). These had triggered other forms of production, such as, the making of tools, textiles, clothing and household goods; the construction of public works; mining and metal working (Florida, 2002). In addition, the production of the steam engine has also triggered the prominence in civil engineering endeavour, planning and overseeing the construction of new roads, bridges, canals, harbours and lighthouses, and iron manufacturing (Keay and Keay, 1994; Tilling, 2002).

Improvement in agriculture took place and the initiatives for improvement came from landowners (Sloan, 1971). The cultivators were forced to raise their produce and consequently pay a greater rent to the landowners to be able to remain on that part of the land. The cultivators were forced to replace, within a reasonable time, the whole of their original expenses together with ordinary profits of stock (Smith, 1910). This

was the suggested capital which needs to be built and restored regularly together with a reasonable profit (Smith, 1910).

The liberal-minded clergymen shared the goal of guiding and shaping material and cultural progress which is referred to as Enlightenment (Sloan, 1971). In Scotland for example, they addressed themselves consciously to the task of spreading enlightened ideas and ideals through the body of common people of low socio-economic status (Sloan, 1971). The Scottish enlightenment had nurtured a radical, democratic culture of political clubs, debating societies, working class libraries and friendly societies (Smout, 1997).

2.2.2 The Role of University

In medieval Scotland, the church was an influential force in Scottish life (Henderson, 1937). The origins of Scottish education may be traced to monasteries and seminaries established in the late 4th century and in the 6th century. The monasteries and seminaries became the centres of teaching and learning (Keay and Keay, 1994). The stated aim of education was to install wisdom, learning, and virtue especially for church leaders (Sloan, 1971).

In the medieval university, there was a practice of the right to teach the truth in philosophy and theology, which in the modern day is now termed “academic freedom”. In law, medicine, grammar and mathematics, men were normally free to lecture and dispute as they wished (Haskins, 1923). The medieval university served as the main channel for supplying educated leaders for the needs of the church (Sloan, 1971). Thus, it could be argued that the role of higher education was to provide education for the churchmen, logicians and clerics (Curtis, 1959).

Thus the historical antecedents in the field of education appear to be integrated with the church and cathedrals. The church exercised an unchallenged domination over education (Vaughan and Archer, 1971). The goal of instruction given was predominantly religious. The whole idea of education was to see that men might be better equipped to serve God, his church and the commonwealth (Daiches, 1982).

In the 15th century, three universities were founded, namely St Andrews University in 1411, Glasgow University in 1451 and Aberdeen University (King's College) in 1494 (Daiches, 1982). Much of the curriculum rested on law, rhetoric, logic, philosophy, arithmetic, geometry, music, religion and literature with some attention to ancient languages and astronomy (Haskin, 1923; Keay and Keay, 1994). However, by the middle of the seventeenth century, Scotland, for example, had developed significance emphases on their higher education such as the responsiveness of the university to the larger society (Sloan, 1971). The university began to educate large proportions of the population in the subjects relating to engineering and science (Keay and Keay, 1994). This is due to the modern farming activities during the agriculture revolution.

The medieval university had two key roles. These are, firstly for pursuit of knowledge for its own sake; and secondly for pursuit of knowledge for practical purposes (Reed, 2004). The pursuit of knowledge for its own sake largely refers to an understanding of knowledge as: firstly, objectivity of knowledge generally expressed in terms of an identification of knowledge with truth; and secondly a major feature is a conviction in the unity of knowledge (Reed, 2004). Thus, the medieval university was attributing a key role to philosophy and theology.

The second role that has been associated with universities was the pursuit of knowledge for practical purposes that have historically been undertaken for two basic reasons. The first of these involves different aspects of social development such as cultural reproduction and socialisation, also known as formation (Reed, 2004). One prominent aspect of formation historically has been character development which was assumed to have strong links between the development of the intellect and of character (Reed, 2004). It could be argued that this process then may allow others to understand one's own culture, language and symbols. Secondly, the professional development that includes education in occupational areas that claim to be grounded in some form of theoretical knowledge such as clerical, medical and legal (Reed, 2004).

It was these traditional roles and functions of universities that entered the 19th century only to find that the increasing demands of the coming industrial age were unlikely to be satisfied by the traditional education system. The liberal arts tradition was open for

critique on a variety of fronts, in addition to being undermined by demand for practical education that have also served to undercut its influence (Reed, 2004).

2.3 Industrial Revolution

2.3.1 Manufacturing-based Economy

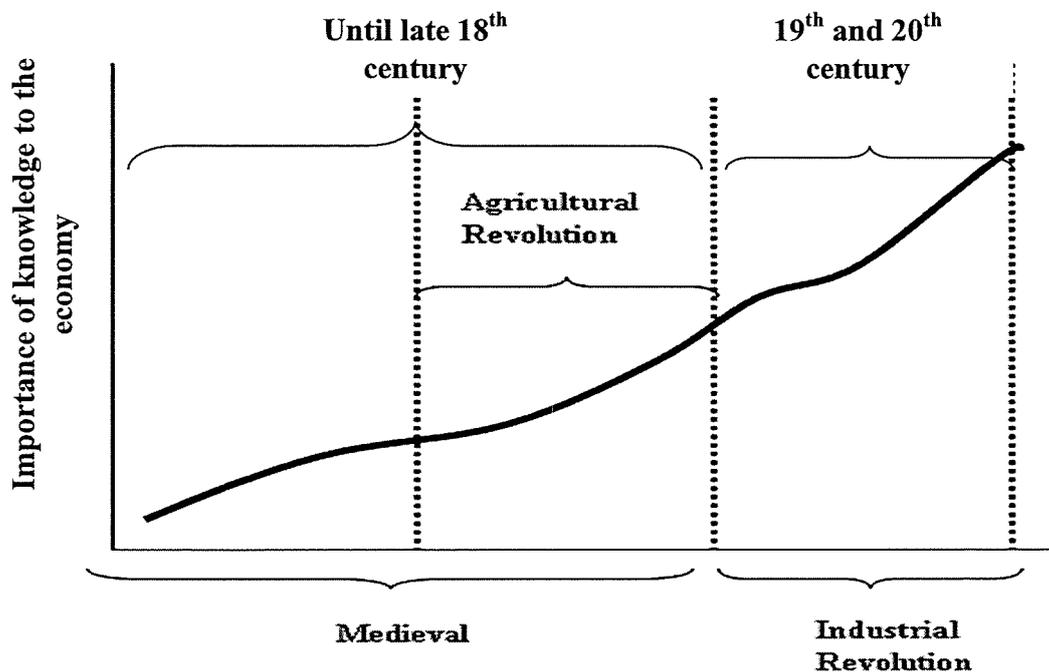
The start of the industrial revolution was traced in the late 18th century and early 19th century (Smout, 1997). For example, the Scottish industrial economy had its foundation firmly laid between 1790 and 1830. The production of the steam engine also triggered the prominence in civil engineering endeavour, planning and overseeing the construction of new roads, bridges, canals, harbours and lighthouses, and iron manufacturing (Keay and Keay, 1994; Tilling, 2002). However, the industrial revolution reached its greatest heights in early 20th century. In the early stage of the industrial revolution there was very little machinery and a large proportion of tasks involved in manufacturing were completed manually. These processes created industrial working communities characterised by the image of skilled male craftsmen and time-served apprentices (Smout, 1997).

In the early twentieth century, the growth in scientific and technical knowledge saw a large rise in production activity, in a form of a factory system that brought a large number of workers together with all their various tools and materials in one place, with a high degree of division of labour, to produce goods efficiently (Florida, 2002). In addition, during the 20th century, American and Japanese light engineering companies were attracted to Scotland by the reservoir of skilled engineering labour and this provided Scotland with a large new technologically advanced industry (Keay and Kaey, 1994). This transition marked a greater rise in large scale organisation and mass production in the UK. Its defining element is the shift to a modern, highly organised economy and society whose fundamental features are large scale institutions, functional specialisation and bureaucracy (Florida, 2002). According to Florida (2002), this transition was premised on two basic principles, namely the breaking down of tasks into their most elemental components and the transformation of human productivity into stable and predictable routines.

The industrial revolution continually changed not only in the technical basis of production, but also in the functions of labour, and in the social combinations of the labour process (Jordan, 1971). It revolutionised the division of labour within society, which consequently imposed the necessity to recognise various types of work and fitness of a labourer for that various types of work (Jordan, 1971). Modern industrial society constantly needed adaptation to the mode of production, fit for various types of work, and ready to face any changes of production (Jordan, 1971).

Thus, the rise in the industrial revolution required a pool of new knowledge which has become increasingly important during the 19th and 20th centuries for economic growth. It could be argued that the importance of knowledge during the industrial revolution has increased exponentially as shown in Figure 2.3 (schematic diagram) below.

Figure 2.3: The rise of importance in knowledge during the industrial revolution



2.3.2 The Role of University

The growth of the bureaucratic state as a consequence of the rise of industrial economies has exerted pressures on universities. However, as the industrial revolution progressed, the university system was reluctant to change (Tilling, 2002). Although the enlightenment during the 18th century had a dramatic impact on society, it had a little immediate effect on the role of the university and universities themselves were quite slow to change (Preston, 2002; Tilling, 2002). By the early 19th century obvious fractures were appearing in the relationship between the universities and the enveloping industrial society (Preston, 2002). Education became a social issue of concern to the state and universities were forced to begin their transformation into national institutions providing for national needs and in the service of the entire nation (Rothblatt, 1968). In the industrial civilisation, higher education is expected to contribute towards economic growth.

In the 20th century there was a need to expand the numbers of participants in higher education. In addition, there was a need for the university to move away from a liberal education towards a more practically oriented curriculum (Tilling, 2002). As such, during the industrial era, the denominational institutions, particularly schools of theology, went into absolute decline, small liberal arts colleges into relative decline and a host of new universities were formed (Goldin and Katz, 1999; Preston, 2002). The industrial society within the universities system demanded a secular, commercial, scientific and professional education (Smout, 1997; Preston, 2002). As such, in the latter part of the 20th century, the subjects taught in universities became subdivided and specialised, and those who taught within them began to define themselves as occupying separate and specialised fields (Goldin and Katz, 1999).

In the 20th century, particularly after World War II, higher education gradually became more accessible to the wider society (Halsey, 2004; Reed, 2004). University education in the twentieth century has a widened scope, and the balance between faculties has also shifted (Halsey, 2004). Higher education increasingly involved in a specialised field of study (Vaughan and Archer, 1971). For example, according to Halsey (2004), subject area such as economics had been divided into economics, industrial economics, econometrics and economic history. Another example is

engineering which became highly specialised into a number of subject areas (Halsey, 2004). The universities have become important centres for engineering research, working particularly closely with companies active in the spheres of aero, optical, off-shore and electronic engineering (Keay and Keay, 1994). In the second half of the 20th century the spread of vocational studies has proceeded apace. Business, computing, accounting, media studies and sociology and psychology have been added (Halsey, 2004).

However, the key role of a university in medieval times has continued but has been under increasing pressure to adapt to change during the industrial revolution. The pursuit of knowledge for its own sake continued but came under increasing attack. The role of a university is not in the quest for truth, but rather in novelty and in the generation of new and proactive ideas (Reed, 2004). The pursuit of knowledge for practical purposes continued. The medieval role of the university in terms of social development (cultural reproduction and socialisation often known as formation) based on character development has been altered to focus on cultural propagation functions in relationship to the larger social structures of the state and the economy (Reed, 2004). The university had a major role as the promoter of national culture with the emergence of the capitalist industrial economy (Reading, 1996).

During the 20th century the role of governance and administration was increasingly influenced by the state and corporate interest and, as a consequence, self-governance was undermined (Reed, 2004). The emergence of the Welfare State (and the Cold War) induced greater interest on the part of the state in guiding more closely both the teaching and research functions of the university (McClelland, 1988). In addition, not only had members of the university lost their ability to govern the university, they had also largely ceased to be a “community of scholars” in any strong sense of the term for several reasons (Reed, 2004).

According to Reed (2004), firstly, with the increased specialisation of knowledge over the past two centuries, academics were increasingly less capable of comprehending developments in their colleagues’ fields and, therefore, interacting with many of these colleagues in substantial ways. Secondly, it could be argued that as the universities have started growing in terms of their size that colleagues do not have the potential to

meet and interact in ways that historically typified the university. Thirdly, the universities have become more diverse and even international, and shared values rooted in a common cultural tradition can no longer be assumed.

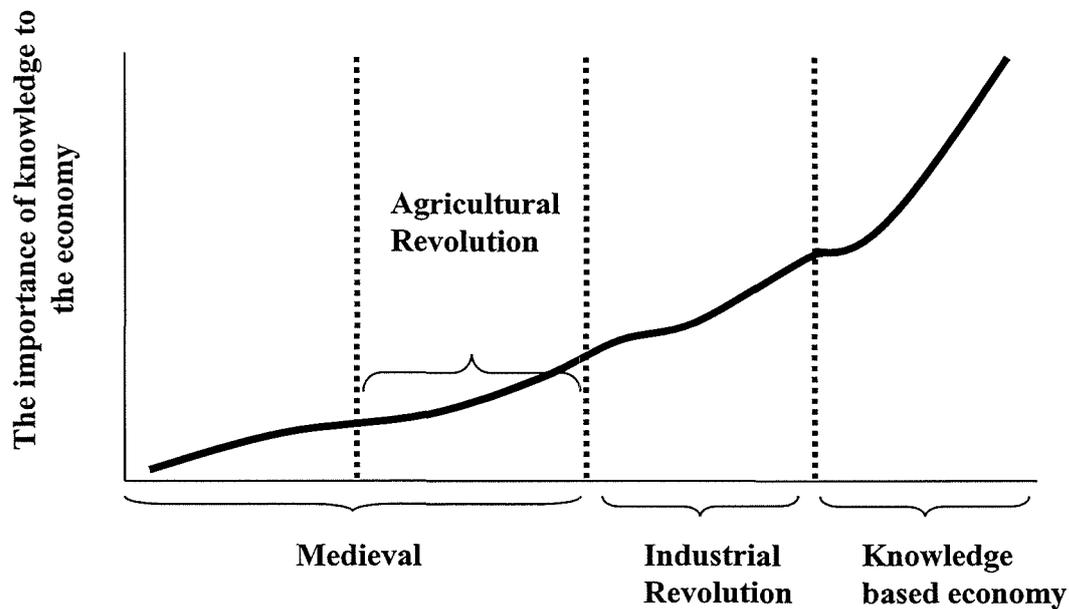
2.4 Post-industrial Economy

2.4.1 Knowledge-based Economy

The world's advanced industrial economies have experienced a fundamental change from the industrial economy to the knowledge-based economy. The nature of post-industrial economy has special importance in human capital (Alic, 1997). It could be argued that the knowledge-based economy became obvious in the early 1980s as the manufacturing industries, mainly in the developed economies, were facing problems of excess capacity and falling profitability (Harris, 2001). This marked the beginnings of the third industrial revolution, founded on new information and communication technology (Harris, 2001). Events such as oil price shocks and major recessions have contributed greatly to this phenomenon, as have institutional changes such as the increasing liberalisation of world trade and capital markets, and the major shift in the locus of economic activity from goods to services (Gera and Mang, 1998). These are a number of indicators of profound changes in terms of economic activities that took place during the late 20th century.

According to Sculley (1989) the key economic resources in the knowledge-based economy will no longer be capital, labour and raw materials, but rather knowledge, individual innovators and information. The information and communication technology developments in the late twentieth century have transformed wealth creation from being labour-based to knowledge-based, in which the key factors for generating economic growth will be innovation through the uses of knowledge, technology, and skills (Sculley, 1989; Gera and Mang, 1998). The importance of knowledge was increasing at an exponential rate (Bell, 1976; Florida, 2002). The schematic diagram in Figure 2.4 shows the increase in importance of knowledge during the development of the knowledge-based economy.

Figure 2.4: The rise in importance of knowledge in the knowledge-based economy



In the knowledge-based economy, knowledge creation was treated as another input to the production process, in the same way that capital and labour were treated (Harris, 2001). According to Harris (2001), knowledge is also a produced input which uses scarce economic resources and this has three important implications. First, knowledge creation is an investment activity and is subject to all the economic calculations one would apply to any other type of investment; secondly, knowledge once created contributes to the productivity of other factor inputs such as capital; and thirdly, knowledge accumulates (Harris, 2001). Thus, knowledge has come to be a most highly prized resource for economic growth and society (Florida, 2002). This may be based on an American view; however UK is also a developed nation. Human creativity may produce formidable results in economic growth (Florida, 2002).

The shift into the knowledge-based economy is also moving the older corporate centred system characterised by large companies to a more people-driven one (Florida, 2002). In the people-driven system, greater participation in decision making of organisations was the main objective (Bell, 1976). According to Bueno et al. (2004), the people-driven system may increase the capacities for the creation, sharing and management of knowledge that in return may generate competitive advantage in organisations. Thus, to increase the creation, sharing and management of knowledge

may require shared values and beliefs in organisation and capital in the same way as labour and raw materials during the industrial revolution. One can argue that social capital may also be acquiring greater importance in the knowledge-based economy (Bueno et al., 2004).

The rise in the knowledge-based economy has had a profound effect on the classification of people into social groups. A more meritocratic class structure of scientists, engineers, managers and highly skill administrator's result, brought on by the shift from a manufacturing era to a knowledge-based economy. Florida (2002) calls this the creative class and defines this class as consisting of two components, namely the super creative core and creative professionals. The first includes scientists and engineers, university professors, poets and novelists, artists, entertainers, actors, designers and architects, writers, editors, cultural figures, think tank researchers, and analysts. The latter are those who work in a wide range of knowledge-intensive industries such as high-tech manufacturing, financial services, media, legal and health care professions, and business management.

The rise of the creative class is reflected in powerful and significant shifts in values, norms and attitudes (Florida, 2002). The members of the creative class exhibit a strong preference for individuality and self-statement that reflect their creativity, and they do not want to conform to organisational or institutional directives and resist traditional group oriented norms (Florida, 2002). According to Florida (2002), the creative class favours hard work, challenge and stimulation. The class members have a propensity for goal setting and achievement and also exhibit a strong preference for diversity of thought and open mindedness (Florida, 2002). They prefer an organisation and environment in which they feel that anyone can fit in and can get ahead (Florida, 2002).

As a result, the creative class continues to move away from manufacturing and services towards the higher value added creative sector (Florida, 2002). Unlike the traditional factors of production such as land or capital, creativity cannot be passed on down from generation to generation (Florida, 2002). According to Florida (2002) creativity has to be constantly fermented and reproduced in the firms, places and

societies that use it. The investment in creative capital will have to begin with investing in education and skill development as these are the most effective and lead to the highest return on investments in the effort to cultivate and nurture creativity (Florida, 2002). According to Florida (2002), by adding to the stock of creative capital, the creative class may increase wealth and economic growth.

2.4.2 The Role of University

The developed countries are increasingly deriving their wealth from the knowledge-based economy in which knowledge has been recognised as the driver for economic growth (Florida, 2002). Central to this economic development is the development of universities (Etzkowitz et al, 2000). The university has been at the forefront, which provides the important resource, namely trained and knowledgeable manpower (Linstone, 1970). It could be argued that, the growing demand for knowledge is a critical driver for the university in the 21st century. The universities need to adopt the necessary proactive role and thus respond to the need to prepare students to contribute to the knowledge society (Teichler, 1999).

In the knowledge-based economy universities which focus on specialisation as in the manufacturing era, are unlikely to survive (Sculley, 1989). According to Sculley (1989), in the knowledge-based economy, individuals may need to have tremendous flexibility to be able to move from one company to another or from one industry to another. Therefore, in the information age, a diverse educational experience may be the critical foundation for success. Universities need to provide the students not just with the mastery of subject matter, but mastery of learning (Sculley, 1989).

The presence of a major research university is a huge advantage in the knowledge-based economy, providing an essential infrastructure (Florida, 2002). There is a shift underway from the production function to the innovation system in which universities are part of a new knowledge infrastructure (Etzkowitz et al, 2000). In addition, the university has become a vehicle for technology transfer, acting as a conduit through which knowledge exchange and exploitation is made more effective (Etzkowitz et al., 2000). The universities need to find ways of bringing the individual minds, text

books, libraries, laboratories and data bases with passion for discovery to the process of instruction (Sculley, 1989). As such, it could be argued that the role of a university would be to unleash and coordinate the creative contribution of many individuals.

The universities may need to promote collaboration and avoid rigidity and stagnation which are the hallmark of the older models of organisation (Sculley, 1989). Cross departmental collaboration must be encouraged and facilitated by university resources and processes (Huff, 2000). It was suggested that an increase in the linkage among sectors, drawing together different stages of the innovation process that comprise universities, research laboratories, laboratories of large corporations and start-up firms may be required (Etzowitz et al, 2000). Thus, it could be argued that the universities will be the centre for creating these opportunities in the knowledge-based economy in order to create and exploit knowledge.

Thus, the main roles of higher education may be summed up as follows (Dearing, 1997, Florida, 2002):

1. To increase knowledge creation and to foster their application to the benefit of the economy and society.
2. To attract and retain the members of highly educated creative people and generate spin-off companies (generate wealth).
3. To play a major role in shaping a democratic, civilised, inclusive society by providing an informed critique of public policy and its development.
4. To develop and transmit culture.

2.5 Conclusions

The medieval university has been an influential force in the political stability of society. The university provided higher education to the political leaders, churchmen, clergymen and cleric to achieve stability. The society was organised in a class system and only those who were from the upper class such as church leaders, clergymen, and the political leaders received education. However, as the medieval period progressed, social and economic development brought about change in this system.

According to Florida (2002), the rapidly changing production techniques as a consequence of the technological revolutions, required an advanced division of labour. Thus, there was an increasing demand to provide education to more people in society. As such, universities in the UK began to respond to the need for the economic growth and became specialised institutions to enhance the industrial capital and to support productivity and economic growth during the industrial revolution (Preston, 2002).

However, the knowledge-based economy is shifting the emphasis on industrial capital to human capital (Alic, 1997). The demand for new knowledge and knowledge exploitation has become increasingly important in the knowledge-based economy. Universities are seen as the key institutions in the knowledge-based economy for knowledge creation and exploitation to support productivity and growth. As such, it could be argued that the UK and other developed nations have begun to treat higher education as a tradeable commodity and this is likely to continue over the next 10 years (Adams and Mohadeb, 2005). In this context, maintaining a strong university system that will be attractive to the world's best and creative minds is important. Given that creativity has emerged as the single most important source of economic growth, the best route to continued prosperity is by investing in our stock of creative minds (Florida, 2002). According to Florida (2002), shifting the investment away from investments in physical capital toward investment in creative capital is vital.

The social change from the medieval period to the knowledge-based economy and how the university responded to these changes clearly indicates that the university is subject to forces of change. It could be argued that, if it is to remain viable in the future, the university may have to change. In the medieval period, the university responded to the societal requirement, but later during the industrial revolution responded to the requirement for economic growth. In the knowledge-based economy, the university is increasingly seen as a critical vehicle for driving economic growth. The future is very difficult to predict but past experience may provide some valuable information for the university to continually respond to future requirements. Universities responding to the current and future requirements may develop new organisational culture in the university. It is important for UK universities to determine an appropriate organisational culture that may facilitate the way the

university should respond to change and consequently accepting the change. This should be based on the social reality in which the UK universities are operating currently. Thus, determining the demand and supply for higher education will be important. The demand and supply for higher education will be discussed in the following chapter.

CHAPTER THREE

DEMAND AND SUPPLY FOR HIGHER EDUCATION

3.1 Introduction

The aim of this chapter is to discuss the demand and supply for higher education in order to raise fundamental questions about the future shape of higher education in the UK. It could be argued that the significant pressures facing higher education are due to the significant changes that have taken place in recent years. These significant changes, which will be discussed in detail below, may transform the future of higher education.

3.2 Pressures facing Higher Education

Some of the significant changes that are putting pressure on higher education are explored. Some of these key changes are demographic change, structural change of the economy, technological change, globalisation, public expenditure and social inclusion. These significant changes may possibly reshape the future of higher education.

3.2.1 Demographic Change

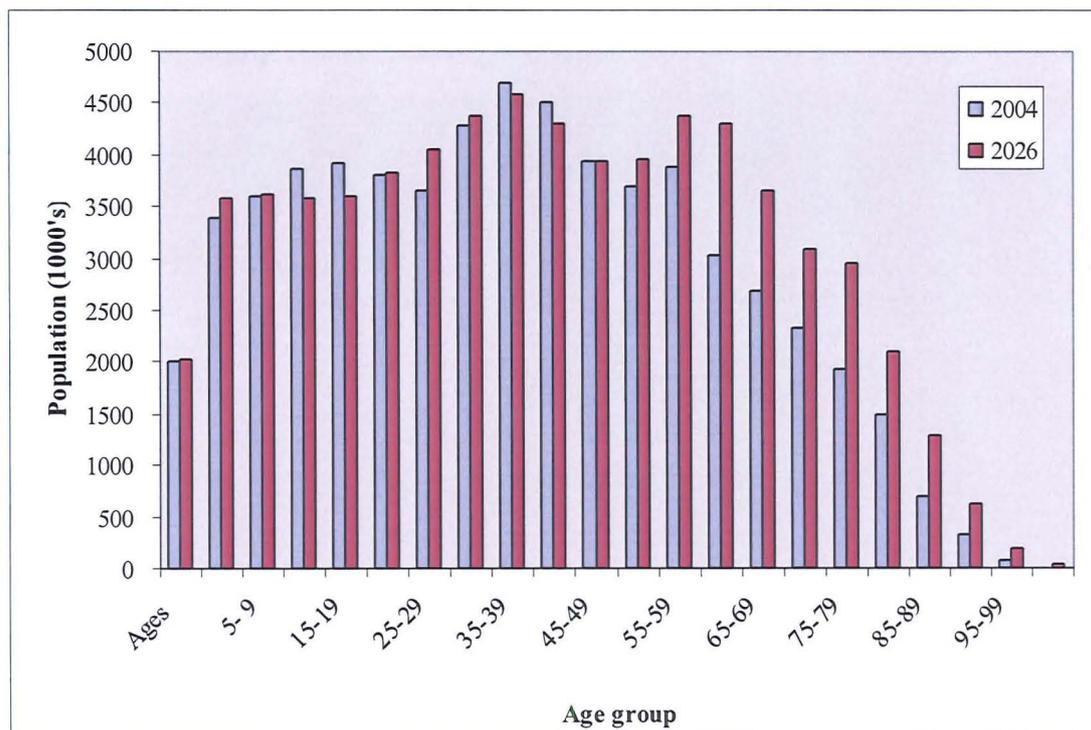
In recent years the population growth in the developed countries such as the UK has declined (United Nations, 2005). The decline in fertility has resulted in a declining population. In the UK, the fertility was 2.09 children per woman in 1950 (Government Actuaries Department, 2005). However, it has declined to 1.74 children per woman in 2000 (Government Actuaries Department, 2005). Other developed countries such as France, Germany and Spain have a similar trend (United Nations, 2005).

At the same time life expectancy across the developed countries and particularly in the UK has increased. In the UK, for example, life expectancy has increased from 69.2 years in between 1950 and 1955 to 78.3 in between 2000 and 2005 (United

Nations, 2005). This is projected to further increase to 83.5 years between 2045 and 2050 (United Nations, 2005).

As a result of reduced fertility and increased life expectancy, there will be a smaller number of younger people and a larger number of older people. For example, Figure 3.1 shows the population of UK in 2004 and the projected population in 2026 by age group. It shows that the younger population (15-19 age brackets) will decrease in 2026. However, the older population (40 and above age brackets) will increase in 2026. This suggests that the population in UK is ageing. Similarly other European countries such as France, Germany and Spain are also experience ageing populations (United Nations, 2005).

Figure 3.1: Population and the projected population in the UK by age group (2004-2026)



Source: Government Actuaries Department (2006)

3.2.1.1 Implications for UK Higher Education

The changes in the demographic pattern will increasingly challenge universities in relation to the numbers of young school leavers available to benefit from their

services. The participation by school leavers continues to be the largest group entering higher education (SHEFC, 2004). For example, in Scotland, 17 per cent of school leavers entered higher education in 1980 and by 2001 this has risen to 50 per cent (SHEFC, 2004). However, the declining population of younger people (15-19 age brackets) in 2026 means the percentage increase in number of undergraduate home students may be smaller than it is now, even if the participation of school leavers continues to stay constant at 50 per cent.

Table 3.1 shows the number of the full-time home students by age group. The table indicates that the number of the full-time home students age 20 and below increased between 1996/97 and 2002/03. However, if one looks at the increased student numbers in percentages it shows that in between 2001/02 and 2002/03 the student numbers increased by 3.4%. In between 1996/97 and 1997/98 student numbers increased by 7.5%. Perhaps this is indicating the decreasing younger population age 20 and below that are available to benefit from higher education. Similarly, trends were also identified for the part-time home students age 20 and below. In between 2001/02 and 2002/03 the student numbers increased by 2.6% only. However the student numbers increased 3% in between 1996/97 and 1997/98. This is likely to continue in the future. The universities in the UK may have to compete for a smaller indigenous market. Thus, the universities in the UK may have to attract greater numbers of international students to compensate for this likely shortfall of young home students. Perhaps the Scottish higher education may not need 19 universities.

Table 3.1: Home students in higher education in UK by year and age group

	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03
Full-time							
under 20	251800	270662	272484	274750	278315	290425	300310
21-24	111440	113292	113671	113340	108780	119875	134310
25 +	106420	107430	106787	103690	108200	117805	126885
Total	470568	492952	493928	492510	495780	528550	562035
Part time							
under 20	7814	8022	10355	10970	15810	18185	18650
21-24	27878	26768	31305	31450	40490	45605	49405
25 +	204221	191862	248409	251000	301215	332820	332460
Total	249731	234672	297583	300060	368035	409175	414720

Source: Higher Education Statistics Agency (2004)

As consequences of reduced fertility and to a lesser extent of increased life expectancy the student group age structure is changing. The participation of mature students aged 21 to 24 has increased as shown in Table 3.1 above. The full-time student numbers age 21-24 increased in between 2001/02 and 2002/03 by 12.1%. The increase in full-time student numbers age 21-24 was higher (12.1%) in between 2001/02 and 2002/03 compared to in between 1996/97 and 1997/98 (1.7%). This indicates that the students group is becoming more mature as a consequence of demographic change.

The part-time student numbers age 21 to 24 recorded 8.3% increase in between 2001/02 and 2002/03. However, in between 1996/97 and 1997/98 the part-time student numbers age 21-24 declined by 4%. Perhaps universities are becoming more flexible which has led to increased part-time studies in 2001/02 and 2002/03. The increase in part-time students aged 21 to 24 may create demand for continuous learning in order to obtain higher qualifications and enhanced skills in the future. This group of students may prefer more distance learning, work-based learning and blended learning which is a mixture of face-to-face and distance learning (Davies, 1998; Shaw and Green, 1999). These will continuously challenge universities in terms of the structure of the programmes, the recording of learning process and demonstrating of learning outcome, and programme organisation. As argued by Shaw and Green (1999), the traditional methods of knowledge delivery may not be appropriate for the mature learner. The traditional methods of knowledge delivery do not offer learners a great degree of flexibility in accessing learning (Shaw and Green, 1999; SHEFC, 2005).

The increase in full-time student numbers shows quite a stable trend in between 1996/97 and 2000/01 with slight decline in 1999/00. However, the full-time student numbers age 25 and above shows a remarkable increase in between 2001/02 and 2002/03. Perhaps, this could be due to the fact that people are changing their career path, however there are often multiple factors.

There is an interesting trend in the part-time student numbers age 25 and above. The part-time student numbers age 25 and above showed a remarkable increase in between 1997/98 and 2001/02. This could be due to the fact that the UK was in the growth

phase of the knowledge-based economy during this time. These mature people may have felt the necessity for higher qualification in order to update the skills required in their jobs. However, in 2002/03 the mature student number has slightly declined by 0.1%. Perhaps, this trend may continue in the future. The knowledge-based economy may have reached maturity phase. Therefore, the British people may not see the necessity of obtaining higher education qualification and to upgrade their knowledge and skills. Among other barriers could be lack of time due to work commitments, family and childcare responsibility, difficulties in paying course fees and being nervous about going back to the classroom. The employers may not encourage training the older people mainly age 40 and above, primarily due to the relatively short period remaining to recoup the benefits from them. In addition, employers may assume that adult education is a signal of lower ability (Vignoles et al., 2004). According to this author if one does not obtain formal qualifications when they were young, they may appear less motivated and less able. However, it is argued that retraining older workers may help in facilitating and reallocating the older workers from declining employment sectors in manufacturing industries to the expanding service sector.

The ageing population may affect the government expenditure on higher education. Demographic transition characterized by increasing older people is expected to have a great deal of political and economic implications. The ageing population will intensify political pressure to increase the composition of social expenditures in favour of the elderly, while potentially sacrificing other publicly provided goods such as education (Gradstein and Kaganovich, 2004).

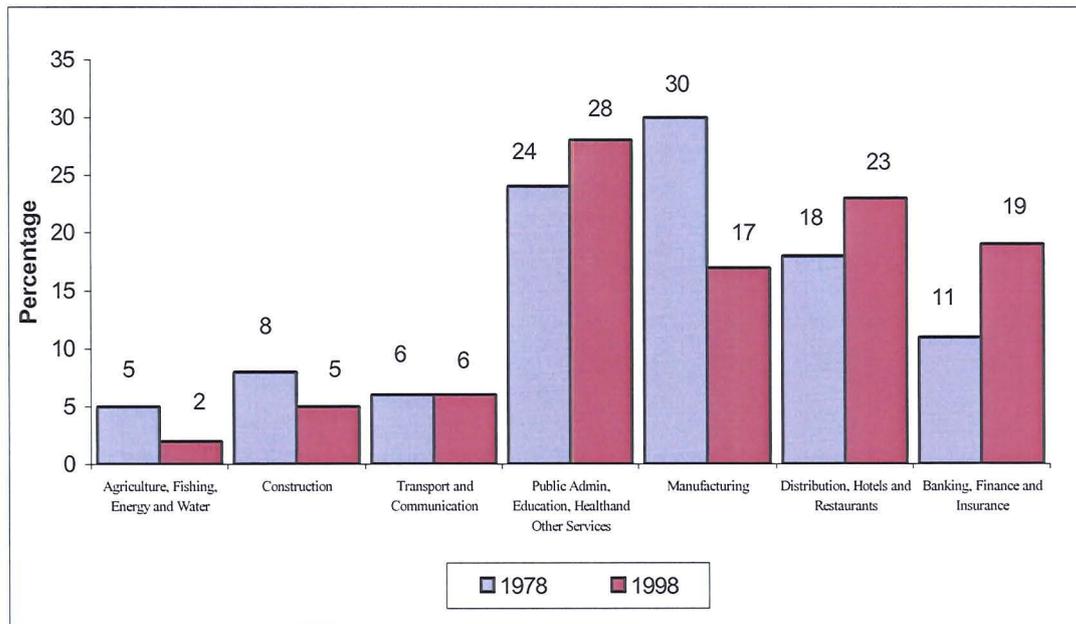
3.2.2 Economic Change

In the 1980s, the UK was entering a post-industrial phase in which the manufacturing role was greatly reduced while the knowledge-based sector played a greater role (Dearing, 1997). In general terms, the knowledge-based economy is directly based on the production, distribution and use of knowledge and information (OECD, 1996). It is argued that the knowledge-based economy relies mostly on the use of ideas and on

the application of technology. In the knowledge-based economy, there is also a new form of activity namely that based on the trading of knowledge.

Figure 3.2 shows the changes in the structure of the economy in the UK. In 1978, the sector with highest proportion of employment was manufacturing. However, by 1998 most of the employees' jobs become much more important in the service industries such as Public Administration, Education, Health, Distribution, Banking, Finance and other services. The changes in the employment structure have changed the occupational profile in the UK. Shown in Table 3.2, the most notable change in the occupational profile of employment has been the increase in managerial, professional and associate professional occupations (ENTO, 2004). These occupations may require higher education qualifications.

Figure 3.2 Employee jobs by board industrial sector, 1978/1998



Source: Department for Education and Skill, 2000

Table 3.2 Employment trends by occupation 1971-1999 and projection for 2010, UK (percentage of total employment)

	1971	1981	1991	1999	2010
Total Employment (million)	24.4	24.5	26	27.5	29.7
Managers	11	10	13	13	13
Professional	7	8	9	11	13
Associate professional and technical	9	9	11	12	14
Clerical and secretarial	14	16	16	15	14
Craft	19	17	15	14	12
Personal and protective	3	4	5	6	8
Sales	5	6	6	7	7
Plant and machine operatives	14	12	10	9	8
Other	17	18	15	14	12

Source: Paulo skills report, 2004

The structural change in economy from manufacturing based to service based requires knowledge and skills to manage the sector. Future Skills (2002) reported that in Scotland the generic skills deficiencies were in the following areas:

1. Communication skills: over half of the employees were not fully proficient, affecting most occupational groups, particularly in personal services.
2. Customer handling: affecting half of the employees with respect to internal processes and prominent among personal service, sales and professional staff.
3. Team working: deficiencies evenly spread across most occupational groups.
4. Problem solving: deficiencies particularly in personal service and also in skilled trades and administrative occupations.

3.2.2.1 Implications for Higher Education

The changes in the economy may have a profound effect on the higher education sector. Future economic development may demand a very different product of higher education. During the industrial revolution higher education moved away from the liberal arts tradition to a more vocationally focused higher education. Higher education became increasingly specialised. In the knowledge-based economy, the universities are seen as a critical vehicle for knowledge creation (OECD, 2004). For

many employers new knowledge, research and development, creativity, communication skills, organisational skills, problem solving skills, critical thinking skills and networking skills may be equally as important as traditional knowledge (Futureskills, 2002). As such, increased specialisation in higher education may not be the key to success in the knowledge-based economy. More diverse subject content and disciplines may be required. Universities may have to develop programmes that focus more on transferable skill development rather than just specific subject content.

Human capital has a special importance in supporting economic growth (Alic, 1997). Accordingly, the university is seen as the primary centre for learning in order to acquire knowledge required to support economic activities (Altbach, 1998). Thus, the stakeholders may continuously demand an improved and a wider range of products and services from universities. Universities may have to develop new and up-to-date programmes to meet the needs of the economy.

Lifelong learning is a key instrument in developing a competitive and multi-skilled workforce. Economic change will demand continuous learning to equip people in order for them to maintain their employability in a transforming labour market. However, despite the importance of lifelong learning, there is very little evidence from the UK on who undertakes lifelong learning and why, and the economic benefits of lifelong learning (Jenkins et al., 2003; Vignoles et al., 2004). Although there are some estimates of incidence of late learning and the economic rewards achieved by those in possession of formally recognised qualifications, little is known about the costs and benefits, or even whether the type of qualification undertaken is important (Conlon, 2005). Jenkins et al. (2003) suggest that acquisition of formal qualifications later in life has no measurable impact on individuals' wages. Acquiring qualifications, such as a Degree, before the age of 30 is associated with a substantial wage premium yet taking the same qualification in your thirties and forties does not lead to higher wages (Vignoles et al. 2004). However, as suggested by these authors, another type of lifelong learning, namely adult work related training, does give a clear wage gain.

The shift from manual to non-manual jobs will create higher demand for knowledge and skills. Two big challenges for universities are to ensure employers are supplied with the right skills to support the success of their business and ensure individuals are

equipped with the skills needed for them to be employable (Dearing, 1997). The universities are incorporating facilitated learning activities such as group discussion, group work, problem solving techniques and oral presentation into their teaching and learning activities in order to develop basic skills such as team working, problem solving, and communication skills. The strength of universities is imparting knowledge (knowing things) and teaching critical thinking (Alic, 1997; Hall, 2005). This raises a potential challenges for the university to determine the types of skills required by the employers. For some employers, organisational skills, communication skills and networking skills are important (Futureskills, 2002). However, it could be argued that those skills should be something that the graduates will be able to develop during their employment or through on the job training. The world of academia and commerce are often seen as being exclusive (Halls, 2005). Each world exists with a number of strengths with which, if bridged can enrich the learning experience (Halls, 2005).

The major challenge for the university to develop partnership with industry is the need to operate in a manner that is compatible with expectations and operations of industry (Ryan and Morris, 2005). This could mean that universities need to be readily accessible and responsive to enquiries from industry. In addition, there could be necessity to adopt a flexible approach to the delivery of programmes (Ryan and Morris, 2005). All these will present major implications in terms of human resource, process and financial resource for the university.

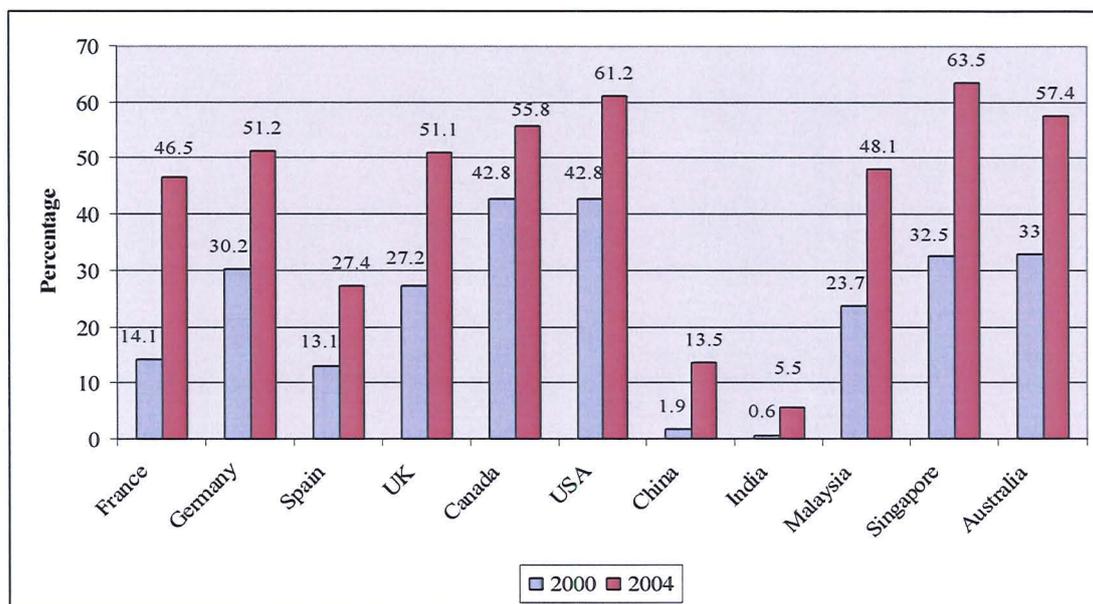
3.2.3 Technological Change

Technology provides new means of information transmission and communication (OECD, 2001). Some of the important trends in information and communication technology are (OECD, 2001): greater broadband access and better data packet handling capabilities, allowing for the transmission of large amounts of data; connectivity and communications technologies to connect small, multi-purpose devices and link them by wireless technology; merging the capabilities of telephone, radio, television and other interactive devices; dramatic drop in the unit cost of bandwidth; the emergence of agreement on technical standards for content

development and sharing, which are expected to advance the development of web-based learning environments; and the emergence of adaptive technology that combines speech recognition, gesture recognition, text-to-speech conversion, and language translation to change the very substance of network-enhanced human communication.

Accordingly global Internet users have increased as shown in Figure 3.3. Note that China and India are currently among the lowest in percentage for Internet usage.

Figure 3.3: Percentage of population who are Internet users by country



Source: Euromonitor (2005)

3.2.3.1 Implications for Higher Education

The cost of higher education in the UK is rising. There is an argument that high teaching and overhead costs have pushed tuition charges upward in universities (Alic, 1997). Thus, the question that has emerged is whether technology could help reduce the rate of cost increase (Alic, 1997; Wall and Sarver, 2003).

Broadband access, the emergence of technical standards for content development and sharing, and the emergence of adaptive technology have relevance for the higher education sector. The rapid advancement in information and communication

technology enabled on-line learning to develop (Thornton, 2001; OECD, 2001; Wall and Sarver, 2003). In addition, the declining costs of computing and telecommunications have enhanced the prospects for distance learning (Alic, 1997; King, 2000; Kriger, 2001). Studies have indicated that higher education could be delivered at much lower cost through on-line learning (Curran, 1989; Alic, 1997; Kriger, 2001; Rumble, 1998; Wall and Sarver, 2003;). Although this study may suggest that universities can achieve substantial cost reductions, the requirement for highly skilled staff to implement and manage distance learning may be very expensive. This may continue to challenge the universities in the future.

In addition, the effort of universities to embrace technology in the higher education sector may shift the traditional transmission of knowledge and instruction to student centred systems of learning (Van, 1997; Magolda, et al., 1998). Academics are placing more course material on-line to supplement and sometimes replace classroom instruction (Janicki, et al., 2002). However, the university is less likely to take advantage of the opportunities offered by the electronic medium to create student centred learning. The materials largely follow the structure and design of print textbooks and generally do not consider the interactive possibilities of the Internet.

In addition, some of the reported obstacles for some of the learners in accessing and using university on-line learning resources are their lack of basic computer skills (Song et al., 2004; Dearnley et al., 2006). The lack of immediacy in responses in comparison to what could typically occur in a structured face-to-face classroom discussion is also another reported weakness of on-line learning and as a result some students will get frustrated (Petride, 2002; Vonderwell, 2003; Song et al., 2004). In addition, the lack of a sense of community was another of the weakness reported (Woods, 2002: Song et al., 2004). Thus, the university may have to focus on innovative ideas to enhance on-line learning (Laurillard, 2002). For example, in order to overcome lack of basic computer skills among the students, the programme communication may have to include paper-based format with clear, specific and elementary guidelines for accessing web-based materials (Dearnley et al., 2006). Thus technology, instead of helping to save costs in higher education, may require additional financial resources to provide the support needed for student's lack of basic computer skills.

There are several other possible explanations for this lack of innovation (Haigh, 2004). According to Haigh (2004) this may be a positive resistance seeking to protect the quality of the student/tutor relationship or a more negative resistance in the unwillingness to master new skills since the benefits to staff are by no means clear. Therefore, the technology may not become an integral part of teaching and learning in the future. Thus, the university may not incorporate technology into their teaching and learning activities in order to provide students with greater flexibility for learning. The university may use technology as a tool to support their teaching activities. For example, teaching software (SPSS, Excel) applications that could help students in their research, creating spreadsheets and the internet as library.

3.2.4 Globalisation of Higher Education

The growing importance of international trade, the increase in foreign direct investment, the number of cross-border mergers and acquisitions, the growth in international production, trans-national corporations and their foreign affiliations, the increase in the speed at which ideas, goods and people move around, and the lowering of barriers to communication are among the indicators of globalisation. Globalisation involves functional integration between internationally dispersed economic activities (Dickens, 1998).

Similarly, universities are increasingly becoming international organisations. The internationalisation of higher education provision has been consistently identified as a major trend since the late 1980s (Bennell and Pearce, 2003). Student exchanges between universities, overseas student recruitment, twinning programs, and international activities such as franchising, partnership and in certain cases establishing branch campuses in other parts of the world are among the indicators of the emergence of globalisation within the higher education sector. In addition, the international migration of academics, researchers and scientists is also another indicator of global higher education (Altbach, 2004).

The UK universities are attracting a greater number of foreign students to their campuses as well as establishing collaborative links with foreign affiliates (UKCOSA,

2006; van der Wende, 2001; Bennel and Pearce, 2003). The value of education exports for the UK has grown. For example, in recent research into the value of education and training exports to the UK economy provided a total estimated figure of around £7 billion per annum (Department for Trade and Industry, 2005). The universities as well as governments themselves have increasingly recognised the enormous potential of overseas markets (Bennel and Pearce, 2003). Since the late 1980s, the UK universities have been successful in recruiting overseas students and have also become one of the market leaders in developing overseas validated courses (van de Wende, 2001; Bennell and Pearce, 2003).

3.2.4.1 Implications for Higher Education

Universities from other countries such as America, Australia and Canada are breaking down the distance barrier to reach out to the student markets. This is taking place in the form of franchising, twinning programmes and establishing branch campuses. US higher education is becoming increasingly popular among the European students and academics (van de Wende, 2001). Canadian universities are also becoming increasingly active in exploiting overseas education markets (Bennell and Pearce, 2003). In addition, Australian university have become progressively more international in focus (Pratt and Poole, 1999).

The similarities between the universities from these countries that provides an advantage to capture the students market is the language (English) and their experience that could be transmitted through the teaching and learning activities. For example, Australia sees the globalisation of higher education as a means of exporting educational services (Back et al., 1996). From the institutional point of view, international links can convey prestige, particularly for new universities seeking reputation and maturity (Craft et al., 1998). Higher education has been significant avenue of cultural imperialism and disseminating largely western ideas, perspective and technology, western experience and behaviour (Craft et al., 1998). Instructional programmes from western countries have heightened the fears about the contamination of cultures in the developing countries (Francis et al., 2000). According to these authors, cultures are being taken over by the West in a process of building the

educational institutions on their own model as the basis for the expansion of international society, and where non-Western cultures will make only a very small contribution to the educational expansion.

By the 1990s, the higher education systems in these countries (UK, Australia, America and Canada) were recruiting more students from the developing countries into fee-paying programmes and such fees had become a critical source of financing for their higher education sector (Mazzarol et al., 2003). Thus, the globalisation of higher education will intensify competition in the future. The UK universities may require more funding to strengthen their position in the market and outpace competition. Perhaps the leaders of universities should initiate change in institutional strategy to position the institution in relation to competition.

The Bologna Declaration has being seen as a way forward for European higher education to promote international competitiveness (Wende, 2001; Huisman and Wende, 2004; Saarinen, 2005). The Bologna Declaration aims to increase the employability of European citizens and the competitiveness and attractiveness of European higher education by enhancing the comparability and compatibility of higher education structures and degrees in Europe, in particular by adopting a system of easily readable and comparable degrees, essentially based on the undergraduate and graduate cycles (Bologna Declaration, 1999). However, the impact goes beyond the traditional internationalisation issues (such as credit transfer and international diploma supplement) to encompass the following issues (Wende, 2001):

1. The reform of degree structures and the development of new qualification structures.
2. To reinforce the national policy initiatives that focus on enhancing the links between higher education with business, industry, employers' organisations and professional bodies. Thus, market relevance has become an important dimension in the new degree structure.
3. The Bologna Declaration has led to a greater emphasis on accreditation.
4. The Bologna Declaration has emphasised the issue of lifelong learning with greater emphasis to make higher education programmes more flexible.

Thus, it is argued that Bologna Declaration has affected the developments regarding the market relevance of higher education, the diversification of systems and programmes offerings in UK higher education.

The European Quality Improvement System (EQUIS) was established in order to facilitate, standard setting, benchmarking, mutual learning, and dissemination across borders. However, the franchising universities may have significant challenges such as (Association of University Teachers and Development Education Association, 1999):

1. Issues for franchising institutions can arise from their ability to monitor the activities of the institutions to which they franchise.
2. The support (human resource development) the franchising university gives to the staff in the franchisee university in relation to the quality requirement.

The globalisation of higher education has led to significant changes in staff responsibilities. This includes the need to develop curricula relevant to local and international students and to give the students the cultural understanding (de la Harpe, 1997). In addition, the staff administration workloads have increased due to the quality implications. Thus, it may raise challenges for the universities in terms of (Association of University Teachers and Development Education Association, 1999):

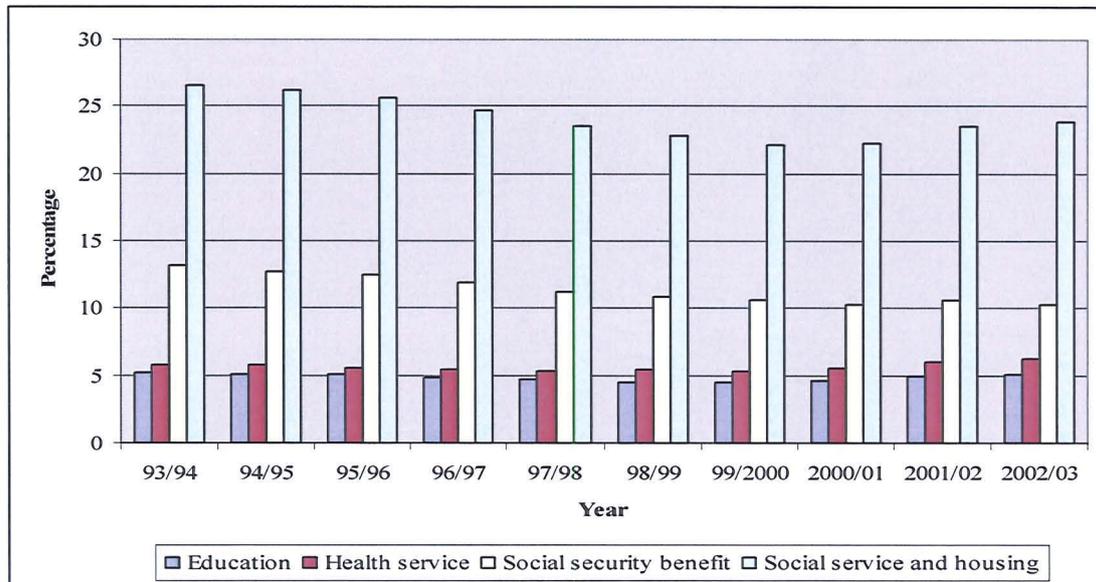
1. Issues for academic and related staff to the extent to which they are personally and professionally vulnerable in such situations.
2. Issues for individual staff in terms of contractual obligations, managerial instructions and behaviour and the maintenance of professional integrity.

3.2.5 Pressures on Funding

The UK government have to make hard choices on public expenditure in respect of social security, health, education and social services. Figure 3.4 below shows the percentage of government expenditure as a percentage of GDP from 1993/94 to 2000/03. The percentage of government expenditure on education in 2002/03 has

increased slightly compared to 1993/94. Thus, Figure 3.4 clearly indicates that education and therefore also higher education, may have to compete with other sectors mainly the social security, social services and the health service in the future (National Statistic, 2005).

Figure 3.4: Percentage of government expenditure as a percentage of GDP



Source: National Statistic, 2005

3.2.5.1 Implication for Higher Education

In 1964 the UK university sector accepted enhanced funding alongside greater direction from the state and subsequently between 1964 and 1974 the sector experienced a golden age, when the State fully funded higher education (Hoorebeek and Marson, 2005). From the mid 1970s a series of monetary reductions and increases in student numbers caused financial problem. In 2002, funding per student declined further by 37 per cent (DfES, 2003). Universities face problems in maintaining public funding levels for teaching at a time of major expansion in student enrolment (Harman, 1999). Thus, the universities as a direct response to the crisis in public funding are taking it upon themselves to create revenue to make up for the shortfalls (Hoorebeek and Marson, 2005).

A common policy response has been to increase the participation rate, recruitment of more foreign students and the diversification of products and services (Harman, 1999; Meek and Wood, 1997; Williams, 1997; Williams et al., 1997; McWhirter et al., 2003). Teaching provided money for the university from the conventional lines of government money according to numbers of undergraduate and postgraduate home students, and the fees system for the overseas students (Hoorebek and Marson, 2005). The universities began to recruit greater numbers of home student as well as students from overseas. The student numbers have increased significantly but staff numbers have only grown slowly which led to increased student staff ratio (Gibbs and Jenkins, 1992). This was aimed to achieve efficiency in universities. Thus, terms such as excellence, increasing competitiveness, efficiency and accountability have been introduced. In addition, different strategies such as internal audits and quality assurance have been adopted to try to improve the efficiency and effectiveness of university. There have also been moves towards market orientation in the UK (Williams et al., 1997). It could be argued that focusing on market orientation is increasingly followed by the requirement for the universities to monitor and adapt to the continuous changes taking place in the political, economic, social and technological environment. Some other examples are closing down of the departments that were not recruiting enough students and ceasing to offer courses that do not have enough students. For example, closure of Department of Physics and Department of Chemistry and cease offering physics and chemistry degrees at Napier University.

All these are generally a new concept for the universities. The staff may resist adapting and changing to this new requirement of market orientation. It could be argued that the senior managers in the university may not have enough experience in how to facilitate the staff to focus on customer-orientation, efficiency and standards within all their operations. These are also largely new notions for the senior managers in the higher education sector. Thus, the effort to focus on customer orientation while maintaining efficiency and standards may challenge the organisational culture of university in the future.

The UK governments have contemplated some change to funding arrangement due to budget constraints. Among the changes are the introduction of top-up fees (implemented in England) and full fees system for the foreign students. Under such

condition students may increasingly demand an improved and a wider range of delivery and service from higher education. For example, students may demand 24-hour access and 24-hour communication with the staff. This will require additional resources, both in terms of human and financial resources. However, due to the funding pressure, the universities may have to seek other options that could cut cost. One possible options will be to merge with the hope to share the cost burden and eventually achieve the cost saving. Some universities in the UK looked at mergers. For example, Aston and Birmingham Universities looked at the possibility of a merger (Harris, 2001). However, the negotiation came to an end when Aston University withdrew from the negotiations. According to the spokesman from Aston, some of the reported challenges for the mergers were (Harris, 2001):

1. The Aston council was convinced that current timing and circumstances are not opportune for fully realising the two present vice-chancellors' shared vision for a new integrated institution, or that integration with Birmingham University on any other terms would be in the best interests of Aston's staff and students.
2. Members of Aston's guild of students had previously voted two-to-one to oppose the merger, and while some staff supported the possibility of a merger, a great many were against the project, due to fears of job losses.

The approach of mergers clearly will bring about organisational and managerial change (Marra, 2004). The senior managers may not be able to realise the shared vision for a new integrated university. In addition, the staff may not accept the mergers for the fear of job losses. Thus, this may present potential difficulties for universities to merge in the future.

“The Guardian” revealed that some of the universities are facing severe financial difficulties. This includes some of the new universities and also some of the pre-1992 universities. The names of the universities were not revealed. However, the financial difficulty faced by the universities is due to severely under-recruiting of students (Curtis, 2005). It was argued that the introduction of top-up fees could have serious implications for universities which fail to recruit students when the fees go up to £3,000 (Curtis, 2005). In addition, many institutions will find it difficult to make the

right pricing and investment decisions, and those that get them wrong may quickly get into financial difficulty (Curtis, 2005). Students may not join those institutions that charge fees higher than other universities. The introduction of top-up fees is yet to be implemented in Scotland. However, faced with the funding constraints it may not be very long before the Scottish universities implement the top-fees system.

3.2.6 Social Inclusion

Widening access and equal opportunity to higher education is a stated key priority for the UK government (DfES, 2003). Government's view is that not enough people are participating and that too many young people, particularly from lower socio economic background are still excluded (DfES, 2003). The UK government policy displays a significant commitment to securing greater participation from the young people in the lower socio-economic groups (Layer, 2005). Access to university has been seen as a route out of poverty for young working class people. Table 3.3 below shows the social class by occupations for the UK. The social class I, II and IIIN are classified as upper socio-economic group. The social class IIIM, IV and V are classified as the lower socio-economic group.

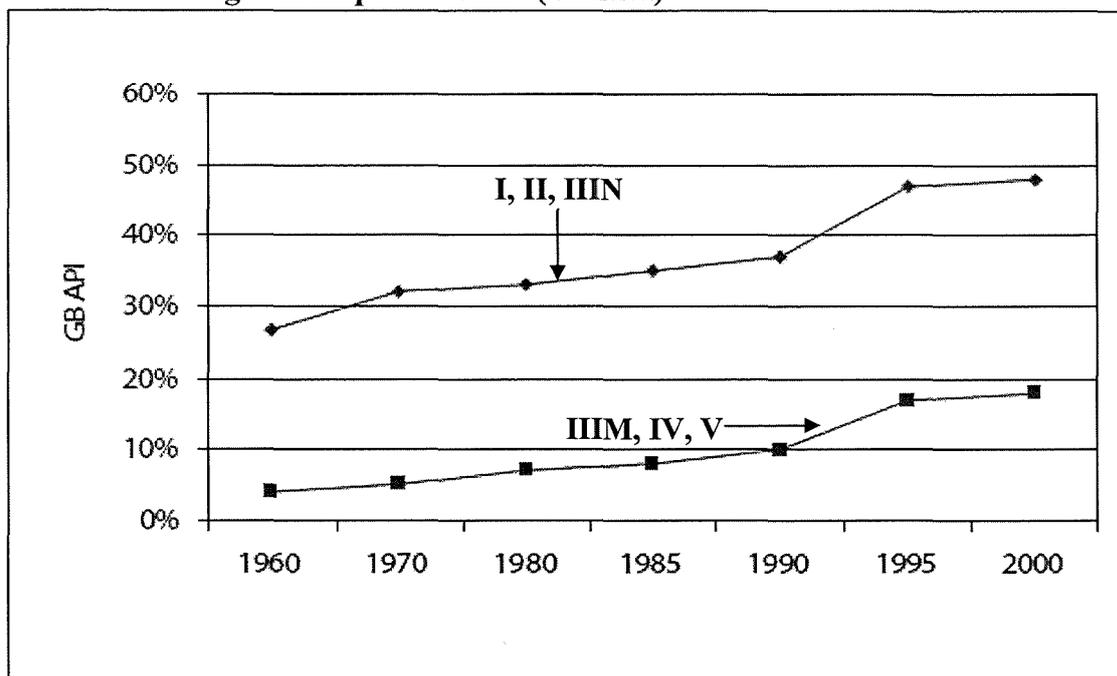
Table 3.3: Socio-economic class by occupations

Social Class	Occupation
I	Professional occupations
II	Managerial and technical occupations
IIIN	Skilled occupations – non-manual
IIIM	Skilled occupations – manual
IV	Partly skilled occupations
V	Unskilled occupations

Source: National Statistic (2005)

Figure 3.5 shows that in 2000, just 18 per cent of young people from lower socio-economic backgrounds were benefiting from higher education (DfES, 2003). While this was an increase of 8 percentage points on the position in 1990, the increase in participation by people from families with professional and non-manual occupations over this period was 11 percentage points (DfES, 2003). Thus, the gap in participation between these two social classes has increased. In 1960 there were just 200,000 full-time students but the gap between the two groups was actually less than it was in 2000 (DfES, 2003).

Figure 3.5: Higher education participation rate by social class (1960-2000) – Great Britain Age Participation Index (GB API)



Source: Department for Education and Skills (2003)

3.2.6.1 Implications for Higher Education

Government policy arising from the need to address the differences between the participation rates in higher education from the lower and upper socio-economic groups will present a great challenge for the universities. Students from disadvantaged backgrounds are more likely to drop out of their course. This could be due to the following (Furlong and Forsyth, 2003):

1. A lack of familiarity with higher education, which often results in such young people enrolling in inappropriate courses or at unsuitable institutions
2. A lack of funds, which limits their choices of course or institution and also the length of time which the young person is willing to remain within higher education
3. A fear of debt, which could exert a much greater deterrent effect on disadvantaged students' continued participation than could actual debt, especially when this fear is coupled with a lack of confidence, about both their

chances of academic success and their chances of finding a job at the end of it all to pay off this debt

4. Feelings of cultural isolation, particularly at the more prestigious institutions, which could compromise the disadvantaged students' identity, lower morale and lessen their commitment to continued study.

Students from disadvantaged background may require additional support, for example, hardship fund in terms of non-repayable bursaries, greater level of advice and information and extended length of study. The university may have to provide additional student support such as counselling services to provide additional psychological support. The academic staff may have to monitor the disadvantaged students more constantly on their progress in studies and provide additional one-to-one tutoring if required. However, with the increased class sizes it may not be possible to provide one-to-one tutoring constantly. It could be argued that the academic staff responsibility is to teach the student and not to provide additional student support service. However, with the widening access policy the academic staff may have to provide student support service. Thus, the university may require additional human resource development in order to guide the academic staff on how to provide the support and what kind of support needs to be provided for the disadvantaged students.

3.3 Supply for Higher Education

The supply for higher education is expected to address the challenges posed by the demands in higher education. The supply for higher education in the future will be supported by the number of lecturers in university, the number of universities across the world, and technology which promotes the growth of distance learning (World Education Report, 2000; Dearing, 1997, OECD, 2002).

3.3.1 Number of Lecturers

The number of academic staff in tertiary level has increased across the world (Table 3.4). In 1990 there was 5.1 million academic staff in tertiary education across the

world. However, by 1997 it had increased to 6.2 million. Most of the growth of academic staff is recorded in the developed and developing regions.

Table 3.4: Number of academic staff (thousands), 1990 and 1997

	1990		1997	
	Tertiary	All levels	Tertiary	All levels
WORLD TOTAL	5,100	51,694	6,284	58,973
More developed regions	2,018	12,018	2,506	13,011
<i>of which:</i>				
<i>Northern America</i>	969	4,302	1,093	4,664
<i>Asia/Oceania</i>	339	1,916	492	2,214
<i>Europe</i>	710	5,800	921	6,132
Countries in transition	946	7,108	1,007	7,498
Less developed regions	2,136	32,569	2,771	38,465
<i>of which:</i>				
<i>Sub-Saharan Africa</i>	77	2,550	123	3,148
<i>Arab States</i>	136	2,351	193	3,117
<i>Latin America/Caribbean</i>	605	5,648	789	6,866
<i>Eastern Asia/Oceania</i>	871	15,522	1,045	17,532
<i>of which: China</i>	512	10,475	544	11,659
<i>Southern Asia</i>	414	6,172	574	7,417
<i>of which: India</i>	330	4,370	419	5,019
Least developed countries	61	1,962	95	2,460

Source: World Education Report, 2000

The growth in terms of academic staff in higher education provision across the world is likely to continue in the future, which will further enhance the supply of higher education. In the UK, for example, the academic staff numbers have increased between 1996/97 and 2002/03 as shown in chapter 1 (Table 1.3). However, the declining social and economic status of academics, combined with increasing regulation, particularly in the UK, may be to blame for falling numbers of male lecturers, although this could be opening opportunities for women (Hill, 2004). The figures in chapter 1 (Table 1.3) suggest a trend of more women being appointed in 2002/03. In addition, the audit of higher education is putting some men off because they don't like the regulation of the profession - the quality assurance and audit - and feel that it isn't what they agreed to do when they became academics (Hill, 2004).

Similarly, the older academic staff may not agree with the regulation of the profession. A combination of relatively low pay and high regulation may change the atmosphere in higher education. It could become a female dominated world.

In order to attract young academic staff the pay structure may have to be more attractive and comparable with industry especially the private industry. Salary increases have not kept pace with comparable professions which it is reasonable to assume will have an impact on universities' ability to recruit and retain young academic staff in the future.

The regulation of the profession may present a challenge for higher education to retain the more experienced academic. The academic workforce in higher education in the UK is ageing. For example, in Scotland there are 28 per cent of academic staff were aged 50 and over (SHEFC, 2004). Many of this academic staff can be expected to retire over the next ten years. Thus, it is reasonable to assume that once the ageing academic staff retired, the young academic staff may comply with the regulation of the profession. Unless the recruitment policy manages to address the poor pay structure in order to reward and retain young academic staff, they may be reluctant to accept the regulation in the profession as well. A long-term strategy to enhance the pay structure, especially in relation to other industries may be needed in order to attract young academics to the academic profession (Scottish Executive, 2004). In addition, improved human resource development programmes may be required in order to facilitate the young academic staff to accept the regulation in the profession.

3.3.2 Universities

The number, type, size and distribution of higher education provision across the world have changed tremendously. In recent years, higher education has also been provided by other institutions, principally colleges for the education and training of teachers, further education colleges and also corporate providers of higher education. In the UK, the Robbins report (1965) recorded the existence of 31 universities (Dearing, 1997). Later additional universities were created in the 1960s (Dearing, 1997). In 1992 educational reform in the UK saw another increase in the number of universities

as the majority of the polytechnics were upgraded to university status. Today there are 171 higher education institutions in the UK. These universities are very diverse in terms of size, strength, and subject areas offered. Such diversity should have considerable strengths, especially in providing for student choice, in program and pedagogic innovation, in the ability of institutions to capture the energy and commitment of staff, and in the ability of the sector as a whole to meet the wide range of expectations, which are relevant to higher education (Dearing, 1997).

A number of corporate sector organisations have a long history of involvement in higher education. In 2001 the record shows there were more than 2000 corporate universities worldwide (Kriger, 2001). Motorola University is one of the examples of a corporate university. In addition, there are some corporate organisations that operate joint ventures with universities as new distance education providers. These corporate-universities joint venture provide course management systems for universities to offer their own distance education courses and also provide packages and links with courses or content from existing institutions (Kriger, 2001). Moving further away from traditional university models, virtual universities are other types of new provider of distance education such as University of Phoenix Online and the UK Open University.

A number of further education colleges in the UK have developed particular expertise and strengths as providers of higher education, whether as a direct provider or in a partnership with a higher education institution (Dearing, 1997). In the UK, in 1994/95, further education colleges provided 13 per cent of higher education (Dearing, 1997). Currently in Scotland there are 6 further education colleges that provide higher education. In the future there may be more institutions that may have the ability to provide higher education. However, as discussed in an earlier section (section 3.2.3), the number of school leavers that go into higher education is likely to be smaller. Thus, if the number of universities continues increasing this may intensify competition for the student market and funding.

Therefore, in order to enhance the supply for Scottish higher education sector and better utilise the resources, both human resource and financial resource, the Scottish higher education sector may not need too many institutions that provides higher

education. Scotland has only 5 million population and this is likely to decrease in the future. Therefore, the number of institutions that provide higher education may need to be reduced.

3.3.3 Technology

One of the key factors which have stimulated the supply for higher education across the world has been the development of information and communication technologies. The use of information and communication technologies as a tool for teaching and learning has increased rapidly in the last few years. Various initiatives have been carried out to try to exploit the potential of new information and communication technologies for learning and teaching. Among the initiatives is the use of web course tools to support teaching and learning activities in universities. This has given greater flexibility for the students in terms of accessing the lecture materials, receiving information or messages from the teaching staff, and coursework submission.

The information and communication technologies which are being adopted by the higher education sector may promise a vast array of options and possibilities for delivering higher education. Some of the existing higher education providers have developed distance learning. In Scotland, for example, Heriot Watt University have developed distance education for their MBA programmes. For-profit organisations are also developing distance education to benefit from the educational market across the world. In the UK among the for-profit distance learning providers are The UK Open University, Institute of Educational Technology and Learn Direct. The three other types of organisational structures and educational activities the for-profit organisation in the world uses are as following (Kriger, 2001):

1. Corporate-university joint ventures, such as those that provide course management systems such as Blackboard, Campus Pipeline, e-College, WebCT, as well as those who package and distribute courses or content from existing institutions such as UNext.com, Cenquest, Fathom, Global Education Network, Quisic and Universitas 21.
2. Full virtual universities, such as Andrew Jackson University, Cappella University, Jones International University, Kennedy-Western University,

University of Phoenix Online and Western Governors University. The UK example is the UK Open University.

3. Corporate universities or training institutions, such as the members of Corporate University X-change and Click2Learn.

The above discussion clearly indicates the variety of new ways to deliver distance education. However, the way distance education is being organised and conducted may present challenges for the publicly funded universities in the UK. According to Kriger (2001), much of the distance education developed by the for-profit organisations is built on corporate ideas about customer focus, product standardisation, and cost effectiveness (maximising course taking while minimising the “inputs” of faculty and development time). These concepts are generally new for the publicly funded universities in the UK. In addition, these concepts are contrary to the traditional model of higher education decision-making which emphasises faculty independence in teaching and research, academic control of the curriculum, and academic freedom in the classroom. Thus, the sector may require significant culture change in order to incorporate distance education into their delivery system and enhance the supply for higher education in the future. Highly skilled staff may be required in order to work more closely with the technology providers and to manage and deliver distance education. Highly skilled staff will be expensive and this may incur additional cost for the publicly funded universities in the future.

3.4 Conclusion

The change in massification is increasing in a period characterised by a number of pressures. Notable amongst these are demographic change and the increasingly ageing societies of Europe. As a consequence of prolonged low fertility level, over the next few decades the percentage increase in number of students in the 17 to 20 age brackets is projected to fall even if school leaver participation in higher education stays constant. To counteract this universities are moving to compete in a global market. However, global campuses may raise new challenges for quality assurance, as well as issues relating to the culture of overseas universities.

There has been a trend towards a reduction in manufacturing jobs accompanied by an increase in service sector jobs. Thus, the knowledge and skills required for the service sector jobs have also changed. There is generally little demand for technical skills and more demand for generic skills and transferable skills with emphasis on critical thinking skills, communication skills and team working. In addition, the roles played by lecturing staff are changing with more emphasis on flexibility and distance learning, and the use of technology to supply mass global markets. These are alien to many of the older staff in an increasingly ageing population.

Among other pressures faced by higher education are social inclusion and stakeholders' demands for improved and wider options of delivery. The widening participation policy to include students from lower socio-economic backgrounds adds additional pressures in terms of resources. On the other hand, the stakeholders increasingly demand the provision of the necessary requirements to meet the diverse needs of the student population in a more cost effective way.

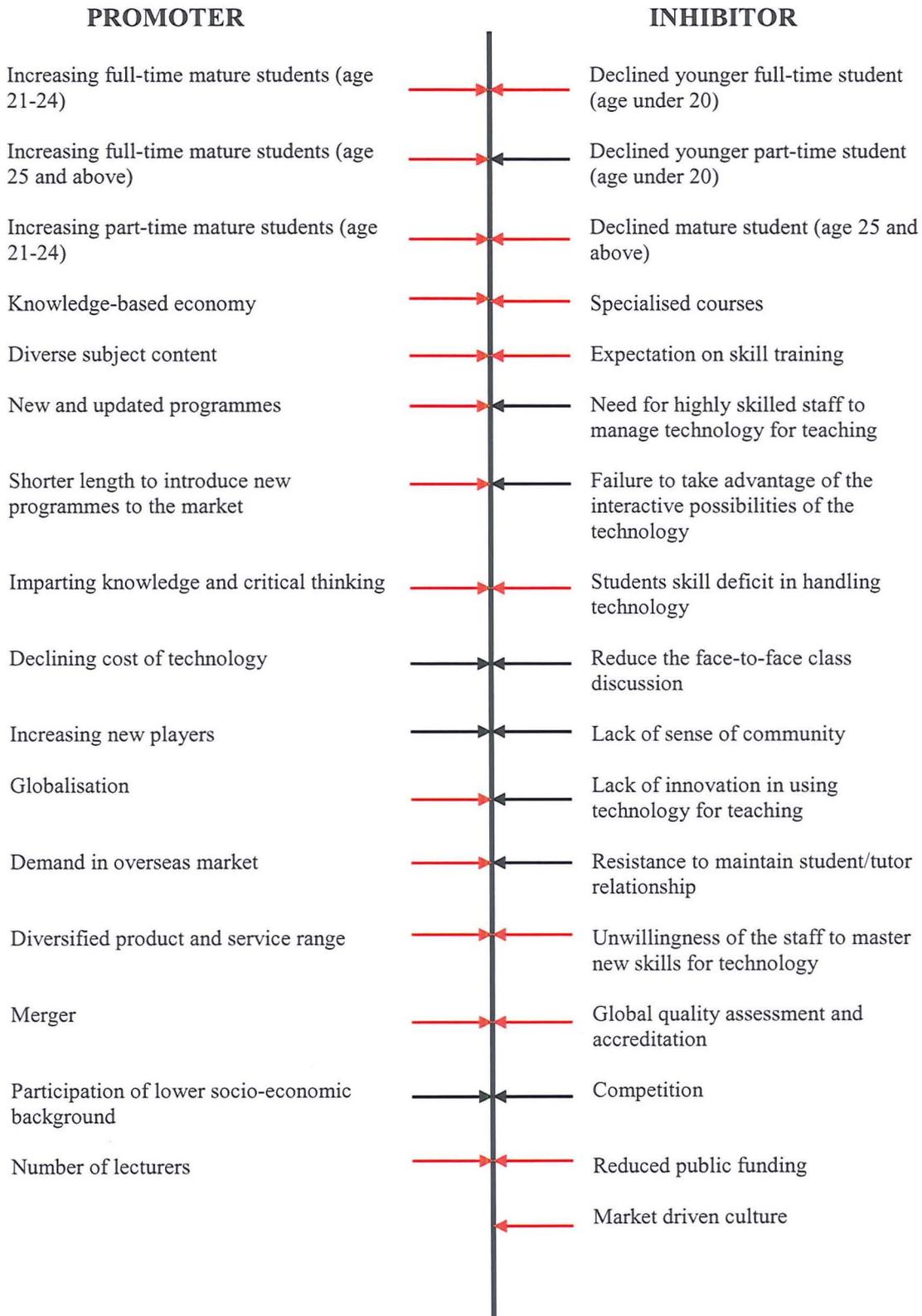
The current supply for higher education may continue to provide reasonable supply in the future. However, the pay structure may need to be comparable to other industries, improved human resource programmes may be required to facilitate young academic staff to agree with the regulation of the profession. In addition, highly skilled staff will be required to work with the technology providers and better manage distance education in the future. The numbers of universities in the UK and particularly in Scotland raise question on the feasibility of 21 universities.

Based on this analysis the factors that promote and inhibit higher education were identified. These are summarised in Figure 3.6. The red arrow indicates the stronger promoting and inhibiting factors. The black arrow indicates the weaker promoting and inhibiting factors. Thus, higher education providers in the UK need to focus more on the stronger promoting factors and overcome the inhibiting factors in the future.

Changing educational provision in order to counteract the inhibiting factors may present major challenges for higher education in the future. Universities need to devise a strategy in order to overcome the inhibiting factors. A way to overcome the inhibiting forces will be by prioritising the universities' response to student

expectations and their views on the likely future of higher education. Student views should be represented in universities strategy for future expansion. Thus, the following chapter will determine the student expectations and their views of likely future of higher education.

Figure 3.6: Promoting and inhibiting factors of higher education



CHAPTER FOUR

STUDENT EXPECTATIONS

4.1 Introduction

This chapter is aimed at examining students' expectations, satisfaction and their views on the future of higher education. In the knowledge-based economy, universities are increasingly playing a role in building knowledge capital and human capital. At the same time the pressures facing the universities in recent years are becoming a major concern in the UK. These pressures are likely to reshape the future of universities in UK in general and in Scotland in particular. Understanding students' expectations, satisfaction and their views on the future of higher education is vital. This may help universities to prioritise their response to students' needs and address them more effectively in the future and consequently help to improve higher education provision. Student expectations should be represented in the future strategy. The adaptation that a university makes in addressing student expectations will develop a new organisational culture in that university.

A student expectations survey was carried out among first year undergraduate and postgraduate students, and final year undergraduate students. For the first year undergraduate student university experience will be something new. The final year students will have years of experience at Napier University. Thus, the first year student expectation may provide initial expectations of students when they started their course at Napier University. The final year students' view may provide ideas on what could be the expectation of students once they develop their experience at Napier University. Comparing these expectations may facilitate the university in providing improved and more suitable options of delivery over the next 10 years.

Most taught postgraduate students would have had several years of experience from their past history of university education. Generally, postgraduate students were returning to university with the intention of obtaining higher qualifications and

expand their opportunities for future employment. Thus, postgraduate student expectations may help to form a consolidated view of student expectation.

4.2 Research Method

The research consisted of three surveys using questionnaires as the main tool. Copies of the questionnaires used are displayed in Appendices 1, 2 and 3. In the first questionnaire the students were asked to indicate their expectations. The same set of questions that was in the first questionnaire was used in the second survey, but with an additional response column to indicate their satisfaction. An additional section (Section B) was also included in the second questionnaire in order to obtain the students' view on the likely future of higher education. The key findings obtained in the Section B from the second survey were fed back to the respondents in order to determine whether students want Napier University to implement these key findings in the future.

The questionnaire was distributed to a sample of students attending Napier University during the 2003/04 academic year. The samples included in this survey will be discussed in detail in the following section (section 4.3). Only students in their first and final year undergraduate programmes, and the first year full-time and part-time taught postgraduate programmes were surveyed. The survey was conducted between October 2003 and May 2004 in three different phases. The group of students selected for the first phase were followed through to the third phase. All three surveys were administered during regular lecture sessions. The respondents received instruction from the researcher who was physically present in each session to administer the survey and to answer commonly asked questions. The respondents were given the first 15 minutes of the class session to complete the survey and return it to the module lecturer at the end of the 15th minute. The survey responses were kept confidential.

The first phase of the student expectations survey was administered in October 2003. The aim was to investigate and determine student expectations (first year undergraduate, final year undergraduate, first year postgraduate full-time and postgraduate part-time) at Napier University. The second phase of the survey was

administered in January 2004. The aim was to compare the change in expectations and satisfaction across the group of students and to determine student views on the likely future of Napier University.

The third survey of student expectations was administered in May 2004. The aim was to obtain consolidated student views on to what extent Napier should be implementing the key findings on the likely future of Napier University.

4.3 Sample

Three different Faculties were identified, namely the Business School, the Faculty of Engineering and Computing and the Faculty of Arts and Social Science. Faculty of Health and Life Sciences was not included, as this was used to obtain greater generalisation from the key findings obtained in the second survey. The students from the Faculty of Health and Life Sciences were included in the final survey. The students were clustered based on their programmes. As the survey was conducted at three different times, it was appropriate to cluster the students from the same programme. However, the Faculty of Arts and Social Sciences do not offer programmes at postgraduate level, so there were no samples at the postgraduate level from this Faculty. Table 4.1 shows the clusters of student for this research.

Table 4.1: Groups of students selected for student expectation survey

	First year undergraduate	Final year undergraduate	First year postgraduate (full-time)	First year postgraduate (part-time)
Business School	Business Studies	Business Studies	Human Resource and MBA	Human Resource and MBA
Faculty of Engineering and Computing	Engineering	Engineering	Computing	Computing
Faculty of Arts and Social Science	Psychology	Psychology		

The questionnaires were distributed to every student in the programme. The total number of students who responded during the first survey was followed through until

the third survey. Table 4.2 shows a summary of the responses obtained in the first, second and third survey.

Table 4.2: Summary of the number of responses obtained for the student expectations surveys

	Business School			Engineering and Computing			Arts and Social Sciences			Health and Life Sciences
	1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd	3 rd	3 rd
First year undergraduate	40	18	40	50	23	32	15	0	49	86
Final year undergraduate	38	7	68	60	40	30	25	5	9	
First year postgraduate full-time	61	43	32	55	21	3				
First year postgraduate part-time	65	50	49	6	2	0				
Total	204	118	189	171	86	65	40	5	58	86

The responses obtained in the second survey were generally low for all the groups. The responses obtained during the second survey from the Faculty of Arts and Social Science was the lowest. The responses obtained in the third survey were generally high. However, the responses obtained from first years postgraduate (full-time) from Faculty of Engineering and Computing, and final year undergraduate from the Faculty of Arts and Social Science were the lowest.

4.4 Limitations

The student expectation survey was conducted during class time. The students were allocated the first 15 minutes of class time which may not have been sufficient for the students to respond to the questionnaire. The lecturers reminded the students to complete the questionnaire within the specified time. Thus, the respondents may not have been able to fully respond to some of the questions.

The first year students were likely to have difficulties in understanding the questions. The first year respondents were new to the university experience. As such, they may not have a strong view of their expectations.

The survey was carried out in three different phases with the same group of people chosen in the first survey. Some difficulties were encountered in tracing the group during the second survey and the final survey. For example, some students have changed to a different programme and some did not want to continue participating in the survey. The group of students that could not be traced in the class during the second survey were followed up. The students were contacted through e-mail. However, the response was very poor. As such, e-mail may not be the appropriate method of getting students to participate in students' expectation and satisfaction surveys. They may not bother responding to the survey.

4.5 First Survey Findings

The findings from the first survey are presented below. Comparisons were made between first year undergraduate, final year undergraduate first year postgraduate (full-time) and first year postgraduate (part-time) student expectations. For issues such as the reputation of the university comparisons were made by country of origin of the students. In addition, for issues such as assessment methods comparisons were made by Faculty.

4.5.1 Demographic Background of Respondents

Shown in Table 4.3 is a summary of the respondents by gender and programme of study. The female respondents consist of 40.5 per cent. The majority of the female respondents are from the first year taught postgraduate programmes both full-time and part-time. The majority of male respondents are from the undergraduate programmes. There are more undergraduate students in the chosen sample. Overall 54.9 per cent were undergraduate students.

The majority of the respondents are from the United Kingdom consisting of 76.1 per cent of the total respondents. The European Union and other overseas respondents constitute of 14.2 per cent and 9.6 per cent respectively. The majority of the overseas respondents are from the first year postgraduate courses studying full time. However, the majority of the European Union respondents are from the final year undergraduate

programs. The majority of the home student respondents are from the first year and final year undergraduate programs.

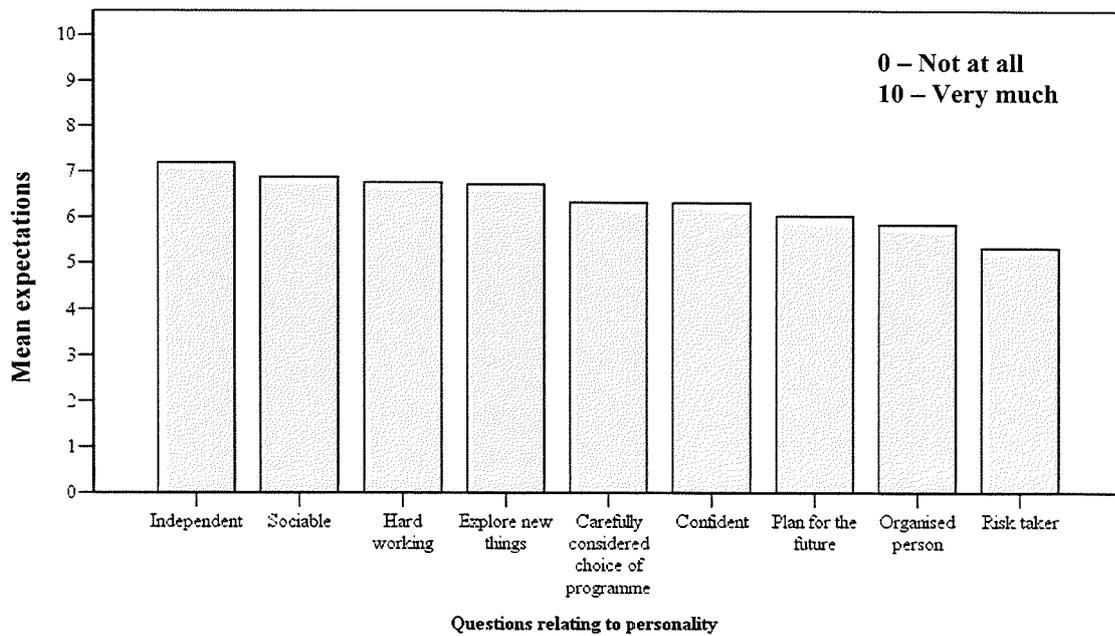
Table 4.3: Summary of respondents' gender by programme of study

	First year undergraduate	Final year undergraduate	First year postgraduate (F/T)	First year postgraduate (P/T)	Total
Male					
Count	80	82	63	22	247
Percentage	32.4	33.2	25.5	8.9	100
Female					
Count	25	41	53	49	168
Percentage	14.9	24.4	31.5	29.2	100
Total					
Count	105	123	116	71	415
Percentage	25.3	29.6	28	17.1	100

4.5.2 Personality of the Respondents

The description of personality of the respondents is shown in Figure 4.1. The respondents were asked to describe their personality on the scale of 0 (not at all) to 10 (very much). The personality type of the respondent may influence their expectations at universities and their view on the future of Napier University. Overall, there is not much difference in respondents' personality. Figure 4.1 shows that the students score higher on the categories "independent", "sociable" and "hard working" compared to "plan for the future", "organised person" and "risk taker".

Figure 4.1: Description of respondents' personality at Napier University



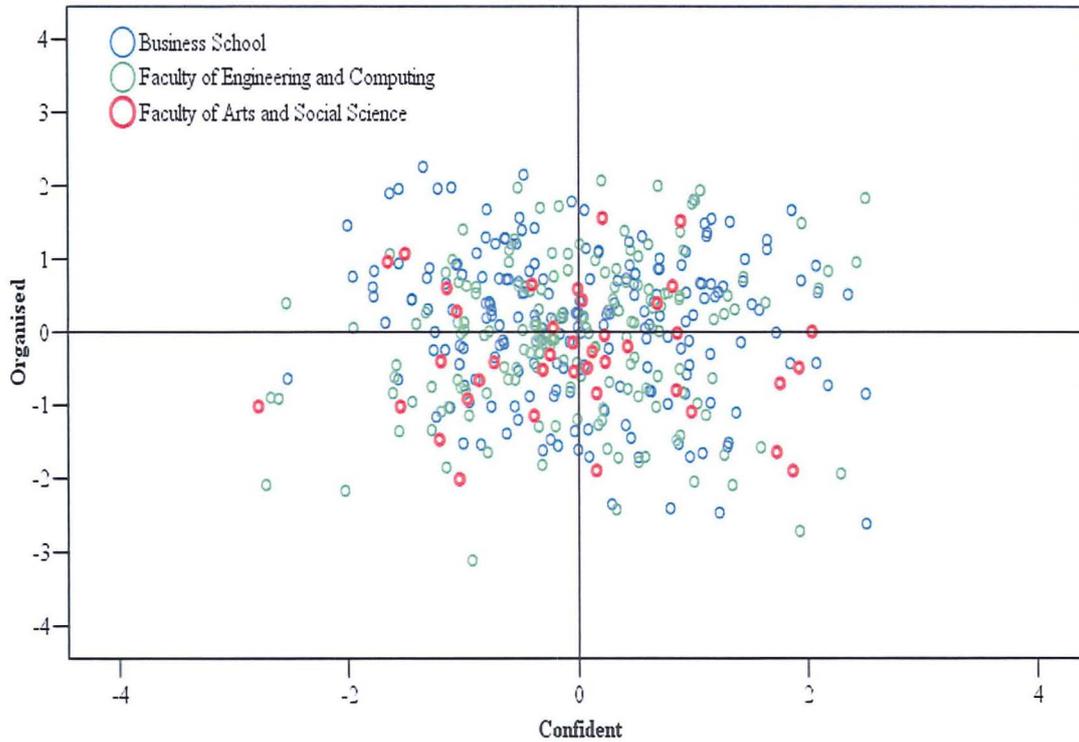
Additional analysis using factor analysis was conducted on the respondents' personality in order to identify common factors. Factor analysis was carried out for this purpose and to explain the common pattern of personalities as shown in Table 4.4. The factor analysis identified two unique factors, which are "Organised" and "Confident". The common factors that reflect the "Organised" factor are organised person, plan for the future, carefully considered choice of program and hardworking. Whereas the common factors that reflect the "Confident" factor are sociable, independent, explore new things, risk takers and a very confident person. The percentage of variance explained for the "Organised" factor was 26.6 per cent. The percentage of variance for the "Confident" factor was 24.7 per cent.

Table 4.4: Personality type at Napier University

	Organised	Confident
Sociable		.483
Independent	.340	.453
Explore new things		.720
Organised person	.795	
Plan for the future	.785	
Carefully considered choice of program	.703	
Risk taker		.769
Confident		.742
Hard working	.638	.335

Shown in Figure 4.2 is the distribution of students for the “Organised” and “Confident” factors. Overall, there is a well balanced distribution for the “Organised” and “Confident” personality.

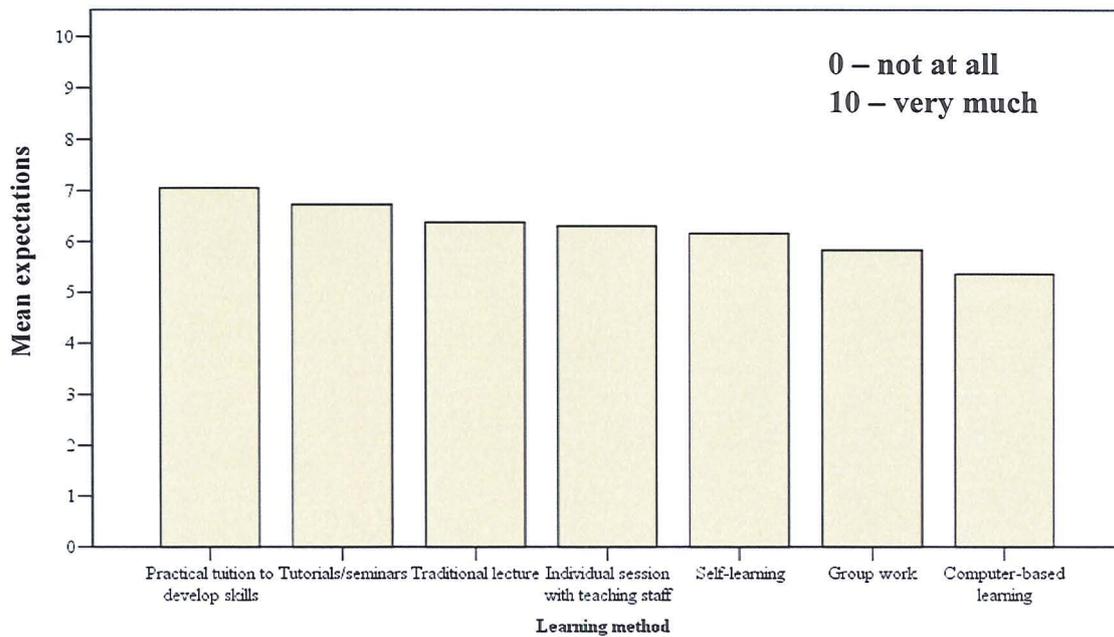
Figure 4.2: Distribution of students for the “Organised” and “Confident” factor



4.5.3 Students' Expectations of Learning Methods

The respondents expect a variety of learning methods at Napier University as shown in Figure 4.3. The respondents were asked to indicate their expectations from 0 (not at all) to 10 (very much). Overall, the respondents demonstrated slightly stronger expectations to learn through practical tuition, tutorials and seminars and traditional lectures compared to self learning and computer based learning. However, there is no method that emerged as a strong preference.

Figure 4.3: Respondents' expectations for learning methods at Napier University



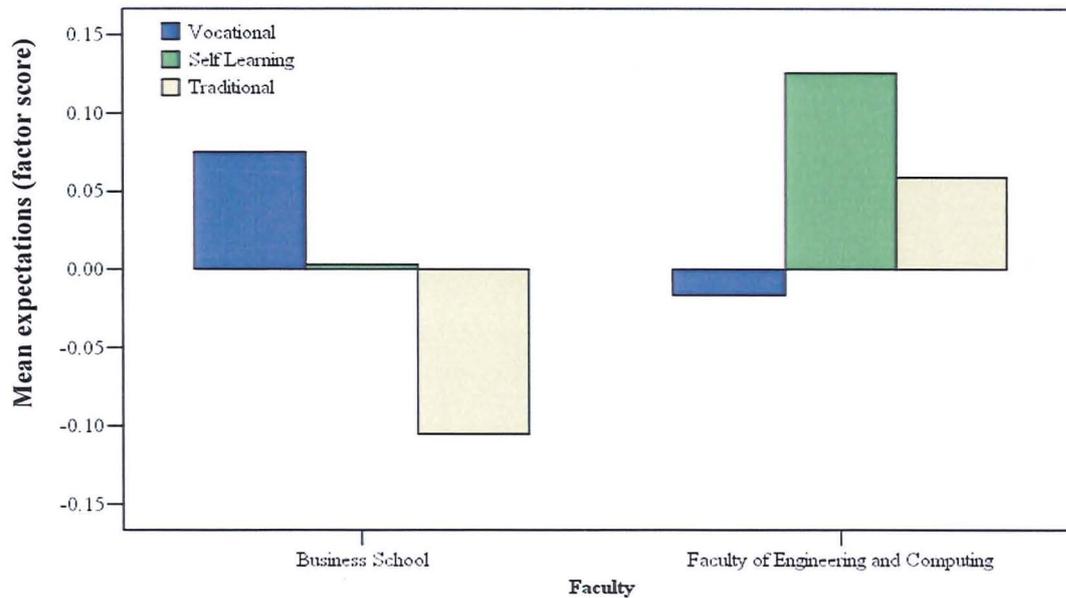
Factor analysis was carried out in order to categorise the learning methods preferred by the respondents. As shown in Table 4.5, there were three unique factors identified which represent the expectation for vocational learning, traditional learning, and self learning. The common factor that reflects the vocational learning are tutorials and seminars, group work, and practical tuition to develop skills. Learning through projects and computer based learning reflects the preferred self-learning method. The traditional learning method is reflected by traditional lectures and individual sessions with the teaching staff. The variance accounted for by vocational learning was 23.9 per cent, for self-learning factor was 18.2 per cent and for traditional learning method was 17.7 per cent.

Table 4.5: Learning Methods at Napier University

	Factor		
	Vocational Learning Methods	Self Learning Methods	Traditional Learning Methods
Traditional Lecture			.850
Computer Based Learning		.856	
Individual Sessions with Teaching Staff			.487
Tutorials/Seminars	.660		.395
Group Work	.769		
Practical Tuition	.732		
Self Learning		.662	

Summarised in Figure 4.4 are the comparison of preference for learning methods across different Faculties at Napier University. The respondents in the Business School demonstrated stronger expectations for a vocational learning style. The respondents from the Faculty of Engineering and Computing indicated stronger expectations for self learning and traditional learning methods. This could be due to the large proportion of respondents being computing students who prefer computer-based learning that reflects self-learning method. The engineering students should be more vocational oriented compared to the business studies student, but the finding of this survey contradicts this.

Figure 4.4: Respondents' expectations (using factor score) on learning methods by Faculty at Napier University



Independent T-test was conducted to identify significant differences in students' expectations for learning methods across Faculties. The respondents from the Faculty of Arts and Social Science were not included in the T-test due to the fact that the numbers were small. The T-test shows that there is a significant difference between the expectations of respondents from the Business School and the respondents from Faculty of Engineering and Computing. The p-value obtained for the expectation on vocational learning method is 0.00; p-value for expectation on self-learning method is 0.00; and p-value for expectation on traditional learning method is 0.00. This shows that the respondents across these two faculties (Business School and the Faculty of Engineering and Computing) have different expectations.

Shown in Figure 4.5 is the comparison for preference of learning methods between the first year undergraduate, final year undergraduate, first year postgraduate (full-time) and first year postgraduate (part-time) respondents. The Figure indicates that the first year undergraduate and first year postgraduate both full-time and part-time respondents prefer vocational learning methods and the final year students prefer self-learning and traditional learning methods. The final year students prefer the vocational learning method less.

Figure 4.5: Preference (using factor score) of learning methods by levels of study at Napier University

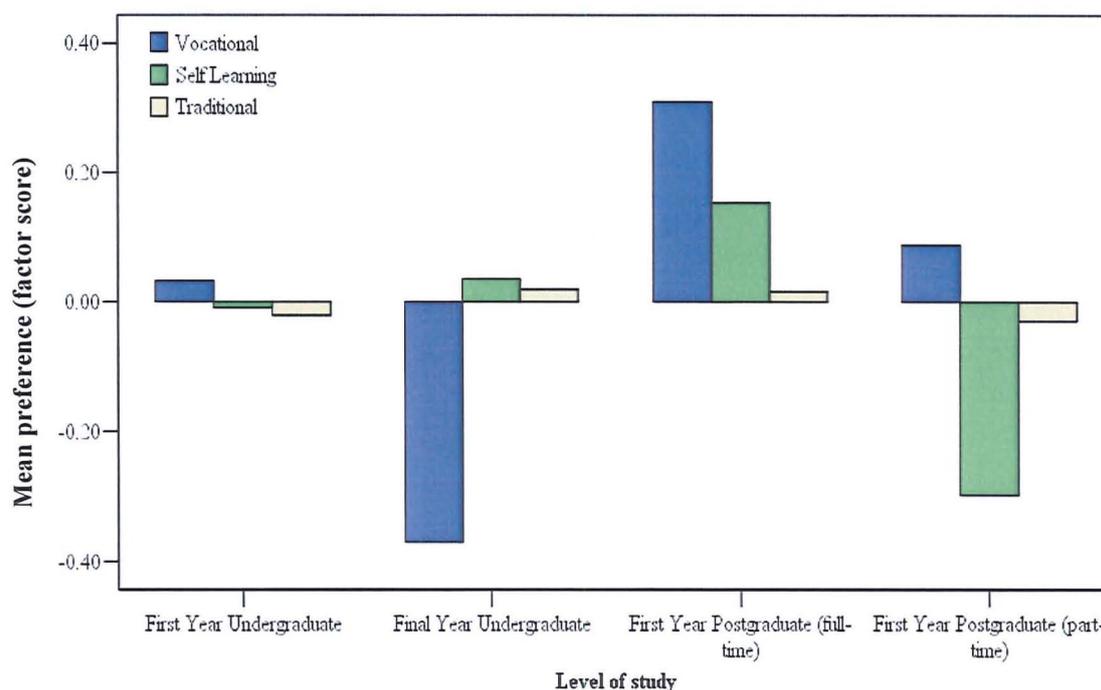


Figure 4.5 also indicates that the students can be segmented into different groups according to their expectations. Perhaps, there will be requirement for higher education to devise and implement different strategies that will facilitate their response to these different groups of students.

An analysis of variance shows that there is a significant difference between the first year undergraduate and final year undergraduate respondents on the preference of the vocational learning method as indicated by the p-value of 0.01. There is also a significant difference between the final year undergraduate and the first year postgraduate both full-time and part-time. The p-value obtained was 0.00 and 0.01 respectively. There is no significant difference between the first year undergraduate and the first year postgraduate full-time and part-time respondents.

In terms of preference of the self-learning method, an analysis of variance conducted shows that there is a significant difference between the first year postgraduate full-time respondents and the first year postgraduate part-time respondents. The p-value obtained was 0.01. Perhaps the part-time respondents need to juggle their work

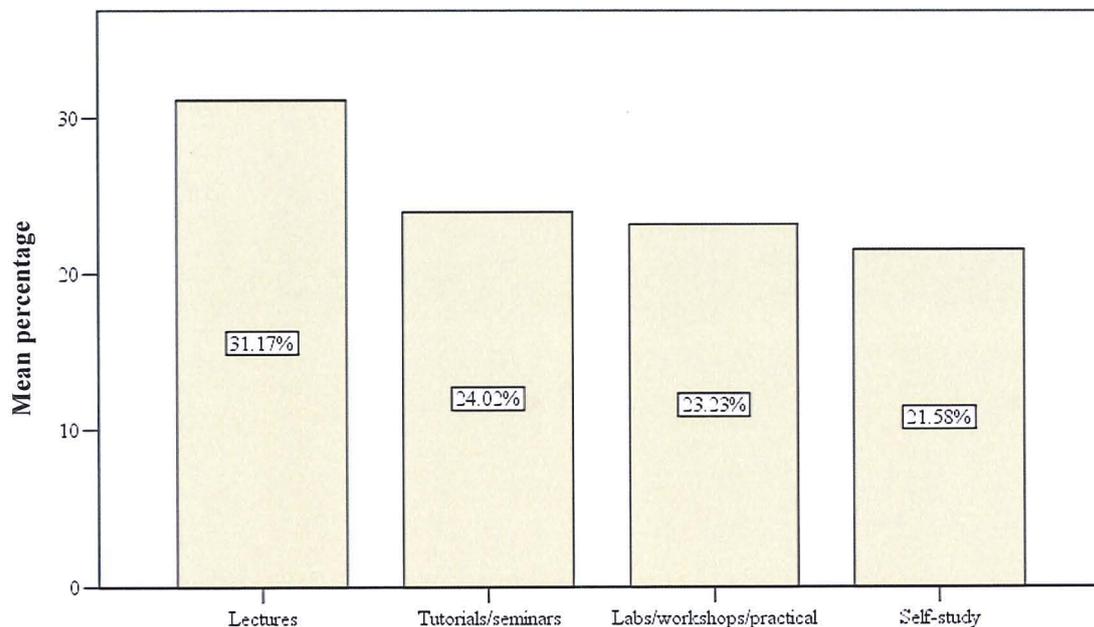
commitment with their studies and so they may not have time to engage in self-study. They want to learn during class hours.

There is no significant difference between the four different levels of respondents for their preference of traditional learning methods. However, Figure 4.5 suggests that the respondents have only a slight preference for the traditional learning method.

4.5.4 Preference of Programme Organisation

The Pareto chart in Figure 4.6 shows the students' preference of programme organisation at Napier University. The Pareto chart suggests that no one method of delivery emerged with a strong preference. The respondents' prefer slightly more lectures. This means the respondents still want to be taught rather than exploring issues on their own. Perhaps the respondents perceive being taught is easier and less stressful.

Figure 4.6: Respondents' preference on programme organisation at Napier University

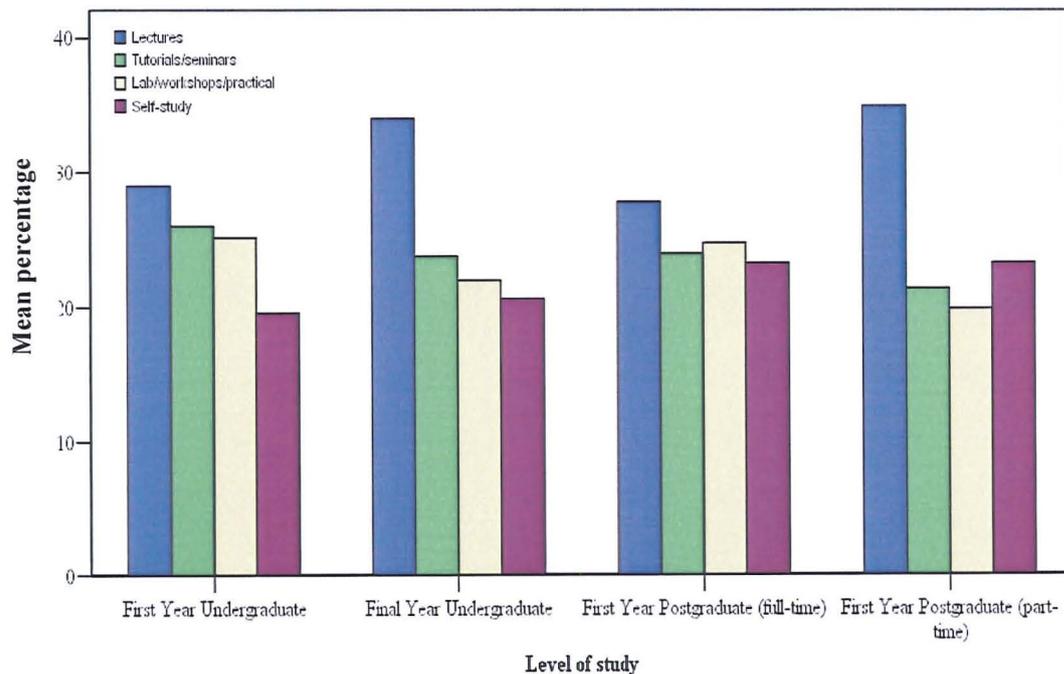


Shown in Figure 4.7 below are the preferences on programme organisation by level of study. Analysis of variance suggest that there is a significant difference between the

first year undergraduate and final year undergraduate students in terms of preference for lectures (p-value obtained was 0.02). There is a significant difference between the first year undergraduate and the first year postgraduate (part-time) with regard to the expectations of lectures as indicated by a p-value of 0.01. The final year undergraduate respondents' preference of lectures differs significantly with the first year postgraduate full-time respondents as indicated by the p-value of 0.00. There is also a significant difference between the first year postgraduate full-time respondents and the postgraduate part-time respondents for their preference for lectures. The p-value obtained was 0.00.

There is a significant difference between the first year undergraduate and the first year postgraduate (part-time) respondents for their preference of tutorials or seminars and, laboratory, workshops and practical, as indicated by the p-value of 0.01 respectively. The first year postgraduate full-time respondents' preferences differs significantly with the first year postgraduate part-time respondents' preference for labs, workshops and practical. The p-value obtained was 0.02. There is no significant difference for the respondents' preference for self-study.

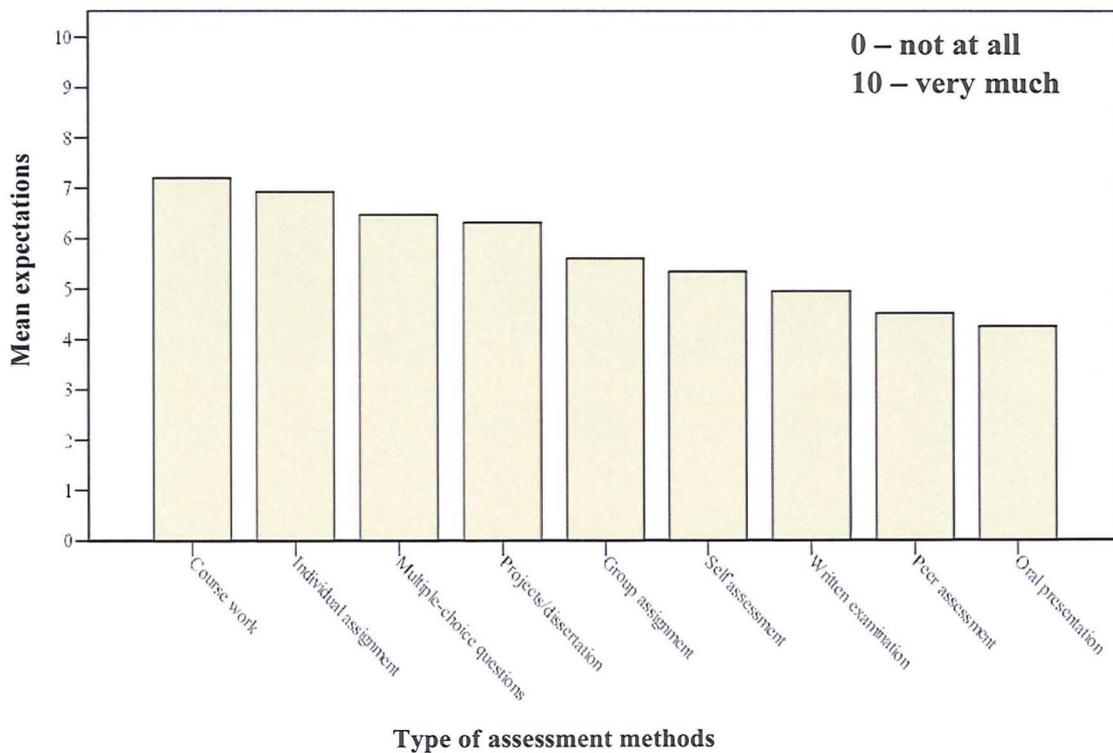
Figure 4.7: Respondents' expectations on program organisation by level of study at Napier University



4.5.5 Expectations of Assessment Methods

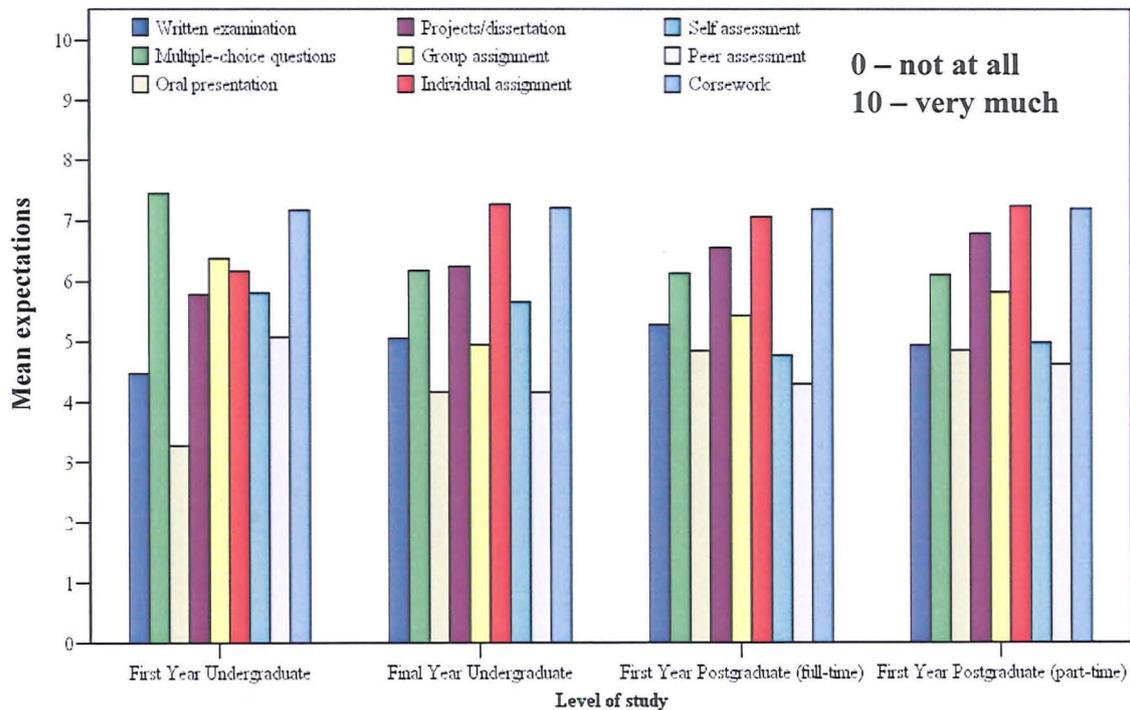
The respondents are exposed to a mixture of assessment methods at Napier University. Shown in Figure 4.8, coursework is the most expected assessment method at Napier University. The least expected assessment method at Napier University is the oral presentation. It could be argued that in order to create a learning society, coursework and individual assignment is likely to be more appropriate than the written examination. Coursework and individual assignments will allow the students to explore the topic area in more detail. Perhaps the written examination may simply encourage the students to memorise the subject content for the purpose of passing the examination. However, it should be noted that plagiarism, which is becoming a central concern in universities, may not allow students to be assessed through non-examination methods. Thus, in the future, written examination may be increasingly adopted in universities and some of the innovative assessment methods may have to be abandoned although they may well be educationally better.

Figure 4.8: Respondents' expectations of assessment methods at Napier University



Shown in Figure 4.9 are the expectations of assessment methods at Napier University by level of study. The analysis of variance suggest that the expectations of multiple-choice questions significantly differ between the first year undergraduate respondents and the final year undergraduate, first year postgraduate both full-time and part-time respondents. The p-values obtained were 0.00, 0.00 and 0.01 respectively. There is a significant difference between the first year undergraduate respondents and the first year postgraduate both full-time and part-time respondents for the oral presentations as indicated by the p-value of 0.00 respectively. Among other respondents' expectations of assessment methods that are significantly different between groups are the projects or dissertation, group assignment, individual assignment, self assessment and the peer assessment. There is no significant difference between the groups of students for the expectations of written examination and the coursework.

Figure 4.9: Respondents' expectations of assessment methods by level of study at Napier University



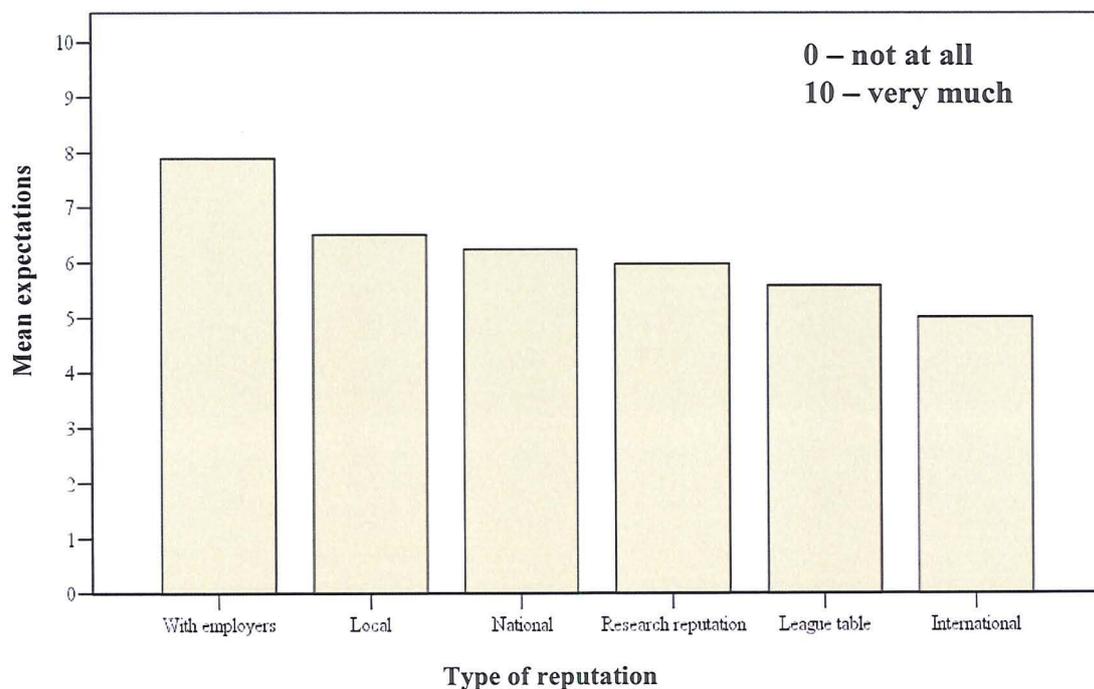
4.5.6 Respondents Expectations of University Reputation

The respondents were asked about their expectations of the reputation of the university. Among the aspects of reputation considered were the international

reputation, national reputation, local reputation, university's reputation with employers, research reputation and university reputation in the League table. The respondents were asked to rate on the scale of 0 (not at all) to 10 (very much) the importance of these aspects for them while attending Napier University.

Figure 4.10 shows that the respondents want the university to have a good reputation with employers, followed by a good reputation at local and then at national level. The reputation with employers has the highest expectation. The expectation of international reputation is lowest. There is a reasonably high expectation of research reputation. This could be reflected by the origin of the respondents who took part in the survey. The majority of the respondents were from the United Kingdom. Perhaps the home students may not be concerned with the international reputation. However, it may be vital for Napier University to maintain and improve its international reputation and its position in the League table if it is to capture a larger overseas students market.

Figure 4.10: Respondents' expectations on university reputation at Napier University

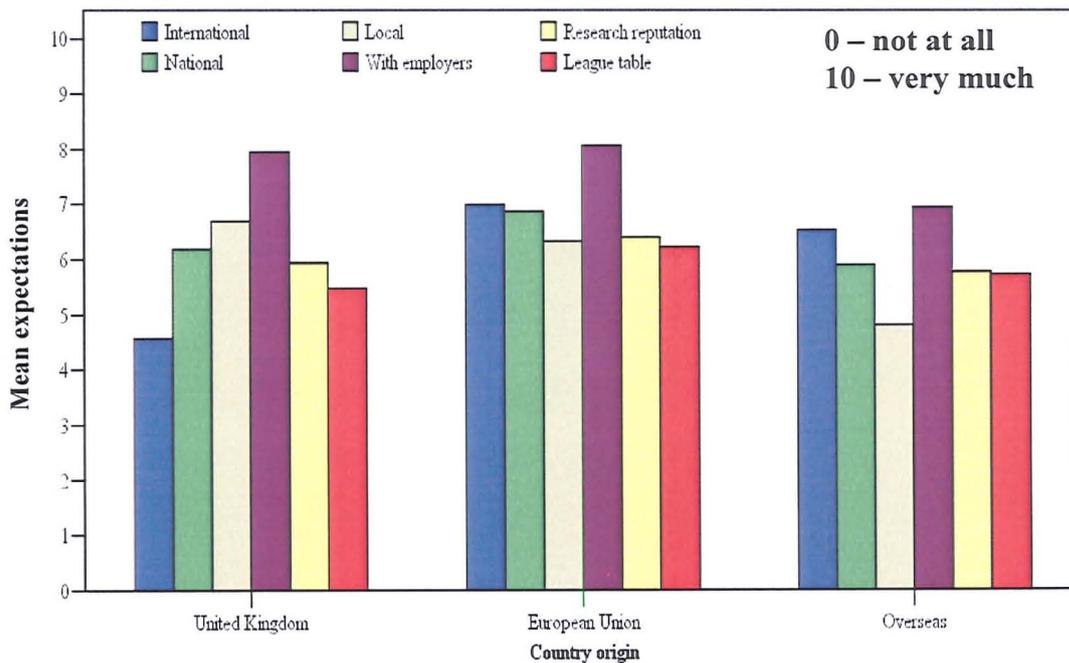


Shown in Figure 4.11 are the respondents' expectations of university reputation by country origin. Figure 4.11 suggests that respondents from the European Union and

respondents from other overseas countries have higher expectations for universities to have an international reputation.

An analysis of variance shows that there is a significant difference between the home students and the students from European Union (EU) with regard to their expectation of international reputation as indicated by the p-value of 0.00. There is also a significant difference between the home students and the students from overseas for their expectations of international reputation. The p-value obtained was 0.00. There is no significant difference between the students from the European Union and the students from other overseas countries. This suggests that both the overseas students and the students from the European Union have similar expectations for international reputation. However, it should be noted that the respondents from the EU and the other overseas countries also have higher expectations regarding reputation with employers. Thus, the overseas students and the European Union students may expect the university to have a greater reputation with employers in the future. This suggests that if Napier University wants to capture larger overseas student markets they may have to devote resources to increase the international reputation of the university as well as its reputation with the employers.

Figure 4.11: Respondents' expectations of university reputation by country of origin at Napier University



There is a significant difference in the expectation for local reputation between the home students and students from overseas as indicated by the p-value of 0.00. There is also a significant difference between the students from the European Union and the students from overseas with a p-value of 0.00. The home students and the students from the European Union have greater expectations for local reputation. There is no significant difference between the home students and the students from the European Union with regard to expectations for the position of the university in the League table. The expectations on the position of Napier University in the League table were the lowest. Thus, it could be argued that the League table may not be important in the future. However, it should be noted that these students are currently already in university. Therefore, it would be better if in future some of the prospective students are surveyed in order to obtain views about expectations on university reputation. This will provide a significant view for universities to prioritise their response to address student expectations on university reputation.

4.5.7 Other Expectations besides Obtaining a Qualification

The respondents were asked to indicate on the scale of 0 (not at all) to 10 (very much) to other expectations (8 options given in the questionnaire) that the respondents have besides obtaining a qualification at Napier University. Figure 4.12 below shows that developing skills, intellectual growth and obtaining employment is the most expected. In addition, meeting new people, increasing confidence, having a good time and the opportunity to engage in future studies or professional studies are also expected but to a lesser extent. To meet a partner is the least expected factor.

A comparison between the respondents' level of study for their other expectations besides obtaining a qualification is shown in Figure 4.13. The Figure illustrates the pattern of other expectations among the four different levels of studies considered. An independent T-test was carried out to examine the differences in the first year and final year undergraduate expectations. There is a significant difference between the first year undergraduate and final year undergraduate students for their expectations of all the factors considered as indicated by p-value of 0.00. For example, the final year undergraduate respondents have greater expectations for obtaining employment

compared to the first year undergraduate respondents. A similar test was carried out to examine the differences between the first year postgraduate both the full-time and the part-time expectations. It shows that their expectations differ significantly for all the factors considered as indicated by a p-value of 0.00 obtained. For example, the first year postgraduate full-time students have higher expectations for obtaining employment. The same test was repeated to examine the difference between the overall undergraduate expectations and the postgraduate expectations. The p-value obtained shows that there is a significant difference between these two groups for all the factors considered.

Figure 4.12: Respondents' other expectations besides obtaining a qualification at Napier University

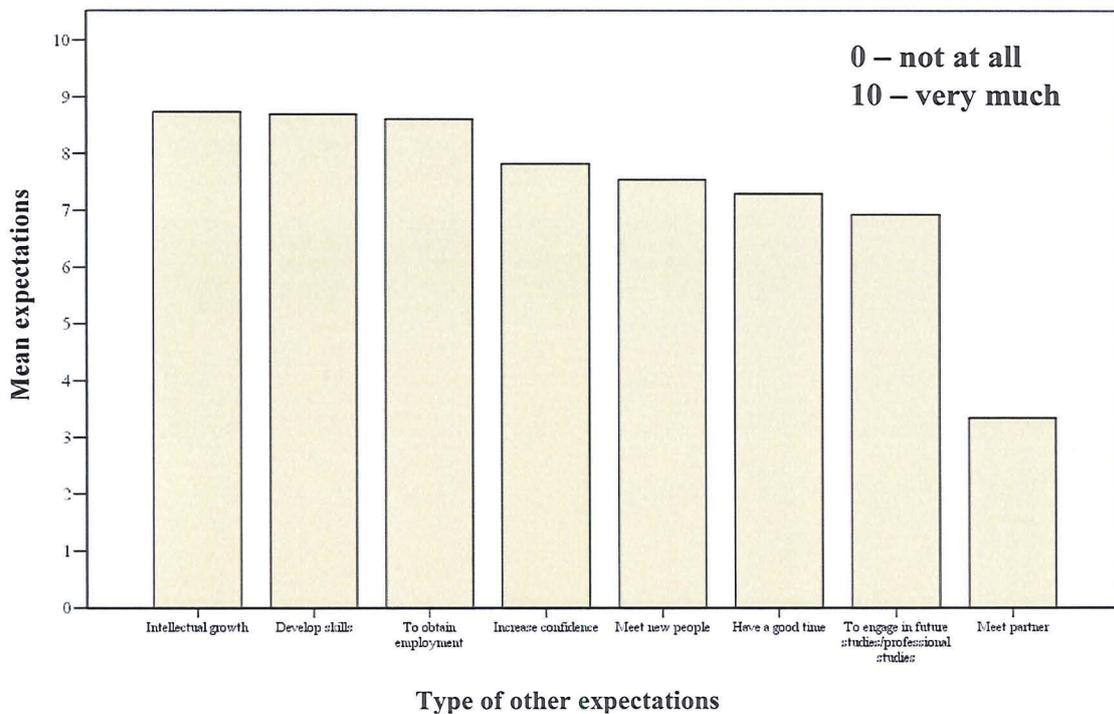
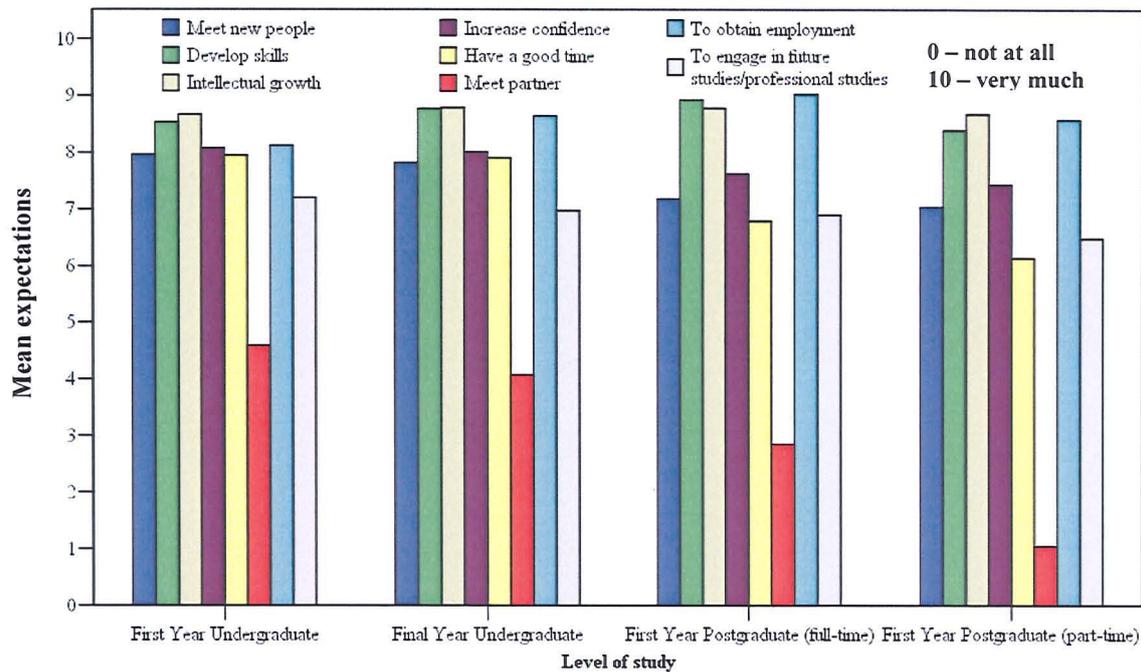


Figure 4.13: Respondents' other expectations besides obtaining a qualification by level of study at Napier University



Factor analysis was used to identify the common pattern of expectations besides obtaining a qualification. Table 4.6 shows that two factors emerged. The first factor reflects the need to build on human capital. It is concerned with developing skills, intellectual growth, obtaining employment and the opportunity to engage in future studies or professional studies. The second factor reflects the need to build on social capital. It is concerned with meeting new people, increasing confidence, having a good time and meeting a partner. The expected variance for human capital is 27.6% and the expected variance for social capital is 26.9%.

Table 4.6: Respondents' other expectations besides obtaining a qualification at Napier University

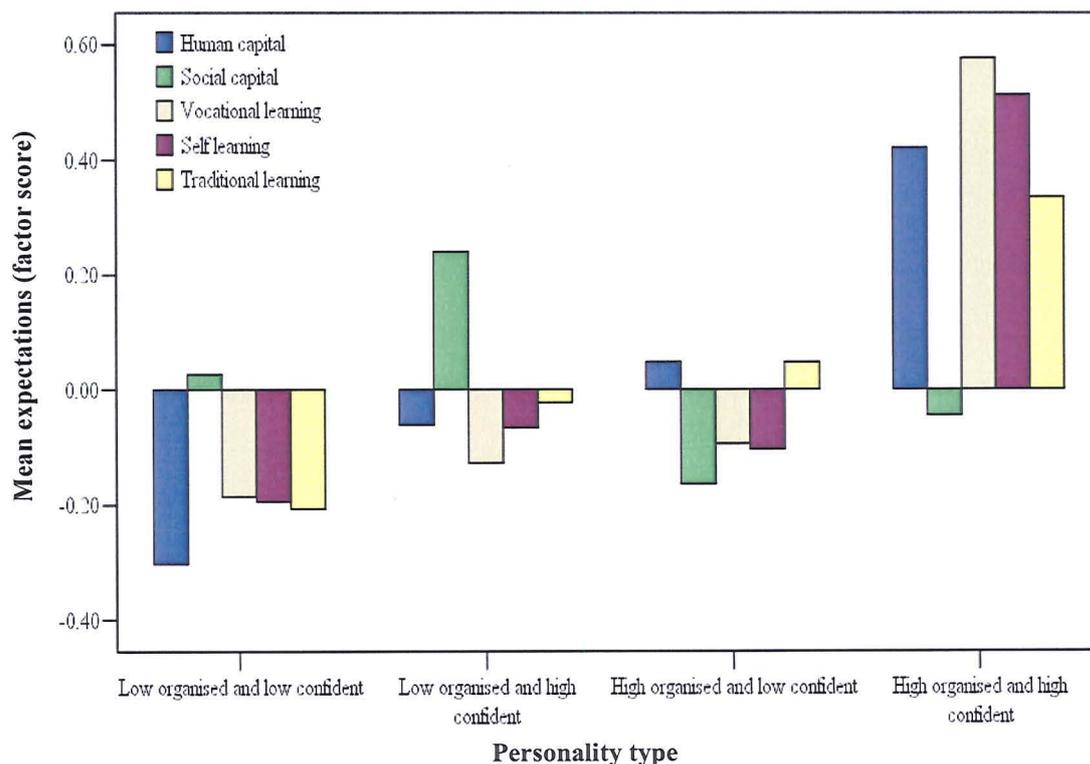
	Human Capital	Social Capital
Meet new people		.759
Develop skills	.828	
Intellectual growth	.858	
Increase confidence	.494	.523
Have a good time		.820
Meeting partner		.735
To obtain employment	.541	
To engage in future academic/ professional study	.392	

4.5.8 Comparison of Expectations of Learning Methods and Other

Expectations besides Obtaining a Qualification by Personality Type

Shown in Figure 4.14 is the comparison for expectations of learning methods and other expectations besides obtaining a qualification by personality type. It suggests that the respondents who are characterised by “low organised and low confident” have lower expectations for vocational learning, self-learning and traditional learning, and for human capital. However, they have slightly higher expectations for social capital. The respondents who are characterised by “low organised and high confident” have similar expectations. The respondents who are characterised by “high organised and low confident” have lower expectations for vocational learning, self-learning and social capital. However, these respondents have higher expectation for traditional learning and human capital. The respondents who are characterised by “highly organised and highly confident” have greater expectations for vocational learning, self-learning, traditional learning and human capital. However, they have slightly lower expectation for social capital.

Figure 4.14: Respondents’ expectations (using factor score) of learning methods and other expectations besides obtaining a qualification by personality type at Napier University

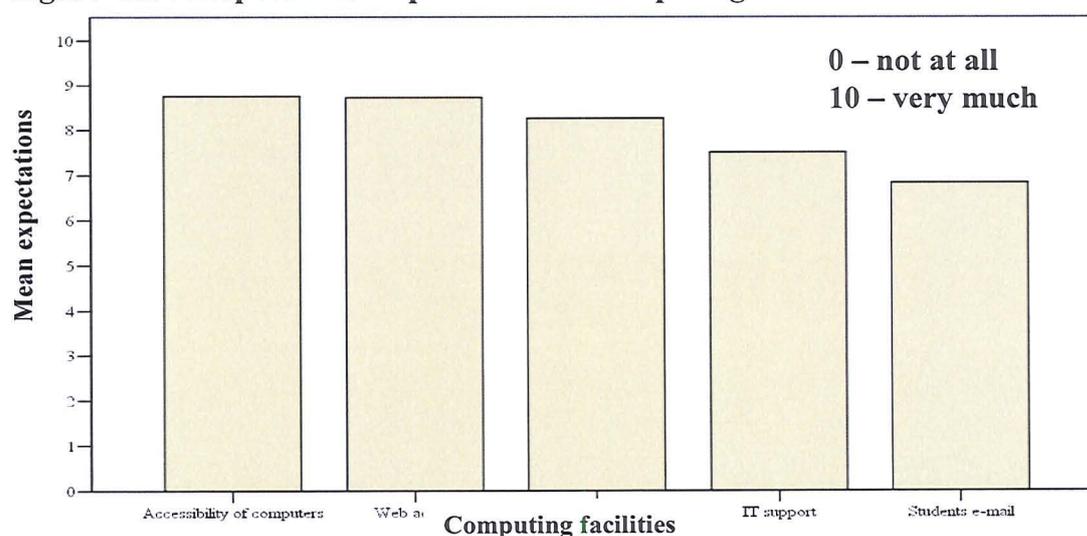


4.5.9 Expectations of Computing Facilities

The respondents were asked to rate the importance of computing facilities at Napier University on the scale of 0 (not at all) to 10 (very much). Figure 4.15 shows that, of the following computing facilities at Napier University the accessibility of computers and web access are the most expected by the students. The next highest expectation related to quality of computers and IT support at Napier University. The least expected facility is the students' email. This shows that the students may not access their university e-mail.

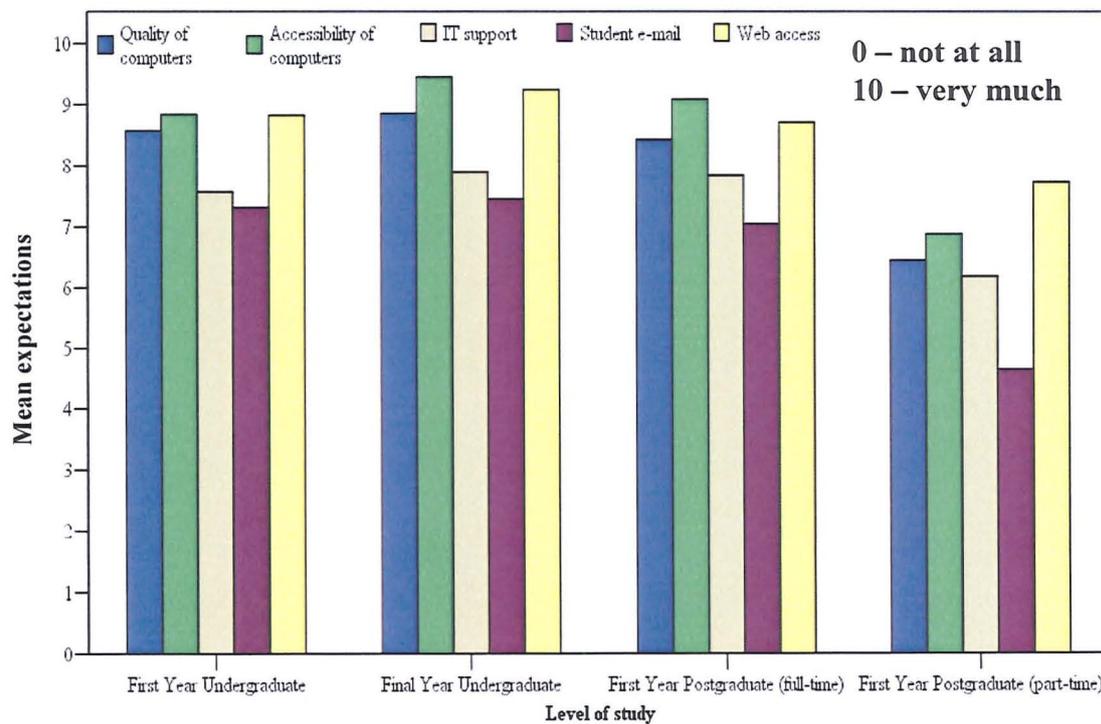
An independent T-test was conducted to investigate the significant difference of the expectations across the two different faculties. The Faculty of Arts and Social Science was not included as the response from this Faculty was low. There is a significant difference between the Business School and the Faculty of Engineering and Computing for the expectation of all the factors considered as indicated by the p-value of 0.00. For example, the students from the Faculty of Engineering and Computing have greater expectations regarding quality of computers. There is also significant difference between the students from the Business School and the students from the Faculty of Engineering and Computing in their expectations on accessibility of computers as indicated by the p-value of 0.00. The students from the Faculty of Engineering and Computing have greater expectations for accessibility of computers. This may be due to the nature of their studies which may have a greater requirement to use more advanced computer packages.

Figure 4.15: Respondents' expectations on computing facilities



A comparison between the first year undergraduate, final year undergraduate and the postgraduate both full-time and part-time respondents is shown in Figure 4.16. The Figure shows that the first year postgraduate part-time respondents have the lowest expectations for all the factors considered. Perhaps these part-time students may have computing facilities at work as they spend most of their time at the work place. An analysis of variance carried out shows that generally there is a significant difference between the first year postgraduate part-time respondents and all other groups of students. For example, there is a significant difference between the first year postgraduate part-time respondents and all other groups for their expectations of quality of computers as indicated by p-value of 0.00 and for all the factors considered. There is no significant difference between the first year undergraduate, final year undergraduate and the first year postgraduate full-time students for all the factors considered.

Figure 4.16: Respondents' expectations of computing facilities by levels of study at Napier University



4.5.10 Expectations of Library Facilities (second survey only)

The respondents were asked to rate the importance of library facilities at Napier University on the scale of 0 (not at all) to 10 (very important). Of the following library facilities at Napier University, resources and the availability of books, and the opening hours are the most expected. Figure 4.17 shows that generally all the facilities shown are highly expected by the respondents.

A comparison was made by grouping all the undergraduate responses together and the postgraduate responses together. Figure 4.18 shows that the postgraduate students have slightly lower expectations of all the factors considered. An independent T-test shows that there is a significant difference between the undergraduate and postgraduate student groups for their expectations of all the factors considered as indicated by the p-value 0.00. For example, the undergraduate respondents have greater expectations of resources and availability of books compared to the postgraduate students. Perhaps the postgraduate students can obtain resources for their studies broadly from the internet.

Figure 4.17: Respondents' expectations of the library facilities at Napier University

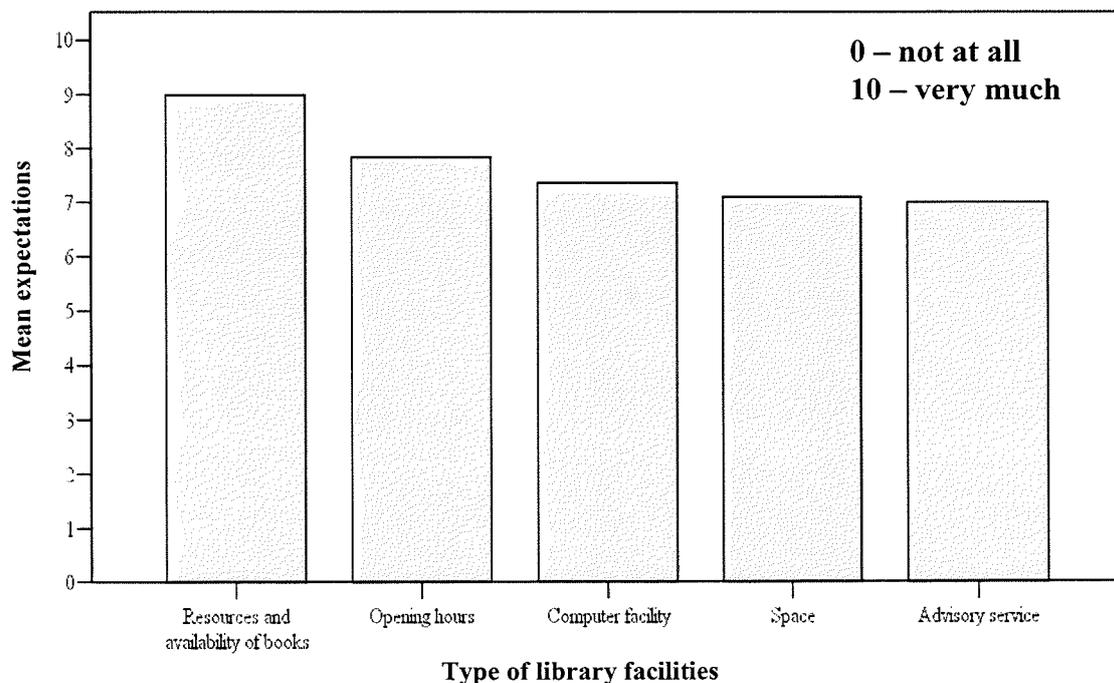
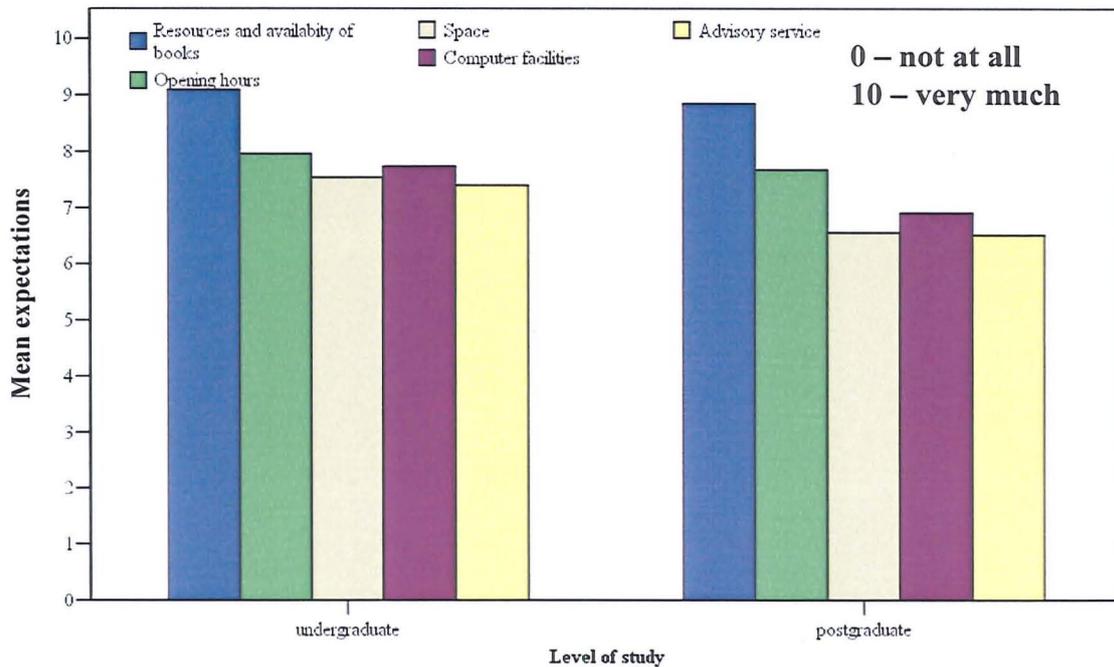


Figure 4.18: Respondents' expectations of library facilities by level of study at Napier University



4.5.11 Discussion

The respondents broadly give similar responses for the majority of the issues considered in the first student expectations survey. Generally, the respondents have a combination of expectations. There is no one option that has emerged as a dominant expectation. Some of the key findings obtained from the first student expectations survey are as follows:

1. The first year undergraduate and the first year postgraduate both full-time and part-time respondents have higher expectations for vocational learning methods. The final year undergraduates have less expectation for vocational learning methods.
2. The final year undergraduate and the first year postgraduate full-time respondents have greater expectations for self-learning methods. The first year undergraduate and the first year postgraduate part-time respondents have less expectations for self-learning.
3. The final year undergraduate and the first year postgraduate full-time respondents have greater expectations for traditional learning methods. The

first year undergraduate and the first year postgraduate part-time have less expectation of traditional learning methods.

4. Generally all the respondents have greater expectations for universities to have a good reputation with employers. The EU and other overseas students expect Napier to have an international reputation.
5. The respondents coming to Napier University broadly want to develop skills, to gain intellectual growth, to obtain employment and to socialise.
6. Computing facilities are expected by all the respondents studying on a full-time basis.
7. Library facilities are expected by the respondents studying at undergraduate level.

The findings suggest that the students expect an improved and wider range of services from Napier University. These expectations may evolve and change in the future. Student expectations may increase and they may continue to demand an improved and wider options of higher education delivery. Thus, Napier University should continuously determine the student expectations and prioritise its response to students' needs. Napier University should aim to keep its students satisfied by providing those services that are expected by the students. This will facilitate Napier University in its future development to capture larger student markets. Student expectations should be included in the future development plans of Napier University.

4.6 Comparison between the First and Second Surveys Respondent

Expectations

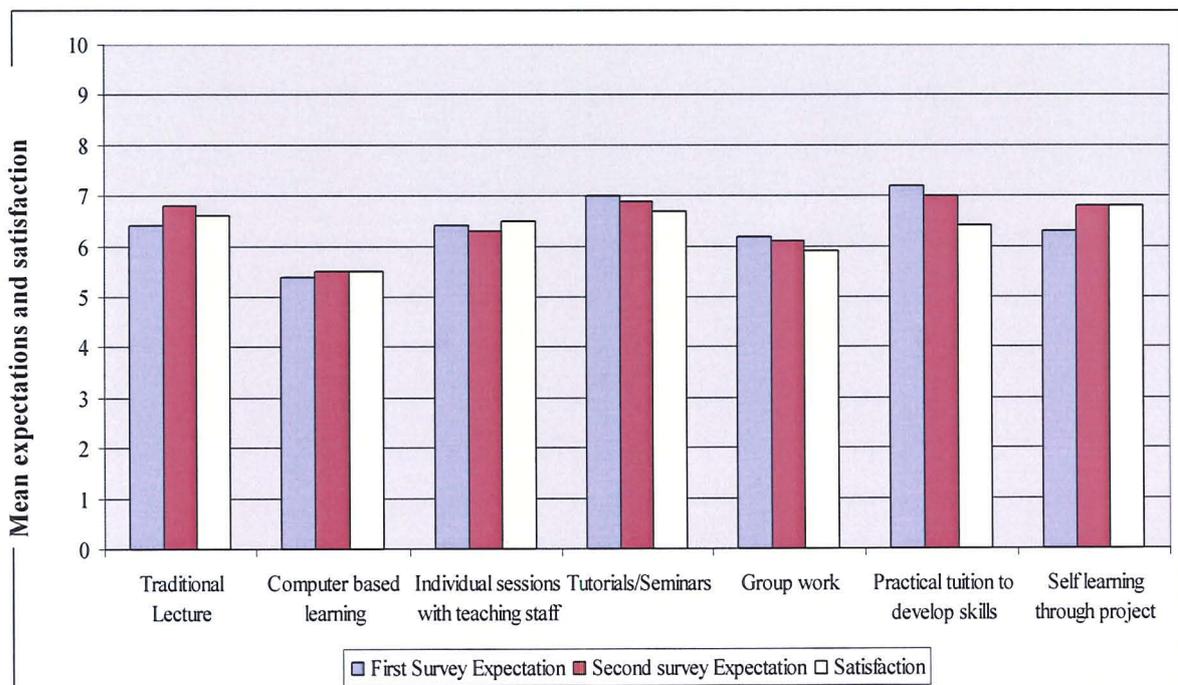
In the second survey 188 responded out of 415 who responded in the first survey. Thus, a response rate of 45.3% was obtained from the 415 respondents. The aim of the second survey was to investigate whether the student expectations increased or decreased as they continue to develop more experience at Napier University. The comparisons were made between both surveys by levels of study and the results are displayed in Appendix 4 for each dimension of the questionnaire. In the second survey the students were asked to indicate their satisfaction level as well. In addition, student views on the future of Napier University were obtained.

4.6.1 Learning Methods

Shown in Figure 4.19 is the expectation of the respondents for the learning methods. Those learning methods that were encountered with slightly increased expectation were traditional lecture, computer based learning and self-learning through projects. The students' satisfaction rating is slightly lower than their expectations for traditional lectures. However for the computer-based learning and self-learning through the use of projects, the students' satisfaction level is equivalent to their expectations.

The expectation of the respondents slightly decreased for the individual sessions with the teaching staff, tutorials and seminars, group work and practical tuition to develop skills. Perhaps this could be due to the possible weaknesses in terms of learning through tutorials and seminars, group work and practical study. For example, in the group work the students may not be able to learn from their peers. It could be argued that this may be due to some students not pulling their weight or contributing to group progress.

Figure 4.19: Respondents' expectations and the satisfaction of learning methods at Napier University (all the groups)



An independent T-test was carried out to investigate any significant differences between the first survey and the second survey. There is no significant difference for

the majority of expectations of learning methods. However, there is a significant difference for the expectations of traditional lecture (p-value = 0.03) and self-learning through project (p-value = 0.04). The respondents' satisfaction level is similar to their expectations. It could be argued that the expectation of the students do not change a lot even after they have more experience at Napier University. Thus, it can be concluded that the initial expectation of the students may not change that much even after the respondents have further developed their experience at Napier University.

A comparison between the two surveys for first year undergraduate, final year undergraduate, first year postgraduate (full-time) and first year postgraduate (part-time) expectations are shown in appendix 4 (Table 1). The finding indicates that the respondents' expectations have slightly changed during the second survey. An independent T-test conducted shows that there is no significant difference between the two surveys as shown by the p-values obtained and it is shown in Appendix 4 (Table 1). There is a significant difference among the final year undergraduate students for their expectations of traditional lectures (p-value = 0.03). Their expectations of traditional lectures are slightly higher in the second survey. The satisfaction level is similar to their expectations. The summary of the findings are as follows:

1. First year undergraduate:

- Respondents expectations of learning methods that recorded a slight increase are the expectations of traditional lectures, computer based learning and the group work.
- The expectations of individual sessions with teaching staff, tutorials/seminars, practical tuition to develop skills and self learning have slightly decreased.

2. Final year undergraduate

- The respondents expectations generally recorded a slight increase except for the group work (slightly decreased)

3. First year postgraduate (full-time)

- The expectations of traditional lectures, individual sessions with the teaching staff, group work and self-learning recorded a slight increase. However, the expectations of computer-based learning, tutorials/seminars and practical tuition to develop skills have slightly decreased.

4. First year postgraduate (part-time)

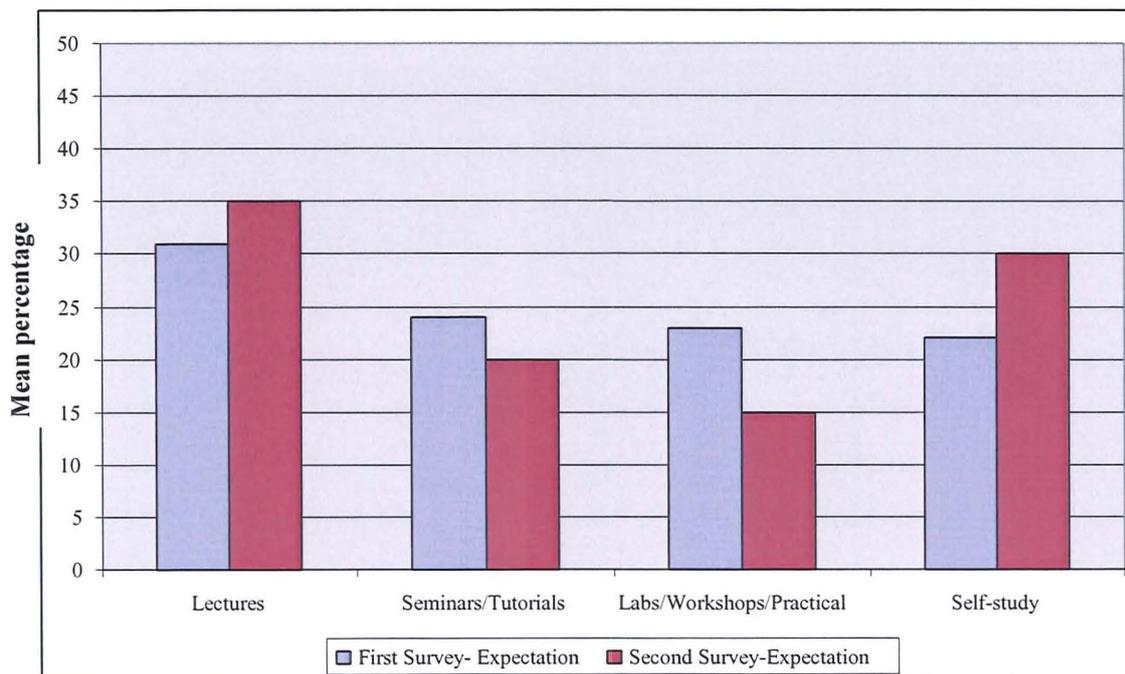
- Their expectations of self-learning slightly increased. However, their expectations of traditional lectures and practical tuition to develop skills do not change.
- The expectations for other learning methods slightly decreased.

4.6.2 Programme Organisation

Shown in Figure 4.20 is the expected percentage for programme organisation at Napier University. The most expected teaching method at Napier University during the first survey in order of preference are lectures, followed by tutorials and seminars, computer based teaching in the form of labs, workshops and practical study, and self-study. However, these have changed in the second survey. The respondents' expectation for lectures and self-study has increased during the second survey, as shown in Figure 4.20. Similarly the expectations of programme organisation by tutorials and seminars, and laboratory, workshops and practical, have decreased. The reason for the decline in their expectations needs to be understood.

An independent T-test was carried out to investigate the significant difference in expectations of programme organisation between the two surveys. The p-values obtained for lectures (0.02), seminars/tutorials (0.00), laboratory, workshops and practical (0.00), and self-study (0.00) indicates that there is a significant difference in respondent expectations between the first and second surveys.

Figure 4.20: Respondents' expectations on programme organisation at Napier University (all the groups)



The expectations of programme organisation were compared between the two surveys across different levels of study. This is displayed in appendix 4 (Table 2). The analysis of this suggests the following:

1. First year undergraduate

- Expectations of lectures, seminars/tutorials and self study have slightly increased. However, the expectation of labs, workshops and practical has decreased.

2. Final year undergraduate

- The expectations of lectures and seminars/tutorials have slightly increased. The expectations for self-study have greatly increased. However, the expectations of labs, workshops and practical have greatly decreased.

3. First year postgraduate (full-time)

- The expectations for lectures have slightly increased. However, the expectations of self-study have greatly increased.
- The expectations of seminars/tutorials and, labs, workshops and practical have greatly decreased.

4. First year postgraduate (part-time)

- The expectations of lectures and self-study have greatly increased.

- The expectations of seminars/tutorials, and labs, workshops and practical have greatly decreased.

The Independent T-test also suggests that there is a significant difference between the two surveys for the majority of expectations of programme organisation among all the groups surveyed as indicated by the p-values obtained and this is shown in appendix 4 (Table 2). However, there is no significant difference between the two surveys for expectations of lectures among the first year undergraduate respondents (p-value = 0.07) and final year undergraduate (p-value = 0.56).

4.6.3 Assessment Methods

Shown in Table 4.7, student expectation has increased during the second survey for written examination, oral presentation, projects or dissertations, individual assignments, and coursework. Assessing students' performance through course work is the most expected method at Napier University. The expectation of group assignment stays the same in both surveys. The expectation of assessing by multiple-choice questions has decreased significantly during the second survey. The Independent T-test shows that there is a significant difference between the two surveys for respondents' expectations of written examination (p-value = 0.01), oral presentation (p-value = 0.00), projects/dissertation (p-value = 0.00), group assignment (p-value = 0.02), individual assignment (p-value = 0.00), self assessment (p-value = 0.00), peer assessment (p-value = 0.00) and coursework (p-value = 0.00). However, there is no significant difference between the two surveys for expectation of multiple-choice questions (p-value = 0.12).

Table 4.7: Preferred assessment methods and percentage of Napier delivering the methods (all the groups)

	First Survey-Expectations	Second Survey-Expectations	p-value	Actual percentage delivered in semester one
Written examination	4.9	6.5	0.01	25%
Multiple-choice questions	6.3	3	0.12	2%
Oral presentation	4.7	5.6	0.00	7%
Projects/Dissertations	6.6	6.8	0.00	10%
Group assignment	5.8	5.8	0.00	10%
Individual assignment	7	7.3	0.00	15%
Self assessment	5.4	4.9	0.00	4%
Peer assessment	4.8	4.1	0.00	4%
Course work	7.2	7.8	0.00	23%

As shown in Table 4.7, the respondents think the actual percentage of assessment methods delivered by Napier University through coursework and the written examination are 23 per cent and 25 per cent respectively. This is in line with students' expectations. The respondents have higher expectations for these two methods and the percentage delivered by Napier University is also higher compared to other methods. However, the percentage of assessment of students based on the oral presentation is low. Consideration needs to be given to assessment based on oral presentation to allow the development of communication skills and presentation skills that are expected by the employers.

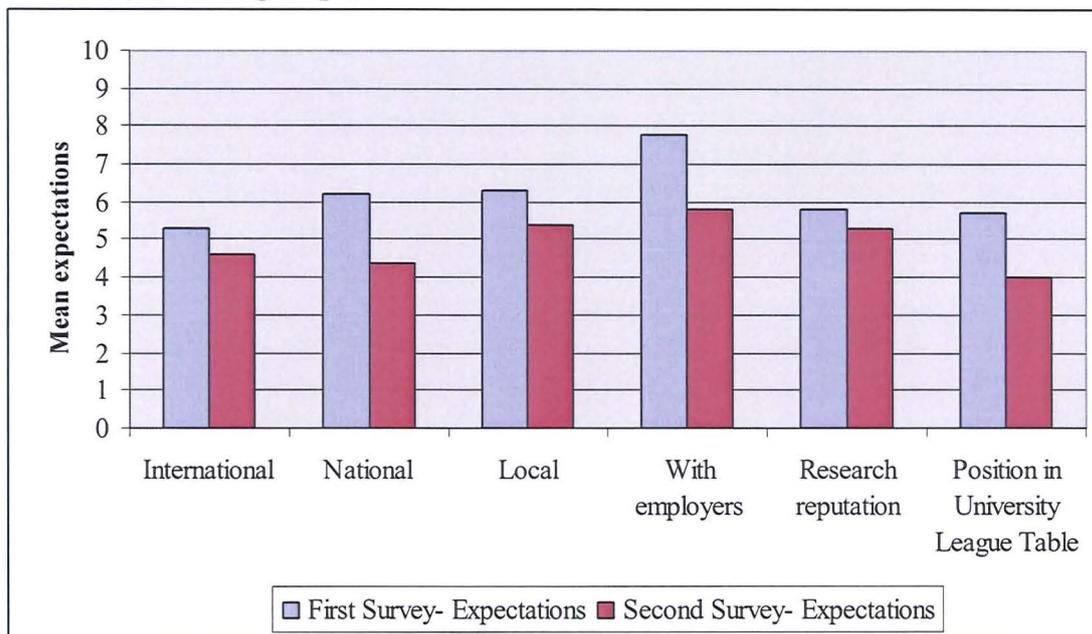
The comparison between the two surveys for first year undergraduate, final year undergraduate, first year postgraduate full-time and the first year postgraduate part-time respondents' expectations show a similar pattern as shown in the table above. This is displayed in Appendix 4 (Table 3). The first year postgraduate both full-time and part-time respondents expect to be assessed through individual assignment and coursework as they develop more experience at Napier University as shown by an increase in their expectations during the second survey. However, the first year undergraduate respondents prefer coursework and projects/dissertation. The Independent T-test carried out shows that there is a significant difference in a majority of respondent expectations of assessment methods. The p-value obtained for each of

the expectations of assessment methods levels of study are also displayed in Appendix 4 (Table 3).

4.6.4 University Reputation

The students' expectations of all the issues considered for university reputation decreased during the second survey as illustrated in Figure 4.21. The Independent T-test suggests that there is a significant difference in respondent expectations of university reputation between the two surveys as indicated by p-value of 0.00 obtained for all the factors shown in Figure 4.21. Perhaps the decrease in expectation during the second survey suggests that once the students develop their experience in university they begin to accept the reputation of the university. This is an example of cognitive dissonance whereby the respondents begin to accept and accommodate the position of the university.

Figure 4.21: Respondents' expectations of university reputation at Napier University (all the groups)



Comparison between the two surveys for home students, the students from the European Union and the overseas students' expectations also shows a similar pattern. Their expectation was higher in the first survey but has decreased during the second survey shown in table displayed in appendix 4 (Table 4). The Independent T-test

suggests that there is a significant difference between the two surveys as indicated by the p-value in appendix 4 (Table 4). There is no significant difference between the two surveys for other overseas respondent expectations of local reputation as indicated by the p-value of 0.19 obtained.

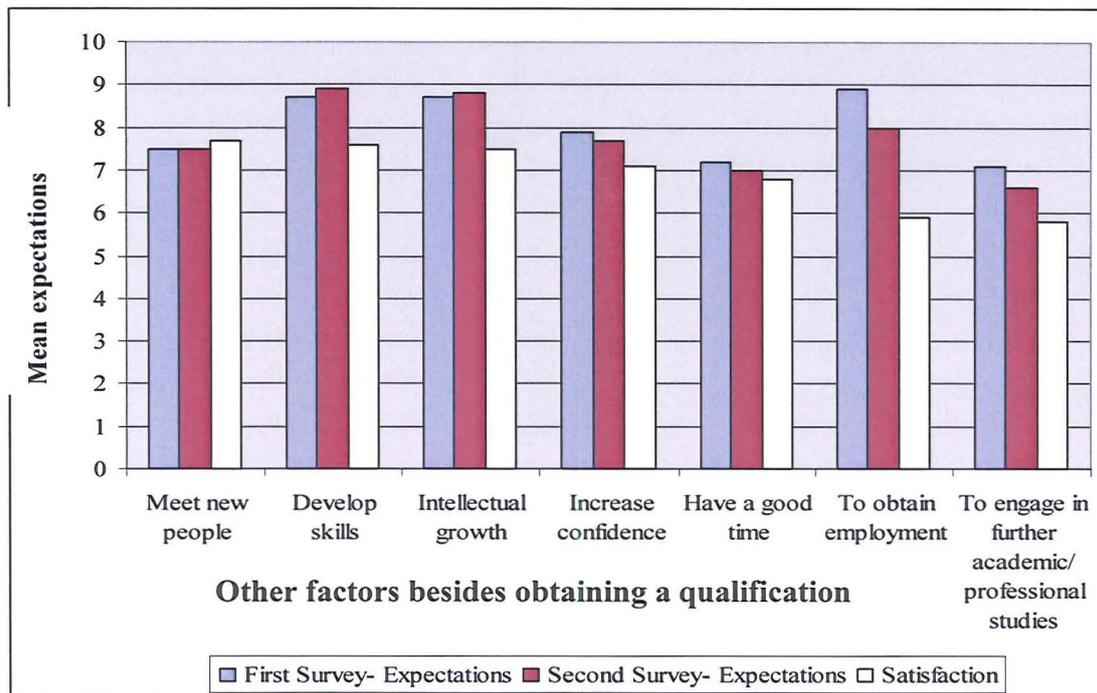
4.6.5 Other Expectations besides Obtaining a Qualification

The respondents' expectations to develop skills and intellectual growth recorded a slight increase in the second student expectation survey as shown in Figure 4.22. It could be argued that the increasing demand for human capital may likely continue in the future. The respondents expectation to increase confidence, have a good time, to obtain employment and to engage in further academic or professional studies shows a decrease and the expectation to meet new people is similar in both surveys. This suggests that the demand for social capital may decrease over the next 10 years. Perhaps the majority of the students are working part-time in the UK, therefore, it could be argued that the students could build their social network and values through their part-time employment. The student may not see the university as a place to build social capital. It is however, expected that this may with age.

The Independent T-test performed shows that there is a significant difference in the majority of the respondents' other expectations besides obtaining a qualification, between the two surveys. The p-values obtained are shown in appendix 4 (Table 5). There is no significant difference in respondent expectations to increase confidence as indicated by p-value of 0.54 obtained.

The respondents' level of satisfaction for all the factors considered is quite similar but the satisfaction level is lower than their expectations. These findings suggest that Napier University may need to emphasise providing the respondents' expectations to develop skills and intellectual growth more. Perhaps emphasising these areas may help the future expansion of Napier University and attract greater numbers of students.

Figure 4.22: Respondents' expectations of other factors besides obtaining a qualification at Napier University (all the groups)



A comparison between the two surveys for first year undergraduate, final year undergraduate, first year postgraduate (full-time) and first year postgraduate (part-time) is displayed in Appendix 4 (Table 5). The finding from this comparison shows a similar pattern of expectation and satisfaction as shown in the Figure 4.22. Generally the first year undergraduate, the first year postgraduate (full-time) and the first year postgraduate (part-time) respondents' expectations slightly increased. The expectations of developing skills and intellectual growth recorded the highest expectations.

The final year undergraduate respondents' expectations also showed a slight increase during the second survey. Their main expectation besides obtaining a qualification is to obtain employment upon finishing their studies. The final year respondents' expectation of having a good time has decreased in the second survey.

There is a significant difference between the two surveys for the majority of the other expectations besides obtaining a qualification as shown by the p-values obtained from the Independent T-test that was carried out. The p-values obtained are displayed in

appendix 4 (Table 5). There is no significant difference between the two surveys among the first year undergraduate respondents' expectations to increase confidence (p-value = 0.03) and to meet new people (p-value = 0.69). There is no significant difference among the final year undergraduate respondent expectations of meeting new people (p-value = 0.24). There is no significant difference among the first year postgraduate both full-time and part-time respondent expectations of having a good time (p-value = 0.14 and 0.39 respectively). There is also no significant difference among the first year postgraduate part-time respondent expectations of developing skills (p-value = 0.17).

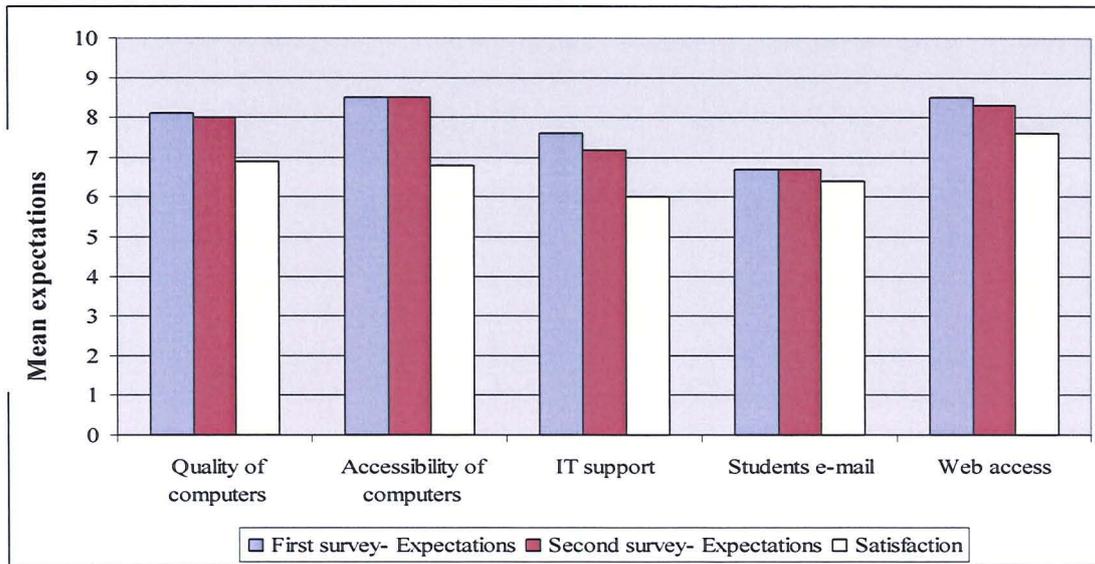
The respondents' satisfaction level is similar for the majority of their expectations. However, the respondents' satisfaction to obtain employment is quite low compared to their expectations. Perhaps Napier University should organise more career fairs in order to help the students to obtain a job in the future.

4.6.6 Computing Facilities

Shown in Figure 4.23 is the expectation of computing facilities at Napier University. The figure shows that there is not much difference between both surveys. Among the most expected computing facilities at Napier University are the accessibility of computers, web access and the quality of computers. Generally the respondents are satisfied with the computing facilities, but it is lower than the expectation rating.

The independent T-test conducted suggests that there is a significant difference between two surveys of student expectations of computing facilities. There is a significant difference for respondent expectations of quality of computers (p-value = 0.00), accessibility of computers (p-value = 0.00), IT support (p-value = 0.01) and students e-mail (p-value = 0.00). There is no significant difference in respondent expectation of web access as indicated by p-value of 0.14 obtained.

Figure 4.23: Respondents' expectations of computing facilities at Napier University (all the groups)



A comparison between the two surveys for first year undergraduate, final year undergraduate, the first year postgraduate (full-time) and the first year postgraduate (part-time) respondents' expectations of computing facilities are broadly similar to Figure 4.23. The finding is displayed in Appendix 4 (Table 6). The first year postgraduate (part-time) respondents' expectation of e-mail differs greatly to the rest of the groups. The first year postgraduate (part-time) respondents' expectation of e-mail facility is the lowest among the other groups.

The Independent T-test conducted suggests that there is a significant difference between the two surveys for the majority of expectations of computing facilities at Napier University. The p-values obtained for the expectations of computing facilities by level of study are shown in Appendix 4 (Table 6).

4.6.7 Discussion

Students expectations during the second survey have not changed much for the expectation for learning methods, expectation for other factors besides obtaining qualification, and expectation for computing facilities. Overall, the respondents' satisfaction level shows a stable pattern. Students' expectations of programme organisation have changed greatly for laboratory, workshops and practical (first year

undergraduate, final year undergraduate, first year postgraduate both full-time and part-time), self-study (final year undergraduate, first year postgraduate both full-time and part-time), seminars/tutorials (for first year postgraduate both full-time and part-time) and lectures (first year postgraduate part-time). The respondents' expectation for assessment methods have increased except for multiple-choice questions self-assessment and peer assessment. The students' expectation for the university reputation has decreased as well in the second survey. All these indicate that the respondents appear to be content with the higher education provision at Napier University. The respondents are likely to continue to demand a wider range of services from Napier University. There were no major differences between the findings in the first and second student expectations surveys for the majority of the issues considered in the student expectations surveys.

4.7 The Students Views of the Likely Future of Napier University

In the second student expectations survey information was also gathered on the likely future of Napier University. The questions include issues such as the growth of Napier University, international reputation, popular subject areas, the length of undergraduate programs, technology embracement at Napier University, and the methods of delivery. The purpose of this section is to determine the student views of the future of Napier University.

Shown in Table 4.8 is that 61% of the respondents think Napier University will continue to grow over the next 10 years. In addition, 46.2% of the respondents also agree that Napier University will increase its international recognition over the next 10 years. The finding from the earlier section on students' expectations on university reputation shows that the expectation of students for international reputation decreased after they have developed further experience at Napier University. But the respondents seem to think that international reputation may be important for the university to attract larger student numbers from overseas. But it should be noted that once the students have joined Napier and developed their experience, the international reputation is no longer seen as an important factor for the students. This could be why

there are high proportions of respondents (39.3%) who do not have a clear view on whether Napier will become internationally recognised in the future.

Also shown in Table 4.8, the majority of the respondents (51.4%) think Napier University will cover a broad range of subject areas. There are 35.5% of the respondents who also think that Napier University will place emphasis on vocational learning methods. At the same time there are 44% of the respondents that do not have a strong view on whether Napier University will place emphasis on vocational learning methods in the future. Further analysis using cross tabulation shows that the majority of these respondents are home students. This further confirms that the home students' expectation for international reputation was lower than the respondents from the European Union and the overseas students.

Table 4.8: Agreement on the likely future of Napier University (percentage)

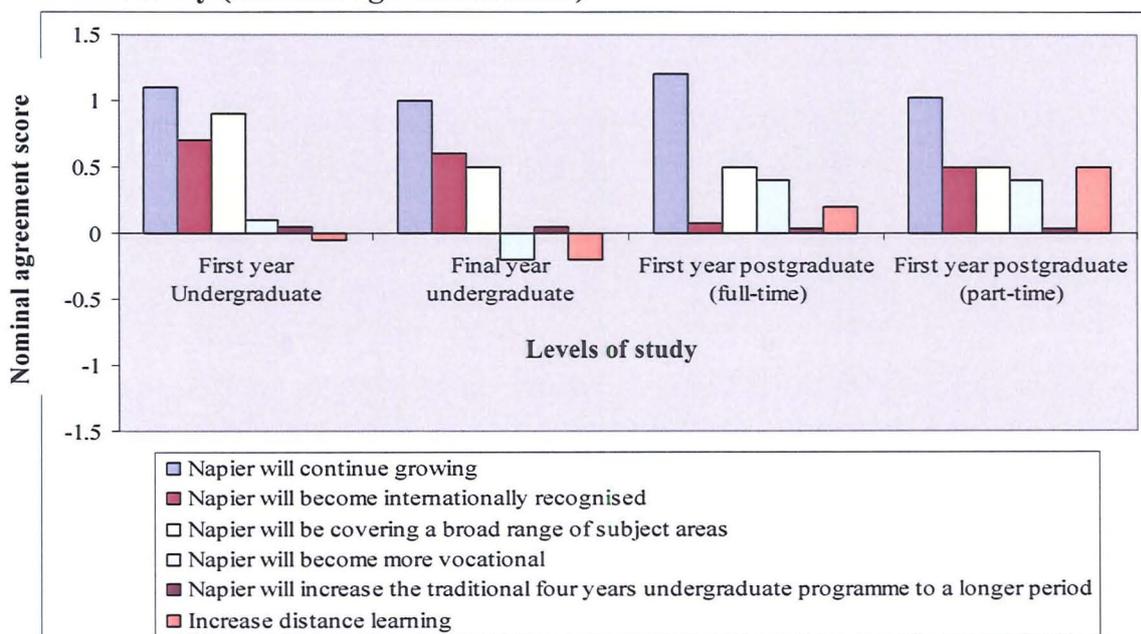
	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly disagree	Nominal agreement score
Napier will continue growing	25	61	12.3	1.7	0	1.1
Napier will become internationally recognised	9.2	46.2	39.3	4.8	0.53	0.6
Napier will be covering a broad range of subject areas	10.6	51.4	25	11.3	1.7	0.6
Napier will become more vocational	4.9	35.5	44	11.8	3.8	0.3
Napier will increase the traditional four years undergraduate programme to a longer period	4.4	30.8	35	24.4	5.4	0.04
Increase distance learning	2.9	32.5	42.1	19.6	2.9	0.2

There were 30.8% of the respondents who think that Napier University will increase the traditional four years undergraduate programme to a longer period. In addition, there were 24.4% of the respondents who do not agree that Napier will increase the length of programme to a longer period. At the same time there were 35% of the respondents that do not have a strong view on whether Napier University will increase the traditional four years undergraduate programme to a longer period. Students appear to be unsure about the length of programmes at Napier University in the future.

Similarly, the majority of respondents do not have a strong view that Napier University will increase distance learning in the future. There were 42.1% of the respondents neither agree nor disagree that Napier will increase distance learning.

Shown in Figure 4.24 is the level of agreement for those issues on the likely future of Napier University by level of study. All the groups agree that Napier University will continue growing in the future. There is a slight agreement that Napier will be internationally recognised in the future among all the groups. The first year undergraduate respondents quite agree that Napier will be covering a broad range of subject areas in the future. The final year undergraduate respondents slightly disagree that Napier will become more vocational. All the groups have no view whether Napier will be increasing the four years undergraduate programmes to a longer period. There is no strong view among the first year undergraduate, final year undergraduate and first year postgraduate (full-time) respondents that Napier will increase distance learning.

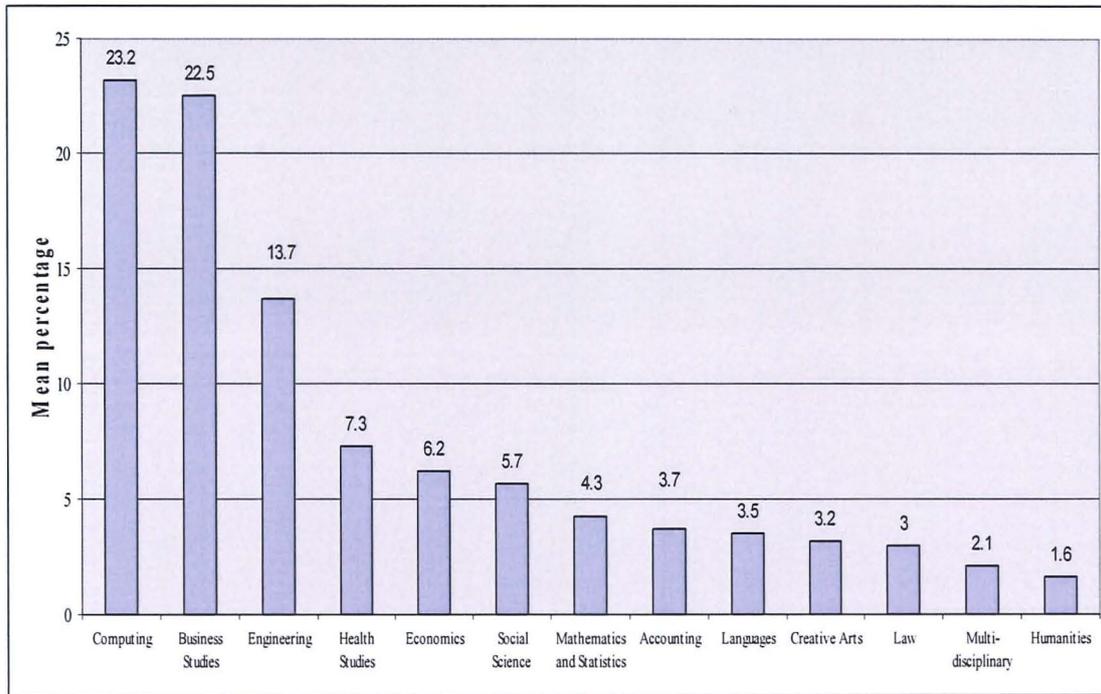
Figure 4.24: Respondents' agreement on the likely future of Napier University by level of study (nominal agreement score)



4.7.1 The Popular Subject Areas in the Future

Figure 4.25 below describes the subject areas that the students thought most likely to be popular at Napier University over the next 10 years. The percentage of responses obtained shows that the majority of the respondents think that computing, business studies and engineering will be the most popular subject areas at Napier University. However, this could be a reflection of the majority of the respondents who were from the Business School and the Faculty of Engineering and Computing. It could be argued that the UK is in the knowledge-based economy whereby service industry is expanding. Thus, studies related to business and IT may be in high demand at Napier University. This popularity of subject areas in the future is illustrated in Figure 4.21.

Figure 4.25: Respondents' view on the popularity of subject areas at Napier University in the future

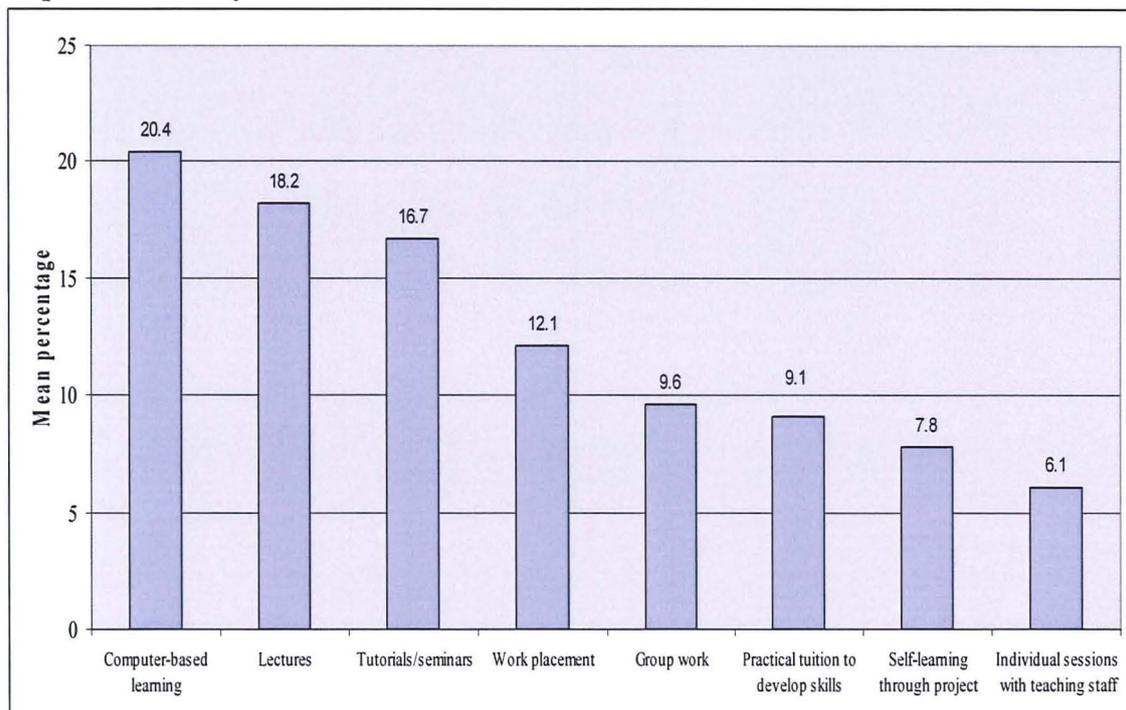


4.7.2 Learning Methods at Napier University in the Future

Shown in Figure 4.26 are the methods of learning that Napier University may provide in the future. There are 20.4% of the respondents that think Napier will emphasise computer-based learning. There are 18.2% of the respondents think that Napier will emphasise lecturing and 16.7% think Napier will emphasise tutorials/seminars. However, comparison with the first survey on learning methods shows that the least

expected method is computer-based learning. Thus, if Napier focuses more on computer-based learning in the future, this may raise potential conflict between the respondents' expectations and the delivery systems at Napier. Perhaps the respondents expect improved computing facilities but do not prefer to engage solely in computer-based learning. Therefore, in the future Napier University may need to provide combinations of learning methods such as lectures, tutorials, self-study and computer-based learning.

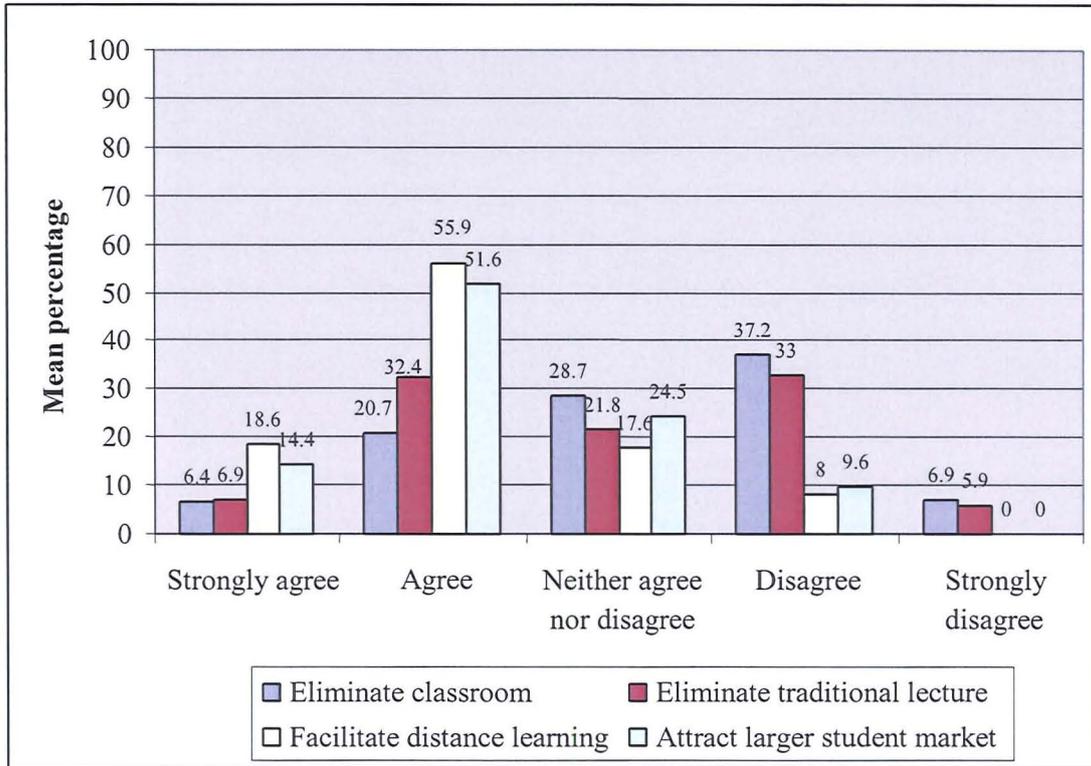
Figure 4.26: Respondents' view on methods of learning that will be adopted at Napier University in the future



4.7.3 Embracement of Technology at Napier University in the Future

Shown in Figure 4.27 is that the majority (55.9% and 51.6% respectively) of the respondents think that embracing technology will facilitate distance learning and attract a larger student market. Also suggested in Figure 4.23 is that the majority of the respondents think that embracing technology will not eliminate classroom and traditional lectures. Thus, it could be argued that technology should be used as a tool to support teaching and learning. Perhaps, technology should be used as a way to increase flexibility and provide students with a wider option of delivery.

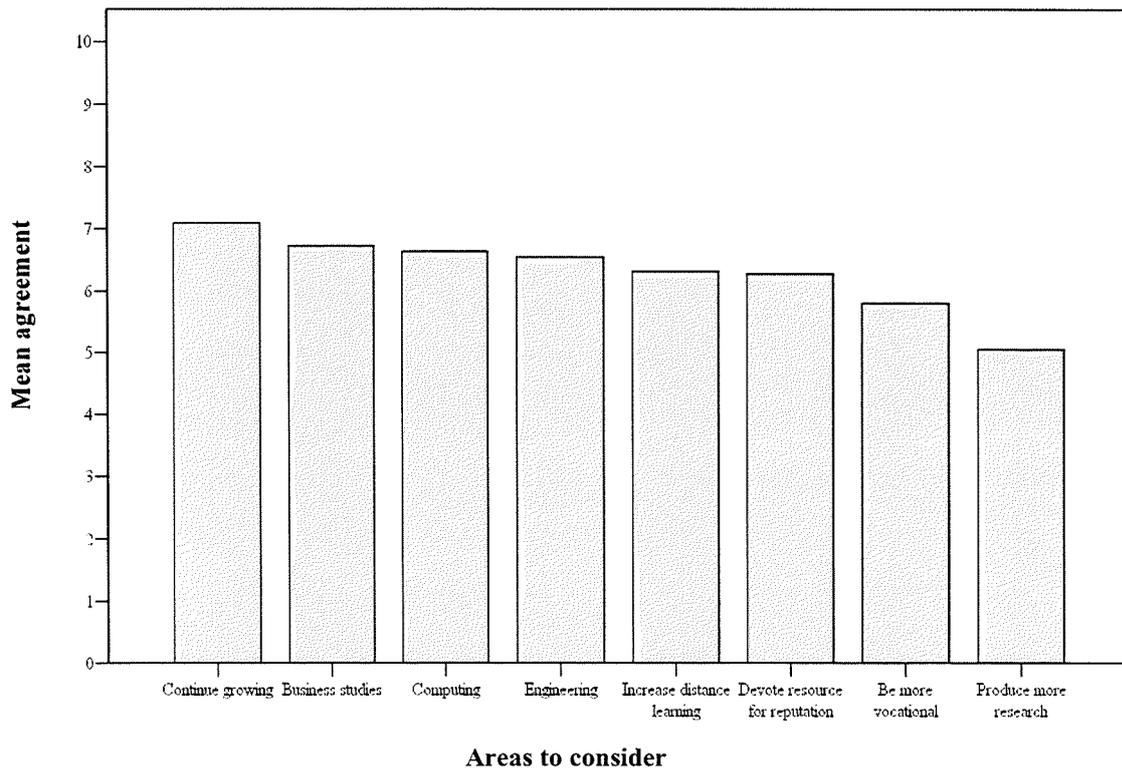
Figure 4.27: Respondents' agreement for embracing technology at Napier University in the future



4.8 Students View on Issues that Napier should be addressing in the Future

The responses obtained on the likely future of Napier University during the second survey were fed back to the respondents in order to determine what Napier University should be doing in the future. In this third survey, the respondents were asked to indicate their agreement for some of the key findings from the second survey (as shown in Figure 4.28) for Napier University to implement in the future. The scale used to indicate their agreement is 0 (not at all) to 10 (very much).

Figure 4.28: Respondents' views about areas to consider by Napier University over the next 10 years



The respondents agreed that Napier University should continue growing and become internationally recognised in order to compete globally. Napier University should concentrate and develop more new courses in Computing, Business Studies and Engineering, be more vocational, increase distance learning, and devote resources to increase Napier University's international reputation.

Another interesting finding here is that the respondents have the lowest agreement for Napier University to produce more research in the future. The respondents seem to know that with increasing concentration of research funding, Napier University may not be able to secure research funding in the future. Napier University may have to form its own research budget or attract private funding if it wants to conduct research in the future. Perhaps this may require better organisation of financial resources and also improved human resource strategy if Napier University wants to continue its research activity in the future.

4.9 Implementation of the Key Issues

Based on the key findings from the third survey, effort was also made to determine how Napier University could implement those issues. Factor analysis was conducted to identify and group some of the common issues. The factor analysis identified three unique factors, which could be addressed as being the product, planning and the process, as shown in Table 4.9. The common factors that emerged under product design were computing, business studies and engineering; planning were to continue growing and devote more resource for reputation; and process were be more vocational and increase distance learning. This suggests that Napier University should emphasise their products, services and planning for future expansion. The percentage of variance obtained for product is 31.9%, for planning is 19.6% and for service is 15.8%.

Table 4.9: Key Factors to consider by Napier University in the future

	Product	Planning	Service
Continue growing		.695	
Computing	.906		
Business studies	.854		
Engineering	.806		
Be more vocational			.911
Increase distance learning		.408	.610
Devote resource for reputation		.746	

Products may be an important area in which Napier should consider making necessary changes. In the future Napier University should develop more new courses in the areas of computing, business studies and engineering as these were predicted as the most popular subject areas in the future. In terms of other subject areas the respondents think that Napier University should maintain the other subject areas as it is currently and not attempt to cease offering them.

Planning is another important area to pay attention to at Napier University. According to the respondents, Napier University should continue growing and increase its international, national, local reputation and its reputation with employers, in order to compete locally and globally. In doing so, Napier University should devote a lot of

resources to this. In terms of service, Napier University should be more vocational and increase distance learning.

These key findings from the factor analysis were then analysed further to determine groups of students according to their patterns of opinions. In order to do this, two-step cluster analysis was employed, and three groups of students with patterns of opinion emerged as shown in the Table 4.10.

Table 4.10: Patterns of groups view for the important factors for the future

Cluster	Student distribution		Product		Planning		Service	
	Numbers	Percentage	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
1	356	89.4	0.209	0.792	0.004	0.926	0.002	0.969
2	27	6.8	-1.841	0.649	0.778	0.896	-0.640	1.004
3	15	3.8	-1.639	1.077	-1.485	1.264	1.152	0.667
Total	398	100	0.000	1.000	0.000	1.000	0.000	1.000

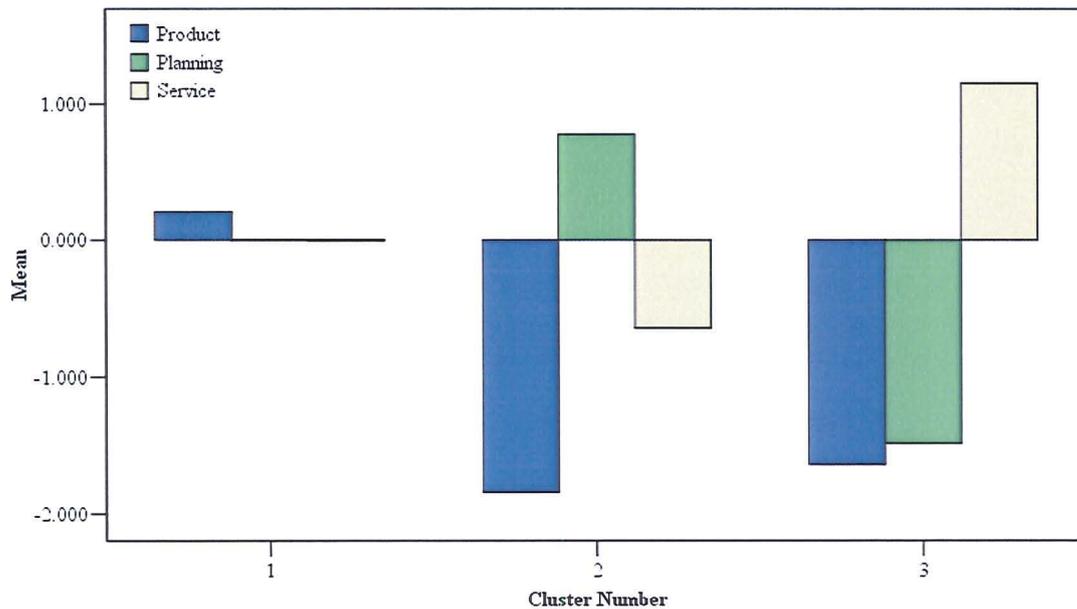
The majority of the respondents are in cluster 1 which consists of the first year undergraduate, final year undergraduate and first year postgraduate full-time and part-time students. They favour the product factor more and slightly on planning factor and service factor. Perhaps, this student group at Napier University think it is vital for Napier University to develop and improve the product in particular to the popular subject areas such as computing, business studies and engineering. These groups of students also think that Napier University should also develop their services by increasing distance learning and be more vocational. These groups of student also think that Napier University should continue growing and to devote resource to increase its reputation.

Cluster 2 consists of students from all the levels of study. This group of students favour the planning factor more, and less on product and service factors. The students in this cluster think that Napier should continue growing and increase its reputation in order to compete locally and globally. Napier University should devote a lot of resources in order to increase its reputation.

Cluster 3 also consists of students from all the levels of study. The students in this cluster show less favour on the product factor and planning factor, but they show more favour on service factor.

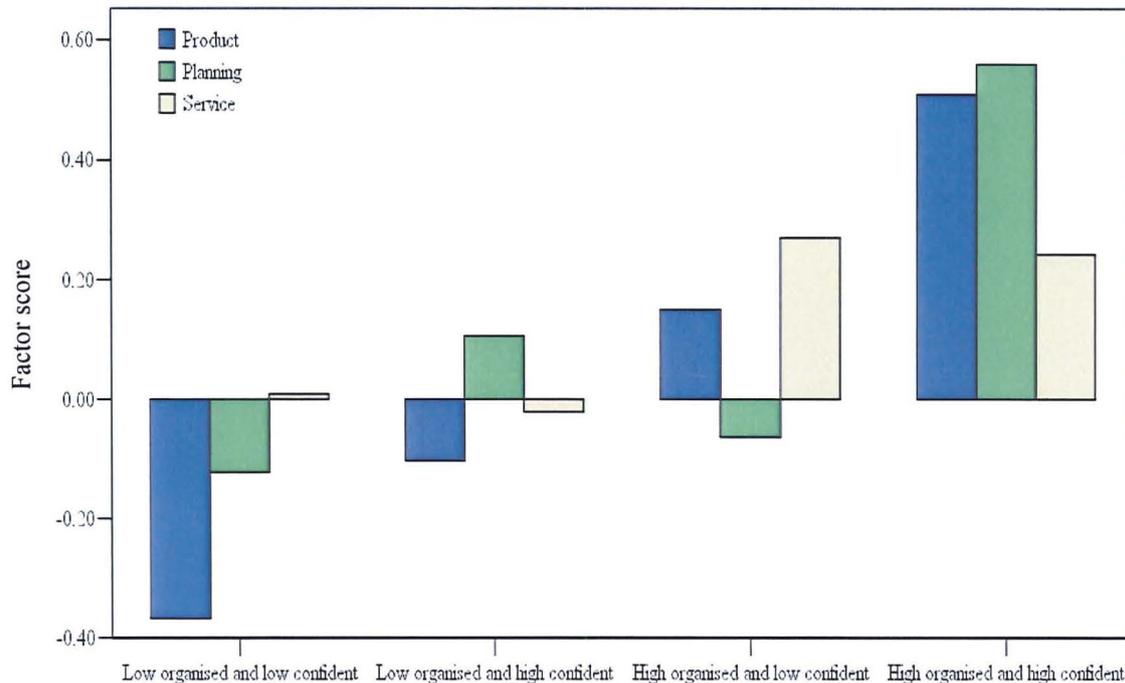
Shown in Figure 4.29 is the comparison of views of the respondents for product, planning and service factors.

Figure 4.29: Respondents' views on product, planning and service factors



Shown in Figure 4.30 is the comparison of views of the product, planning and service factors by respondents' personality types. The respondents who are characterised by "low organised and low confident" seem to think that Napier University should emphasise service. The "low organised and high confident" respondents think that Napier University should emphasise planning in the future. The respondents who are characterised by "high organised and low confident" think that product and service should be emphasised in the future. However, the respondents who are characterised by "highly organised and high confident" think that Napier should emphasise all three factors.

Figure 4.30: Respondents' views on product, planning and service at Napier University in the future by respondents' personality types



4.10 Conclusion

The student expectations survey suggests that the students will continue to demand improved and wider options of delivery. Napier University should respond to student expectations more positively in order to continue to attract larger student markets. In so doing, Napier University should respond to the following key findings from the survey:

1. Napier University needs to have a mixture of delivery methods, namely, vocational learning methods, traditional learning methods and self-learning methods in the future. But greater emphasis should be placed on vocational delivery.
2. Lectures need to be a major part of the programme followed by tutorials/seminars, laboratory, workshops and practical, and self-study. Napier should continue lecturing activities (face-to-face) in the future.
3. Napier University needs to develop a broader range of subject areas particularly subjects related to computing, business studies and engineering.

4. Napier University needs to increase its reputation particularly the reputation with employers and its international reputation. The home student expects Napier to have a good reputation with employers. However, the overseas students expect international reputation.
5. Napier University needs to increase distance learning delivery as an additional method to supplement the face-to-face method. This will provide the students with greater flexibility for learning.
6. Napier University needs to place more emphasis on developing intellectual growth and skills. Napier University needs to attract employers and to take part in career fairs in order to help students to obtain a job upon completing their studies.

The students in the future may expect something different than the expectation of the current students. One must remember that student expectation is dynamic and may change in the future. The university should regularly administer student expectation surveys in the future. The university should be concerned to provide wider options of delivery for the students. In addition, the university needs to continuously develop new programmes that are more suitable to the knowledge-based economy. Planning on how to continue growing and devoting resources to increase its reputation will be an important factor for future expansion of Napier University.

The ability of Napier University to prioritise its response to students' expectations and address them more effectively depends critically upon its staff. The staff should respond to student expectations more proactively and positively. The staff need to be more imaginative in mobilising their skills and talents in the future. The exploration of the staff view of organisational culture of Scottish universities and difficulties in changing culture will facilitate Napier University to devise strategy to mobilise the skills and talents of its staff in responding to student expectations in the future. Thus, the following two chapters will explore the overview of organisational culture (Chapter 5) and the staff view of organisational culture of Scottish universities (Chapter 6).

CHAPTER FIVE

ORGANISATIONAL CULTURE

5.1 Introduction

This chapter aims to provide an overview of organisational culture. The issues that are considered are providing the definition of organisational culture; the types of organisational culture; the levels of organisational culture; the sources of organisational culture; the influence of organisational culture on performance; the measurement of organisational culture; and the organisational cultures of higher education.

Organisational culture has always been the most important aspect of any organisation as it can create and destroy the organisation. Organisational culture plays an important role in corporations, affecting employees and organisational operations throughout a firm (Sadri and Lees, 2001). There is broad agreement that organisational culture is the key factor underpinning organisational success and performance (Ouchi, 1981; Deal and Kennedy, 1982; Peters and Waterman, 1982, Kotter and Heskett, 1992). For these reasons the study of organisational culture has become one of the major domains of organisational research, and some might even argue that it has become the single most active arena, eclipsing studies of formal structure, of organisation-environment research and of bureaucracy (Ouchi and Wilkins, 1985). Similarly, organisational culture is also important to universities to underpin the organisational success and performance.

Organisations have values, beliefs and stories to tell, not just products to offer and profits to make (Deal and Kennedy, 1982). According to Deal and Kennedy people are the greatest resource for an organisation and the best way to manage them is by the subtle cues of organisational culture. The leaders of “Procter and Gamble” and “Johnson and Johnson”, believed that the strong culture in their companies created an unusual level of motivation in employees who thereby did the work necessary for the

well being of the business and that this brought success (Deal and Kennedy, 1982; Kotter and Heskett, 1992). The key issue for the success of Japanese firms is neither technology nor investment, neither regulation nor inflation, but the involved workers are the key to increased productivity (Ouchi, 1981).

UK higher education is increasingly seen as a critical vehicle for knowledge creation and its exploitation, in order to enhance human capital and to support economic activities. However, this may be constrained by the increasing pressures facing higher education as a consequence of the demographic change, technological change, the labour market, globalisation, social change and economic change which will continue over the next 10 years. In addition, students are demanding improved and wider delivery paths in higher education. All these will transform and reshape the current organisational culture of university. It could be argued that this transformation is already taking place in the UK.

Because of this, it may be difficult for managers in universities to understand and shape their university's appropriate organisational culture in the future. It could be argued that the adaptations to these changes will further develop new organisational cultures. This is likely to impose greater challenges for the managers in higher education to cultivate appropriate organisational cultures. Furthermore, organisational cultures may vary greatly within the university itself, which is likely to make it difficult for the managers to cultivate the appropriate organisational culture. As such, developing an appropriate organisational culture is likely to continue to be one of the major challenges for managers in universities in the future.

5.2 Defining Organisational Culture

There is a large literature on organisational culture but there is no one agreed definition of the term culture (Sinclair and Collins, 1994; Mackenzie, 1995; Lewis, 1996; Parker and Bradley, 2000; Choueke and Armstrong, 2000; Corbet et al., 2000; Wilson, 2001; Frankema, 2001; Buch and Wetzels, 2001). There are a variety of definitions within the substantive organisational culture literature. This may

contributed to the difficulties in interpreting what organisational culture actually means.

These definitions of organisational culture can be divided into two groups; either definitions that describe how organisations work or definitions based on shared values and beliefs. Edward B. Taylor conceptualised culture as referring to *“that complex whole which includes knowledge, beliefs, arts, law, morals, custom, and other capabilities and habits acquired by man as a member of society”* (Leslie, 1959). Since then many researchers have extensively elaborated this conception of culture and it has been linked increasingly with the study of organisation (Ouchi, 1981; Deal and Kennedy, 1982; Peters and Waterman, 1982; Smircich, 1983; Ouchi and Wilkins, 1985; Schein, 1992; Lomas 1999). For example, Schien (1992) defines organisational culture as *“Pattern of basic assumptions that a given group has invented, discovered or developed in learning to cope with its problem of external adaptation and internal integration, which have worked well enough to be considered valid, and, therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems”*. Schien’s definition of organisational culture has been adopted in this research as a framework in order to develop further understanding about organisational culture in higher education.

It could be argued that organisational culture has been perceived as an aspect of anthropology. Among the anthropologists, organisational culture is to do with the norms of an organisation that develop over time and which are transferred to new members in that particular organisation. However, some argue that culture is an interdisciplinary phenomenon with contributions from sociology (Ouchi and Wilkins, 1985). According to Ouchi and Wilkins, the influence of sociology is rooted more deeply in the study of organisational culture than any other intellectual discipline. According to Geertz (1973), organisational culture is a system of shared symbols and meanings. In order to understand the underlying meaning of activity in a social system one needs to immerse oneself in the complex clustering of symbols people use to impart meaning upon their organisation (Geertz, 1973). Geertz showed the ways symbols such as language, rituals and myths are linked in meaningful relationships and demonstrated how they are related to the activities of the people in an organisation.

These two different roots (anthropology and sociology) have developed two differing approaches in studying organisational culture (Smircich, 1983). According to Smircich, some are based on a functional approach and others are based on semiotic approach. The functional approach views organisational culture as something an organisation “is”. Organisations themselves are considered as culture-producing phenomena besides producing goods and services. The organisation produces distinctive cultural artefacts such as rituals, legends and ceremonies (Smircich, 1983). Although organisations are embedded within a wider cultural context, Smircich argued that cultural qualities develop within an organisation. The functional approach assumes that researchers and managers can identify differences among organisational cultures, can change cultures, and empirically measures culture (Cameron and Quinn, 1999).

On the other hand, the semiotic approach views organisational culture as something an organisation “has”. The perspective of culture as something an organisation has examines how specific characteristics of “good” culture that are regarded as universal have been imported into the organisation through its membership (Maull et al., 2001). The semiotic approach assumes that culture emerges from social interaction and one can encounter that organisational culture at any time (Brown, 1985; Cameron and Quinn, 1999).

However, all definitions of organisational culture suggest that in the majority of cases, organisational culture has been treated as a set of values, beliefs and assumptions that characterises an organisation and its members. Most importantly, these definitions distinguish the concept of organisational culture from organisational climate, where according to Cameron and Quinn (1999), organisational climate refers to more temporary attitudes, feelings and perceptions of individuals. Organisational culture refers to implicit, often indiscernible aspects of organisations, consensual interpretation about how things are, and this is slow to change (Cameron and Quinn, 1999). However, organisational climate refers to more overt, observable attributes of organisations, individualistic perspectives that are modified frequently as situations change and new information is encountered. Because organisational climate is based on attitudes, it can change quickly (Cameron and Quinn, 1999).

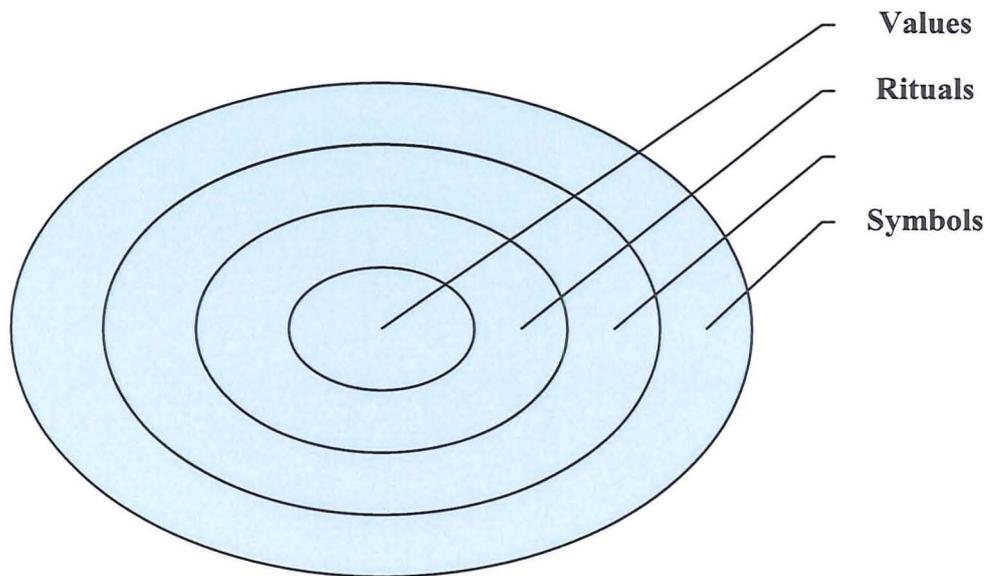
It could be argued that organisational climate is behaviourally orientated, for example, the climate for safety, represent the patterns of behaviour that support safety. However, organisational culture, in contrast, comes to light when employees are asked why these patterns exist (Patterson et al., 2005). As suggested by Patterson et al., the question is answered in relation to shared values, common assumptions and patterns of beliefs held by organisational members, and it is this which defines organisational culture. Thus organisational climate can be understood as a surface manifestation of organisational culture (Schien, 1992).

5.3 Levels of Organisational Culture

Many commentators agree that organisational culture can be analysed at several different levels determined by the degree to which the cultural phenomena are visible to the observer (Schein, 1992; Hofstede, 1990; Kotter and Heskett, 1992). The organisational culture may not be fixed in time but may evolve and change in response to external and internal stimuli. However, it could be argued that the change process due to the external and internal stimuli may take place slowly. For this reason, organisational culture may not be simple to interpret as the organisation reality is likely to be complex and uncertain.

Hofstede et al. (1990) classified culture into four categories, namely symbols, heroes, rituals and values as illustrated in Figure 5.1. Symbols are words, gestures, pictures or objects that carry a particular meaning within an organisation. Heroes are persons, alive or dead, real or imaginary, who possess characteristics highly prized in the culture and who thus serve as models for behaviour. Rituals are collective activities that are technically superfluous but are socially essential within a culture.

Figure 5.1: Manifestation of culture

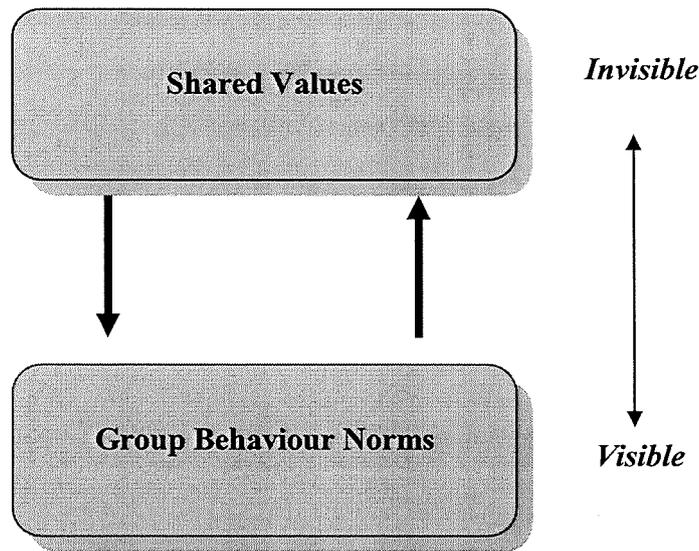


Source: Hofstede et al., 1990

The three factors - symbols, heroes and rituals - have been subsumed under the term “practices” due to the visibility of those factors to an observer, although their cultural meaning lies in the way they are perceived by insiders (Hofstede et al., 1990). The core of organisational culture is formed by values, in the sense of broad, non-specific feelings of good and evil, beautiful and ugly, normal and abnormal, rational and irrational - feelings that are often unconscious and rarely expressed, that cannot be observed as such, but are manifested in behaviour (Hofstede et al., 1990).

The organisational culture model proposed by Kotter and Heskett (1992) illustrates culture at two levels (Figure 5.2). At the invisible level organisational culture represents the important concerns and goals that are shared by most of the people in a group, and tend to shape group behaviour. According to Kotter and Heskett, this will often persist over time even with changes in membership. At the more visible level, culture represents the common or pervasive ways of acting that are found in a group and that persist because group members tend to behave in the ways that these practices were taught to new members.

Figure 5.2: Uncovering culture in organisation



Source: Kotter and Heskett (1992)

Schein's (1992) model contains three levels of organisational culture as illustrated in Figure 5.3. Schein suggested that, within an organisation, culture exists simultaneously on each of these three levels. At the most surface level is artefact, which is the most visible manifestation of culture. According to Schein, artefacts include the physical layout of the building, its language, its technology and products, its artistic creations, and its style as embodied in clothing, manners of address, emotional displays, myths and stories told about the organisation, published lists of values, and observable rituals and ceremonies. Artefacts include the visible behaviours of the group and the organisational processes into which such behaviours are made routine. It could be argued that artefact may be easy to observe but very difficult to interpret. The observer can describe what they see, but are unable to give a clear interpretation of what these things mean in any particular organisation. As such, Schein suggested that, in order to have a clear view or understanding of the meaning, one needs to work long enough within that organisational culture.

basic assumptions tell group members how to perceive, think about, and feel about things.

Schein (1992) states that the six dimensions around which shared basic assumptions form are the nature of reality and truth, the nature of time, the nature of space, the nature of human nature, the nature of human activity, and the nature of human relationships. Those six dimensions are considered here:

1. ***The nature of reality and truth:*** The shared assumptions that define what is real and what is not, what is a fact in the physical realm and the social realm, how truth is ultimately to be determined, and whether truth is revealed or discovered?
2. ***The nature of time:*** The shared assumptions that define the basic concept of time in the group, how time is defined and measured, and the importance of time in the culture.
3. ***The nature of space:*** The shared assumptions about space and its distributions, how space is allocated and owned, the symbolic meaning of space around the person, the role of space in defining aspects of relationships such as degree of intimacy or definitions of privacy.
4. ***The nature of human nature:*** The shared assumptions that define what it means to be human and which human attributes are considered intrinsic or ultimate. For example, is human nature good, evil, or neutral, and are human beings perfect or not?
5. ***The nature of human activity:*** The shared assumptions that define the right things for human beings to do in relation to their environment, on the basis of the foregoing assumptions about reality and the nature of human activity. For example, in one's basic orientation to life, what is the appropriate level of activity or passivity. At the organisational level, what is the relationship of the organisation to its environment and what is work and what is play.
6. ***The nature of human relationships:*** The shared basic assumptions that define the ultimate correct way for people to relate to each other and distribute power. For example, is life cooperative or competitive; individualistic, group collaborative, or communal; what is the appropriate psychological contract between employers and employees; is authority ultimately based on traditional

linear authority, moral consensus, law, or charisma; and what are the basic assumptions about how conflict should be resolved and how decisions should be made.

In general, these three models of organisational culture may be useful to represent the most commonly identified components of culture in an organisation. They provide useful structures for managers, teachers within universities and even researchers within the universities to understand the culture of their organisation. Within the universities, there may be a mosaic of sub-cultures that could make it very difficult for managers to discover their dominant organisational culture (Lomas, 1999). It may be that an understanding of these models will help the managers to understand the complexities of organisational culture in university better. These models could also help raise awareness and understanding of prevailing and developing organisational cultures in the higher education sector.

5.4 Types of Organisational Culture

There are a number of researchers who have described various types of organisational culture. Deal and Kennedy (1982) suggested that many companies fall into four general categories or types of organisational cultures and these are determined by the degree of risk associated with the company's activities, and the speed at which companies and their employees get feedback on whether decisions or strategies are successful. Those four types of organisational cultures identified by this author are described as follows:

1. The tough-guy, macho culture: An organisation consists of people who regularly take high risks and expect quick feedback on whether their actions were right or wrong. Through rituals of bonding and problem solving, and with values that make taking high risks a virtue, this type of culture is expected to move the organisation forward. It could be argued that taking a high risk and seeking a quick return could be the driving force for organisations to move forward, but it does not place value on long-term persistence, but rather emphasises short term orientation more. According

to Deal and Kennedy this short term orientation is a real weakness for organisations because:

- a. The competition to become a top performing organisation is so keen that the virtues of cooperation are forgotten
- b. It breeds out the ability to learn from mistakes
- c. It fosters immaturity by tolerating a situation in which everyone is trying to score points off each other.
- d. The organisation may reward the individual based on the short term performance, this could dampen the motivation of people who are unable to perform within the time required.

2. The work hard/play hard culture: The organisation emphasises fun and action with employees taking few risks. Success is defined by persistence and maintaining a high level of relatively low-risk activity. As suggested by Deal and Kennedy, this type of culture develops in sales organisations such as real estate, computer companies, automotive distributors, door-to-door sales operation (Avon), mass consumer sales companies (McDonalds), office equipment manufacturers (Xerox) and retail stores. This type of culture is ideal for active people who thrive on quick and tangible results. Therefore these cultures are often for people who are looking for places to prove their worth. The disadvantage of this culture is that volume can displace quality in the rush to produce. If the companies that practice work/play hard cultures get in trouble, these cultures often go for quick fix solutions and tend to have short term perspectives similar to tough-guy cultures (Deal and Kennedy, 1982).

3. The bet-your-company culture: This type of organisational culture emphasises high risk but slow feedback. It should be acknowledged that slow here does not mean less pressure but persistent pressure in order to develop, refine and test ideas before implementing those ideas. As suggested by Deal and Kennedy, such organisational culture exist in Boeing Aircraft, NASA, capital goods companies, mining and smelting companies, oil companies, investment banks, architectural firms, computer design companies, nuclear industry and the actuarial department of insurance companies. It could be argued that quick solutions in these companies could cause major problems. For example in the nuclear industry, quick solution may not lead to

high quality interventions and major scientific breakthroughs that will help to move the company forward. The organisation moves slowly, they do not produce on a mass scale, nor perform with high speed even though their long term prospects are vulnerable to short term fluctuations in the economy.

4. The process culture: This type of culture places emphasis on low risk and slow feedback. As suggested by Deal and Kennedy, organisations that have this type of culture are the government sector, utilities, and heavily regulated industries like pharmaceutical industries. It could be argued that it is hard to get things done in an organisation that is full of red tape. In addition, the process culture has become a scapegoat for much that is wrong with the modern world. It could be argued that this type of culture may offer a counterpoint to the high-risk world of the tough-guy culture and sometimes lack of attention of the work hard/play hard culture.

Hofstede (2001) suggested six types of organisational cultures that exist in the twenty manufacturing organisations he studied. These types of organisational cultures identified by the author are as follows:

1. Process oriented vs. results oriented: This dimension opposes a concern with means (process oriented) to a concern with goals (results oriented). In process oriented cultures people perceive themselves as avoiding risks and making only a limited effort in their jobs. On the other hand, in result oriented culture people perceive themselves as comfortable in unfamiliar situations and put in a maximal effort, while each day is felt to bring new challenges. As suggested by Hofstede (2001), it is difficult not to attach a “good” label to the results-oriented pole and a “bad” label to the process-oriented pole, but there are operations for which a single minded focus on the process is essential. The pharmaceutical firm is an example of a risk avoiding, routine based environment in which it is doubtful whether one would want its culture to be result oriented (Hofstede, 2001).

2. Employee oriented vs. job oriented: This dimension opposes a concern for people (employee oriented) to a concern for completing the job (job oriented). In the employee oriented culture people feel their personal problems are taken into account, which the organisation takes a responsibility for employee welfare, and that important

decisions tend to be made by groups or committees (Hofstede, 2001). In job oriented cultures people experience a strong pressure to complete the job. The employees perceive the organisation as only interested in the work they do. In this culture the important decisions tend to be made by the top individuals.

3. Parochial vs. professional: This dimension emphasise units whose employees derive their identity largely from the organisation (parochial) to units in which people identify with their type of job (professional). According to Hofstede (2001), members of parochial cultures feel the organisation's norms cover their behaviour at home as well as on the job and in hiring employees the company takes their social and family background into account as much as their job competence. Thus, the employees do not look far into the future assuming the organisation will do this for them. On the other hand, members of professional cultures consider their private lives their own business, they feel the organisation hires on the basis of job competence only, and they do think far ahead (Hofstede, 2001).

4. Open system vs. closed system: In an open system unit members consider both the organisation and its people open to newcomers, almost anyone could fit into the organisation, and new employees need only work a few days to feel at home (Hofstede, 2001). In a closed system unit the organisation and its people are felt to be closed and secretive even among insiders. Only very special people fit into the organisation and new employees need more than a year to feel at home (Hofstede, 2001).

5. Loose control vs. tight control: This refers to the amount of internal structuring in the organisation. According to Hofstede (2001), people in loose control units feel that no one thinks of cost, meeting times are only kept approximately, and jokes about the company and the job are frequent. However, tight control units describe their work environment as cost-conscious, meeting times are kept punctually, and jokes about the company and/or the job are rare (Hofstede, 2001).

6. Normative vs. pragmatic: This dimension deals with the popular notion of "customer orientation". The pragmatic units are market focus as opposed to normative units that perceive their task regarding the outside world as the implementation of

inviolable rules (Hofstede, 2001). The normative units place emphasis on correctly following organisational procedures, which are more important than results; in matters of business ethics and honesty, the unit's standards are felt to be high (Hofstede, 2001). In the pragmatic units, there is a major emphasis on meeting the customer's needs, results are more important than correct procedures, and in matters of business ethics, a pragmatic attitude prevails (Hofstede, 2001).

Cameron and Quinn (1999) proposed a two dimensional model of organisational cultures. The first dimension differentiates effectiveness criteria that place emphasis on flexibility, discretion, and dynamism from criteria that emphasise stability, order and control. The second dimension differentiates effectiveness criteria that place emphasis on internal orientation, integration, and unity from criteria that emphasises an external orientation, differentiation, and rivalry (Cameron and Quinn, 1999). Together these two dimensions form four quadrants that characterise the types of cultures that exist in an organisation. These four types of organisational cultures identified by Cameron and Quinn are as follows:

- a) Hierarchy culture: Organisations characterised by a formal and structured place to work. Standard rules, regulations and procedures govern what people do.
- b) Market Culture: Organisations characterised by strength in the market place, high targets and securing customer bases are the primary objectives of the organisation.
- c) Clan culture: Organisation emphasises teamwork and employee development. Customers are best thought of as partners. Staff empowerment, employee participation, and commitment and loyalty are the main concern of clan culture in organisation.
- d) Adhocracy culture: Entrepreneurship and creativity are the main focus for organisational success. Innovativeness leads to new resources and profitability, so emphasis is placed on creating a vision of the future.

It is reasonable to suggest that all these three frameworks of organisational culture discussed are broadly consistent with one another. In addition, it is argued that all

these types of culture will be relevant to business organisations and that it may not be relevant to Scottish universities. However, owing to the pressures from a range of stakeholders for a wider and improved range of products and services from the higher education sector in the UK, linked with increasing pressure on resource utilisation, universities are currently conducting their activities in a more business-like manner (Hides, et al., 2004). The higher education sector is increasingly adopting quality management techniques because of its extensive practice in industry. As such, this will develop organisational culture that is likely to be similar to the business organisation. Therefore, it is reasonable to suggest that the organisational culture of the 21st century universities is likely to have a mixture of the types of organisational culture discussed.

The Quality Assurance Agency has moved quality management in universities towards a more structured approach (Lomas, 1999). The universities will be vulnerable to this structured and highly regulatory environment. Therefore, based on the research on types of culture reported above, it is suggested that the types of organisational culture that may be emphasised greatly in universities are as follows:

1. The tough-guy, macho culture and the process culture as identified by Deal and Kennedy (1982).
2. Process oriented vs. result oriented, loose control vs. tight control and normative vs. pragmatic culture as identified by Hofstede (2001)
3. Hierarchical culture and Market culture as identified by Cameron and Quinn (1999).

5.5 The Sources of Organisational Culture

Practitioners in higher education institutions may wonder where an organisation's culture originates from. In assessing the nature of an organisation's culture, it is important for practitioners in higher education institutions to understand the factors that influence an organisation's culture. An organisation's current customs, traditions and general way of doing things are largely due to what it has done before and the degree of success it has had with those endeavours (Robbins, 1996). However, it could be argued there are three most important sources of organisational culture,

namely national culture, organisational leadership and the business environment (Brown, 1985).

Societal or national culture varies across the nations of the world. The differences in national culture are likely to have intrinsic effects on the organisation's initial culture. For example, the French are keen to apply Cartesian logic and engage in theoretical discussions of business issues, while American organisations are generally more pragmatic and action-oriented (Brown, 1985).

The founder or leader of an organisation has a profound effect on the organisation's initial culture. It could be argued that the inspiring ideas of a leader will permeate the organisation's culture. Schien (1992) argued that culture originates from the beliefs, values and assumptions of leaders of an organisation. According to Deal and Kennedy (1982), the heroes or founders or leaders reinforce the basic values of the culture by making success attainable and human, providing role models, symbolising the company to the outside world, preserving what makes the company special, setting a standard of performance, and motivating the employees.

The nature of the activities an organisation undertakes and the particular operating environment in which it subsists may have a profound effect on its culture (Brown, 1985). According to Deal and Kennedy (1982), the nature of the organisation and the marketplace in which it operates have a great effect in shaping the organisation's culture.

5.6 Sub-cultures

Sub-cultures are likely to exist within organisations (Sackman, 1992). Organisations with subcultures will have different beliefs, values and assumptions. This heterogeneity in beliefs, values and assumptions may conflict with the dominant culture in an organisation, as is often the case with a top management team and a unionised group. In addition, it is also usually associated with different functional groupings and geographic locations (Martin and Siehl, 1983; Gregory, 1983; Louis, 1986). Similarly, the universities are likely to have sub-cultures which may be usually

associated with different functional groupings or departments. For example, within a university there are different departments that focus on different subject areas. Therefore, the emphasis on knowledge delivery will be different. In addition, Napier University has several different campuses. Therefore, the staff may associate themselves with the culture that exists in their particular campus.

Thus members of an organisation are unlikely to be restricted to the dominant organisational culture. People may identify with their gender, ethnic background, parent and spouse roles, sports club, city, the university from which they hold a degree, profession, department, division, work organisation, geographical region, industry, nation or greater region such as Europe, America, or Asia. It could be argued that all these potential cultural identities may raise potential conflict with the overall cultural context of an organisation.

5.7 Influence of Organisational Culture on Performance

Many organisational culture commentators suggest that culture has a significant effect on the performance of an organisation (Lewis, 2002; Schein, 1992; Peters and Waterman, 1982; Brown, 1985; Deal and Kennedy, 1982; Cameron and Quinn, 1999, Denison, 1990, Kotter and Heskett, 1992). Most of these commentators argue that organisational culture plays a major role in organisational effectiveness. According to Schein (1992), organisations can become more effective if they build the “right” kind of culture. However, little rigorous research has actually been undertaken and the most accepted hypothesis is that a strong culture enables an organisation to achieve excellent performance (Brown, 1995). A strong culture means, all the functional departments and individuals share the same beliefs, values and goals.

According to Deal and Kennedy (1982), a major reason for the success of Japanese companies is their continuing ability to maintain a cohesive culture, not only in individual organisations but the links among businesses. Based from their survey conducted in eighty companies, Deal and Kennedy (1982) provide evidence on the impact of values and beliefs on company performance. Firms with cultures that emphasised all the key managerial constituencies (customers, stakeholders, and

employees) outperformed firms that did not have those cultural traits (Kotter and Heskett, 1992).

One may debate the way that a “strong culture” can improve the productivity of an organisation. According to Deal and Kennedy (1982), a strong culture is a system of informal rules that spells out how people are expected to behave most of the time. By defining employee job functions and what is expected of them, one may waste little time in determining correct work procedures or modes of working. In contrast, without a clear description of job functions or what Deal and Kennedy (1982) call a weak culture, one may waste great deal of time in determining their action. Secondly, a strong culture enables people to feel better about what they do, so they are more likely to work harder. This raises the question whether the practice of strong culture will be appropriate in higher education environment. The academic staff may question the informal rules and the description of job functions.

In addition, Denison (1990) found empirical evidence that high levels of employee participation in an organisation contributes to better organisational performance. According to Robbins (1996), employees form an overall subjective perception of the organisational culture based on factors such as degree of autonomy, structure, reward orientation, warmth and support provided by managers. All these will contribute to the satisfaction of the employees and consequently, increased performance (Robbins, 1996).

The successful companies, such as from large behemoths like General Electric, Coca-cola, Intel, McDonalds, Sony, Toyota, to small entrepreneurial start-ups, have developed a distinctive culture that is clearly identifiable by its employees (Cameron and Quinn, 1999). According to Cameron and Quinn, the sustained success of these firms has had less to do with market forces than company values; less to do with competitive positioning than personal beliefs; and less to do with resource advantages than vision. Those companies that have been recognised as leaders in their industry have distinctive organisational cultures. These organisational cultures have placed emphasis mainly on shared values and beliefs. It could be argued that the exemplary companies may not remain exemplary.

5.8 Organisational Culture of University

In recent years, higher education institutions in the UK have faced tremendous pressure to adapt to significant challenges due to economic change, technological change and globalisation. In response to these challenges and transformation in the new century, massification of higher education, lifelong learning, research, knowledge transfer activities, social inclusion, and regional economic development have been strongly emphasised in ongoing reforms in higher education (DfES, 2003). As a result, appropriate organisational cultures in higher education have become a prominent requirement. Accordingly, the organisational leaders, managers and academic researchers are demonstrating an increased interest in understanding the organisational culture of higher education (Srikanthan and Dalrymple, 2003; Navarro et al., 2005).

The funding has declined and governments have sought to achieve efficiency gains in higher education whilst at the same time increasing student numbers (DfES, 2003). As a consequence, the universities have been forced to find new funding regimes the recruitment of overseas students, overseas franchise programmes and collaboration with industry. These have stimulated increasing competition in the international as well as the national market. As such, universities are being encouraged to become more distinctive and diverse in their missions (Brown, 2004). Perhaps universities may have to increasingly focus on market orientation (customer focused) and differentiate themselves from the competition. This may facilitate the Scottish universities capturing a greater number of overseas students, delivering franchise programmes and collaborating with industry.

In the university environment, the concept of customer is not clearly defined (Navarro et al., 2005). There are various groups that can be categorised as customers of universities, such as students, employers, government, funding councils and society (Consortium for Excellence in Higher Education, 2003a; Srikanthan and Dalrymple, 2003). In spite of this diversity, higher education institutions are increasingly placing greater emphasis on meeting the expectations and needs of their participating customers, that is, the students (Owlia and Aspinwall, 1997 ; Deshields et al., 2005).

It could be argued that focusing on students satisfaction can facilitate universities to align their organisational structure, processes and procedures to become more customer oriented (Deshields et al., 2005). Thus, the rapid expansion of Scottish universities, may force universities to increasingly utilise student-oriented philosophy. As such, the Scottish universities may re-examine their structures and business strategies, and the processes employed to deliver value-added education.

It could also be argued that having an appropriate organisational culture of higher education has gained popularity with the increasing emphasis given to quality management requirement within universities. Quality management philosophy has transformed the products and processes of leading Japanese manufacturing companies (Kwan, 1996). Since then Quality management philosophy has gained widespread acceptance in other businesses and industries. It could be argued that universities have been much slower in embracing this philosophy. In the UK the establishment of Quality Assurance Agency (QAA) has moved quality management in higher education institutions towards a more universalistic and structured approach (Lomas, 1999). Terms such as code of practice, benchmarking and efficiency have been introduced in universities. The universities are required to firmly address the issues of best practice and the quality of teaching and learning (Lomas, 1999). This may develop a culture that emphasises tight conformance with rules and regulations, standardisation of processes and academic programmes and a slow response to change. This suggests that the university is likely to be more rigid and less flexible in the future.

It could be argued that the elements of increasingly regulatory environment in universities may not carry the same meaning with respect to the role of staff in university particularly the academic staff. The staff may not be prepared to deal with highly regulatory environment. But universities are increasingly being encouraged to become more efficient and customer focused. Perhaps the organisational culture of higher education is contrary to the principles of quality requirement. The stakeholders in higher education have different perception for quality of higher education. This has been explained in chapter 1. The organisational culture of higher education is contrary to the principles of quality requirement (Elmuti, 1996). This will raise potential conflict to implement the quality programmes in universities. Therefore, having a

appropriate organisational culture of university will become a prominent requirement (Appelbaum and Patton, 2002; Srikanthan and Dalrymple, 2003).

Universities are increasingly being encouraged to become distinctive and diverse in their missions, customer focused, and to support the national and regional social and economic goals. A collegial mode of operation should be cultivated in the universities as suggested by Srikanthan and Dalrymple (2003). The staff need to be involved in the quality improvement programmes, generate priorities and develop a strategic plan in order to secure the vision of the universities. This suggests that quality improvement programmes need to be integrated into culture change within universities.

In this regard, the leader or the senior managers in universities generally, are responsible for the cultural change effort in universities (Brown, 2004; Washington and Hacker, 2005). Washington and Hacker (2005) suggested that managers who may understand the quality requirement are more likely to be less resistant to change. It could be argued that once the managers in universities understood the culture change then they could try to create a shared vision about quality in the universities among immediate group members which further could be spread throughout the institutions. However, this could raise questions about the abilities of the leaders/senior managers in universities to create the shared vision among the immediate group members.

5.9 Leadership in UK Higher Education

Higher education in the UK has been through a dramatic transformation over the last quarter-century as participation in higher education has increased significantly (DfES, 2003). As such, maintaining quality and standards has become a prominent requirement in universities. Furthermore, universities are expected to conduct their activities in a more business-like manner and, as such, need a concerted effort by all to succeed (Davies et al., 2001). Strong leadership and management therefore is one of the critical success factors needed to drive the change and sustain continuous quality and performance improvement in universities (Osseo-Asare, et al., 2005).

Traditionally, the universities consist of small and independent units and forward looking with a narrow central management above them (Barret, 1998; Reponen, 1999). Universities have been governed on a collegiate basis, focusing on developing knowledge both in the students attending and through research activities (Davies et al., 2001). As such, the departments with multifaceted and diversified work had fairly independent decision-making power (Davies et al., 2001). It could be argued that this traditional governance could be associated with weak leadership and management, unable to focus on activities to facilitate the change in higher education while maintaining quality, quantity of knowledge and standards. Therefore, it is reasonable to suggest that developing power and bureaucratic culture can be beneficial for universities.

The mass higher education system requires the universities to monitor their resource utilisation. The stakeholders also demand better quality, greater relevance and improved effectiveness of higher education institutions (Dimmen and Kyvik, 1998). However, one should note that the declining funding may not allow the leaders to make transformational changes in university. It could be argued that a wide range of measures to improve academic and administrative leadership functions at universities may be required to facilitate the changes needed in higher education. As such, one solution that emerged is the belief that a new management model could be adopted in order to address the demands in higher education (Dimmen and Kyvik, 1998; Reponen, 1999). The new management ideology in higher education includes increased emphasis on producing the expected results with a minimum of resources, decentralisation of authority from the government to individual institutions, application of performance indicators and evaluation of results, and increasing emphasis on values such as quality (Bleiklie, 1994).

The instinctive reaction of most institutional leaders under constrained resource conditions is what Guskin and Marcy (2003) called “muddling through”. Some of the “muddling through” processes are (Guskin and Marcy, 2003):

1. Making across-the-board budget reductions for example fairly significant layoffs and early retirements are a prominent part of budget reduction and,

wherever possible, vacated faculty positions are filled with instructional staff that teach more and are paid less.

2. Maximising tuition, increasing enrolment, refinancing debts, establishing higher fund-raising goals and, in the public sector, pulling out all stops to persuade state officials to increase funding.
3. Requiring the faculty members to take on increasing workloads.

However, initiative has been continuously undertaken to strengthen academic and administrative leadership in UK higher education. This effort materialised in a new Leadership Foundation for higher education which was created in late 2003 and formally launched in 2004. The main aim of this foundation is to draw on the best international expertise in leadership and management, and develop models of good practice in leadership, governance and management in current and future leaders within higher education institutions (Leadership Foundation, 2005). As argued by Bleiklie (1994), rapidly increasing student numbers would have provided a powerful argument for a strategic managerial approach in handling the expansion in the higher education system. It could be argued that this could give stronger backbone to the university operation in order to meet the demands in higher education.

The governance system of the universities has become less collegiate and more authoritarian and there are few signs of strategic academic leadership. Because the changes are occurring incrementally, leaders in university are uncertain about how to “manage” or “control” their institution so as to best exercise the “influence” that leadership is said to manifest (Bess and Goldman, 2001). Perhaps this is the case in the UK universities as well. With the mass higher education system, they may not have had enough experience to learn how to hold units together with less emphasising on controlling mechanisms in university. Universities need more concerted effort by all the staff in order to succeed (Davies et al., 2001). Academics may struggle, on occasions, to identify what it is they are trying to do and even to identify who the customers are (Davies et al., 2001). This suggest that a transformational leadership is needed to transform the manifestation of control to a culture of empowerment in UK higher education in order to raise staff morale and motivation, reducing frustration and dissatisfaction in order to manage the mass higher education system better (Osseo-Asare, et al., 2005).

As argued by Reponen (1999), transferring the straightforward decision-making system from the business world to universities may be problematic and consequently may not work. The academics may not for very long, listen to and obey the dictates and orders of the leaders (Reponen, 1999). This is due to the fact that the business decision making mechanism easily undermines the researchers' and teachers' autonomy and thus undermines scholarly work (Reponen, 1999). Thus, it is reasonable to suggest that with the advent of the mass higher education system in the UK, transformational leadership is central in all quality improvement programmes if it is to facilitate the development of UK higher education in the future. It could be argued that leaders within such a culture will be role models, mentors and facilitators. They consistently espouse organisational goals and purpose that all employees take up as important components of the organisation's vision (Parry and Proctor-Thomson, 2001).

5.10 Measuring the Organisational Culture

It should be acknowledged that organisational culture is something difficult and controversial to measure. However, generally there are two types of research methods that one could use to measure organisational culture, namely the quantitative approach and the qualitative approach. The qualitative approach is a more holistic approach in which the investigator becomes immersed in the culture and engages in in-depth observation, interviews and conducts document or report analysis in order to uncover cultural patterns. The quantitative approach on the other hand uses questionnaires to assess particular dimensions of organisational culture.

The critical question or argument is whether using quantitative research methods to measure organisational culture is valid or an in-depth qualitative research method is the better way to assess organisational culture (Silverman, 1998; Lindahl, 2006). The basic issue is that when assessing organisational culture via quantitative methods, is one really measuring superficial characteristics of an organisation, and are they incapable of probing the depth of an organisation's culture (Lindahl, 2006). Perhaps it measures the organisational climate rather than in-depth cultural values of an organisation. A number of culture questionnaires have been published over the last 25

years, which can be seen as measures of organisational climate as they tap the surface manifestations of underlying cultural assumptions (Schien, 2000). Because organisational culture is based on underlying values and assumptions, using quantitative methods in which artefacts, stories and myths, and interpretation systems will be a more comprehensive way to assess organisational culture.

However, the opposing point of view argues that breadth of comparison is sacrificed by employing a qualitative approach (Cameron and Quinn, 1999). As argued by Cameron and Quinn (1999), the investigation of multiple organisational cultures becomes impossible when immersion in each one is mandatory. Therefore, it is vital for those who are responding to a questionnaire into culture report underlying values and assumptions (culture), not just superficial attitudes or perceptions (climate). Thus using a scenario analysis procedure in which respondents report the extent to which written scenarios are indicative of their own organisation's culture will facilitate the respondents to report the underlying values and assumption (Cameron and Quinn, 1999). These scenarios serve as cues both emotionally and cognitively that bring to the surface core cultural attributes (Cameron and Quinn, 1999).

There are researchers who have suggested that one way to improve the quality of organisational culture assessment and to ensure that the findings are culturally relevant and accurate is to combine qualitative and quantitative methods (Hines, 1993; Zammuto and Krakower, 1991).

5.11 Tool to Measure Organisational Culture

A number of researches on organisational culture contributed to the development of the cultural assessment instrument to measure organisation culture. The Fletcher's Cultural Audit was developed to measure a range of dimensions of organisational culture. The dimensions included in this tool are: 1) work demands: include features as perceived work load, pace, complexity, variety, conflict and difficulty maintaining standards; 2) interpersonal relationships in the workplace: includes the interpersonal relationships with co-workers, bosses and subordinates, as well as isolation, co-operation and difficulties with delegation; 3) work supports and constraints: includes

feedback, intellectual challenge and participation in decisions, autonomy and clearly defined goals; 4) the physical environment: includes assessment features of the work environment, physical layout, poor lighting, noise and physical atmosphere, in addition to the perception of physical risk; 5) performance: measures the individual's perception of whether they are working effectively and to capacity; 6) organisational commitment: indication of a worker's satisfaction with their career profile in the organisation and their intention to stay; 7) job dissatisfaction: measure which encompasses overall satisfaction with the job as a whole, with management, pay and co-worker relationships; 8) strain: measure psychological health in terms of a simple measure of depression and anxiety; and 9) personality: measure some aspects of personality, which incorporates elements of self-esteem and autonomy

In the attempt to understand the organisational culture prior to implementing an organisational improvement program, Maull, et al. (2001), developed a tool known as PCOC (Personal, Customer Orientation, Organisational issue and Cultural issue). The PCOC tool has two interrelated aspects, which are, the cultural elements and organisational climate element in which culture exists. The authors believed that it is important to measure the impact the culture had on the everyday operations and workings of the organisation, such as, relation with customers (internal and external) and how an organisation treated staff. The specific focus of the PCOC tool is to identify areas for intervention within the organisation that can assist organisational and quality improvement. The tool does not contain implicit value judgements about "best" or "strong" culture or what profile it is best to have (Maull et al., 2001).

It could be argued that the Fletcher's cultural audit and the questionnaire developed by Maull, R. et al. (2001) could measure the underlying cultural assumptions as well as organisational climate. According to Schein (2000) the term culture should only relate to the "deeper" less visible level. Thus, those two tools may be confusing for the survey participants. In addition, confirmatory studies that have used their tool have not been discovered.

Cameron and Quinn (1999) proposed something different. According to them using a scenario analysis could help to uncover the culture of an organisation. Therefore, the Organisational Culture Assessment Instrument (OCAI) developed by Cameron and

Quinn (1999) could be a better way to diagnose the existing organisational culture as well as diagnose the future culture. The instruments are identical except for the response column. Organisational Culture Assessment Instrument helps to assess six key dimensions of culture. This will be explained in detail in chapter 6. It could be argued that these six dimensions reflect organisational cultural values and implicit assumptions about the way the organisation functions. They reflect “how we do things” in the organisation. In addition, the instrument has been used in many organisations (more than 1000) and also higher education institutions (343 institutions) in the US.

5.12 Conclusion

Culture change in organisations is becoming increasingly important because of the rapid change in their external environment. Similarly, culture change in universities in the UK may also become increasingly important because of the shift from a manufacturing-based economy to knowledge-based economy. In the knowledge-based economy, universities are seen as a critical vehicle for knowledge creation and its exploitation and consequently contribute to greater economic growth (Huff, 2000; Harris, 2001; Florida, 2002). Higher education has moved from an elite system to mass higher education system. The change to massification of higher education is increasingly characterised by a number of pressures as indicated in chapter 3. The stakeholders are demanding universities provide improved and wider options of delivery, and more relevance to industry. The quality improvement programme is becoming increasingly structured. It could be argued that this has led universities to emphasise developing structures, rules and regulation. This raises the question to what extent the staff in universities are ready to accept highly regulatory environment. This may require organisational cultures that best facilitate the staff acceptance of highly regulatory environment in the future.

In considering how higher education could evolve to address the pressures and better facilitate the staff acceptance of massification of higher education and the highly regulatory environment may mean continual change and development in universities. As indicated by Hills and David (2001), changing educational provision to adapt to the pressures and the stakeholder requirements are the foremost future challenges to

the higher education sector. The current role of universities, the pressures facing universities and the students' expectations may lead to transformations of universities to new requirements, which may eventually cause the development and emergence of new organisational cultures.

It could be argued that transformational leadership is the key to develop appropriate organisational culture of any organisation. As such, transformational leadership is required in Scottish universities in order to develop appropriate culture in the future. Unless the managers in universities are willing to commit to develop appropriate culture the staff may be reluctant to accept the highly regulatory environment in the future. It is reasonable to suggest that a more collegial culture may be required in universities in order to facilitate the staff to accept the highly regulatory environment and customer oriented culture. In order to develop an appropriate organisational culture one should integrate the effort needed to be embedded into quality management models such as the European Foundation for Quality Management Model.

Therefore, cultivating an appropriate organisational culture will facilitate universities in future development and consequently achieve their vision. In the following chapter, exploration of culture of Scottish universities will be carried out and the difficulties in changing culture will be understood.

CHAPTER SIX

ORGANISATIONAL CULTURE AT SCOTTISH UNIVERSITIES

6.1 Introduction

This study of diagnosing organisational cultures is aimed at exploring the current culture, future culture and preferred culture at universities in Scotland. This is worthwhile in order to advise on how to facilitate the development of Scottish universities towards the likely future of Scottish higher education.

Three Scottish universities were surveyed in order to explore the prevailing cultures in the knowledge intensive nature of these institutions. The values that characterise the selected institutions and how these institutions operate were explored. The structure of higher education, the changing role of higher education, the forces that are reshaping higher education provision and the students' expectations will intensify the need for universities to change. As such, the difficulties that these selected institutions may face in changing their culture will be understood.

One solution that has emerged in universities is the belief that management models would improve the situation and give a stronger backbone to the university's operations (Reponen, 1999). The adoption of Quality Management was preferred, because of its extensive practice in industry (Srikanthan and Dalrymple, 2003). However, its practice in higher education is deteriorating because of lack of development of a shared vision (Srikanthan and Dalrymple, 2003). A clear set of shared values will be the glue that holds the organisation together and reinforces continuity and consistency in the organisation (Cameron and Quinn, 1999).

6.2 Research Method

A quantitative approach with a questionnaire as a main tool was used to determine the organisational culture at Scottish universities. Past research suggested that a quantitative approach can be used in order to determine organisational culture (Scott et al., 2003). It could be argued that a quantitative approach allows multiple viewpoints to be considered within a short period of time. As suggested by Cameron and Quinn (1999), the scenario analysis procedure could be used in the survey instrument that acts as a mirror against which the respondents can reflect their values and assumptions.

6.2.1 Tool Used to Determine Organisational Culture of Universities

The Organisational Culture Assessment Instrument (OCAI) developed by Cameron and Quinn was used to determine organisational culture of the university. A copy of the questionnaire used is displayed in Appendix 5. The Organisational Culture Assessment Instrument is in the form of a questionnaire which requires the staff of a university to respond to six attributes of organisational culture. These six attributes are as follows (Cameron and Quinn, 1999):

- 1) **Dominant characteristics:** what the overall organisation is like.
- 2) **Organisational leadership:** leadership style and approach that permeate the organisation.
- 3) **Management of employees:** the style that characterises how employees are treated and what the working environment is like.
- 4) **Organisation glue:** bonding mechanisms that hold the organisation together.
- 5) **Strategic emphasis:** what areas of emphasis drive the organisation's strategy.
- 6) **Criteria of success:** how victory is defined and what gets rewarded.

It is reasonable to suggest that organisational culture is extremely broad. Organisational culture could be determined by examining different levels in which culture can be uncovered. As suggested by Schien (1992) espoused values and the basic assumptions could be accessed and interpreted easily compared to the artefacts. Therefore, the use of OCAI will facilitate the researcher to access the values and basic assumptions, and consequently uncover the culture with the help of the Competing

Values Framework. The Competing Values Framework will be discussed in the next section.

The universities are increasingly adopting other business management models in order to facilitate their future development (Martins and Terblanche, 2003; Reponen, 1999; Bess and Goldman, 2001). It could be argued that other business organisations have placed greater emphasis on values such as how the organisation should look, organisational leadership, managing the staff, holding the organisation together to focus on their vision, strategic direction and defining success in terms of achieving their goals. The emphasis on these values could facilitate the organisations in achieving their vision. Therefore, similar emphasis will exist in universities if they adopt the business models. The OCAI help to capture the information to what extent these values exist in an organisation.

All the six attributes have four alternatives. Each alternative represents one type of culture. The alternative "A" represents a Clan culture, the alternative "B" represents a Adhocracy culture, the alternative "C" represents a Market culture and finally the alternative "D" represents a Hierarchy culture. The respondents were asked to divide 10 points among these four alternatives depending on the extent to which each alternative is similar to the university. Originally it was proposed by Cameron and Quinn to divide 100 points. However, it was thought that 100 points may be difficult for the respondents to keep track with the counting. Therefore, it was reduced to 10 points. A higher point is allocated to the alternative that is most similar to the university. For example, for the dominant characteristics, if the respondents think alternative A is very similar to the individual university, alternatives B and C are somewhat similar, and alternative D is hardly similar, the respondents may allocated 5 points to A, 2 points each to alternatives B and C, and 1 point to D. The respondents just need to make sure that the total equals 10 for each question. Please refer to the copy of the OCAI in appendix 5.

Originally the instrument is divided into two columns, consisting of the same set of questions for each column. The response column one is labelled "now". These responses mean that the respondents are rating their university as it is now. The response column two is labelled "preferred".

However, for the purpose of this research, a minor modification has been made. In this research the instrument was divided into three columns but consisting of the same set of questions for each column. Column one is labelled “now”. The responses mean that the respondents are rating their university as it is now. Column two is labelled “future”. Here the responses mean that the respondents are rating their university as they think it would be in the future. Finally, column three is labelled “preferred”. Here the responses mean that the respondents are rating their university as they think it should be in the future. The response column “future” was included in order to obtain the staff view of what culture they think would exist in university in the future. This will provide information to determine whether the university’s future culture is aligned with the staff preferred culture.

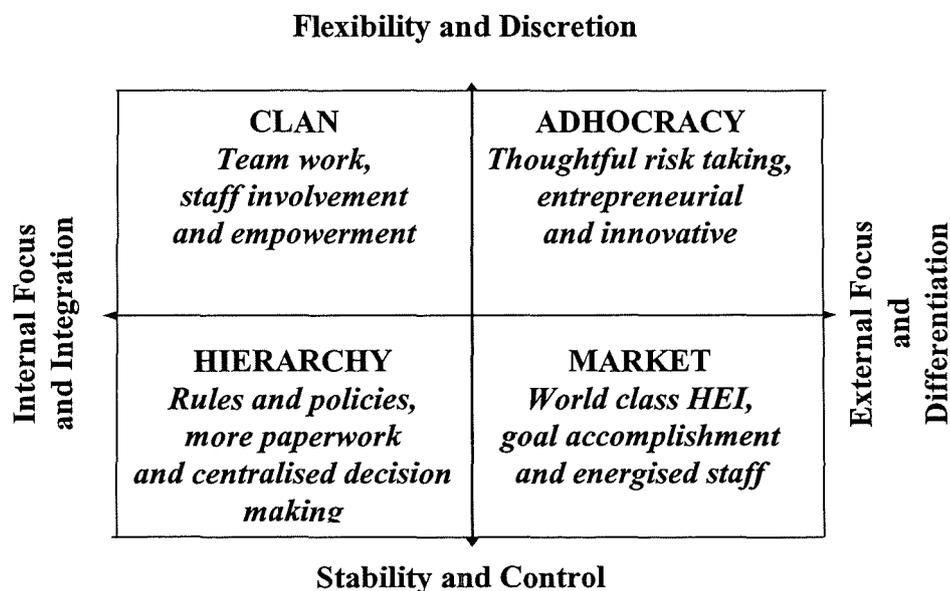
In addition, another slight modification that has been made in this tool is the language used to describe the culture type, considering that this tool is to be used in Scotland. Therefore, slight changes with regard to English language have been made in describing the culture type. There are no other major modifications as this may affect the validity of the tool.

The Organisational Culture Assessment Instrument has been used in more than a thousand organisations such as public utility firms and many others, and it has been found to determine organisational culture (Cameron and Quinn, 1999). Zammuto and Krakower (1991) used this instrument to measure the culture of higher education institutions. More than 1300 respondents including administrators, department chairpersons and trustees participated in this survey. The reliability coefficients for each culture types shows 0.82 (clan culture), 0.83 (adhocracy culture), 0.67 (hierarchy culture), and 0.78 (market culture). Another study of organisational culture at Ohio State University also discovered that the information obtained from the OCAI is reliable (Berrio, 2003). The reliability coefficient for each culture type obtained is as follows: Clan culture (0.80); Adhocracy culture (0.75); Market culture (0.90); and Hierarchy culture (0.62).

6.2.2 Competing Values Framework (CVF)

The OCAI is based on a theoretical model entitled the Competing Values Framework (Cameron and Quinn, 1999). From the information captured through the OCAI, an organizational culture profile can be drawn using Competing Values Framework. The CVF originally emerged from empirical research conducted by Quinn and Rohrbaugh (1983) on the major indicators of effective organisations. Based on their comprehensive analysis, Quinn and Rohrbaugh (1983) discovered two major dimensions underlying the concept of effectiveness as shown in Figure 6.1. The first dimension is related to organisational focus, from an internal emphasis on the well being and development of people in the organisation to an external focus on the well being and development of the organisation itself (Quinn and Rohrbaugh, 1983). The second dimension differentiates organisational preference for structure and represents the contrast between stability and control and flexibility and change (Quinn and Rohrbaugh, 1983).

Figure 6.1: Competing values framework



It could be argued that these competing values will exist in universities. Some universities think that they can be effective if they emphasise flexibility and discretion more. On the other hand, some think that the university can be effective if they

emphasise stability and control. Similarly, some universities think that they can be effective if they maintain efficient internal processes. Whereas others think that they can be effective if they maintain competitive positioning relative to their customers' demands. However, it can also be argued that all these values will exist in universities simultaneously.

Together the two dimensions form four quadrants that represent the type of culture that this research is addressing. These four types of cultures that serve as the foundation for the Organisational Culture Assessment Instrument are (Cameron and Quinn, 1997):

1. Clan culture (Collegiate): Higher education institutions characterised by Clan culture focus on the internal maintenance of the resources and processes with a high degree of flexibility, concern for the staff and are sensitive to the students' expectations. It places emphasis on more staff empowerment in higher education institutions, more participation and involvement, more cross functional teamwork, more horizontal communication, and more recognition for employees. An increased emphasis on this culture does not necessarily mean lack of standards and rigor, an absence of tough decisions, slacking off and tolerance of mediocrity.
2. Adhocracy culture (Create): Higher education institutions characterised by Adhocracy culture focus on external positioning of the university locally and globally, with a high degree of flexibility. It places emphasis on more staff suggestion, more process innovativeness, more thoughtful risk taking, tolerance of first-time mistakes, and more listening to customers. An increased emphasis on this culture does not necessarily mean that it is everyone for him or herself, covering up errors, thoughtless risk taking, spending money on the latest fad, not coordinating and sharing ideas.
3. Market culture (Compete): Higher education institutions characterised by Market culture focus on external positioning of the university with a need for stability and control in order to achieve predictable results. It places emphasis more on the on-going commitment to excellence, a world class organisation, goal accomplishment, and energised staff. Less emphasis in this culture does not necessarily mean less pressure on performance, ceasing to listen to

customers, less satisfied customers, missing deadlines, lower quality standards, and less competitiveness.

4. Hierarchy culture (Control): Higher education institutions characterised by Hierarchy culture as the dominant culture focus on internal maintenance of resources and processes with a need for stability and control in order to achieve predictable results. It places emphasis more on centralised decision making, more roadblocks and red tape, less trying out of new ideas, more paperwork, and more sign-offs for decisions. Less emphasis on this type of culture does not necessarily mean lack of measurement, not holding people accountable, not following the rules, not monitoring performance, and a non-orientation toward change.

The use of the OCAI and the CVF to demonstrate the cultures that exist in a sample of Scottish universities is the first known attempt in Scotland. The Competing Value Framework will help the managers in universities to determine and understand the congruency and discrepancy among these values of the university. Finally, the CVF could serve primarily as a map that could help managers to mix and mould the appropriate organisational culture of the university in the future.

6.2.3 Sample

Multi-stage cluster sampling was employed in this study. Three different Scottish universities were identified, namely Napier University, Heriot-Watt University and Edinburgh University. Napier University was used as the main sample to measure culture of university in Scotland. A sample of other two universities was used for comparing organisational culture at different universities. The sample was chosen based on the nature of the university as being the traditional university (Edinburgh University), red brick formed in 1960's (Heriot Watt) and post 1992 university (Napier University). All the faculties at Napier University, namely the Business School, Faculty of Engineering and Computing, Faculty of Arts and Social Science and Faculty of Health and Life Sciences participated in this survey.

However, only the Business School and the Faculty of Engineering responded at Heriot-Watt University. At Edinburgh University only the Business School responded to this survey. Some of the other Faculties contacted at Heriot-Watt and Edinburgh University for this survey that did not respond acknowledged that they were not interested in taking part in this survey

A survey was carried out at the Business School at Napier University, the Faculty of Engineering and Computing, the Faculty of Arts and Social Science, and the Faculty of Health and Life Sciences. Hundred and two staff responded to the organisational culture survey (13.7 per cent response rate) which includes the second survey that was a repeat after several months. The response rate obtained during the first time was very low. Therefore, the survey was carried out a second time and it was aimed at those who did not respond during the first survey. This is discussed in more detailed in section 6.4. The breakdown of the respondents is shown in the Table 6.1 below. The Business School has the highest number of responses, followed by the Faculty of Health and Life Sciences, and Faculty of Engineering and Computing. The lowest response was obtained from the Faculty of Arts and Social Science.

Table 6.1: Breakdown of respondents at Napier University

	Total number of staff	Responses obtained
Business School		
<i>Academics</i>	191	39 (20.4%)
<i>Administrators</i>	34	14 (41.2%)
Faculty of Arts and Social Science		
<i>Academics</i>	114	6 (5.3%)
<i>Administrators</i>	30	2 (6.7%)
Faculty of Engineering and Computing		
<i>Academics</i>	136	7 (5.2%)
<i>Administrators</i>	19	6 (31.6%)
Faculty of Health and Life Sciences		
<i>Academics</i>	192	23 (12%)
<i>Administrators</i>	29	5 (17.3%)
Total	745	102 (13.7%)

A survey was carried out at the Business School and the Faculty of Engineering at Heriot-Watt University. A total number of 25 responses were obtained from these two Faculties. The breakdown of the respondents is shown in Table 6.2.

Table 6.2: Breakdown of respondents at Heriot Watt University

	Total number of staff	Responses obtained
Business School		
<i>Academics</i>	80	9 (11%)
<i>Administrators</i>	9	0 (0%)
Faculty of Engineering		
<i>Academics</i>	113	13 (11.5%)
<i>Administrators</i>	3	3 (30%)
Total	205	25 (12.2%)

A survey was also carried out at the Business School in Edinburgh University. There were only 15 responses obtained. Table 6.3 shows the breakdown of the respondents.

Table 6.3: Breakdown of respondents at Edinburgh University

	Total number of staff	Responses obtained
Business School		
<i>Academics</i>	71	6 (8.5%)
<i>Administrators</i>	9	9 (100%)
Total		15

6.3 Limitations

The generalisation of the findings to the whole higher education sector and even the whole university is considered to be limited for five reasons. These five reasons are as follows:

1. The total responses obtained from the three universities were low. Perhaps the tool worked well in certain Faculties, within Napier University, for example,

the Business School and the Faculty of Health and Life Sciences. There could be some research bias as the respondents from the Business School knew me and they gave a better response compared to other Faculties. In addition, female respondents are perhaps more compliant, so faculties with more female staff such as the Faculty of Health and Life Sciences may respond better.

2. The tool did not work well in other faculties such as the Faculty of Engineering and Faculty of Arts and Social Sciences within Napier University. Perhaps this could be due to the fact that the Faculty of Arts and Social Science is badly affected by a restructuring process which is causing a great deal of unrest. Therefore, I was unable to obtain a good response from the Faculty of Arts and Social Science. The Faculty of Engineering at Napier University also did not respond well. The problem could be due to the discipline area. Perhaps the engineers may not like the management approach to assessing organisational culture. In addition, the Faculty of Engineering was the first department established at Napier University. They have experienced all the changes that took place at Napier University before and perhaps they are not interested in any more culture change. The majority of the academics in the Faculty of Engineering at Napier University have a history of long service. Also the majority were male and therefore they may not want to comply with any culture change initiatives.

3. The low response could be due to staff at Napier University wishing not to respond to another kind of documentation or paper work. It also could be argued that the staff have been overloaded with tasks whereby they do not have the time to take part in this survey. The organisational culture assessment instrument needs to be made simpler in order to be applied to all Scottish universities. As indicated by some of the respondents from the Faculty of Engineering at Napier University, they prefer not to have to keep going back to the statements provided in order to allocate the points and at the same time making sure that the total equals to 10. It takes longer than was thought, it was thought to be easy but it was time consuming. In addition, the staff may feel that they are forced to respond to the four statements provided. Some of the respondents provided feedback that they felt forced to allocate points to some of the statements even though they were not at all similar to Napier University.

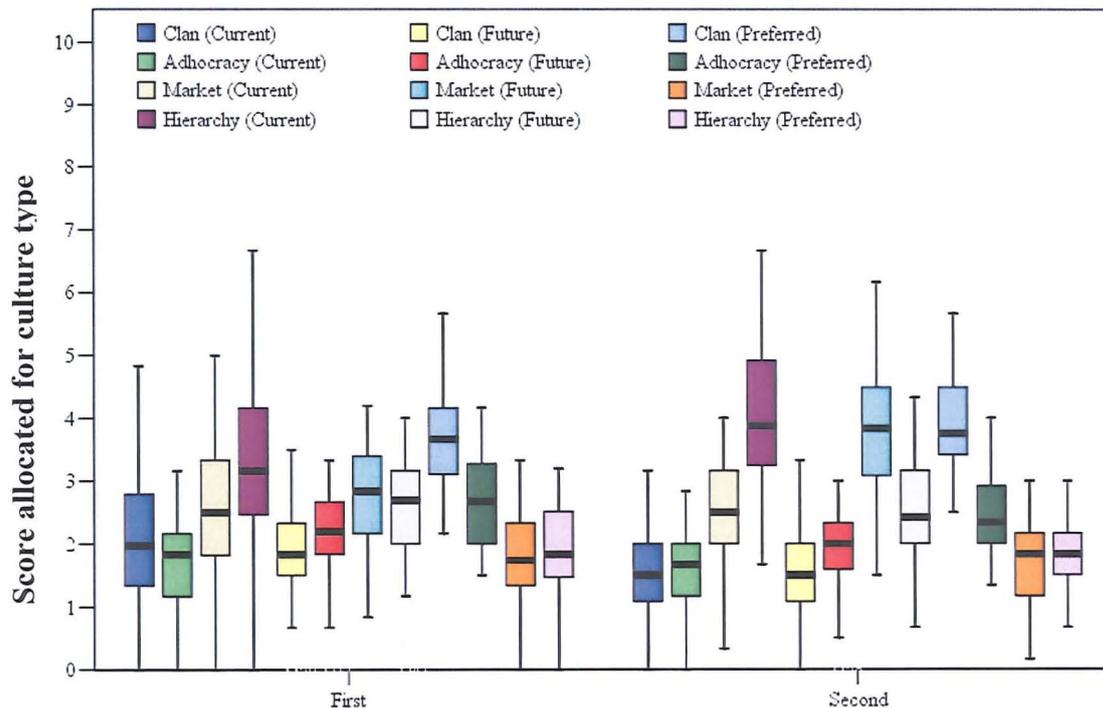
4. The financial constraints and significant dependence on funding, could affect the strategic planning and administration within these universities. The financial pressure in a university will lead to both rationalisation and centralisation (Bess and Goldman, 2001). Perhaps universities that are highly dependent on government funding may well follow the structures such as the code of practice for the quality assurance in higher education that are determined by the Quality Assurance Agency. On the other hand, universities that are highly dependent on private funding are likely to be forced to be more entrepreneurial. Less stable funding streams will force central administrators to be more strategic in their thinking, increasing university development efforts and seeking out new markets for students and initiating programs in new areas (Bess and Goldman, 2001). Therefore, the funding stream could affect the administration and strategic planning which will be reflected in the cultures at a university.

5. A university's vision and goals could affect the process and development within these universities and could have implications for the culture at each university. For example, Napier University's vision by 2010 is to be regarded as the best modern university in Scotland and one of the best in the UK (Napier University Strategic Plan, 2004). This will be achieved by providing flexible access to the widest possible range of learners and by being more responsive to learners' needs. Heriot-Watt's vision is to provide the highest quality education and training to suit the professional employment sector; meet the aspirations of students and help them to realise their potential; deliver world class innovative research in the fields of business and industry; and exploit knowledge for the benefit of society (Heriot-Watt, 2005). The vision of Edinburgh University is to sustain and develop its position as a research and teaching institution of the highest international quality and to benchmark its performance against world class standards (Edinburgh University Strategic Plan, 2004). The individual university vision will affect the process and development within these three universities that will reflect in their culture at each university.

6.4 Comparison of Data Obtained at Two Different Times at Napier University

The organisational culture survey was carried out at two different times. During the first time the response rate was low. Therefore, after several months the organisational culture survey was carried out again. This time the survey was aimed at those respondents that had not participated during the first survey. This was conducted only at Napier University. The comparison of staff opinion between the two different times was broadly similar as shown in Figure 6.2. This is very interesting finding. It could be argued that leadership and management of Napier University should manipulate its cultures more vigorously in their operation. However, the staff think that the cultures are broadly similar. This shows that culture in Napier University is generally characterised by similar values.

Figure 6.2: Staff view on culture at Napier University at two different time scales



6.5 Culture Profile at Different Faculties within Napier University

The Business School is one of the largest in Scotland, with four thousand students, offering a wide range of internationally recognised programmes from Bachelor Degree to PhD level. The Business School's vision is to enter a partnership with the students and the many organisations that employ the students to ensure that the

business education it provides is successful and relevant to current business. The Business School has links with professional bodies and a growing expertise in entrepreneurship and employment related research (Napier University Business School, 2005). The Business School also focuses on internationalisation activities. The Business School has a large number of students from the European Union countries and many students from China and the Far East (Napier University Business School, 2005). These indicate that the Business School will likely become increasingly market focused in the future and this will be as consequence of the pressures outlined in Chapter Three.

The Faculty of Engineering and Computing is also one of the largest in Scotland and offers a wide range of programmes at Undergraduate and Postgraduate levels in the areas of engineering, electronics, multi-media technology, computing, information service, software design and the built environment. The Faculty's vision is to excel in technology transfer, business transformation, sustainable development and creative industries (Faculty of Engineering and Computing, 2005). This suggests that the Faculty should become increasingly market oriented and providing the necessary facilitation in order to focus on market orientation will be their main concern in the future.

Faculty of Arts and Social Sciences offers a wide range of programmes at Undergraduate and Postgraduate levels. The staff have a broad range of interests spanning from sociology, psychology, design and media arts, communication arts, law and music (Faculty of Arts and Social Science, 2005). The Faculty's vision is to continually develop new training initiatives to help to solve business problems, turn ideas into actions, improve productivity and enhance team working and communication skills (Faculty of Arts and Social Science, 2005). It could be argued that this Faculty should become increasingly market oriented and satisfying their customers will be their main concern in the future.

The Faculty of Health and Life Sciences has strong links with the National Health Service and other clinical environments in the UK and is one of the Europe's leaders in health and life science education and research. The faculty is nationally and internationally focused, provides a substantial range of programmes from diploma, through degree, honours degree and masters, to doctorate level. The vision of the

Faculty is to enhance the quality in all aspects of operation within the Faculty, while embracing innovation and change as the key factors in establishing a place at the forefront of health and life science education (Faculty of Health and Life Sciences, 2005). This indicates that the Faculty should become increasingly focused on market orientation in order to become the best provider of courses related to health and life science in the future.

The above discussion provides a brief view about the faculties' vision and how they want to look in the future. Based on the individual faculty's vision it could be argued that all the Faculties will become increasingly market focused in the future. Capturing the opportunities in the market and satisfying customers will be the main concern in the future. The staff within these Faculties will be expected to perform their task and achieve the vision.

The Organisational Culture Assessment Instrument facilitated the capturing of the responses of the staff about how the Faculties operate and the values that characterise the Faculties. Based on the responses obtained to the six questions in the organisational culture assessment instrument, a competing values framework can be produced to indicate the cultures that exist in the surveyed Faculties within Napier University.

Culture profiles were produced for Business School, Faculty of Engineering and Computing, Faculty of Arts and Social Sciences, and Faculty of Health and Life Sciences as shown in Figure 6.3. It was thought that the cultures that exist at these four faculties would differ greatly from each other and that it would represent the subcultures at Napier University. The reasoning being that, all four faculties are different in terms of history of development, vision, pressures facing the faculty, partnership agreement, nature of teaching and learning, and primarily the subject study offered. However, the Competing Values Framework indicates a similar pattern of culture profile for all the surveyed faculties as shown in Figure 6.3. The straight line indicates the culture profile based on the mean score obtained for each culture type. The dotted lines indicate both the upper confidence interval and lower confidence interval for the mean score obtained for each culture type. The lower confidence interval was obtained by subtracting the mean from the standard error

multiplied by two. The upper confidence interval was obtained by adding the mean with the standard error multiplied by two.

Figure 6.3: Culture profile for different Faculties at Napier University

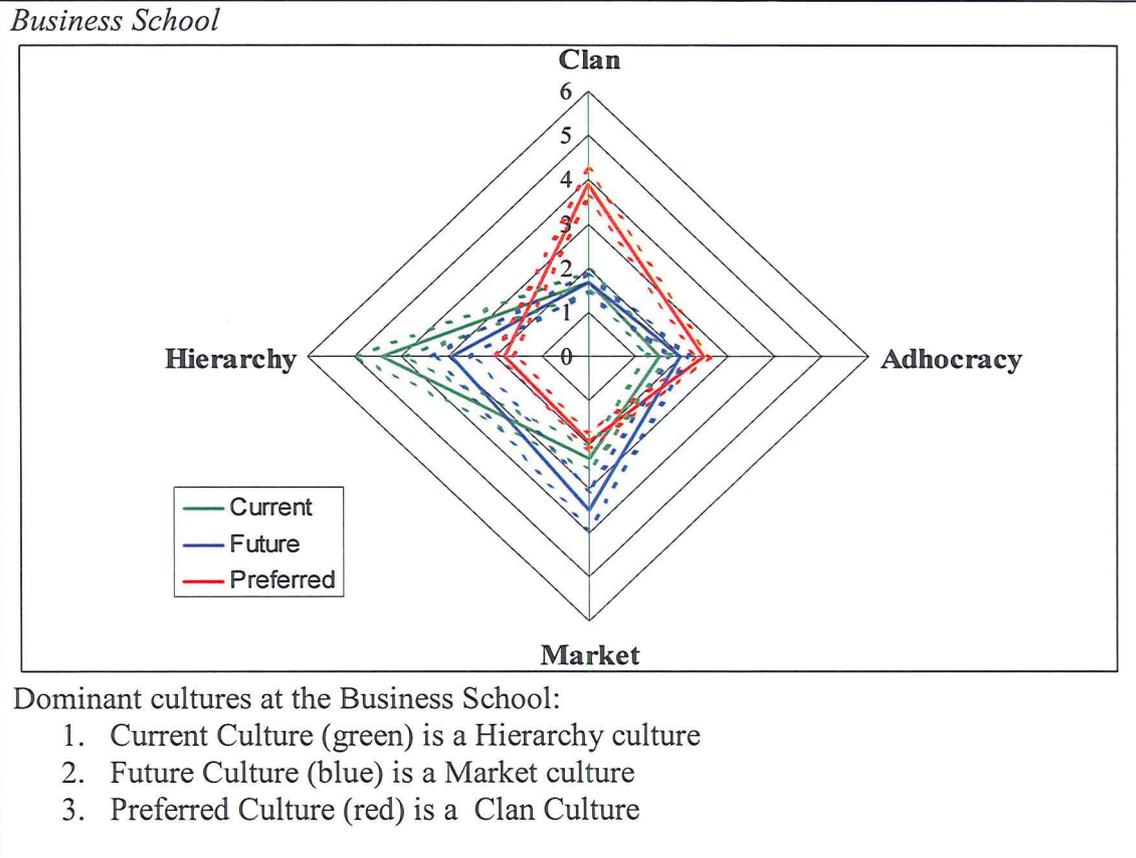
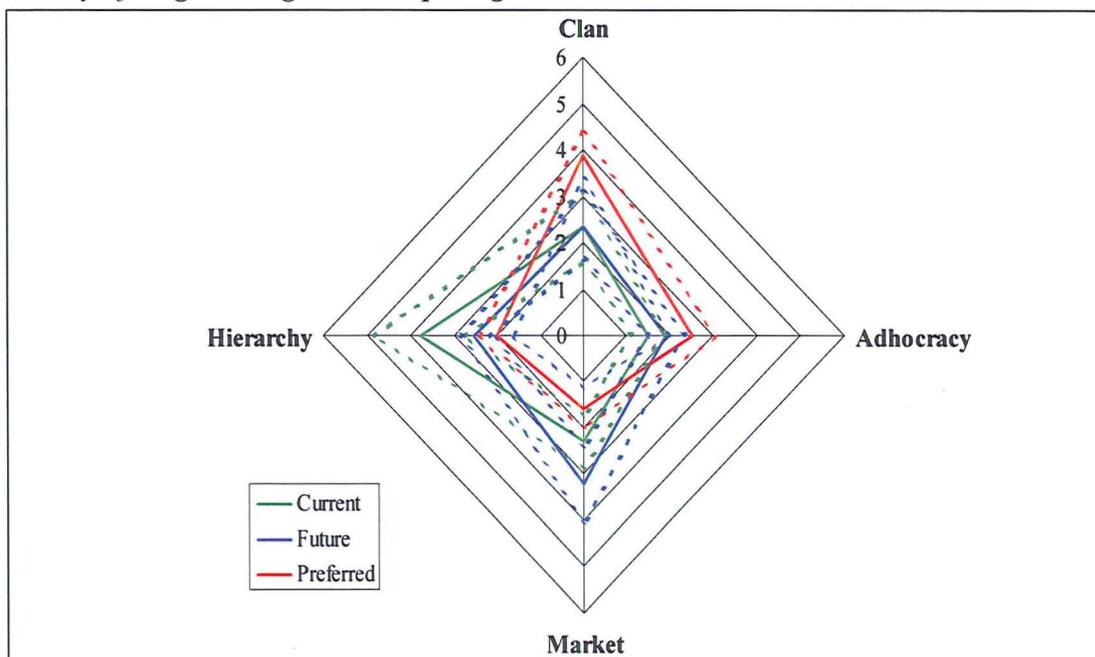


Figure 6.3: continued

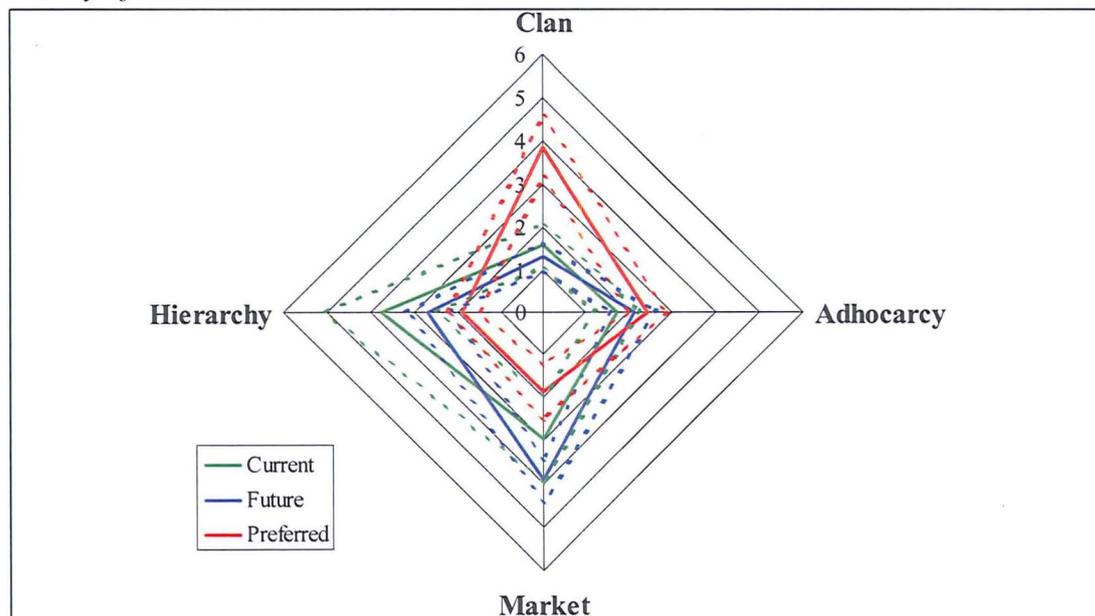
Faculty of Engineering and Computing



Dominant cultures at the Faculty of Engineering and Computing:

1. Current culture (green) is a Hierarchy culture
2. Future culture (blue) is a Market culture
3. Preferred culture (red) is a Clan culture

Faculty of Arts and Social Science

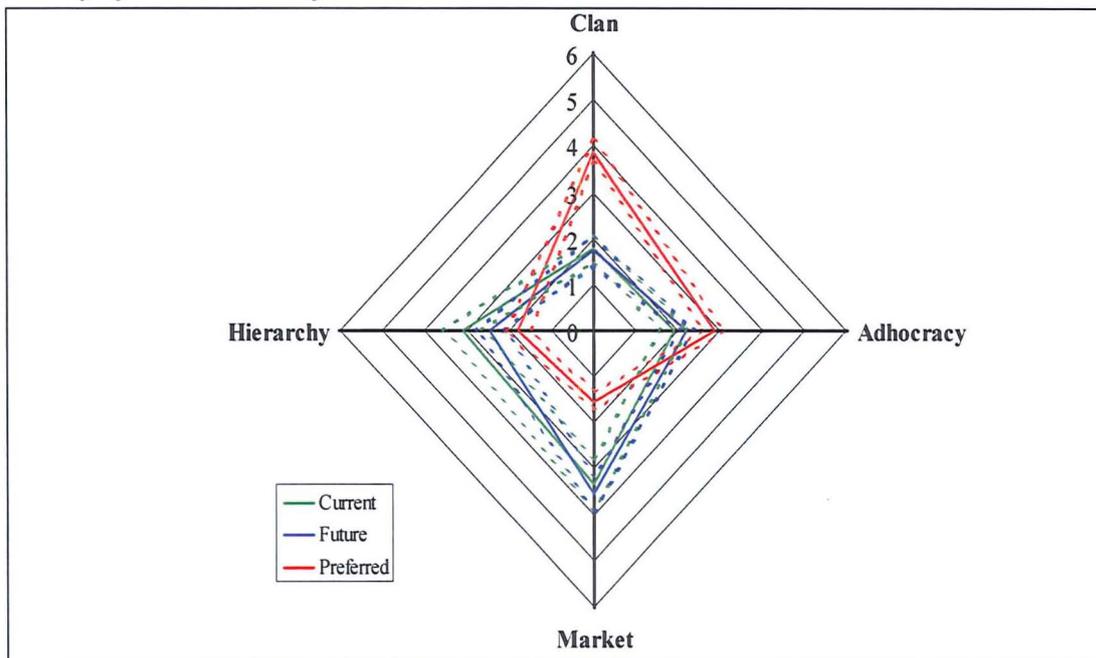


Dominant cultures at the Faculty of Arts and Social Science:

1. Current culture (green) is a Hierarchy culture.
2. Future culture (blue) is a Market culture
3. Preferred culture (red) is a Clan culture

Figure 6.3: continued

Faculty of Health and Life Science



Dominant cultures at the Faculty of Health and Life Sciences:

1. Current culture (green) is a Market culture.
2. Future culture (blue) is a Market culture
3. Preferred culture (red) is a Clan culture

The current culture at the Business School, Faculty of Engineering and Computing, and Faculty of Arts and Social Science is a Hierarchy culture. The emphasis on a hierarchy culture indicates that maintaining integration and unity of process with a high degree of stability and predictability is important within the Business School, Faculty of Engineering and Computing, and Faculty of Arts and Social Science. For example, the staff think that performance measurement, documentation, and managing information is the key ways to ensure smooth operation within these faculties. It could be argued that formal rules and policies will govern whatever the staff do related to the job. The staff think that the managers at these faculties monitor and coordinate and make sure the staff are complying with the rules and policies. The staff think that success in these faculties is determined by smooth scheduling, dependable delivery and cost reduction.

In the future, the staff think that these faculties will focus greatly on market culture. The staff view is very much in-line with the vision statement of the Faculties

surveyed. It could be argued that these faculties are likely to shift their focus from the internal integration and unity of process toward external focus and opportunities, and differentiation regarding competitors. However, this will be achieved with a high degree of stability and control. The staff think that all the three faculties are likely to be competing more aggressively, locally as well as globally. They also think that they will be given jobs and expected to perform as required by the management and produce predictable results. The leaders of these faculties are likely to be more aggressive and results oriented - making sure that the staff produce what is expected of them. Success will be defined on the basis of winning in the marketplace and outpacing the competition.

However, the staff prefer a Clan culture that focuses on internal integration in terms of well-being and development of people with a high degree of flexibility and discretion. This suggests that the staff prefer an emphasis on teamwork, self-organising, employee commitment to achieve goals, staff involvement in decision-making processes and human resource development. This may raise a potential conflict between the future culture and the preferred culture at the Business School, the Faculty of Engineering and Computing, and the Faculty of Arts and Social Science. Perhaps this is the sign that staff prefer the Faculty to place more emphasis more on cultivating values such as human resource development programmes, involving entire staff in decision making processes, teamwork and, trust and commitment in order to be market focus. It could be argued that the notion of market orientation is new for the staff. Many of them may not clearly know exactly what is expected from them and what they have to do in order to be market focused. Accordingly, emphasis on a Clan culture in order to be market focused could be the way for faculties to achieve their vision.

The staff at the Faculty of Health and Life Sciences think that the current culture in their Faculty is a Market culture. The staff think in the future the Faculty may increasingly focus on a Market culture. However, the staff prefer a Clan culture. This may raise potential conflicts between the future culture and the preferred culture.

The box plot in Figure 6.4 illustrates the pattern of staff view of current, future and preferred culture across Faculties at Napier University. The box plot shows that the

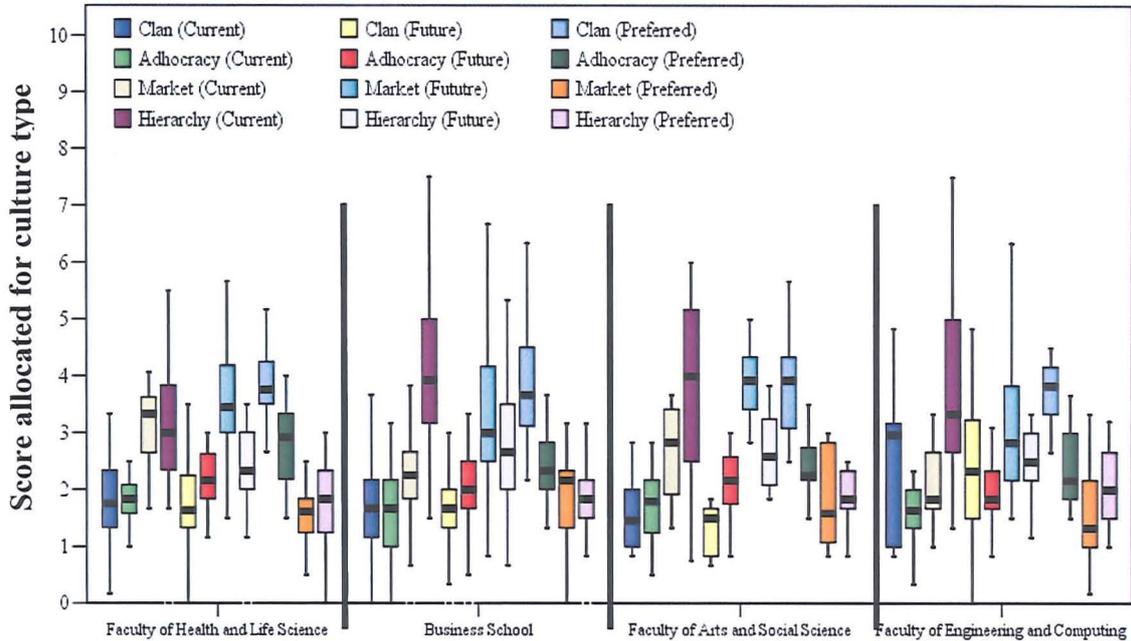
staff view within each of the Faculties are significantly different. However, from the strategic point of view, Napier University will be more concerned about the differences between Faculties. One way analysis of variance was conducted to explore the significant differences in staff view of cultures at these four faculties. A comparison between the faculties indicates generally the staff views are broadly similar. However, there are some significant differences in staff view for current Market and Hierarchy culture and future Clan culture across the faculties. There is no significant difference for current and future adhocracy culture.

The analysis of variance suggests that there is a significant difference between the Faculty of Health and Life Sciences, and the Business School in relation to the current Market culture. A p-value of 0.00 was obtained. Based on the Figure 6.4, it could be argued that the staff in the Faculty of Health and Life Sciences think that their faculty is emphasising a Market culture compared to what the staff in the Business School think. There is also a significant difference between the Faculty of Health and Life Science, and the Faculty of Engineering and Computing in relation to the Market culture, as indicated by the p-value of 0.05 obtained. Similarly the staff in the Faculty of Health and Life Sciences think that their faculty is placing emphasis on a Market culture compared to the staff in the Faculty of Engineering and Computing. In addition, there is also a significant difference between the Faculty of Health and Life Sciences, and the Business School for the current Hierarchy culture, as indicated by the p-value of 0.01. The staff in the Business School think that their faculty places emphasis on current Hierarchy culture to a greater extent than that perceived by staff in the Faculty of Health and Life Sciences. There is no significant difference between Faculties with regards to current Adhocracy culture and a Clan culture.

There is a significant difference in the staff view between the Business School and the Faculty of Engineering and Computing in terms of the Clan culture in the future. The p-value obtained was 0.05. There is also a significant difference in the staff view between the Faculty of Arts and Social Science, and the Faculty of Engineering and Computing for the Clan culture in the future. The p-value obtained was 0.03. Based on Figure 6.4 it can be argued that the staff in the Faculty of Engineering and Computing think that their faculty emphasises a Clan culture more than the Business School and the Faculty of Arts and Social Science. There is no significant difference

between Faculties with regards to future Market culture, Hierarchy culture and Clan culture.

Figure 6.4: Culture comparison across Faculties at Napier University



However, the comparison between the faculties for their preferred culture shows no significant differences. This indicates that the staff at all four Faculties at Napier University have similar views in terms of the culture that they prefer to be cultivated in all the Faculties in the future and that culture is a Clan culture.

6.6 Culture Profile for Faculties across Different Universities in Scotland

A culture comparison between faculties across different universities in Scotland had been conducted. As the responses from other universities were low the comparison between faculties was the best option. A comparison between the Business Schools at Napier University, Heriot-Watt University and the Edinburgh University is conducted in this section. In addition, a comparison between the Faculty of Engineering at Napier University and the Faculty of Engineering at Heriot-Watt is also presented in this section. This will provide an indication of cultures in these three universities.

6.6.1 Comparison between the Faculty of Engineering at Napier University and Heriot-Watt University

Displayed in Figure 6.5 are the culture profiles for the Faculty of Engineering at Napier University and the Faculty of Engineering at Heriot-Watt University. The Faculty of Engineering's vision at Heriot-Watt University is to meet the needs of the students and their future employers by offering the highest degree of flexibility and choice within the wide range of courses offered. The Faculty enjoys an international reputation for its research and its close connection with the professional and industrial world of science, engineering and technology (Heriot-Watt University, 2005). This suggests that the Faculty of Engineering at Heriot-Watt University will increasingly become market focused in the future.

Figure 6.5 Culture profile at Faculty of Engineering across different universities

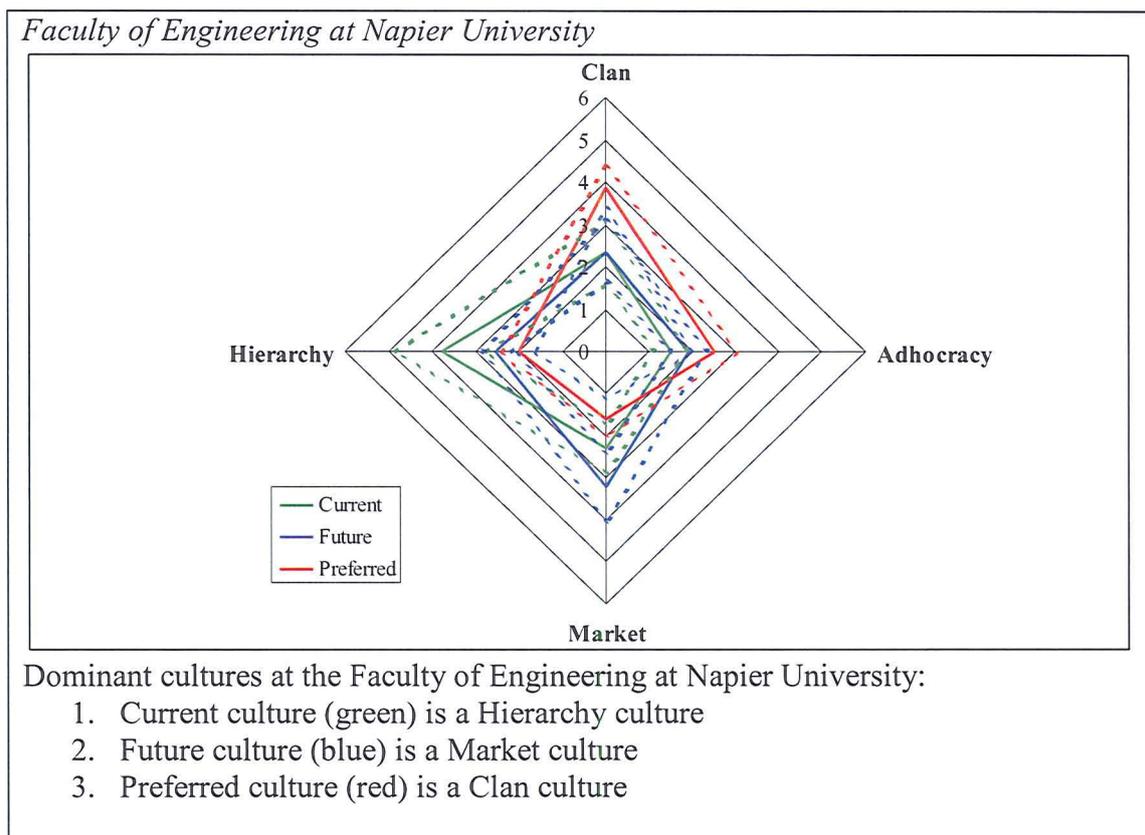
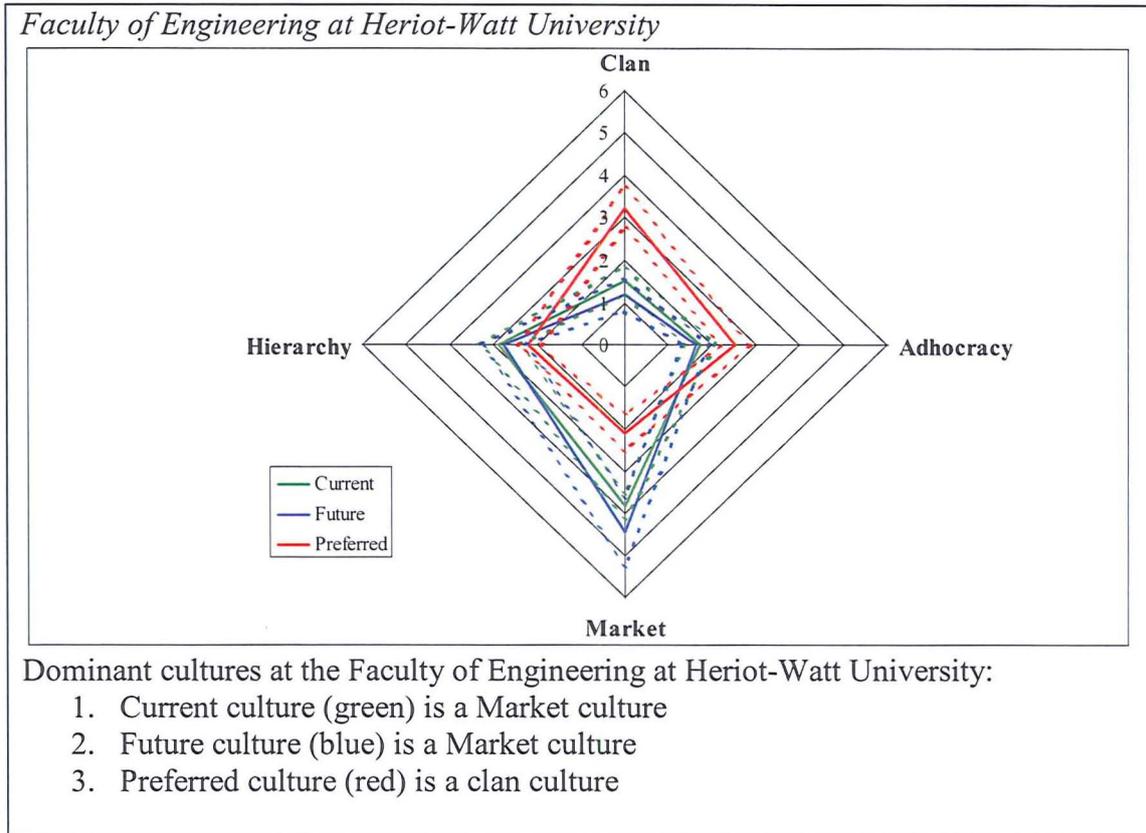


Figure 6.5: continued



The current culture that exists at the Faculty of Engineering at Heriot-Watt is somewhat different to the Faculty of Engineering at Napier University. The Faculty of Engineering at Heriot-Watt University places emphasis on a Market culture. However, the Faculty of Engineering at Napier University places emphasis on a Hierarchy culture.

The Faculty of Engineering at Heriot-Watt have greater collaborations or partnerships with other companies in terms of research contracts. The Faculty of Engineering at Heriot-Watt University is active in a wide range of research areas, supported by strong external funding (Heriot Watt University, 2005). They provide many opportunities for imagination to be stimulated, whether in fundamental knowledge or applying knowledge to real-life problems (Heriot-Watt University, 2005). This is very much in-line with the culture profile for the Faculty of Engineering at Heriot-Watt University. In the future, the staff at the Faculty of Engineering at Heriot-Watt University think that the Faculty will increasingly places emphasis on a Market culture.

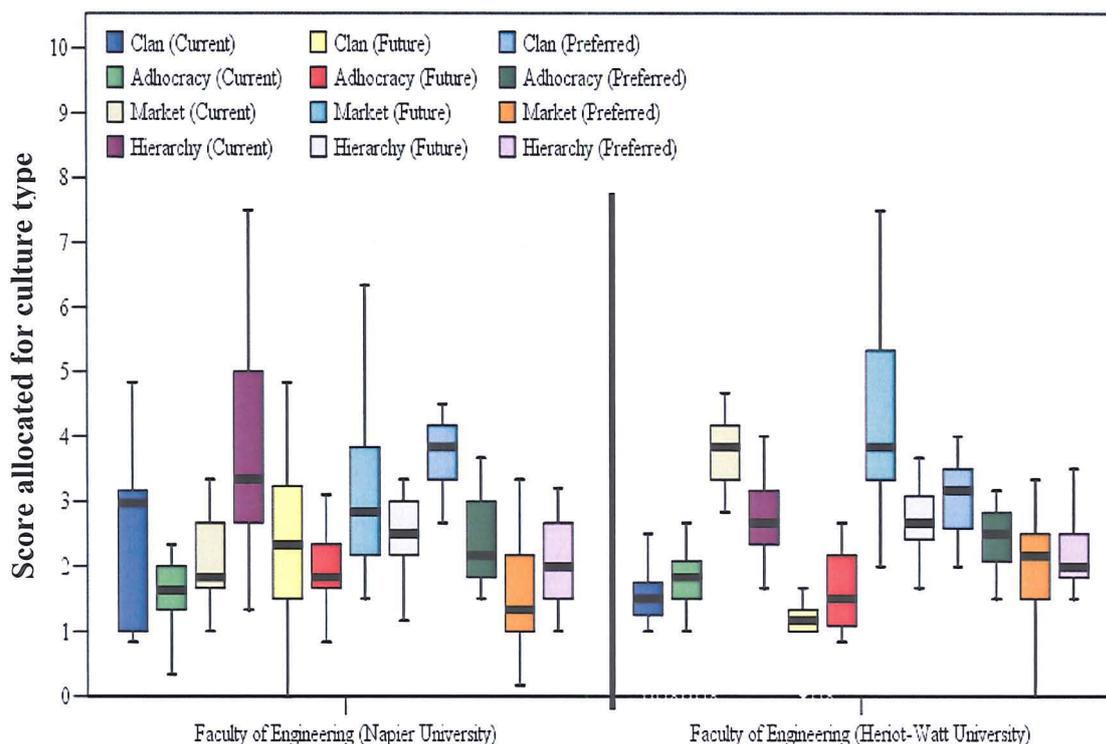
It could be argued that the Faculty of Engineering at Napier University do have private ventures such as conducting Knowledge Transfer Programmes. For example, the School of Engineering within the Faculty of Engineering is engaged in industrial activities and knowledge transfer and is acknowledged as the largest provider of Knowledge Transfer Partnerships in Scotland (Napier University, 2005). This indicates that Napier University should place emphasis on a Market culture. However, the staff think that currently the Faculty places emphasis more on a Hierarchy culture. But the staff think it will change to focus on market orientation in the future.

However, the staff at Faculty of Engineering in both universities prefer a Clan culture. The staff prefer internal integration with high degree of flexibility and discretion. The staff prefer greater human resource development, staff involvement, teamwork and staff empowerment. This may raise potential conflicts with the future culture and what the staff prefer.

Figure 6.6 shows the pattern of staff view in the Faculty of Engineering at both universities. Based on the Figure 6.6 it could be argued that there is some significant difference in staff view in relation to current and future culture at both universities. The staff view on the preferred future culture is quite similar. In order to confirm this pattern of staff views a series of Independent T-test were performed.

The Independent T-test suggests that there is a significant difference between the Faculty of Engineering at Napier University and the Faculty of Engineering at Heriot-Watt University for current Clan culture as indicated by the p-value of 0.04. From Figure 6.6 it clearly shows that the staff in Faculty of Engineering at Napier University think that their faculty emphasises a Clan culture more compared to what the staff in Faculty of Engineering at Heriot-Watt think. There is also a significant difference between these two faculties in terms of current Market culture. The p-value of 0.00 was obtained. It is argued that the staff at the Faculty of Engineering at Heriot-Watt University think that they greatly emphasises on a Market culture compared to the staff view in Faculty of Engineering at Napier University. There is no significant difference between the Faculty at both Universities in regard to the current Adhocracy culture and a Hierarchy culture.

Figure 6.6: Cultures at Faculty of Engineering across different universities



There is also a significant difference in staff view with regard to the future Clan culture and a Market culture. The p-value of 0.01 and 0.04 obtained respectively. The staff in the Faculty of Engineering at Napier University think that in the future their Faculty will continue to place emphasis more on a Clan culture compared to the staff at the Faculty of Engineering at Heriot-Watt University. At the same time, the staff at the Faculty of Engineering at Heriot-Watt University think that their Faculty will continue to place emphasis on a Market culture in the future compared to the what the staff at the Faculty of Engineering at Napier University think. There is no significant difference with regard to the future Adhocracy culture and future Hierarchy culture.

The Independent T-test conducted also suggests that there is no significant difference between the Faculty of Engineering at Napier University and the Faculty of Engineering at Heriot-Watt University with regards to the preferred cultures.

6.6.2 Culture Comparison between the Business Schools at Napier

University, Heriot-Watt University and Edinburgh University

Figure 6.7 shows the culture profile for the Business School at Napier University, the Business School at Heriot-Watt University and the Business School at Edinburgh University. The vision of the Business School at Heriot-Watt University is to provide high quality education and research. It runs an internationally renowned distance learning management education programme; partnership with selected further education colleges in Scotland; and has close links with industry and commerce with staff involved in a range of research and consultancy work (Heriot-Watt, 2005). On the other hand, the vision of the Business School at Edinburgh University is to focus on teaching and research in management and economics. The Faculty is a pioneer in Management Education. The Business School at Edinburgh University's strategic emphases are highly rated research, top class management education at all level, and commitment to corporate engagement (Edinburgh University, 2005).

Figure 6.7: Culture profile for the Business Schools across different universities

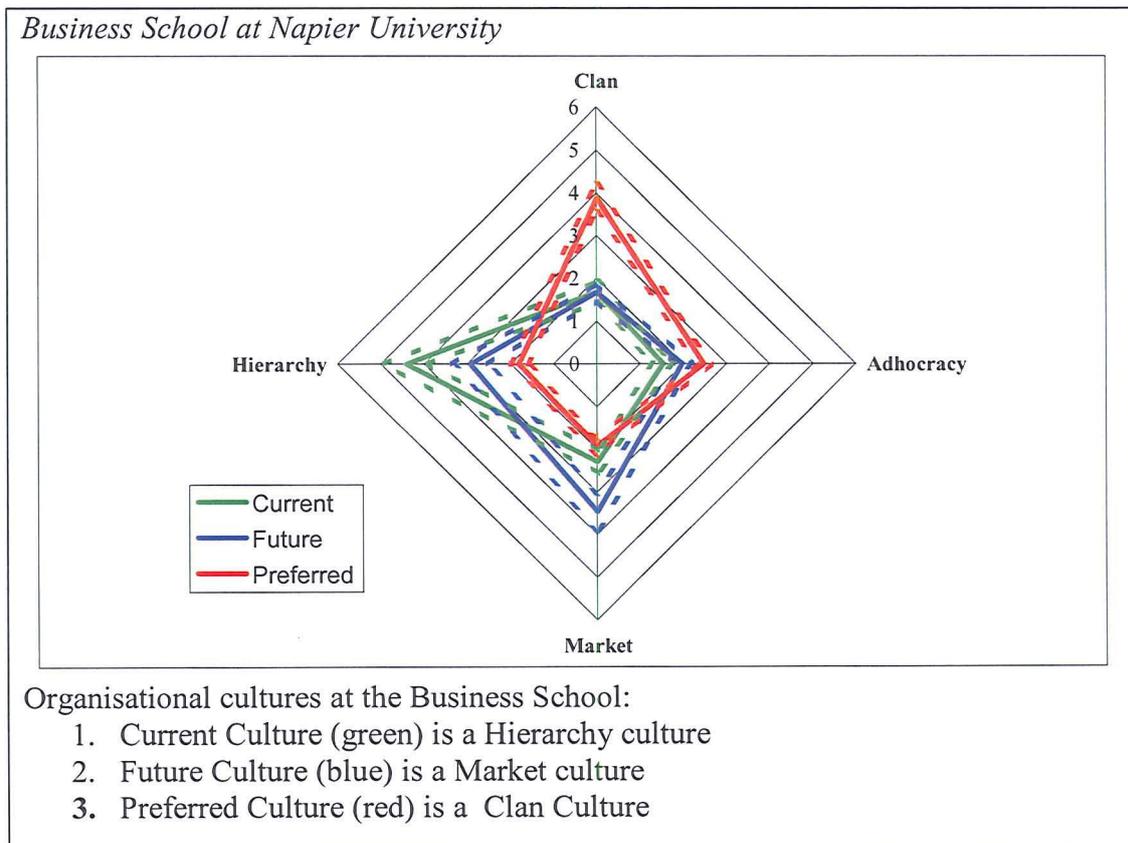
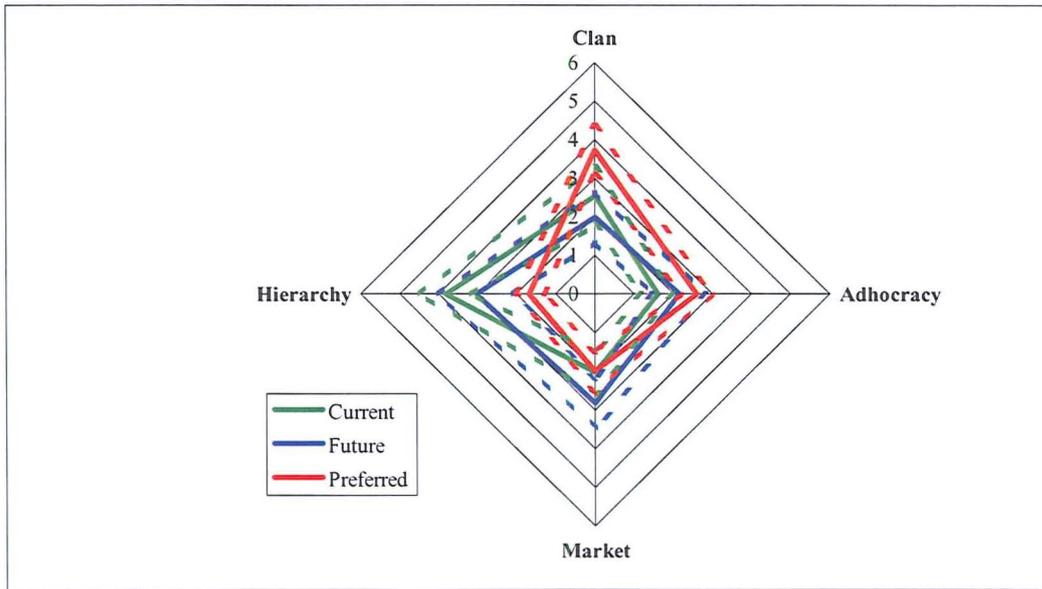


Figure 6.7: continued

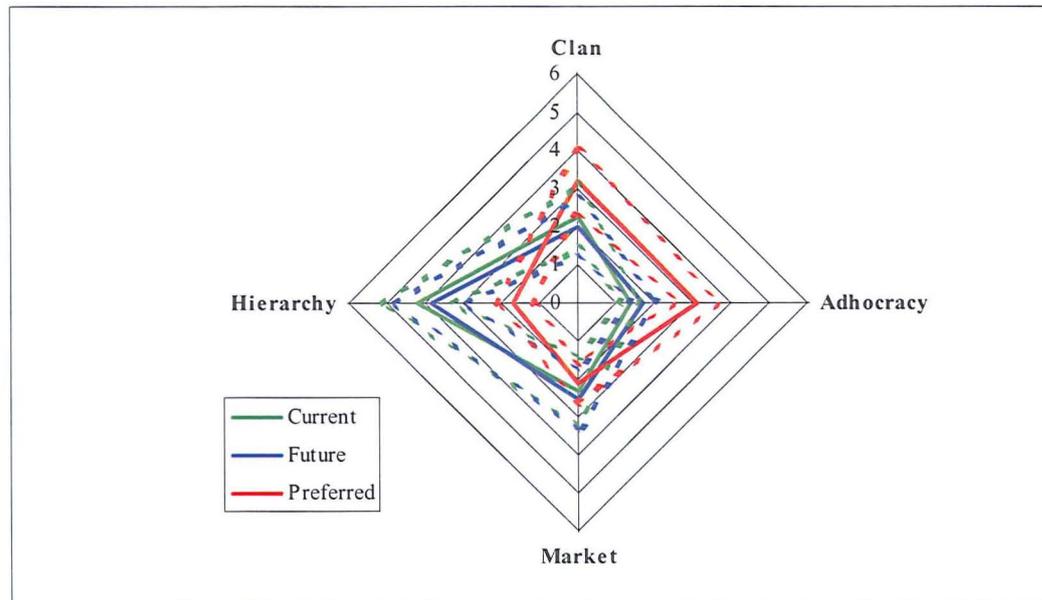
Business School at Heriot-Watt



Organisational cultures at the Business School:

1. Current Culture (green) is a Hierarchy culture
2. Future Culture (blue) is a Hierarchy culture
3. Preferred Culture (red) is a Clan Culture

Business School at Edinburgh University



Organisational cultures at the School of Management and Languages:

1. Current Culture (green) is a Hierarchy culture
2. Future Culture (blue) is a Hierarchy culture
3. Preferred Culture (red) is a Clan Culture (closely followed by a Adhocracy culture)

The current culture at the Business Schools across different universities is a Hierarchy culture. In the future, the staff at the Business School at Heriot-Watt University and the Business School at Edinburgh University think that their Faculty is likely to place emphasis on a hierarchy culture. Focusing on internal maintenance and integration with a need for stability and control will be important. It could be argued that this may not be in-line with their vision statement which indicates that the Faculty should be market focused. However, the staff at the Business School at Napier University think that the focus will likely be on a Market culture. The staff think that the Business School at Napier University will focus on the external positioning of the school with a high degree of stability and control.

However the preferred culture at the Business School at all three universities is a Clan culture. The staff prefer the school to focus on internal maintenance with emphasis on flexibility, concern for people, staff involvement, and greater human resource development.

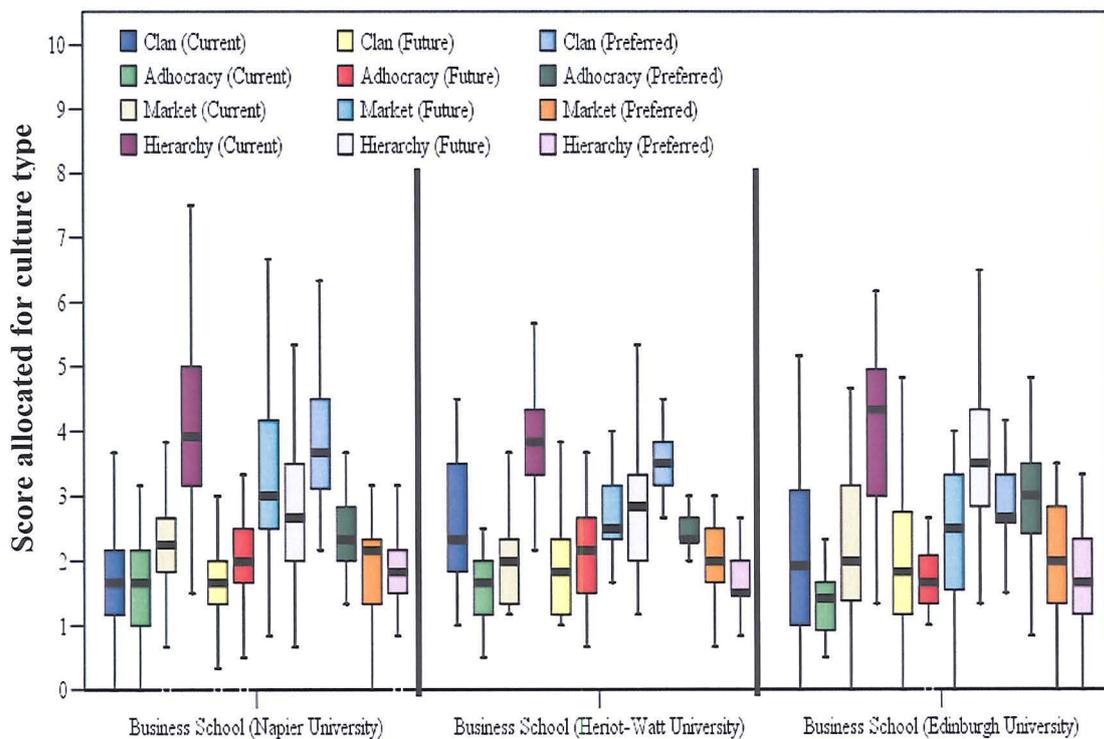
The culture profile at the Business School at all three universities may raise potential conflict in the future. The staff at Heriot-Watt and Edinburgh University think that in the future their Business School is likely to focus on a Hierarchy culture whereas their vision statement indicates they should be market focused. This suggests that the Business School at Heriot-Watt University and the Edinburgh University is likely to increasingly places emphasis on performance measurement, rules and policies. The rules and regulations will be essential for the Business School, but at the same time the staff need to be well informed of what is expected from them and how can they contribute to the School.

As argued earlier the notion of market orientation is generally new for the staff. The staff prefer the Business School at all three universities to focus on internal integration and development of people with an emphasis on flexibility. This could be the sign that the staff prefer the Business School to cultivate greater human resource development programmes, team work and staff involvement in order to achieve the School's vision that it is to be market focused in the future. Therefore it is reasonable to suggest that the Business School should cultivate teamwork, staff involvement and invest in human resource development programmes to facilitate the staff in order to achieve the

Faculty's vision. Emphasising stability and control alone may not facilitate the School to achieve their vision. In addition, the staff may resist complying with the rules and policies in their institution. They may not clearly understand what is expected of them and how to meet that expectation.

A comparison of culture at the Business School across the different universities is shown in Figure 6.8. In addition analysis of variance was performed in order to determine the significant differences of culture amongst Business Schools.

Figure 6.8: Cultures at the Business Schools across different universities



The analysis of variance suggests that there is no significant difference for the current and future cultures in the Business Schools across these three universities. However, there is a significant difference between the Business School at Napier University and the Business School at Edinburgh University in relation to preferred Adhocracy culture as indicated by the p-value of 0.02. The staff in the Business School at Edinburgh University prefer their faculty to place greater emphasis on Adhocracy culture in the future compared to the staff in the Business School at Napier University.

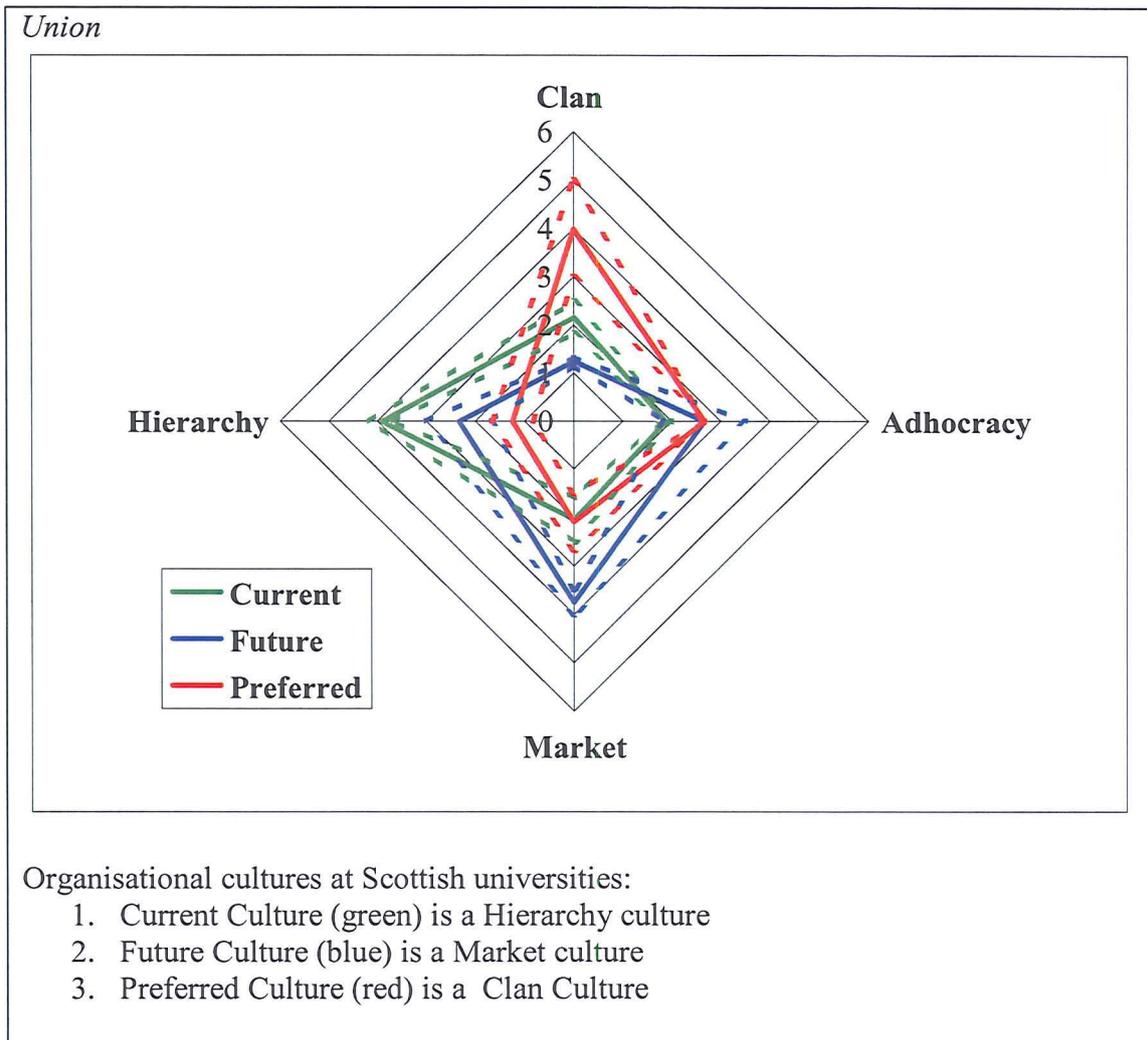
There is no significant difference between the Business School at Heriot-Watt and Business School at Napier University with regard to the preferred cultures.

6.7 Union View on the Culture at Napier University

Two Trade Union representatives at Napier University were also included in the organisation culture survey. These two union representatives are from UNISON (the Trade Union for people delivering public services) and EIS-ULA (University lecturers association). They were asked to respond to OCAI as the representatives at Napier University. It should be acknowledged that the finding only provides an indication of cultures that exist in Napier University as only two respondents were included.

Figure 6.9 shows the culture profile that was based on the two union representatives view. The culture profile shows a similar pattern to most of the Faculties surveyed at Napier University. This supports the initial finding of organisational culture that exists at different faculties within Napier Universities. Therefore, it could be argued that the findings at the Faculties surveyed at Napier University could represent the overall culture at Napier University.

Figure 6.9: Culture profile for Napier University (based on two trade union representatives views)



6.8 Summary of the Findings

The culture profile presented using the Competing Values Framework suggests that the organisational cultures at the surveyed faculties at Napier University, Heriot-Watt University and Edinburgh University were similar. These faculties were characterised by competing values. Currently, the majority of the Faculties surveyed place great emphasis on a Hierarchy culture. This suggests that the Faculties are more concerned with internal integration such as unity of processes, emphasis on measurement and documentation, managing information, continuous improvement, benchmarking, maintaining objectives, analysing data and carefully monitoring progress, with a need for stability and control. It is argued that the stereotype within this culture is that in order to secure the vision of the Faculty and the University, the management need to be internally focused with high degree of control.

At the same time all the Faculties surveyed also place emphasis on other types of cultures such as Market culture followed by the Clan and Adhocracy culture. This suggests that a combination of cultures will facilitate the development of the Faculties. This means an organisation does not emphasise only one type of culture but a combination of cultures in order to secure their vision in the future.

The staff of all the Faculties surveyed think that a Market culture will have most emphasis in their Faculties in the future. This means the faculty will be focusing on external positioning and differentiation but with a high degree of stability and control as indicated by the Competing Values Framework. It could be argued that the faculty will be a result-oriented organisation, and the leadership will be characterised by hard-drivers, tough and demanding. The success will be defined in terms of outpacing competition and winning the market share. The staff think that the long-term focus will be on competitive actions and achievement of measurable goals and targets. Identifying the future trends and competing for market share and growth may be the main concern. This will be inline with the faculties' vision to be market oriented in the future as indicated in their vision statement. It is likely that high demands will be placed on the staff to take competitive action on whatever they do and achieve the goals that have been set. The stereotype within the Market culture could be that in order to foster market orientation, the leadership in the faculty surveyed is likely to

place emphasis on a high degree of control and close monitoring. This suggests that staff are likely to be governed in a bureaucratic environment.

However, the staff at all the four Faculties surveyed prefer a Clan culture. This may raise potential culture conflict between the future culture and the preferred culture in their organisation. The staff prefer a culture that emphasises on teamwork, staff involvement in decision making, high trust, staff empowerment, leaders to guide rather than to direct, and greater human resource development programmes. Generally the staff may not have an idea on how to be market focused. They may not have knowledge on the quality agenda in their faculty. For example, the academic staff from the Faculty of Engineering or the Faculty of Arts and Social Science may not have knowledge of what is expected from them in terms of quality requirements. Therefore, these staff will benefit from greater human resource development programmes. In addition, the academic staff from the Business School may have reasonably good knowledge of how an organisation should operate. Therefore, these staff may prefer greater trust and staff empowerment. All these suggest that a university is a place where there is a combination of expertise in individual areas. Hence, the management should recognise and include a deeply ingrained people-oriented philosophy that is summarised as “respect the individual” (McGovern and Hope-Hailey, 1997). This, combined with an apparent lack of rigid command, helps to produce a sense of family feeling within the organisation (McGovern and Hope-Hailey, 1997). These traits are part of a highly successful business philosophy of generating productivity through people (Peters and Waterman, 1982).

A Hierarchy culture may be beneficial to the universities in achieving stability and consistency. Due to the implications of funding arrangements, the universities may be subject to close monitoring of the progress and predictability of their performance. This can be the main current concern for the management team in a university. The higher education institutions are imposing formal rules and policies and the staff are expected to comply with these rules and policies. The leadership in the Faculties’ surveyed do not want anything to go wrong which could affect their institution. However, it could be argued that a Hierarchy culture may respond slowly to pressures facing higher education due to roadblocks and red tape. On the other hand, a Market culture is characterised by the manipulation of opportunities, winning the market

place and satisfying the customers. These may raise critical questioning among the academic staff in universities on how to achieve the market orientation with a high degree of bureaucracy. Perhaps the roadblocks, red tape and bureaucracy will establish a sense of controlling environment for the academic staff and this may dampen their motivation to be market oriented.

In the knowledge-based economy higher education is increasingly being linked to the economic growth of a nation. The universities are increasingly seen as a critical vehicle for the creation of knowledge to facilitate economic activities. Perhaps the universities need greater cross functional teamwork, increased two-way communication, greater involvement of staff in decision making and massive staff development programmes in order to develop creative and innovative ideas on how to deliver the knowledge creation and transfer. Perhaps a greater emphasis on a Clan culture may facilitate this development and consequently secure the vision of the university surveyed.

Perhaps a greater emphasis on a Market culture with a need for stability and control will not be able to secure the vision of the Scottish universities surveyed. The staff may not be willing to meet the requirement of a Market culture. The academic staff see higher education institutions as the providers and promoters of learning (Triller, 2004). Therefore, a management model that focuses on external positioning with a need for stability and control will not be directly beneficial for universities. Perhaps in order for the universities surveyed to expand and flourish in the competitive marketplace they need to embrace greater human resource development, staff involvement in decision making, trust and commitment, teamwork and staff empowerment. Attention should be paid to the structures, systems, as well as cultures and the individual people which make up the institution.

In order to achieve these, universities will require strategic leadership and a commitment from senior level management on how to create a common sense of direction in university and enthusiasm to progress towards it. Because the pressures facing Scottish higher education are occurring incrementally and in different ways across different universities, the leaders are uncertain about how to manage the situation (Bess and Goldman, 2001). This suggests that the university should focus

more on cultivating cultures that emphasise greater human resource development, staff involvement in decision making, trust and commitment, and teamwork between the management and the staff in university. Perhaps an emphasis on a Clan culture could facilitate the staff to be market focused and consequently secure the visions of the chosen Scottish universities. Perhaps a people-oriented approach should be essential for universities in the future. Therefore, managerial intervention that encourages development, that orients rather than orders, that provides nourishment rather than blueprints is needed in chosen Scottish universities (Cohen and Prusak, 2001).

6.9 Discussion

Based on the literature of organisational culture, it is argued that there is no single definition of organisational culture which is widely accepted. Organisational culture is the intangible aspect of an organisation such as the feeling towards the way the organisation operates. Therefore, measuring intangible aspects of an organisation could be very controversial and proven to be difficult to measure using quantitative methods. The interpretation of the results needs to be performed with caution.

The Organisational Culture Assessment Instrument (OCAI) can be used to measure culture. However, there are some difficulties that should be noted. These difficulties are as follows:

1. The tool has been developed in America. As such, it has some influence of American “language”. We tried to make some minor modification in order for the tool to be suitable for Scottish higher education. However, there are some meanings that still emphasise the American “language” that can be interpreted differently in Scottish higher education environment.
2. The tool has been validated largely in corporate organisations. There were some studies that attempt to use the tool in higher education environment, but it was in America. Thus, the findings can be valid considering the American higher education environment which is similar to other corporate organisations in America.

3. The respondents participated in the surveyed universities had difficulties with the idea of scoring. They also had difficulties in interpreting the questions even after slight modifications in terms of language. This shows that the tool proved to be difficult to adopt in Scottish higher education.

In order to see if the data obtained in the survey is adherent to the culture types, reliability test was performed using Cronbach's Alpha as shown in Table 6.4. The Cronbach's Alpha suggest that the tool measured the four culture types reliably.

Table 6.4: Reliability test using Cronbach's Alpha

	Current	Future	Preferred
Clan	0.795	0.816	0.615
Adhocracy	0.644	0.624	0.54
Market	0.803	0.831	0.688
Hierarchy	0.888	0.819	0.643

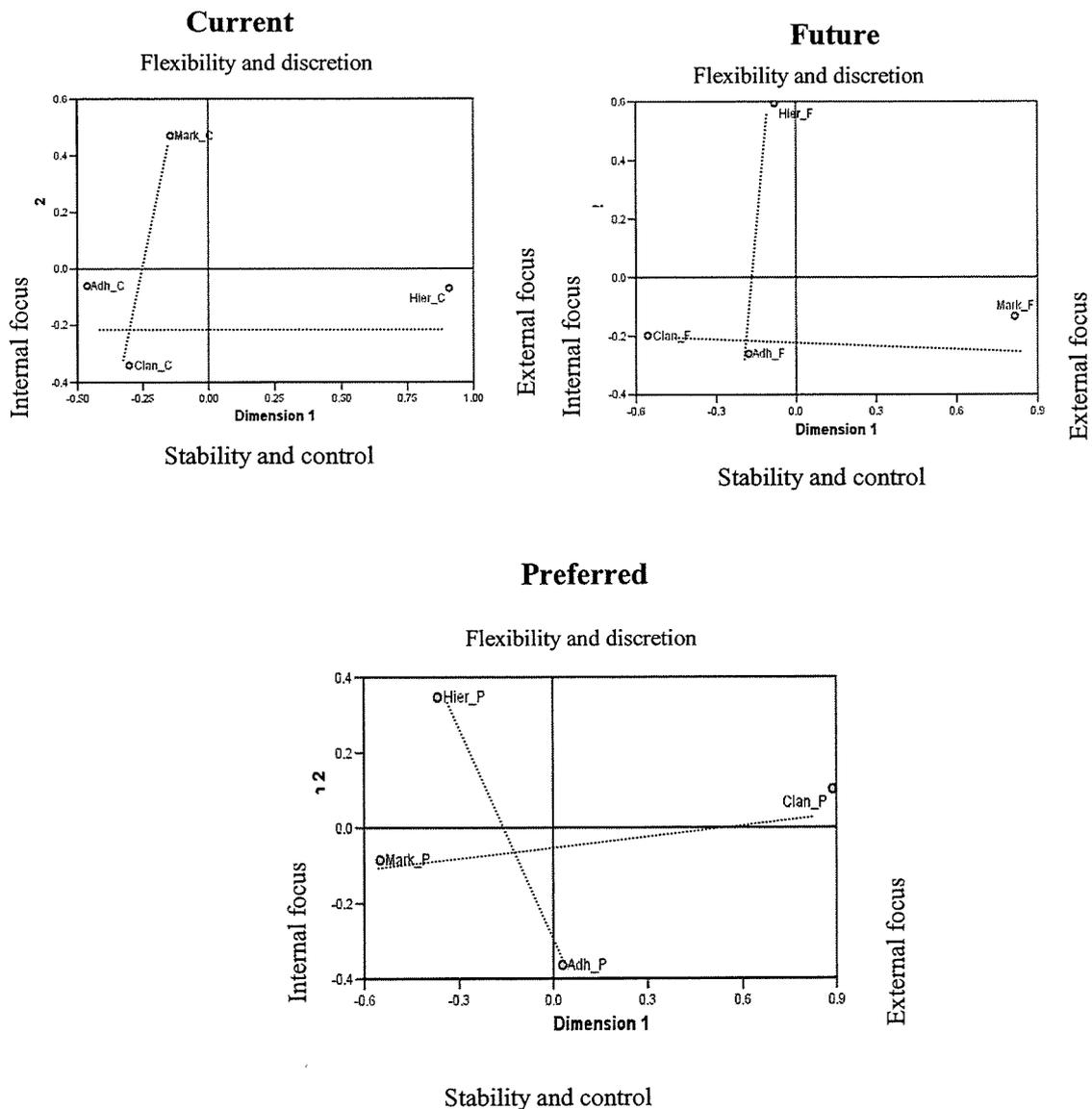
The results obtained from the survey may raise concern on respondent bias. Firstly, it may raise concern on gender biasness. However, the results obtained from Faculty of Engineering with majority respondents being males also show similar culture profile. Perhaps this provides some evidence to claim that there was no gender biasness in the results obtained. Secondly, it raises the question whether the view on culture is dominated by administrators view rather than academics due to the high proportion on administrators in the sample. I have carried out the comparison between the academics view and administrators view. The result shows that the academics and administrators view are broadly similar.

In addition, the presentation of the culture profiles using the Competing Values Framework has been validated. For this purpose we have used the Multidimensional Scaling. Multidimensional scaling is the problem of representing "n" objects geometrically by "n" points, such that the inter-point distances correspond in some sense to experimental similarities or dissimilarities between the objects (Manly, 2005). Based on the Multidimensional Scaling it is suggested that the presentation of the culture profiles using the four quadrants as suggested in Competing Values Framework could be misleading and consequently the finding could be misinterpreted (Manly, 2005). However, the analysis using Multidimensional Scaling suggests that

culture evolve within these four quadrants as shown in Figure 6.10 for current, future and preferred culture.

These plots show that in terms of position in relation to the axis flexibility and discretion to stability and control and internal focus to external focus, the culture types do not remain control in one quadrant but change between the quadrants for the current, future and preferred views. This means that culture cannot be regarded as static phenomena. However, the multidimensional scaling confirms that market and clan, and adhocracy and hierarchy lie on axis system and are at the extremes of these axes. This to an extent gives validity to the Competing Values Framework approach.

Figure 6.10: Evolution of culture at different quadrants



6.10 Conclusion

The Scottish universities are central to the growth in economy and society. If they are to contribute to the economy and society, the universities should continue to embrace values such as collegiate mode of operation. The universities should invest to develop effective leadership and management. Therefore, it is reasonable to suggest that transformational leadership is essential to develop, support and enhance a Clan culture in university. The commitment of managers and staff is the key to achieve a Clan culture in university. However, establishing the commitment of managers and also staff may be difficult. Perhaps, both the managers and the staff may resist change. In addition, the effort will be cost intensive both in terms of time and financial resource. Constant information gathering on organisational culture is essential to monitor the culture change activities. A contingency fund should be formed in order to invest in human resource development programmes to facilitate the managers and the staff to change through the people-driven approach and consequently improve productivity.

The Competing Values Framework (CVF) was applicable in demonstrating the information obtained from the Organisational Culture Assessment Instrument. The application of the Organisational Culture Assessment Instrument (OCAI) in this research captured the information to indicate the cultures within the chosen faculties at Scottish universities. However, the generalisation of the findings to the individual university and to the whole higher education sector is likely to be considered limited. The responses obtained from these three higher education institutions were low. Therefore, it is difficult to draw significant conclusions from a relatively small sample. It is likely to provide views on the subcultures rather than the dominant culture at these three Scottish universities. Thus, the findings only give an indication of the cultures that exist at each Scottish university. In the future, additional methods such as document analysis and observation techniques (sitting in at meetings) should be adopted to facilitate the researcher to immerse in the organisation in order to uncover the cultures that characterise these Faculties.

The CVF and OCAI will provide required information on the current, future and preferred culture. This information will provide some suggestion on appropriate culture that need to be cultivated to achieve the future direction of university. To

facilitate the development of appropriate culture, it is proposed that tools such as European Foundation Quality Management (EFQM) model could be used to focus activities. This will be discussed in Chapter Eight. However, the development of appropriate culture should be based on the likely future of Scottish higher education. Thus, the likely future of Scottish higher education will be determined in the following chapter.

CHAPTER SEVEN

THE LIKELY FUTURE OF SCOTTISH HIGHER EDUCATION

7.1 Introduction

The aim of this chapter is to forecast the likely future of Scottish higher education. The current pressures facing higher education such as demographic pressures, technological, economic, funding pressures and social inclusion will present significant challenge for higher education. The secondary data on the pressures facing universities suggest that the universities need to be more competitive, flexible and efficient. In addition to this, empirical data had been collected from the surveys of student expectations and satisfaction at Napier University, given that these students will be members of knowledge-based economies. Analysis of this suggests that generally students seem to be content with the current higher education provision. They do not seem to have a strong view with increasing the four year undergraduate programmes to a longer period. The students do not seem to be content with the massification of higher education that includes the distance learning delivery. All these raise fundamental questions affecting the future of Scottish higher education.

In order to forecast the future, key stakeholders in the higher education sector were interviewed. The areas of questioning were on the purpose of higher education; adaptation to pressures, namely, demographic change, changing student body, economic change, technological change, social inclusion, ageing academic workforce, and globalisation; and finally product and teaching styles to take account of diverse student population.

7.2 Methodology

The Delphi Method was employed in order to determine the likely future of higher education with specific reference to Scotland. This approach to forecasting was developed by Helmer (1966) and others at the Rand Corporation, as a means of extracting opinion from a group of experts. The Delphi method is used to generate views rather than test hypotheses, and to map out a field rather than to test relationships within it (Kaynak and Macaulay, 1984). The method can be explained by the following three steps:

Step1: A group of experts was selected from the pool of stakeholders in higher education. The group of experts consist of the senior managers within higher education institutions, senior academic staff in higher education institutions, senior managers in the Scottish Funding Council for Further and Higher Education, senior managers at Scottish Enterprise and the Scottish Leadership Foundation, senior manager in Universities Scotland and in the Scottish Executive, and senior managers in industries, namely from the National Health Service, the manufacturing sector, and financial institutions.

Step2: The experts were approached individually and were questioned based on the semi-structured questionnaire in order to obtain their views on the likely future of higher education in Scotland. These sessions were more of a discussion than rigid semi-structured interviews.

Step3: The responses were then analysed and a consensus on the future of higher education was gleaned. This was then fed back to participants. The feedback obtained shows that generally the identified stakeholders agreed with the findings.

Further probing was also carried out for any particular questions that required further clarification and confirmation of ideas given. The questions were of a general nature and did not pertain to any individual institution. A copy of the questions discussed displayed in appendix 6. The interviews were recorded using a digital recorder and downloaded to a PC. The interviews were then transcribed.

7.3 Sample

The samples were chosen from the group of stakeholders in higher education. The identified stakeholders in higher education are students, government, development agencies, funding council, employers, and staff within higher education institution. The student group was not included in the Delphi study. The student group was surveyed earlier to ascertain their expectation of higher education. Thus, the government bodies represented by the Scottish Executive and the Universities Scotland; development agencies such as the Scottish Enterprise and the Scottish Leadership Foundation; the Scottish Higher Education Funding Council; higher education institutions such as Napier University, Stirling University and Indiana University; employers such as the National Health Service, the Royal Bank of Scotland Plc. and Solectron Scotland Limited, were chosen.

The selection of the respondents was based on the person's post and job responsibility within their organisation. The identified respondents were contacted by mail to explain the nature of the research and permission obtained in order to interview them. Follow-up phone calls were made to arrange the interview appointments. Approximately 30 respondents were identified, but only 21 agreed to be interviewed. Appointments were made with the secretary of the respondents via telephone. A description of the respondent's post and their department is presented in Table 7.1. From this it is recognised that the majority of the respondents were the senior managers from the universities. However, it should also be noted that the other senior managers are fairly influential people to higher education as well.

Table 7.1: Information about the respondents

Organisation	Position	Department
Employer		
National Health Service	Training Manager	Practical Research and Development
The Royal Bank of Scotland	Learning Consultant	Human Resource Development
Solectron Scotland Ltd.	Director of Quality	Quality
Funding Council		
The Scottish Funding Council	Deputy Director	Learning and Teaching
The Scottish Funding Council	Assistant Director	Leaning Policy and Strategy
Government Body		
Universities Scotland	Public Affairs Officer	Public Affairs (Higher Education)
Scottish Executive	Head of Division	Higher Education
Development Agency		
Scottish Enterprise	Chief Executive	Operational and Corporate
Scottish Enterprise	Director	Strategic Research and Learning
Scottish Leadership Foundation	Chief Executive	Scottish Leadership Foundation
Higher Education Institution		
Napier University	Principal	Napier University
Napier University	University Secretary	Napier University
Napier University	Head of Planning	Planning and Intelligence
Napier University	Dean	Business School
Napier University	Dean	Engineering and Computing
Napier University	Dean	Arts and Humanities
Napier University	Director	Human Resource
Napier University	Head of Pay and Reward	Human Resource
Napier University	Director	Lifelong Learning
Stirling University	Professor	Institute of Education
Indiana University	Professor	Educational Psychology/ Instructional Systems

7.4 Interview Findings

The respondents selected were interviewed and each interview lasted for an average of 60 minutes. The interviews were then transcribed and key phrases were identified for each answer given. These key phrases contained approximately five to ten words. However, for some of the questions the key phrases contained only around three words. These key phrases were then transferred onto post-it notes as shown in Figure 7.1. These post-its were coded using numbers in order to identify the respondent and

the organisation they represented. A total of 1081 post-its were generated and used during the analysis.

Facilities were organised to arrange all the post-its as shown in the Figure 7.1. The post-its were organised in to thirteen columns and twenty one rows. The thirteen columns represent the identified issues over the next ten years. As the questions were semi-structured the issues were predetermined based on debates from government publications (Dearing, 1997; DfES, 2003). The twenty one rows represent the number of respondents participating in the interview. Each respondent was allocated one row and was grouped by the respondent type in order to observe their views on the issues in higher education across all interviews and respondent types.

Figure 7.1: The generated post-its notes for the analysis



The issues that were discussed during the interview were purpose and type of higher education; strengths, weaknesses, opportunities and threats; promoting and inhibiting forces of higher education; competition; demand; demographic change; lifelong

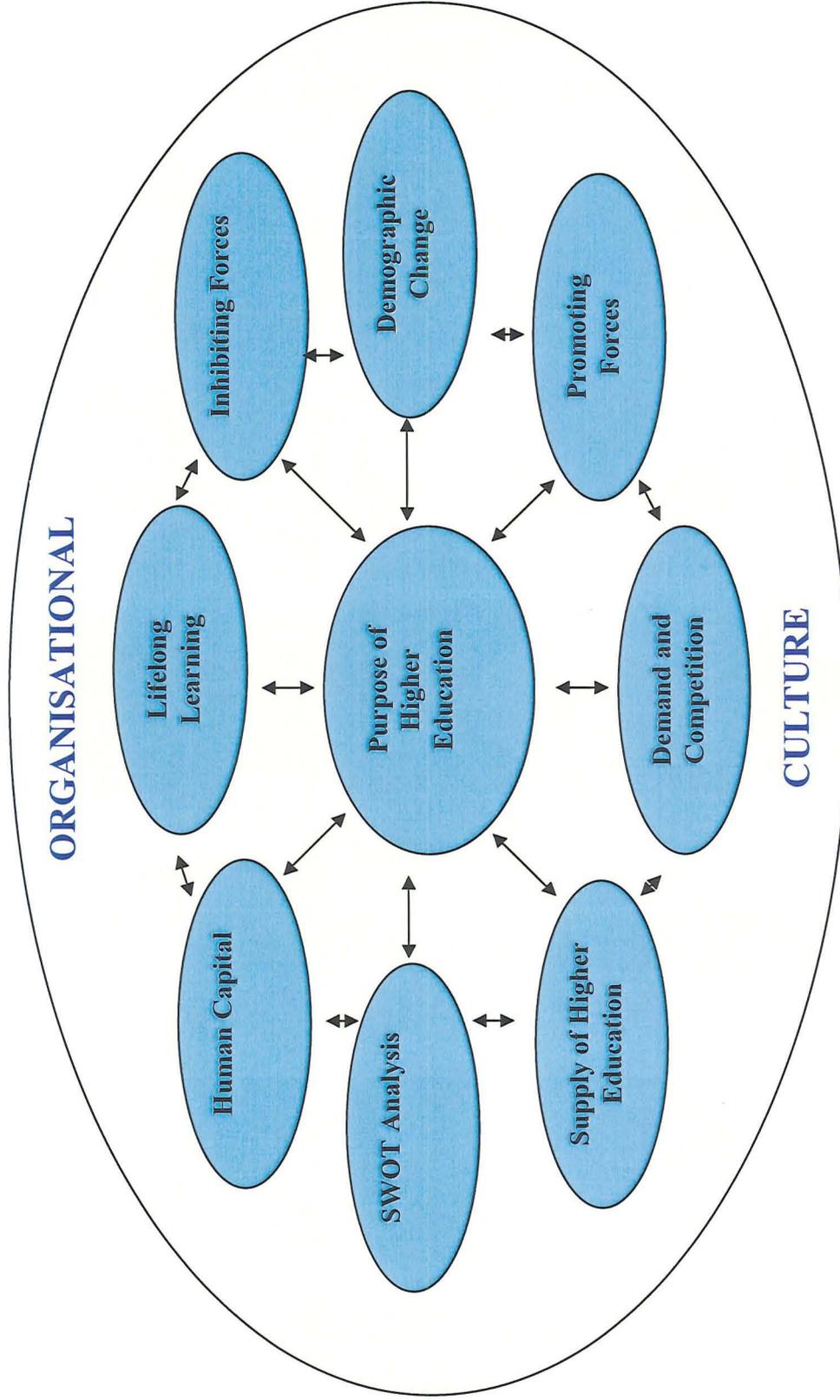
learning; human capital; supply of higher education; technology; social inclusion; globalisation; and organisational culture of higher education. The frequency of responses obtained for each of the issues considered during the interview by respondent type, are shown in Table 7.2.

Table 7.2: Frequency count for responses obtained by respondent type

	INDUSTRY	SCOTTISH FUNDING COUNCIL	GOVERNMENT	DEVELOPMENT AGENCIES	HIGHER EDUCATION	Total
Purpose of Higher Education	16 (12%)	15 (14%)	15 (14.4%)	11 (6.5%)	52 (9.4%)	109 (9.8%)
New types of University	0 (0%)	3 (2.8%)	1 (0.9%)	2 (1.2%)	10 (1.8%)	16 (1.5%)
Strengths	6 (4.5%)	2 (1.9%)	1 (0.9%)	3 (1.8%)	9 (1.6%)	21 (1.9%)
Weaknesses	9 (6.8%)	0 (0%)	2 (1.9%)	4 (2.4%)	15 (2.7%)	30 (2.7%)
Opportunities	10 (7.5%)	2 (1.9%)	1 (0.9%)	7 (4.1%)	24 (4.3%)	44 (4%)
Threats	6 (4.5%)	3 (2.8%)	1 (0.9%)	3 (1.8%)	13 (2.4%)	26 (2.4%)
Promoting Forces	0 (0%)	2 (1.9%)	5 (4.8%)	3 (1.8%)	10 (1.8%)	20 (1.8%)
Inhibiting Forces	0 (0%)	1 (0.9%)	4 (3.8%)	3 (1.8%)	10 (1.8%)	18 (1.6%)
Competition	0 (0%)	5 (4.7%)	7 (6.7%)	12 (7.1%)	18 (3.3%)	42 (3.8%)
Demand	4 (3%)	5 (4.7%)	6 (5.8%)	4 (2.4%)	15 (2.7%)	34 (3.1%)
Demographic change	18 (13.5%)	18 (16.7%)	9 (8.6%)	20 (11.8%)	92 (16.6%)	157 (14.2%)
Lifelong Learning	11 (8.3%)	4 (3.7%)	10 (9.6%)	17 (10.1%)	40 (7.2%)	82 (7.4%)
Human Capital	16 (12%)	10 (9.3%)	21 (20.2%)	43 (25.4%)	67 (12.1%)	157 (14.2%)
Supply of Higher Education	11 (8.3%)	11 (10.2%)	0 (0%)	5 (3%)	45 (8.1%)	72 (6.5%)
Technology	4 (3%)	4 (3.7%)	3 (2.9%)	7 (4.1%)	38 (6.8%)	56 (5.1%)
Social Inclusion	0 (0%)	5 (4.7%)	3 (2.9%)	4 (2.4%)	16 (2.9%)	28 (2.5%)
Globalisation	5 (3.8%)	6 (10.2%)	0 (0%)	5 (3%)	42 (7.6%)	58 (5.2%)
Organisational Culture	17 (12.8%)	11 (10.2%)	15 (14.4%)	16 (9.5%)	52 (9.4%)	111 (10%)
Total	133 (100%)	107 (100%)	104 (100%)	169 (100%)	568 (100%)	1081 (100%)

All the issues considered are inter-related to one another. A framework was developed as shown in Figure 7.2 and this was used to cross examine those factors in order to determine the likely future shape of higher education.

Figure 7.2: Framework on the likely future of higher education



7.5 The Future Purpose of Higher Education and the Rise of Human Capital

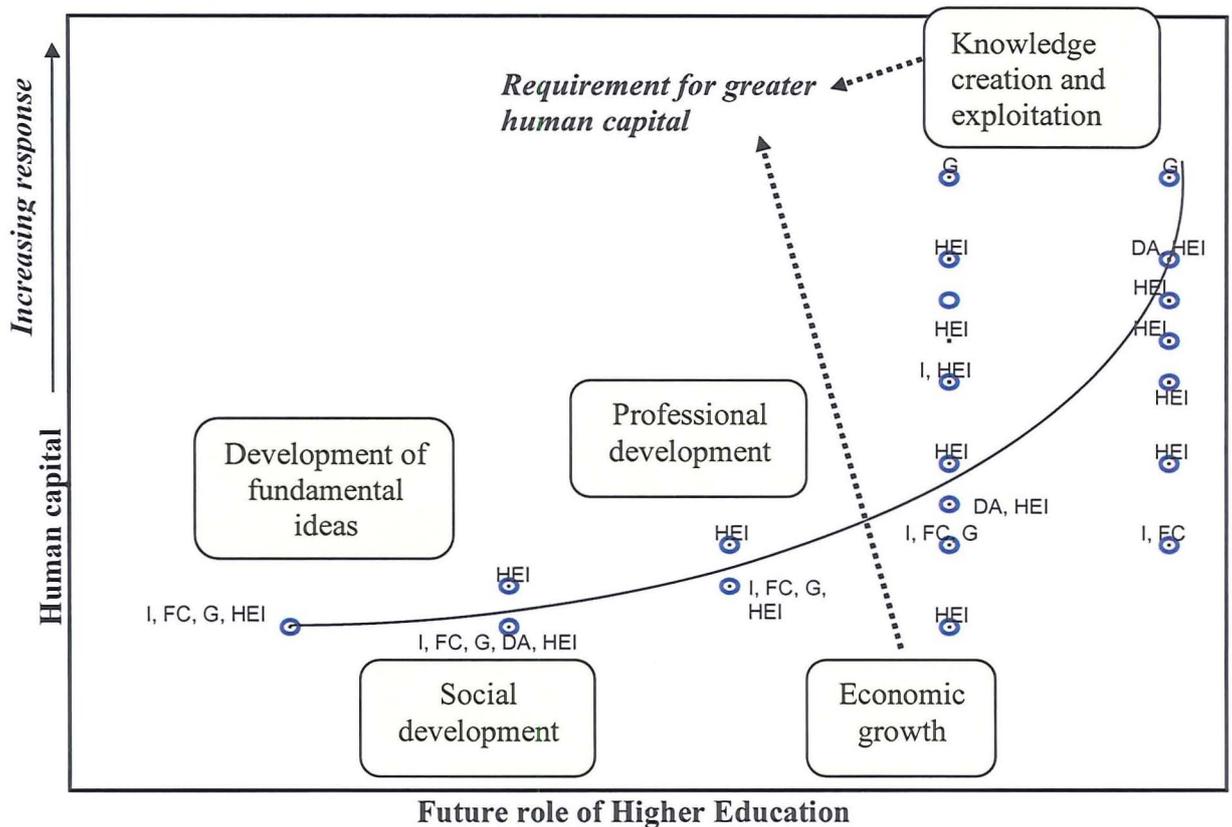
The respondents were asked to list the purpose of higher education in the past and the future purpose over the next 10 years. Generally the majority of the senior managers have said that in the past higher education existed to enable people to develop fundamental ideas, social development and professional development in order to become a professional such as a doctor or lawyer. As quoted by a senior manager from industry *“during the industrial revolution higher education was expected to improve the economy”*. According to the senior manager from the Scottish Higher Education Funding Council *“higher education has a large emphasis on the economic impact of a graduate”*.

In recent years, higher education is increasingly being related to economic development. As quoted by the senior manager from the government *“making sure that there is enough graduates with appropriate skills for the knowledge-based economy”*. It could be argued that the knowledge-based economy may need a highly educated workforce to provide creative solutions for the service industries and this may continue in the future. According to a senior manager from a university *“in the future there is likely to be greater emphasis on preparing individuals to enter the knowledge-based economy”*. This suggests that economic development will require people with higher qualifications. Another senior manager from a university stated that *“greater emphasis on knowledge creation and its exploitation”*. This suggests that higher education will increasingly become a business to generate wealth.

The responses obtained are displayed as a schematic diagram in order to illustrate the rise of human capital. The responses obtained from each respondent on the purpose of higher education was cross checked with the responses obtained for the factors that indicated the importance of human capital. The number of responses obtained for the factors that indicated the importance of human capital was used as a reference for the strength in the respondents view. The higher the number of responses given on the factors indicates the greater importance of human capital. Thus, Figure 7.3 shows that the importance of human capital with reference to intellectual capital may increase exponentially in the

future. This finding further supports Florida's (2002) argument on the rise of human capital with reference to creative capital. This is likely to continue in the future in conjunction with the knowledge-based economy.

Figure 7.3: The role of higher education and the growth in the importance of human capital (Schematic Diagram)



**I = Industry FC = Scottish Higher Education Funding Council G = Government
 DA = Development Agency HEI = University**

The respondents, particularly the senior managers from the university (HEI), government (G) and the Scottish Higher Education Funding Council (FC), fully agreed that higher education needs to increase human capital for the knowledge-based economy. It can be argued that in order to increase human capital, the Scottish higher education sector will need to be more flexible. As quoted by one of the senior managers from industry “the

higher education sector needs a flexible approach in terms of teaching and learning". Higher education may have to move beyond the traditional concept of teaching and learning to a more flexible approach such as workplace learning. The senior manager from the development agency quoted that *"I fully support the need for work place learning in the future"*.

New products that are suitable for the knowledge-based economy and products that are up-to-date are required in higher education. As quoted by the senior managers from the development agency *"universities have to continuously update their products and quickly bring them to the market"*. Similarly the senior manager from the university indicated that *"the life cycle of a product shortening and this is same for education"*. In addition, a senior manager from the university stated that *"the knowledge that was gained within five years will become out of date and people need to upgrade them"*. This suggests that lifelong learning will play an important role in contributing to knowledge creation and its exploitation, and consequently to enhance the human capital. As stated by senior manager from the university *"the need for continuously upgrading knowledge will require people to engage in lifelong learning"*. However, it is argued that there will be a requirement for people to engage in learning throughout their life but not necessarily pursuing higher education.

7.5.1 Challenges Faced by Higher Education in order to Increase Human

Capital

The assessment processes within higher education will greatly challenge the development of new teaching and learning activities such as workplace learning. The written examination or coursework may not be appropriate for assessing workplace learning. According to a senior manager from industry *"there will be a need for a holistic approach to assessing workplace learning which includes assessing the practical skills acquired and on the job learning"*. Perhaps in order to determine the holistic approach for assessing students' performance in workplace learning the staff will be required to try many different approaches. The universities should consider how staff development will

enable the academic staff to identify new approaches for workplace learning assessment methods. This human resource development will require additional financial resource.

The student staff ratio has increased due to the massification of higher education. In addition, there is a need to recruit students from overseas to accommodate the likely shortfall of student numbers as a consequence of demographic change. As quoted by the senior manager from the university *“recruit more students from the European Union, China, India and other Far East countries”*. It is argued that the academic staff will be dealing with a diverse student body in the future. The morale of the academic staff to accept the massification of higher education may present a major challenge for the universities.

In addition, the academic workforce is ageing. For example in Scotland the average age of a member of academic staff is 50. As quoted by the senior manager from the funding council *“there was a large expansion of academic staff numbers in universities 20 years ago and all these people are getting older and soon will be retiring”*. There is a need to recruit younger academic to the workforce. A senior manager from a university stated that *“recruit young PhD holders to teach”*. This raises the question of who are these young PhD holders. A senior manager from a university suggested that *“recruit more academic staff from overseas”*. This raises questions of ethical issues. Perhaps if UK attracts more lecturers from overseas this may increase the divide between the developed and developing countries. The developing countries will struggle to retain their academic staff. The academic staff that come here to work may decide to continue to stay in Scotland.

Lifelong learning may present major challenges for the universities. As quoted by a senior manager from a university *“there is not enough demand coming from employers”*. One of the senior managers from a university stated *“until there is a real pressure from the employers for high level qualifications, it is difficult to see how higher education can be the main driver for lifelong learning”*. It is argued that higher education should have a clear understanding of what exactly is lifelong learning. From the responses obtained it

was indicated that senior managers are only targeting those who are in employment. Lifelong learning should perhaps refer to learning from cradle to grave. This means that most people after retirement or coming to a retirement age may not pursue higher education but concentrate more on leisure studies. Perhaps this will be a new market for the universities. Additional funding would be needed to develop programmes that suit the lifelong learners.

7.6 Promoting and Inhibiting Forces of Higher Education

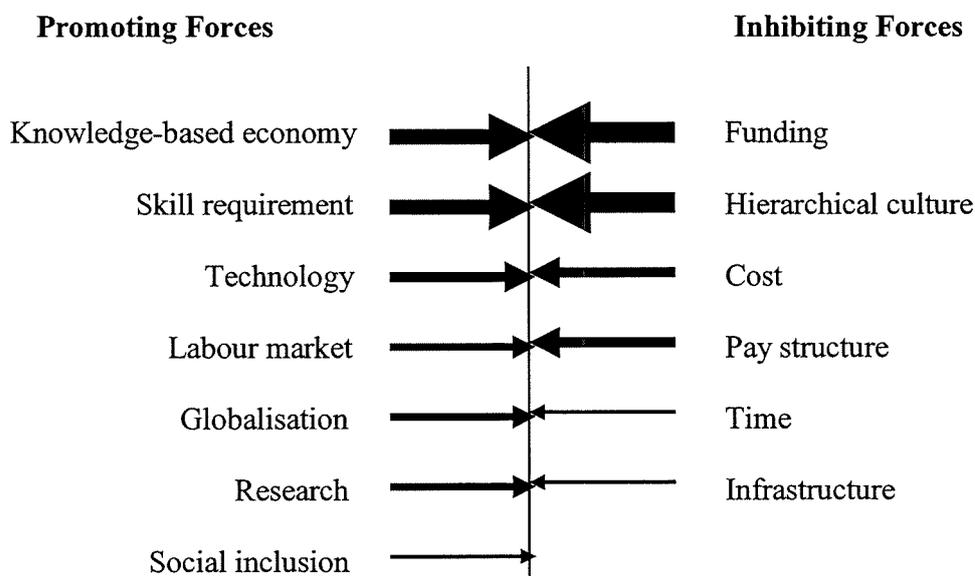
The respondents were asked to list the promoting and inhibiting forces of higher education. The list obtained were then cross checked throughout the interview in order to obtain the frequency of responses on each of the promoting and inhibiting forces identified. This is to determine the strength of those promoting and inhibiting forces identified. The frequency of responses obtained is shown in Table 7.3 below. Ninety percent of the respondents view throughout the interview contributed to the classification of promoting and inhibiting forces of higher education. The majority of the respondents' views were very similar. This could be a good thing indicating that the higher education community share the same vision.

Table 7.3: Frequency of responses

	Frequency of responses
Promoting forces	
Skill requirement	14
Highly educated workforce	12
Knowledge-based economy	14
Widening participation	8
Technology	13
Research activities	12
Globalisation	12
Inhibiting forces	
Cost	13
Time	8
Funding	15
Hierarchical culture	15
Infrastructure	8
Pay structure	13

The force-field analysis shown in Figure 7.4 illustrates the strength of the promoting and inhibiting forces. The thickness of the arrows (thicker = strong; less thick = weak) indicates how greatly those factors could inhibit and promote higher education in the future. The thickness of arrows for the inhibiting forces such as the funding and the culture are greater than the thickness of arrows for the promoting forces. However, it is reasonable to suggest that the requirement of the knowledge-based economy may outperform the inhibiting forces in the future. Scottish higher education is likely to respond vigorously to the pressures facing higher education in the future in order to meet the requirements of the knowledge-based economy.

Figure 7.4: Force field analysis



7.6.1 Promoting Forces

The promoting forces of higher education are as follows:

1. **Knowledge-based economy:** According to a senior manager from a university “*the knowledge-based economy is likely to be the major driving force for higher education*”. There is a need to create more new knowledge and its exploitations in

order to enhance and support the economic activities in a knowledge-based economy.

2. **Skill requirement:** The need to develop thinking skills in order to support the economic activities in a knowledge-based economy is another promoting force for higher education. As quoted by the senior manager from the development agency *“the whole issue of knowledge-based economy is the requirement for high level of thinking skills for the business and economic growth”*.
3. **Technology:** The rapid development in technology is another promoting force for higher education in the future. A senior manager from a university stated *“technology will facilitate distance learning”*. Another senior manager from the development agency quoted that *“the university should increasingly manipulate the Internet to reach the global market”*. Thus, the Scottish universities should recruit highly skilled staff to manage distance learning delivery.
4. **Highly educated workforce:** A senior manager from a university quoted that *“a degree will be a prerequisite to obtain a job in a knowledge-based economy”*. This will greatly promote higher education. Thus, Scottish higher education should have diversified products and services that are relevant to knowledge-based economy.
5. **Globalisation:** As stated by 25 per cent of the respondents, the unmet demand in other countries particularly in the Far East will promote higher education. There is a need for Scottish higher education to appreciate other cultures and become internationally focussed. However, there are also other universities from the English speaking countries such as America, Canada and Australia that will be competing with the Scottish universities. Therefore, as stated by one of the senior manager from a university *“we may need to develop better facilities in order to deal with external competition”*.
6. **Research:** A senior manager from a university stated that *“companies that depend on research will still have major influence on higher education”*. The commercial exploitation of research activity can be seen through the technology centres and parks, business incubators, the technology transfer offices, small business development centres, and research collaboration with private industry.

The universities are likely to become increasingly business oriented. Thus, cultivating appropriate organisational cultures of universities will be important.

7. **Widening participation:** According to a senior manager from the government “*education is the best route out of poverty and disadvantage*”. More people who previously never experienced higher education may have the chance to send their children to universities. Thus, the Scottish universities should provide additional teaching support, for example frequent one-to-one meetings, and additional student support services in relation to students counselling.

7.6.2 Inhibiting Forces

The inhibiting forces of higher education are as follows:

1. **Funding:** There were 5 responses obtained that think the funding for higher education will be the major inhibiting factor. According to a senior manager from the development agency “*the government funding pushes university in a particular direction which is not necessarily helpful*”. Perhaps the funding implications may force universities especially the newer universities to be more market focussed. The newer universities may be forced to cease offering courses that have less demand in the market. However the role of higher education for knowledge creation and its exploitation may require a broad range of subject areas.
2. **Hierarchical culture:** The knowledge-based economy may require greater bureaucratic environment in higher education. A senior manager from the funding council stated that “*the rules and regulations will facilitate the universities to focus on future activities*”. It is argued that the rules and regulations that surround the quality assurance and accreditation process will be time consuming and it may dampen the motivation for staff to develop a new range of products and services.

3. **Cost:** The cost for higher education is another inhibiting factor. As stated by a senior manager from a university “*cost for higher education cannot be cheaper*”. It is argued that the students need to balance their investment into higher education with other costs and this may be against the benefits of pursuing higher education.
4. **Pay:** The pay structure will inhibit the supply for higher education. As quoted by the senior manager from the government “*pay must be comparative to other sectors*”. There is a requirement for Scottish higher education to recruit young academic staff in the future due to demographic pressure. It is argued that the academic salary is widely viewed as discouraging for the new entrants to the profession.
5. **Time:** Lack of time due to work commitment of the learner is another inhibiting force. They may seek for greater flexibility in order to pursue higher education. However, as quoted by senior manager from industry “*the universities are not flexible enough*”.
6. **Infrastructure:** The lack of research facility, computing facility and teaching facility is another inhibiting force. According to senior manager from a government “*universities should be able to provide better facilities for research, teaching and computing facilities*”.

7.7 SWOT Analysis in Higher Education

A SWOT analysis was carried out based on the responses obtained throughout the interview and presented in a SWOT diagram as shown in Figure 7.5. The count in the bracket indicates the total number of responses obtained on those issues presented in the SWOT diagram. Based on the total number of responses obtained it clearly shows there are more responses obtained for “weaknesses” as compared to the “strengths”. Similarly the total number of responses obtained for the “threats” are higher than the responses obtained for the “opportunities”.

Therefore, it is argued that there is perhaps a real danger for the current strengths to decline if the weaknesses are not addressed. The Scottish higher education need to realise the identified opportunities in order to overcome its threats in the future. Perhaps, a way to overcome the threats is by overcoming its weaknesses that will facilitate the realisation of future opportunities and consequently build upon its strength.

Figure 7.5: SWOT analysis for Scottish higher education

<p style="text-align: center;">STRENGTHS</p> <p>Reputation (7) - national and international High quality research (5) - variety of research Collaboration (5) - with industry Vocational delivery (4) - knowledge and skill development</p>	<p style="text-align: center;">WEAKNESSES</p> <p>Poor structure of programmes (2) - inflexible Lack of strategic thinking (4) - not out of the box thinking Poor strategic planning (5) - short-term Slow acceptance to change (5) - slow in fostering a market focus Poor career progression (5) - poor reward Poor strategic leadership (7) - operational leadership Product life cycle (3) - long life cycle</p>
<p style="text-align: center;">OPPORTUNITIES</p> <p>Globalisation (8) - greater unmet demand Research (6) - new knowledge Vocational delivery (6) - relevant to industry Structure of programme (6) - flexible Technology (5) - distance learning Collaboration (6) - with industry in international markets to develop new programmes</p>	<p style="text-align: center;">THREATS</p> <p>Mass higher education (5) - more rules and regulations Competition (7) - smaller indigenous market Globalisation (3) - competition from other global players Funding (9) - compete with other government priorities Demographic trends (8) - student shortage</p>

Based on the frequency of responses obtained for the current strength, it is argued that the reputation is the major contributing issue for the strength. As quoted by a senior manager from a university *“the Scottish universities have a good reputation”*. The high quality research conducted in Scottish universities is another key strength. As quoted by a senior manager from a development agency *“the variety of research such as the bio-tech research and the medical related research is the key strength for the Scottish higher education”*. The stakeholders stated that the collaboration with industry is another key strength for the Scottish universities to continuously involve themselves in world class

research and generate income. As stated by a senior manager from a development agency “*the collaboration between Dundee University and other world leading pharmaceutical companies*”. Finally, the vocational delivery that emphasises skills development is another stated strength.

The current weaknesses in Scottish higher education are poor structure of programmes, lack of strategic thinking, poor of strategic planning, slow acceptance of change, poor career progression, poor strategic leadership and long product life-cycle. However, poor strategic leadership is the major weakness currently in Scottish higher education as shown by highest responses obtained. As quoted by a senior manager from a university “*we have operational leadership but not strategic leadership*”. Operational leadership may not be able to address the weaknesses particularly on acceptance of the staff to quickly foster a market driven culture. In addition, poor career progression could also be a barrier for staff to accept a market driven culture. According to a senior manager from industry “*the university must be able to provide better career progression, better perceived value of the sector, development opportunities and staff supports*”. Perhaps better reward will encourage the staff to actively develop new programmes suitable for the knowledge-based economy and incorporate greater flexibility into their teaching activities. Thus, strategic leadership is required to generate ideas and devise a flexible strategy to facilitate the staff to quickly foster a market driven culture in the future. If not there is real danger that the current strength will decline.

The Scottish higher education should quickly overcome its current weaknesses and become more market focussed in order for the sector to reap greater benefits from the future opportunities. As quoted by a senior manager from a university “*there are greater unmet demands for higher education in China, India and other Far East countries*”. Perhaps Scottish higher education needs to understand the culture and become internationally focused. The structure of the programmes needs to incorporate the cultures of international markets. As quoted by a senior manager from the funding council “*the programmes delivered in international markets need to be relevant to industry*”. This suggests that the collaboration activities with industry in the international

markets will provide greater opportunities to develop new programmes that are relevant to the international markets. The other opportunities stated by the stakeholders are the research activities and the structure of programmes. As quoted by a senior manager from a development agency *“the Scottish higher education should create more new knowledge”*. Perhaps this will generate greater income for the higher education sector. The structure of programmes delivered should be more flexible and provide wider options for learning. As stated by a senior manager from industry *“technology could be used to provide distance learning for continuing professional development and postgraduate studies”*.

The threats facing Scottish higher education may not allow them to realise the future opportunities. The threats facing Scottish higher education as stated by the stakeholders are mass higher education, competition for smaller indigenous home student markets, competition from other global players, funding and demographic trends. Based on the frequency of responses obtained as shown in Figure 7.5, funding is likely to impose greater threats. As quoted by a senior manager from the funding council *“the higher education sector is competing with other government priorities for funding”*.

However, if Scottish higher education could develop strategic leadership to facilitate the staff acceptance of market driven culture the future opportunities can be realised and consequently build upon their strengths. This will facilitate Scottish higher education to overcome the threats in the future. If the opportunities can be realised as quickly as possible, greater income will be generated through the internationalisation activities. In addition, the reputation of Scottish higher education will facilitate to outpace competition from other global players. Finally, Scottish higher education can recruit more students to compensate the likely shortfall in home student numbers.

7.8 Future Demand and Competition

The respondents were asked to give their views regarding the future demand for higher education in terms of student numbers in the UK and future competition among

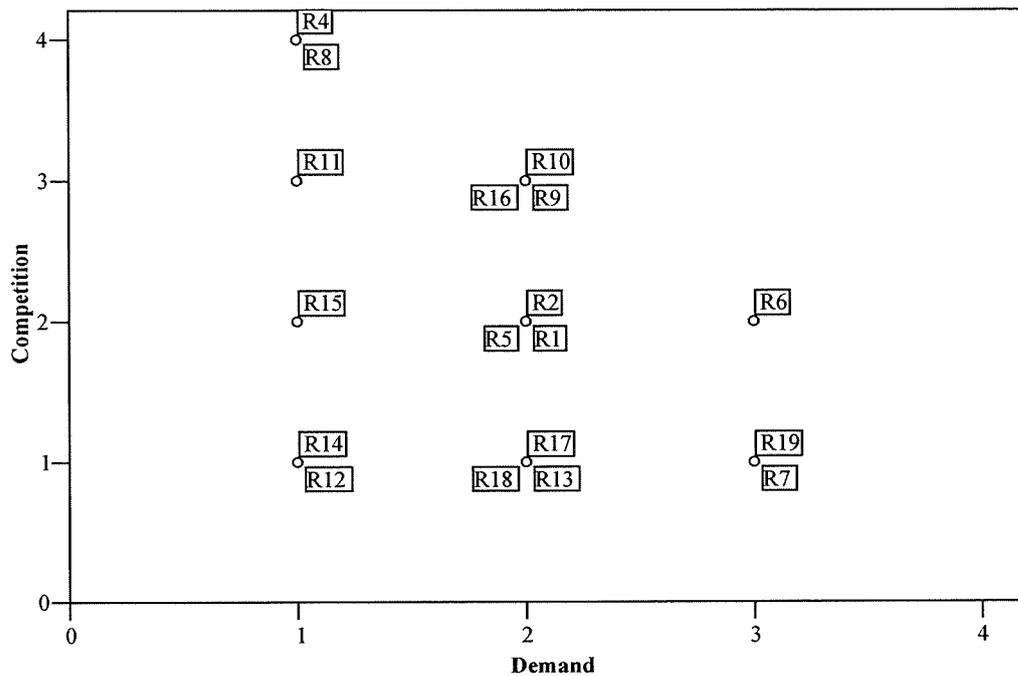
universities to capture larger student markets. The number of responses obtained was used to indicate the strength for the demand and competition factor. There was a minimum of 1 statement that indicates low strength and a maximum of 4 statements that indicates higher strength were obtained. This was then presented as a schematic diagram (Figure 7.6) in order to investigate the pattern in the senior managers' views of future demand and competition issues.

The majority of the respondents think that in the future the demand for higher education in terms of the home students is likely to be low and therefore the Scottish universities may not be competing with each other. As quoted by the senior manager from the development agency *"the Scottish universities are likely to start thinking more creatively how to collaborate in addressing the likely falling demand in the future"*. However, as quoted by the senior manager from the university *"the traditional universities may not be concerned about this as they will always be able to attract students from outside UK due to their reputation"*. Perhaps the newer universities should be concerned especially with the likely decline in the home student demand in the future. As quoted by the senior manager from Napier University *"for the newer universities like Napier we may have to work more closely with other newer universities to capture the foreign markets"*.

Figure 7.6 clearly shows that there is some lack of homogenous view on the future demand and competition in higher education. The diagram indicates that there is some contradicting view between the stakeholders in higher education. For example, the senior manager from the funding council (R4) and the senior manager from the government (R8) are demonstrating patterns that emphasise high competition and low demand. Similarly, the some senior managers from the development agency (R9 and R10) are demonstrating pattern that emphasise high competition and low demand. However, the senior managers from the universities (R12, R13, R14, R17, R18 and R19) are demonstrating a pattern that emphasise low competition and high demand. This clearly shows that there are competing views in the higher education sector. However, in order for Scottish higher education to evolve and respond to students and other stakeholders demand, it is important for the sector to cultivate a shared vision. This may lead to

improved reputation at national and international markets. In addition, this may be the glue to hold the Scottish higher education sector together and outpace competition.

Figure 7.6: Views on demand and competition in the future



7.9 Organisational Culture of Higher Education

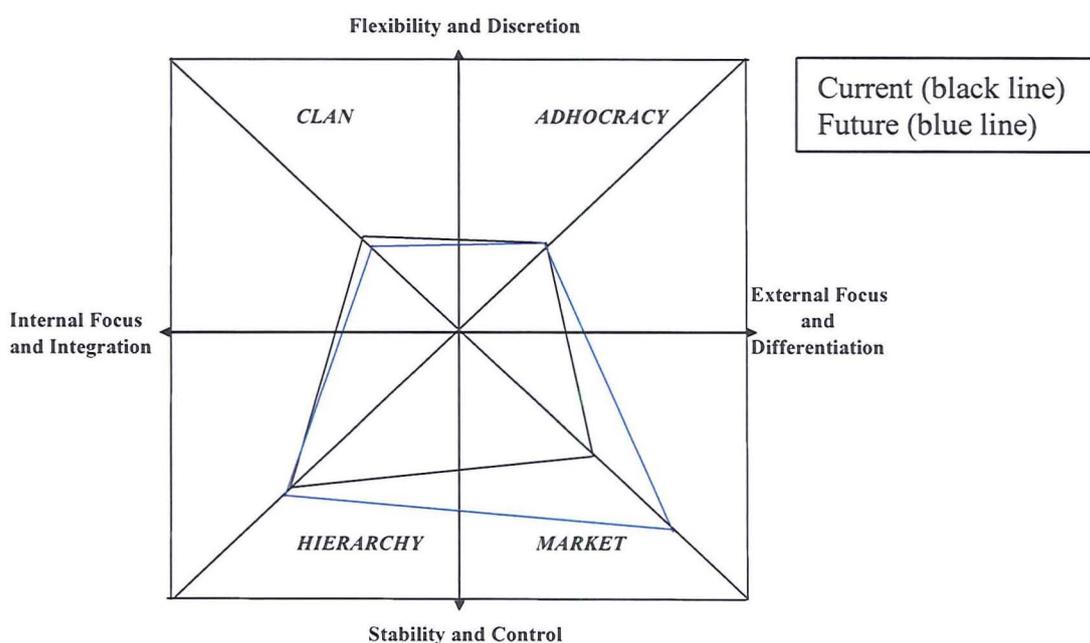
The majority of the stakeholders interviewed have the similar view on the current organisational cultures of higher education. As quoted by one of the senior manager from the university “*due to the funding situation, we have to impose a strong managerial control to make sure that things don’t go wrong*”. The senior manager from the university quoted that “*the structures, policies and procedures actually aimed to help to get things done*”. The senior manager from the development agency stated that “*currently universities focusing on control mechanisms*”. It is argued that this will be a way for the managers in universities to make sure things don’t go wrong. The universities

consist of larger numbers of students and have expanded their teaching activities throughout the world.

Higher education is not seen as being a public good but it is seen more of a tradable good. This can be supported by the statement by the senior manager from the government. The senior manager from the government stated that *“using education as an instrument to achieve specific income”*. Therefore it is reasonable to suggest that manipulating the opportunities in the market will be the main concern for universities in the future. The market orientation will be beneficial for the universities especially the newer universities. However, it raises question about how the universities will become more market focussed. It is likely that the managers will adopt the business model to become market focussed. As quoted by the senior manager from the university *“we need to well manage our staff”*. This suggests that the university will focus on establishing more structures, policies, procedures and demanding leadership in order to monitor the staff and become increasingly market focused.

Based on the responses on the current culture and the future culture of universities a schematic diagram was established based on the Competing Values Framework as shown in Figure 7.7. The black line indicates the current culture and the blue line indicates the future culture. The schematic diagram below illustrates that the managers in universities will be focusing increasingly on a hierarchy culture and a market culture in the future. A Clan culture and an Adhocracy culture will exist in universities as identified in Chapter 6, but the universities are not going to emphasise these two types of cultures.

Figure 7.7: Cultures of universities (other stakeholders view)



Perhaps the universities should balance between institutions that need to be well managed with institutions that can manage themselves effectively in the future. The finding from Chapter 6 suggests that the staff prefer the universities to emphasise a Clan culture. In addition, the senior manager from the university stated that *"the transparency in terms of ownership of the business by all employees is important for the business"*. As quoted by the senior manager from the development agency *"we need to build trust, understanding, openness and develop culture of enquiry in higher education"*. However, as quoted by one of the Union representatives *"this could only be a dream for university staff"*. The managers in universities may not be concerned with emphasising values such as staff involvement in decision making, commitment and trust, and teamwork in order to emphasise market driven culture. Perhaps a Clan culture should be emphasised in order to be market focussed (see chapter eight).

Therefore, the leaders in universities should manipulate a Clan culture in order to achieve the vision of being a Market oriented institution in the future. As quoted by the senior manager from the Scottish Higher Education Funding Council *"the leaders need to step*

back from their job and think about what university want to do, where the university want to be in the future and how the university could achieve that direction". Thus, the universities should ingrain a people-oriented philosophy to become increasingly market focused in the future.

7.10 Likely future of Scottish Higher Education

The data obtained from the interviews and the findings throughout this thesis were used to map out the likely future of Scottish higher education. Table 7.4 shows the optimistic future, pessimistic future and most likely future of Scottish higher education for each of the issues considered. The optimistic future of higher education indicates the tremendous contribution that the sector can make to knowledge, society and economy assuming there are no pressures facing higher education to reform. The pessimistic future of higher education indicates the declining contribution in the future adoption if no strategy is devised to address the pressures facing higher education and reform. However, the most likely future of higher education indicates the anticipated future of higher education following a strategy devised to address the pressures facing higher education, leadership that develop appropriate organisational culture of higher education to accept necessary reform and becomes more internationally focused.

Table 7.4: Summary of views on the likely future of Scottish higher education

Issues	Optimistic future of higher education	Pessimistic future of higher education	Most likely future of higher education
Globalisation of higher education	Greater opportunities – possible: there are greater unmet demands overseas. Therefore, the Scottish university can provide.	Fewer opportunities – possible: difficult to capture the market due to too much competition. Scottish universities will be outpaced by other global players.	Increased level of opportunities.
Contribution to knowledge creation and exploitation	Major opportunities – possible: if knowledge creation and knowledge transfer works well.	Declining opportunities – possible: with the concentration of research funding in fewer universities. Fewer numbers of universities will be conducting research.	Increased level of contribution if the research-intensive university creates fundamental knowledge and the teaching-intensive university focuses on knowledge transfer.
Contribution to learning - technology	Major opportunities – possible: if they can incorporate the technology into teaching to provide flexibility, student centred learning and distance learning. The higher education can provide improved and wider options of learning.	Declining opportunities – possible: if unable to recruit highly skilled staff to develop and manage technology assisted learning and distance learning.	Greater use of technology to support learning and distance learning.

Table 7.4: continued

Issues	Optimistic future of higher education	Pessimistic future of higher education	Most likely future of higher education
Contribution to economy	Major opportunities – possible: if knowledge creation fostered and the knowledge transfer works well in order to produce more fundamental knowledge and human capital.	Declining contribution – possible: if can't articulate the increase in human capital and can't develop new products and services.	Increased level of contribution.
Number of universities	More universities – possible: it will intensify competition and there are greater unmet demands overseas. It will intensify competition and increase quality.	Fewer universities – possible: The Scottish universities can increase quality of higher education.	Fewer and bigger universities in terms of its resources (both human resource and financial resource).
Number of lecturers	More lecturers – possible: if higher education can revise and improve the salary system to be comparable to other industries, provide better facilities and career progression. This will attract greater number of entrants to the profession.	Fewer lecturers – possible: use technology to facilitate learning. However, the student staff ratio will increase.	Increase number of lecturers

Table 7.4: continued

Issues	Optimistic future of higher education	Pessimistic future of higher education	Most likely future of higher education
Bureaucratic culture	Decline: the staff will not accept the increasingly regulatory environment. Too much time will be wasted arguing. More time will be required to develop and bring a new product to the market.	Increase: This can be the way to better facilitate resource utilisation and ensuring the sustainability of the institution. Emphasis will be given to developing structures, rules and policies.	Increase bureaucratic culture – more structures, rules and procedures that govern whatever the staff do.
Strategic leadership	Major contribution – possible: if they can plan for long-term, generate priorities and improved organisation of resources (both financial and human resource).	Declining contribution – possible: if higher education keep focusing on short term convenience and muddle through with the resources available. This will affect the future expansion of higher education.	The leadership will be more vigorous focusing on long-term plans and better organisation of staff.
Top-up fees	Increase fees: it will reduce the number of students pursuing Scottish higher education but increase quality.	Reduced the fees –: the universities will not be able to provide better teaching and learning facilities and attract more academics.	Increase fees for knowledge creation activities and maintain fees for teaching activities.

Table 7.4: continued

Issues	Optimistic future of higher education	Pessimistic future of higher education	Most likely future of higher education
Lifelong learning	Major expansion - possible: if there is no real demand from employers. Higher education will need more new products that suits lifelong learners. People will not be attracted if there is no real benefit.	Declining share - possible: Unable to subsidise. Society will not see higher education as a means for lifelong learning to upgrade knowledge. There will be more commercial providers.	Declining contribution to lifelong learning.
Reputation	Major enhancement – possible: if resources devoted to increase the local, national and international reputation. Can capture larger student markets and outpace competition from other universities from other countries.	Declining of reputation – not possible: higher education from other countries will capture the Scottish markets locally as well as internationally. Scottish higher education will be increasingly outpaced by other global players.	Increased local, national, international reputations.
Vocational delivery	Major expansion – possible: if applied research and knowledge transfer works well.	Declining contribution – possible: if unable to articulate the research and knowledge transfer. Students will not be attracted to higher education.	Increased level of contribution.

Table 7.4: continued

Issues	Optimistic future of higher education	Pessimistic future of higher education	Most likely future of higher education
Social inclusion	Major contribution – possible: if higher education can attract the talents to support and enhance the economic activities. This will root out poverty and contribute to economic growth.	Declining contribution – possible: if higher education cannot retain the students from lower socio-economic background.	Much the same.
Funding	Major increase – possible: if greater funding is allocated for higher education. This will allow universities to provide better facilities to students and staff. Greater funding will allow improved salary system and attract young academic staff to the profession.	Declining funding: higher education will muddle through with budget constraints and will be forced to have short-term plans. This will not allow higher education to be vigorous in adapting to economic requirements.	Increased level of funding – the universities will find ways to attract greater private funding.
Acceptance to change	Greater acceptance – possible: if higher education can respond vigorously to the pressures facing higher education and become market focus.	Less expansion – possible: if there is poor strategic leadership to cultivate cultures that will facilitate universities to become market focused.	Higher education will respond more vigorously with greater emphasis on people-driven approach and become increasingly market focused.

Table 7.4: continued

Issues	Optimistic future of higher education	Pessimistic future of higher education	Most likely future of higher education
Mass higher education	Major expansion – possible: if higher education can increase the staff numbers and provide improved facilities and services for students. Students will be attracted to higher education. Educated citizens are important for economic growth	Declining expansion – possible: cannot develop qualify nor resume the skills require to support and enhance economic activities.	Increased level of contribution. More lecturers and improved facilities and services.
Demographic change	Major contribution –possible: if higher education can attract greater number of young entrants to the profession. Many of the academic staff will retire over the next 10 years.	Declining contribution – possible: there will be a smaller number of younger people who are ready to enter higher education. Universities will compete for smaller indigenous markets.	Increase number of overseas student to compensate the shortfall. Recruit lecturers from overseas. Use technology to facilitate learning.

It is reasonable to suggest that the Scottish higher education may not be able to adopt the optimistic future of higher education due to the pressures facing the higher education sector. For example, the change to massification of higher education is increasing in a period characterised by a number of pressures. Notably among these are demographic change, funding pressure and the stakeholders demand for improved and wider range of services from higher education. In considering how higher education could evolve to address the pressures and deliver improved and wider range of services means continual change and development in higher education. It is argued that changing educational

provision to meet the pressures and the stakeholder requirements are the future challenges to the Scottish higher education.

In order to positively reshape the Scottish higher education, the sector needs to overcome its weaknesses to allow its future opportunities to be realised and build upon its strengths. This is important for the higher education sector in order to overcome the threats. If not, there is a real danger that the current shape of Scottish higher education will decline and consequently the future of Scottish higher education will fall into the pessimistic future of higher education as shown in Table 7.4.

Therefore, cultivating appropriate cultures is important to best facilitate the Scottish higher education to be reshaped to avoid the pessimistic scenario. In so doing, Scottish higher education should respond to the following key findings.

1. Scottish higher education will be increasingly linked with the economic requirements. Scottish higher education should articulate the knowledge creation and knowledge transfer activities. This will increase the human capital required to support and enhance economic activities in the future.
2. The two-tier system should be formed. Concentrating with the individual key strength will be a way to contribute for knowledge creation and dissemination activities in the future. There was a remarkable consensus for research-intensive university and teaching-intensive university. The research-intensive university creates fundamental knowledge. On the other hand, the teaching-intensive university focuses on knowledge transfer activities. However, there needs to be stronger link between these two systems.
3. The research-intensive university should increase the fees for research programmes but maintaining the fees for taught programmes. On the other hand, the teaching-intensive university should be more concerned with strengthening their foundation. Thus, maintaining the fees as it is currently may be more appropriate for the teaching-led university.

4. There was no consensus obtained for a new type of university (university for industry). There was a remarkable consensus that the teaching-intensive university should form links with industry for knowledge transfer activities.
5. There should be fewer universities in Scotland. The majority of the stakeholders broadly agreed that there is likely to be fewer numbers of universities in Scotland. This is likely to provide better capacity to compete globally.
6. The Scottish universities should become increasingly internationally focused. Thus, understanding international cultures will be important. Reputation will be the key to enter the global market. The universities should devote a lot of resources to increase their international reputation.
7. The programmes offered in Scottish universities should become flexible through the use of technology. Distance learning should increase. New programmes that incorporate international cultures will be developed. In addition, the programmes offered should become more vocational.
8. Strategic leadership is required for the future. The leaders in higher education should focus on long-term planning, generate priorities and organise resources (both financial and staff) more effectively in order to become increasingly market focused. The leaders should devise strategy to facilitate the staff to quickly foster a market driven approach in the future.

7.11 Conclusion

As part of the Delphi process, the key findings were fed back to the respondents to obtain a general consensus on the future of Scottish higher education. Broadly, the majority of the respondents agreed with those key findings. There was a remarkable consensus that universities have a vital role in developing human capital and hence will make a large contribution to the knowledge economy. However, demographic trends, ageing staff, increasing competition and lack of funding will create threats in the future. But if a market driven culture can be developed then universities can exploit new knowledge in the economy they reside in and internationally. There is a huge opportunity to develop international markets. However, the general consensus obtained indicates that the slow

acceptance to change, lack of strategic thinking and lack of strategic leadership will be a major barrier to foster a market driven culture in Scottish universities.

The leaders in higher education need to formulate strategy on how to make the staff accept changes and foster a market driven approach. There may be a requirement to emphasise human resource development, trust and commitment, staff empowerment, staff involvement in decision making, and collaboration among the staff. The key to achieve this will be the leadership. Strategic leadership is required to devise flexible strategies to engage stakeholders to identify issues, propose solutions, and become partners in implementing the changes needed to facilitate knowledge creation, knowledge transfer and increasingly foster a market culture with regard to the most likely future of Scottish higher education. The final chapter (Chapter 8) will discuss how the leaders could facilitate those developments in the future.

CHAPTER EIGHT

CONCLUSION

8.1 Introduction

The aim of this chapter is to consider how to implement a strategy to secure the future of Scottish higher education. The UK Universities have been through a dramatic transformation over the last quarter of a century. Higher education in the UK has moved from an elite system to one with emphasis on mass higher education. The government recognised the need for widening access through the policy of a mass higher education system. Thus, the number of universities doubled and student numbers have increased. However, the increase in academic staff numbers is not proportionate to the increase in the student numbers. Hence the resources per student have declined significantly. The move from an elite system to a mass higher education system is characterised by number of significant pressures. Notable among these are pressures of demographics, economics, technology, globalisation and funding. As a consequence, the universities are expected to be more competitive, flexible and efficient.

The analysis of student expectations and satisfaction surveys suggest that broadly students seem to be content with the current higher education provision. They will continue to demand a wider range of products and services. The student expectations are dynamic and will change in the future. There is a suggestion that the students may perceive the need to obtain a university degree as an entry to the knowledge-based economy.

The organisational culture assessment in the chosen Faculties at three Scottish universities indicates that currently most Faculties have placed emphasis on a Hierarchy culture. The staff think that the Faculties surveyed will place emphasise on a Market culture in the future. This is very much inline with the Faculties' vision statements. It could be argued that the market orientation will be achieved by establishing a control

system. This may raise potential conflict for culture change in universities. The preferred culture at all these faculties is a Clan culture that places emphasis on teamwork, staff empowerment, staff involvement in decision making, commitment and trust, flexibility and discretion. The staff may accept the change to focus on market orientation via teamwork, staff involvement in decision making, staff empowerment, trust, commitment, with a need for flexibility and adaptability.

If one looks back over history, a control system was adopted by most organisations, particularly during the Industrial Revolution. This control system (Hierarchy such as standardised procedures, formal rules and policies, leadership that coordinates and monitors) became a norm in most organisations including higher education. It could be argued that this control mechanism could be beneficial to an extent. However, to adapt to the knowledge intensive nature of universities, direct copying of this management model will not work in the future. The staff will be reluctant to accept a culture that is characterised by control mechanisms. They will perceive the control mechanism as downgrading their ability and knowledge. The staff have a different view of culture change. The staff think that the universities should emphasise a Clan culture in order to be market focused in the future.

The Delphi study on the future of Scottish higher education provides clear recognition of the importance of universities for both society and the economy. The future of Scottish higher education will increasingly contribute to knowledge creation and dissemination activities. Higher education is seen as a critical vehicle to produce human capital to support and enhance economic activities. The massification of higher education will continue in the future, but it will demand more diversified products and flexible delivery from universities. The universities need to incorporate technology into their delivery systems to cope with staff shortage as the consequences of an ageing population and difficulties in attracting young academic staff. However, Scottish higher education will face greater difficulty in attracting greater government funding due to the competition for funding with other government priorities. Therefore, Scottish universities will need stronger links with other industry and local business to attract private funding. Thus, the

globalisation of higher education will provide greater opportunities for Scottish higher education. However, the challenge from other global players will be growing. The American universities, Australian universities and the Canadian universities are breaking down the distance barrier to reach out to student markets.

Scottish higher education will continue to be under increasing pressure and challenge from other countries which will intensify in the future. Scottish higher education needs to respond to the pressures and the challenges. If not, the sector is at risk of decline. The external stakeholders think that the Scottish higher education needs to react to the requirements of the market. The universities should determine their future direction and rethink their strategies to change in order to achieve their future desired direction. Thus, the ability of Scottish higher education to facilitate the process of change depends critically upon their universities. Scottish higher education should be more imaginative and creative in order to mobilise skills and talents of staff in the future.

8.2 Discussion

There are number of comments that can be made on the findings from this research. The first is that the literature review has been carried out for this research in order to determine the pressures facing higher education. The interpretation of these and the general implications for Scottish higher education that were drawn in this research may be open to criticism. It may raise questions about the validity of the interpretations. The analysis of the pressures facing higher education and their general implications could have been carried out at very superficial level. This is a very broad scope and needs to be examined in-depth considering each of the factors are inter-related. However, our aim was to determine and discuss the pressures and their general implications for Scottish higher education in order to raise fundamental question for the future of higher education.

Secondly, the student expectation survey conducted at Napier University could present a challenge regarding the validity and generalisability of the findings to the whole of Scottish higher education. The background of Napier University suggests that it

emphasises higher education provision that is based more on vocational delivery methods. As such, students at Napier University may have different expectations compared to students at traditional universities. This suggests that participation of students from traditional universities will provide comparison and consequently ensure the significant conclusions to be drawn on the student expectations on Scottish higher education.

Thirdly, it is suggested that the finding from the organisational culture assessment provides an indicator of the types of cultures that exist at the Faculties surveyed at three Scottish universities. While it might be expected that there would exist major differences in the organisational cultures of the Faculties at that three universities, the results showed that, broadly, they shared the same organisational culture type. This may be subcultures that are viable within the larger organisational culture. Thus, all of the Scottish universities should be included in that organisational culture assessment in order to draw a significant conclusion. In addition, the Organisational Culture Assessment Instrument (OCAI) that was used to explore the culture of Scottish universities is open to criticism. The tool was developed in America and has been tested in American organisations including the American universities. Hence, the tool may be well suited for American culture and less for the Scottish culture. The staff interpretation of the American “language” could have had some implications for the finding. However, testing the reliability and face validity found that the interpretation here is valid and consistent. The test results were similar to the American studies.

Finally, the research on the future of higher education may raise concerns about how one can research the future. It was argued that in many respects future studies falls within existing paradigmatic boundaries (Blass, 2003). If this is the case, the strategic vision derived from the Delphi study, namely the research-intensive university and the teaching-intensive university, present significant challenges on the validity of that finding. Perhaps this finding may not represent the future of Scottish higher education. As argued by Blass (2003), the Delphi technique relies on the personal authority of the individual chosen to participate in the study. They develop their strategic vision for higher education based on

their thinking within the current model of the university and knowledge (Sarles, 2001). Getting people to step outside their current thinking into new ones may be impossible for those chosen to participate in the futures study (Blass, 2003).

The ability to have vision as a core competence for the researcher also raises significant challenges on the validity of the finding in this research. Thus, it may be questionable whether sufficient ability to have vision was present in the researcher. It is argued that this is something that is very difficult to learn like any other qualitative method. Thus, the researcher may have not interpreted the views on the strategic vision systematically to add rigour to the finding. The ability to have vision is important in futures study similar to this research in order to systematically apply and interpret its meaning (Blass, 2003).

8.3 Likely Future of Scottish Higher Education

The future of Scottish higher education will increasingly contribute to society and the economy through their knowledge creation and dissemination activities in the future. Thus, the two-tier system namely, the research-intensive university and the teaching-intensive university, will be the future direction. The research-intensive universities should increasingly create fundamental knowledge and the same time contribute to the knowledge dissemination activities. The research-intensive university should focus on high quality research that will facilitate the production of new knowledge. The presence of a major research university is a basic infrastructure component of the knowledge-based economy (Florida, 2002). The research-intensive university provides a huge potential source of competitive advantage for wealth generation (Florida, 2002). It functions as a hub in providing office space for start-up companies, venture capitalists and high-technology service providers, as well as providing a wide range of amenities (Florida, 2002).

On the other hand, the teaching-intensive universities should increasingly contribute to knowledge transfer activities. The teaching-intensive university needs to diversify the products and services for knowledge transfer activities in order to produce the human

capital required to support the economic activities in the future. The proponents of the human capital theory argue that the key to regional economic growth lies in endowments of highly educated and productive people (Florida, 2002). Scottish higher education should strive to enhance the creativity of people given that they will be members of the knowledge-based economy. As argued by Florida (2002) the creativity of people has the power to turn their introspection into real energy for broader renewal and transformation

There is a need for greater collaboration between these two systems, the research-intensive university for knowledge creation and the teaching-intensive university for knowledge dissemination in the future. The collaboration with the research intensive universities will facilitate the teaching-intensive university to develop new products in the future. Perhaps this two-tier system is likely to better facilitate Scottish higher education to be more market focused, gain a better reputation and consequently outpace competition in the future.

It should be noted that the two-tier system may raise potential conflict with regard to cultures of universities in the future. The two-tier system will be a move towards a more hierarchical culture in order to be market focused. This may raise potential conflict with regard to cultures that best facilitate the staff acceptance of this two-tier system in the future. Therefore, the key challenge may be how to manage the change with greater acceptance by the staff. In considering how universities could evolve and better facilitate staff acceptance of this two-tier system means continual change and development in universities. The future success for staff accepting this two-tier system depends on how the leaders could develop, enhance and support the set of beliefs, values and commitment that will effectively manage the change. This should be based on careful understanding of social realities of the universities (Cohen and Prusak, 2001).

The leadership in universities need to be able to cultivate a culture that is less resistant to change. The entire institution needs to respond more positively and proactively to the future direction of higher education. The leaders should rethink human resource development, staff involvement and staff empowerment. The organisational culture of a

university needs to be geared up to accept change. Therefore, internal focus and external focus with a high degree of flexibility may be vital for the universities to secure the future direction of Scottish higher education. This suggests that transformational leadership will be required in universities. The leaders should integrate the future culture with the staff preferred culture.

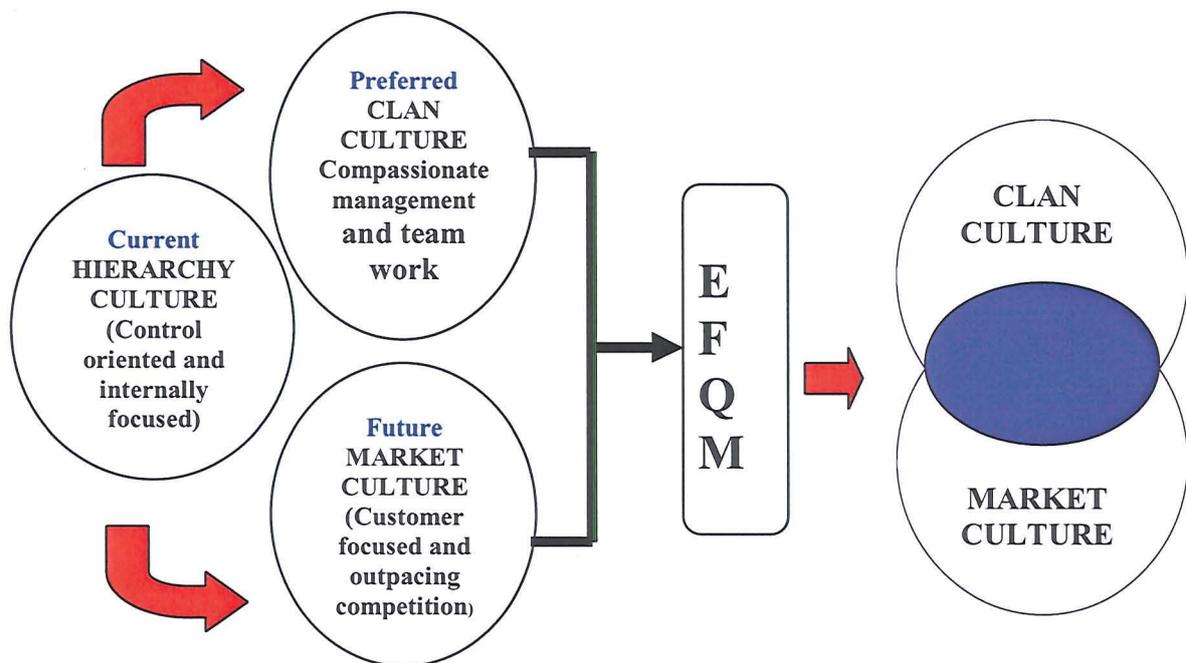
It could be argued that the leaders should consider a people-oriented philosophy to facilitate the staff acceptance of the future direction of Scottish higher education. The leaders should cultivate a culture that places emphasis on values such as collective decision making, staff empowerment, human resource development, secure employment and teamwork. Thus, a collaborative culture (Clan culture and Market culture) should be cultivated in Scottish universities. The universities need to achieve the intersection area as shown in the Figure 8.1. It is proposed that a way to develop a collaborative culture (Clan and Market) in Scottish universities is by using the European Foundation Quality Management (EFQM) Excellence Model self assessment.

The EFQM is a quality model that brings together the customers and other stakeholders views. It is a framework that self-assesses to what extent the university is achieving its vision with a clear focus on customers, people and society via its people, policy and strategy, and partnerships and resources. This will be important in order to facilitate the development of Scottish universities towards the future of Scottish higher education. The EFQM Model based on self-assessment, will provide a useful co-ordinating framework that enables the staff to recognise and take action in the area of structures and systems; it highlights the cultural issues and the individual styles and behaviours that are expected of an excellent institution (Consortium for Excellence in Higher Education, 2003c). This will facilitate the development of shared vision particularly among the staff in universities which is essential in any culture change initiative. The staff may accept this much better than the use of control mechanisms.

The EFQM Excellence Model can be useful to focus activity in universities as it emphasises processes and its stakeholders view. Taking into consideration the perspective of the stakeholders is one way of broadening the quality management practice

in higher education (Srikanthan and Dalrymple, 2003; Cullen et al., 2003). Presently, the practice of quality management in higher education is deteriorating into managerialism in institutions in view of lack of development of a shared vision and a lack of a match between quality management practices and educational processes (Srikanthan and Dalrymple, 2003). Thus, establishing a collegiate mode of operation, senior level commitment and staff commitment will be vital for successful implementation of EFQM Excellence Model (Hides et al., 2004).

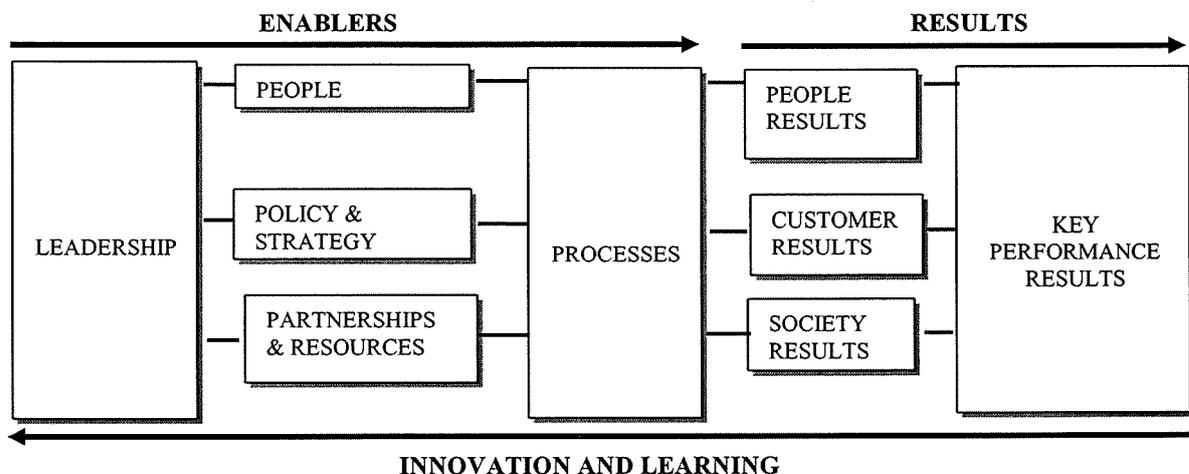
Figure 8.1: Proposed culture profile in the future



The EFQM model is increasingly being adopted in UK higher education and this could facilitate the development of a collaborative culture and consequently facilitate the development of universities towards the future of Scottish higher education (Williams, et. al., 2003; Gretton, 2003; Hides, et. al., 2004). Thus, it is suggested that the Scottish higher education should develop a new way of working through effective partnerships and a collaborative approach, establish communications across all levels and share good practice in order to become increasingly market focused in the future.

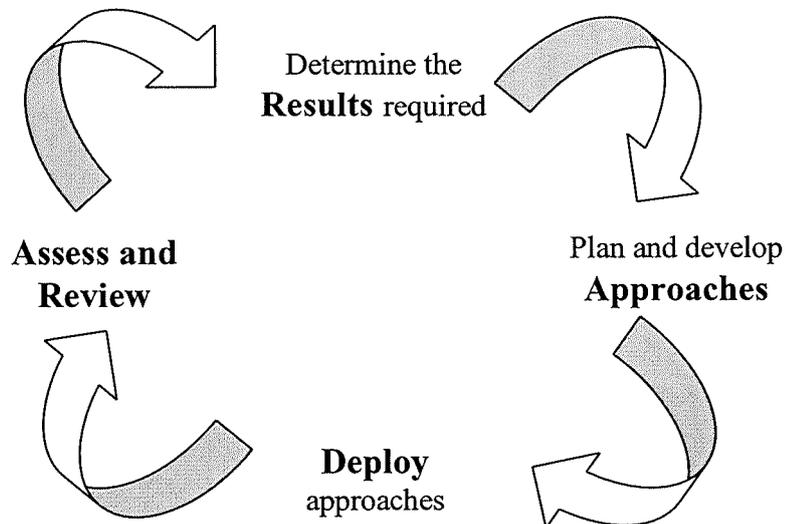
The EFQM Excellence Model as schematically outlined in Figure 8.2 is a non-prescriptive framework based on nine fundamental concepts that can be used to assess an organisation's progress towards excellence (EFQM, 2006). The fundamental concepts represent a belief system for excellence on which it provides a foundation for an organisation committed to excellence to build its culture and performance. The Excellence Model can be a catalyst through which improvements can be identified and action taken for major strategic reorientation (Consortium for Excellence in Higher Education, 2003c). It is based on the premise that "Excellent results with respect to Performance, Customers, People and Society are achieved through Leadership driving Policy and Strategy that is delivered through People, Partnerships and Resources, and Processes" (EFQM, 2006). This suggests that leadership commitment is vital for the development of a holistic approach to excellence.

Figure 8.2: The European Foundation Quality Model



The Model recognises that there are many approaches to achieving sustainable excellence in all aspects of performance. The arrows emphasise the dynamic nature of the Model. They show that innovation and learning help to improve enablers which in turn lead to improved results (EFQM, 2006). Central to EFQM Excellence Model is the RADAR logic which consists of the following elements as shown in Figure 8.3.

Figure 8.3: RADAR logic



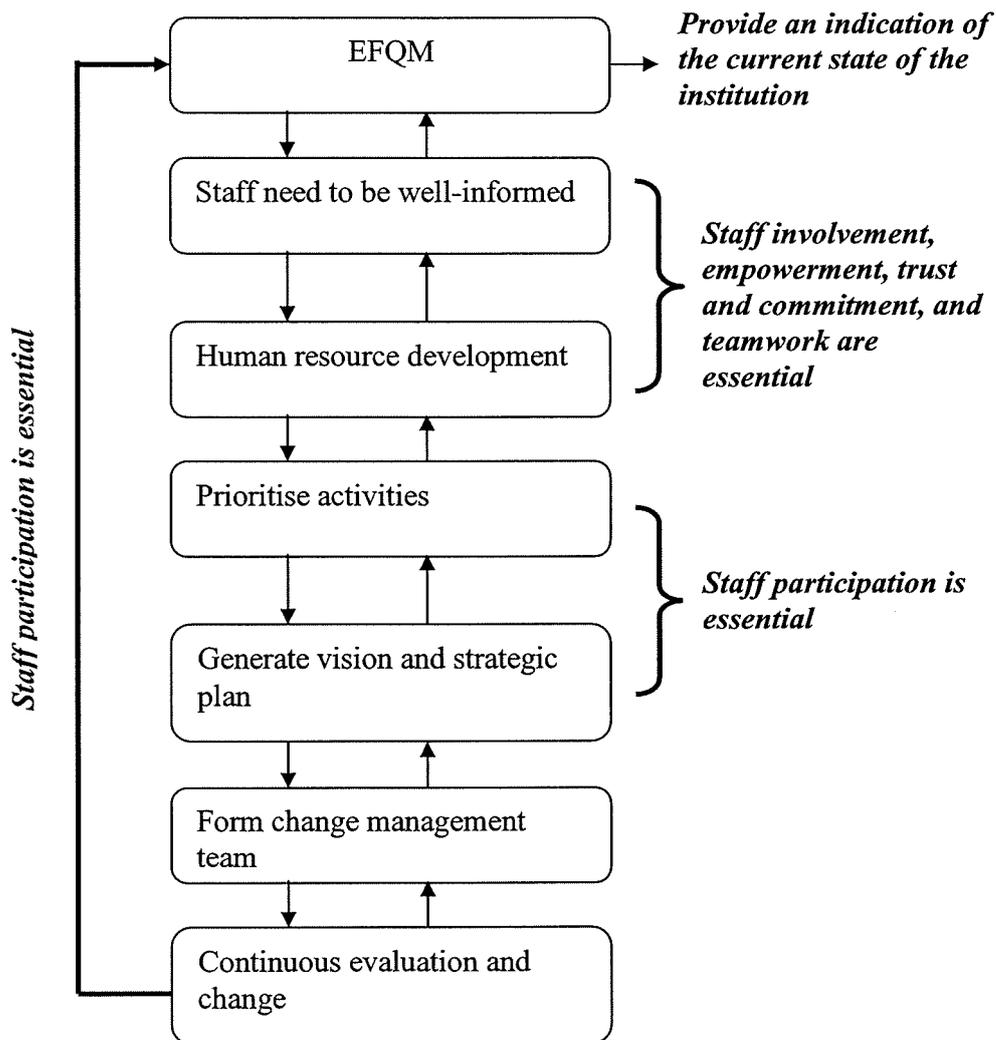
The RADAR philosophy embraces the thinking that an institution needs to (Consortium for Excellence in Higher Education, 2003b):

1. Determine the Results it is aiming to achieve in relation to the policies and strategies that have been implemented.
2. Plan and develop an integrated set of approaches which will enable the results to be realised through its people, partnerships and resources.
3. Deploy the approaches in a systematic and comprehensive way throughout the institution.
4. Assess and Review whether these approaches are effective and have been able to provide the planned results, identifying, prioritising and implementing planned improvements as a result of this analysis.

The self-assessment based on the EFQM framework provides an indication to the leadership about the state of health of their institution in relation to their vision. This is beneficial in getting everyone involved. The staff need to be well informed about the current health of the institution. At this stage the staff need to be involved in order for

everyone to participate, recognise the need for, and make the case for change and its implications for different parts of the institution. Thus, teamwork, staff empowerment, trust and commitment, human resource development (e.g. training for the staff on quality initiatives) and staff involvement need to be cultivated in order for staff to understand the current state of the institution and to accept the need for change. It is recommended to form a change management team, trained and commissioned to develop a work plan and implement the change. Frequent communication and evaluation, and feedback from the staff will facilitate the leaders to continuously make adjustment to the policy and strategy. A summary of additional activities that could support EFQM Excellence Model and the RADAR logic is shown in Figure 8.4.

Figure 8.4: Model to support the EFQM Model and the RADAR logic



It is recommended to form a change management team, trained and commissioned to develop a work plan and implement the change. The management need to adopt integrated views for the strategic plans, processes and systems. Frequent communication and evaluation, and feedback from all stakeholders will facilitate the leadership to continuously make adjustment to the strategic plan towards excellence in the future.

8.4 Contributions to Knowledge

From this research the contributions to knowledge that has been made are as follows:

1. Derivation of a multi-method approach that includes student expectations and satisfaction surveys, organisational culture assessment and the Delphi approach to form a strategic view of the future of Scottish higher education in particular.
2. Particular contribution is the use of Organisational Culture Assessment Instrument and Competing Values Framework to explore culture and to understand the difficulties in changing culture that can form a barrier for the Scottish universities surveyed to achieve their strategic vision.
3. Encapsulation of how the universities can implement the change towards excellence and become more market focus by using EFQM Excellence Model to focus activities is another contribution.

8.5 Recommendations to Academia and Higher Education

Drawing from the research, the following recommendations to both academia and higher education are made:

8.5.1 Recommendations to Academia

The recommendations when considering the university as a dynamic environment are as follows:

1. Transformational leadership is required in universities in order to cultivate cultures that will facilitate the universities to become increasingly market focused with less resistance from the staff. Transformational leadership is required in universities in order to develop, support and enhance the desired culture.
2. A team should be formed to focus activities in order to realise the strategic vision and the development towards excellence. Tools such as Organisational Culture Assessment Instrument, Competing Values Framework and EFQM Excellence Model will facilitate the team to focus activities.
3. A contingency fund is needed in the university in order to invest in training the team, managers and the staff in order for them to understand the tools and terminology involved and to increase their personal commitment that will help them to realise the need for change and properly implement the change effort.
4. The leaders in universities should consider establishing a collegiate mode of operation to increase productivity through their staff. The university should foster a culture of learning and staff development in order to improve staff performance inline with institutional strategic vision.
5. The stakeholders in universities are likely to change. They may have a different perception on approaches to culture change. Therefore, universities need to continuously evaluate other methods that can be incorporated with the Organisational Culture Assessment Instrument, Competing Values Framework and the EFQM model in the future.

8.5.2 Recommendations to Higher Education

The following recommendations to higher education with specific reference to Scottish higher education:

1. Additional funding for human resource development programmes is required. Human resource development in universities cannot be regarded as expenditure to be avoided. The human resource development programmes in universities should include training for the deans, heads of department, senior managers, and

administrative staff that are involved for example in quality improvement programmes. The staff will welcome the quality improvement programmes better when they know what is expected of them and how to implement the quality programmes.

2. New pay structure is required to enable recruitment difficulties to be tackled effectively in the future. The new pay structure should give the academics the choice, flexibility and reward, but linked to contribution to teaching, research and other contribution such as consultancy work with companies.
3. Universities should expand and improve the induction for new staff in order to enhance teaching across university. The university should increasingly highlight and reward excellent teaching staff. Thus, additional funding is required to reward the excellent teaching staff.
4. Greater links with industry and local businesses is required for the knowledge transfer activities at teaching-intensive universities to work well. Diversified products and services are needed in order to generate greater links with industry and local businesses. As such, applied work will depend on the link between research and knowledge transfer activities. Therefore, greater links between the teaching-intensive universities and the research-intensive universities need to be created.
5. Scottish higher education needs to invest in high quality research to create fundamental knowledge and generate greater research income. However, there needs to be balance between funding the research-intensive universities for the purpose of knowledge creation (fundamental knowledge) and the teaching-intensive universities that will develop areas of research for the purpose of knowledge transfer activities.
6. Higher education should enhance teaching excellence by responding quickly to customer requirements including developing new programmes for different types of markets. Both the academic standard and the quality of the student learning experience should be of concern.

8.6 Future Work

The following suggestions for future research:

1. More research should be carried out to provide a holistic view on the strategic vision of higher education. This needs to be broadened to a global scale to include the understanding of cultures, economies and histories of other countries.
2. More research should be conducted with diffused stakeholders at national and international level in order to find ways how the existing and new products can be articulated with the market requirements and quickly disinvest those products when there is no demand in the market.
3. The entire student population can be included in student expectations survey. The student views from the traditional universities could also be included in order to compare their expectations and their views on the likely future of higher education.
4. More Scottish universities can be included in organisational culture survey. All the staff from the participating universities can be included in the survey in order to draw a significant conclusion about the dominant culture of universities and to understand the difficulties in changing culture.

8.7 Conclusion

In the future, the universities will be increasingly linked to the economic growth of Scotland. Thus, the Scottish universities should strive to be among the best in the world and increasingly contribute to the health of Scottish economy. Therefore, if vision is to be achieved, then the challenges faced by the Scottish universities have to be overcome.

These challenges are:

1. To recognise the diversity of role, and universities should increasingly focus on their individual strengths.
2. Welcome collaboration between the universities and also industry and local businesses.

3. Stimulate the changes required for the likely future of Scottish higher education and develop and enhance the knowledge creation and knowledge transfer activities.
4. Provide a higher quality of teaching and research through effective use of public funds and collaboration.
5. Focus on a collegiate mode of operation to stimulate innovation to develop diversified products and services in the future.
6. To improve the leadership in higher education.

The Scottish universities are central to the development of educated citizens and economic growth of Scotland. The Scottish universities cannot afford to refuse to face these responsibilities. The whole sector should work collaboratively to change and increasingly contribute to economic growth in terms of educated citizens, research and knowledge transfer. The Scottish universities should adopt a Market driven culture in the future. In so doing, tools such as the Organisational Culture Assessment Instrument (OCAI), Competing Values Framework and the EFQM model could facilitate the universities to make the transition occur more smoothly and with minimal unrest.

CHAPTER NINE

Reflection of the PhD Process

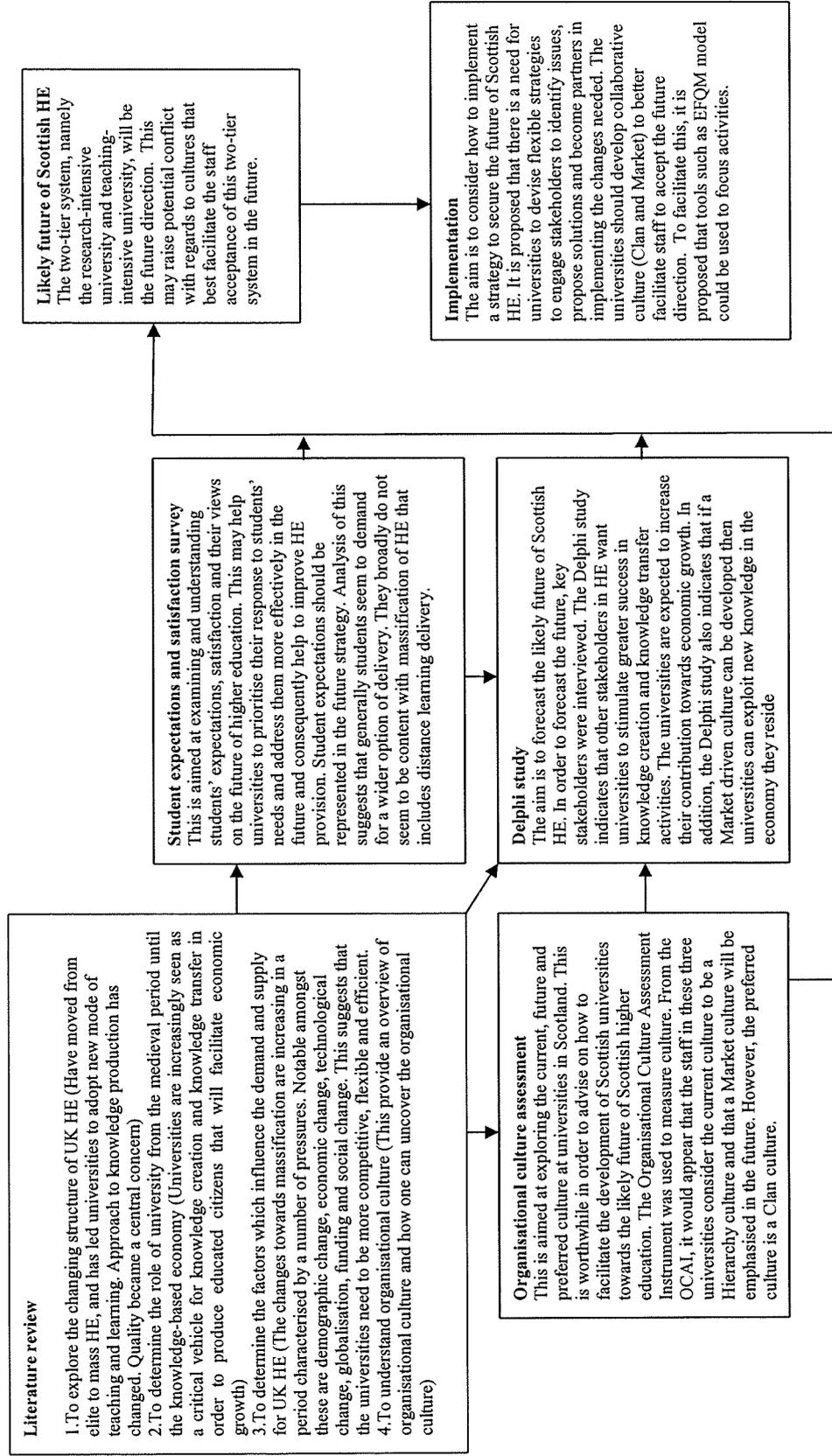
The purpose of this research was to understand the changing context of UK higher education in order to help to develop an approach to facilitate the future development of Scottish higher education. A summary of the processes that is undertaken for this is presented as a flow chart in Figure 9.1.

A broad view of literature review has been presented in order to support the ideal future strategies. The pressures on UK higher education were determined by reviewing government documents, books and journals. Through this integrated approach, a summary of how these pressures might affect the demand and supply for UK higher education in the future was produced.

Some of the identified stakeholders in higher education are funding bodies, society, government, providers and customers/students/staff. The stakeholder requirements should be represented in future strategy for higher education. Understanding student expectations and satisfaction is important in order for the universities to prioritise their response to student expectations and address them more effectively in the future. The student expectations and satisfaction surveys that were carried out at Napier University was generally successful. However, there are some more work that may be required in order to draw significant conclusion on student expectations and satisfaction.

Among the additional work are, firstly, about the understanding of student expectations. The data obtained on the likely future of higher education raises concern that some student may not think about the likely future. The time given during the survey may not be sufficient for the students to provide sensible view on the likely future. Thus, for future researchers it is recommended to conduct focus group interview with students in order to obtain their view on likely future of higher education.

Figure 9.1: Research processes



Secondly, more work is clearly needed in certain areas such as the learning methods and university reputation. In terms of expectations on learning methods, there may be some biasness in the finding. If one looks at the composition of respondents, there were a substantial number of respondents from computing studies. Thus, computing student expectations may influence the finding and that may not be the expectations of other students. Therefore, in future, in order to understand student expectations further comparison by area of study should be conducted. In terms of expectations on university reputation, I think the future researcher should also include the potential student expectations and satisfaction. This should be conducted at national and international level.

Thirdly, the survey focused on Napier University only. The findings may not allow for generalization to the whole higher education sector. It is recommended that, in future, researchers should include other universities in Scotland. Most importantly, there should be a balance of traditional universities, red bricks formed in 1960's and the post 1992 universities. This will allow the researchers to draw significant conclusion and greater generalization to the whole sector.

Organizational culture is something difficult and controversial to measure. The critical question or argument that one should take note is whether using quantitative research methods to measure organizational culture is valid or an in-depth qualitative research methods is a better way to assess organizational culture. The use of Organizational Culture Assessment Instrument or OCAI (quantitative method – survey) seems to work to measure culture. However, obtaining a good response from staff was problematic. Therefore, drawing a significant conclusion was also difficult. In addition, the survey technique raises concern on potential gender bias. There was no space provided in the questionnaire in order to differentiate the respondents' gender, perhaps there should have been. In addition, the staff found it difficult to understand the questions and the scoring. Perhaps this is a reflection of the difficulty of using a US instrument in a UK context.

In future, many more Scottish universities should be included in order to increase the number of responses obtained. This will allow future researchers to draw significant conclusions and not just providing an indicator of culture in universities. Using

interview techniques rather than survey may give a higher response rate, and would allow the researcher to overcome any gender bias and finally can deliver a better explanation with regards to the language used and the scoring idea in OCAI. It is recommended that future researchers should approach their respondents personally and facilitate the respondents in their feedback. In addition, focus group interviews can also be carried out in order to obtain the feedback with regards to OCAI. However, it should be noted that the researchers should not give too much facilitation in both face-to-face interviews and focus group interviews, as this may raise question on the response being the researchers' views and not those of the respondents.

The Delphi technique used to forecast the future of Scottish higher education was carried out systematically. The optimistic future, pessimistic future and the most likely future of Scottish higher education were tabulated based on the Delphi study. The key findings were fed back to the respondents to obtain a general consensus on the future of Scottish higher education. In future, researchers should validate the key findings and the general consensus obtained through focus group study. I strongly recommend focus group interviews in order to add rigor to the findings on the future of Scottish higher education.

It is also recommended that using focus group interviews will facilitate the multi-method approach used that includes student expectations and satisfaction surveys, organizational culture assessment and the Delphi study to form a strategic view of the future of Scottish higher education. It is difficult to integrate all the three approaches used and perhaps to bring the three groups together (student, staff and senior management). It is recommended that the future researchers could use workshops to triangulate the findings in regard to the strategic view for Scottish higher education. However, bringing all three groups together and attempt to obtain the consensus will facilitate future researchers to further explore to see whether the organizational culture fits in to the Competing Values Framework. Perhaps the future researchers will be able to validate the proposed collaborative culture (Market culture and Clan culture) that need appears to be required for Scottish universities to secure their desired future direction.

The Competing Values framework (CVF) was useful to demonstrate the information obtained from OCAI. Successful application of the OCAI and CVF will facilitate the development of appropriate cultures for universities in the future. However, the interpretation of the results from the CVF needs to be performed with caution. The culture profiles based from the CVF may be altered due to the pressures facing higher education over time. Perhaps in future staff may demonstrate different views with regards to organisational culture of university. Therefore, in future, researchers who want to measure organisational cultures of universities may need to use the tools consistently or perhaps more often. Continuous culture assessment will help the managers to explore the type of culture that need to be emphasized and cultivated in higher education. In addition, this also will help the managers to understand the difficulties that they may face in changing culture. These will better facilitate the managers to devise an approach to facilitate staff acceptance of the desired future direction of universities with minimal unrest.

In this research some important groups with regards to staff may have been given less emphasis or even missed from the sample. For example, qualified pedagogical development staff, professors, teaching fellows and managers in charge for support services within universities, have not been included. In future, there is a need to draw more of this people in the respondent's list as they can provide valuable information or views on organisational culture of universities. For instance, views on the types of culture that will best facilitate the universities to make some transformational changes in infrastructure in universities will come from managers in charge for the support services. In addition, views on culture from the pedagogical development staff, professors and teaching fellows will be required to inform on pathways to transformational changes with regards to delivery methods and program and module development which will support knowledge-based economy. In addition, views from these groups of people will assist universities on how to prioritise student expectations and address them more effectively. All these will facilitate universities to make transition to secure the future direction occur more smoothly and with minimal unrest.

Drawing from the research, we make general recommendation that transformational leadership is required in order to be able to cultivate a culture that is less resistant to change. Universities are important national assets and the Scottish universities cannot

refuse to face this responsibility. Another general recommendation is that higher education need additional funding for human resource development programs. This is to train the staff to understand what contributions are expected from them in order to secure university's future strategic direction.

Some of the important issues that I have learnt from this research are as follows:

1. Higher education will continuously face pressures that will influence the demand and supply for higher education. Thus, leaders should think out of the box and respond more proactively in future. Operational leadership is not sufficient for higher education if future direction is to be achieved.
2. There is a wide range of stakeholders with diverse views about future of higher education. These stakeholders' views need to be represented in future strategy for higher education.
3. Organisational culture is something difficult and controversial to measure. Depending on quantitative methods alone will not be able to draw significant conclusion. One way to improve the quality of organizational culture assessment and to ensure that the findings are culturally relevant and accurate is to combine qualitative and quantitative methods.
4. I have learnt how to use multi-method approach to form a strategic view of the future of Scottish higher education.
5. I have obtained insights in using the Organisational Culture Assessment Instrument and Competing Values Framework to explore culture and to understand the difficulties in changing culture in universities.
6. I have obtained knowledge on how universities can implement the changes towards excellence.

REFERENCE

Adams, J. and Mohadeb, P. (2005) Higher education: options for future funding in China. *World Review of Science, Technology and Sustainable Development*, 2(2), pp. 137-153.

Alic, J.A. (1997) Knowledge, skill and education in the new global economy. *Futures*, 29(1), pp. 5-16.

Altbach, P. G. (2004) Globalisation and the Universities: Myths and Realities in an Unequal World. *Tertiary Education and Management*.

Appelbaum, S.H. and Patton, E. (2002) Downsizing the university: Bonne chance. *The International Journal of Educational Management*, 16(3), pp. 126-136.

Association of University Teachers and Development of Education Association (1999) *Globalisation and higher education: guidance on ethical issues arising from international academic activities*. Available from: www.dea.org.uk (Date accessed: 15/02/06).

Back, K. Davis, D. and Olsen, A. (1996) *Internationalisation and Higher Education: goals and strategies*. Australian Government Publishing Service Canberra.

Barrett, B. (1998) What is the function of a university: Ivory tower or trade school for plumbers? *Quality Assurance in Education*, 6(3), pp. 145-151.

Bell, D. (1976) *The Coming of Post Industrial Society: a venture in social forecasting*, New York: N.Y. Basic Books.

Bennell, P. and Pearce, T. (2003) The internationalisation of higher education: exporting education to developing and transitional economies. *International Journal of Educational Development*, 23, pp. 215-232.

Berio, A. A. (2003) An organisational culture assessment using the competing values framework: a profile of Ohio State University Extension. *Journal of Extension*, 41 (2).

Bess, J.L. and Goldman, P. (2001) Leadership ambiguity in universities and K-12 schools and the limits of contemporary leadership theory. *The Leadership Quarterly*, 12, pp. 419-450.

Blass, E. (2003) Researching the future: method or madness? *Futures*, 35, pp. 1041-1054

Bleiklie, I. (1994) *The New Public Management and the Pursuit of Knowledge*. Bergen: Norwegian Research Centre in Organisation and Management.

Boaden, R.J. and Cilliers, J.J. (2001) Quality and the research assessment exercise: just one aspect of performance? *Quality Assurance in Education*, 9(1), pp. 5-13.

Bolgar, R. R. (1954) *The classical heritage*. In Preston, D.S. (2002) *The evolution of the English university mission*. Paper presented at The Idea of Education Conference 3rd to 4th July 2002, Mansfield College, Oxford.

Bologna Declaration (1999) *The European Higher Education Area: Joint Declaration of the European Ministers of Education Convened in Bologna at the 19th of June 1999*. Available from: www.unighe.ch/creBolognaForum (Date accessed: 11/01/06).

Brown, A.D. (1985) *Organisational Culture*. London: Pitman.

Brown, P. (2004) Strategic capability development in the higher education sector. *The International Journal of Educational Management*, 18(7), pp. 436-445.

Brymen, A. and Bell, E. (2003) *Business Research Methods*. Oxford University Press.

Buch, K. and Wetzel, D. K. (2001) Analysing and realigning organisational culture. *Leadership and Organisation Development Journal*, 22(1), pp. 40-43.

Bueno, E., Salmador, M. P. and Rodriguez. O. (2004) The Role of Social Capital in Today's Economy: Empirical evidence and proposal of a new model of intellectual capital. *Journal of Intellectual Capital*, 5(4), pp. 556-574.

Cameron, K.S. and Quinn, R.E. (1999) *Diagnosing and Changing Organisational Culture: Based on the Competing Values Framework*. Addison Wesley USA.

Choueke, R. and Armstrong, R. (2000) Culture: a missing perspective on small and medium sized enterprise development. *International Journal of Entrepreneurial Behaviour and Research*, 6(4), pp. 227-238.

Cohen, D. and Prusak, L. (2001) *In Good Company: How Social Capital Makes Organisations Work*. USA: Harvard Business School Press.

Commonwealth Higher Education Management Service (1998) *Benchmarking in Higher Education: An International Review*. Available from: <http://www.acu.ac.uk/chems/onlinepublications/961780238.pdf> (Date accessed: 2/05/06).

Comrack, S. (1999) University of the future. In Thorne, M. (1999) *Universities in the Future*. Department of Trade and Industry, United Kingdom.

Conlon G. (2005) The incidence and outcomes associated with the late attainment of qualifications in the United Kingdom. *Education Economics*, 13(1), pp.27-45.

Consortium for Excellence in Higher Education (2003a) *Linking the EFQM Excellence Model to other Management Models and Tools*. Sheffield Hallam University. Available from: <http://excellence.shu.ac.uk/publications/publications.asp> (Date accessed: 10/11/05).

Consortium for Excellence in Higher Education (2003b) *Applying Self-Assessment against the EFQM Excellence Model in Further and Higher Education*. Sheffield Hallam University. Available from: <http://excellence.shu.ac.uk/publications.asp> (Date accessed: 4/04/06).

Consortium for Excellence in Higher Education (2003c) *Embracing Excellence in Education*. Sheffield Hallam University. Available from: <http://excellence.shu.ac.uk/publications.asp> (Date accessed: 4/04/06).

Corbett, L.M. and Rastrick, K.N. (2000) Quality performance and organisational culture. *International Journal of Quality and Reliability Management*, 17(1), pp. 14-26.

Craft, M., Carr, R. and Fung, Y. (1998) Internationalisation and distance education: A Hong Kong case study. *International Journal of Educational Development*, 18(6), pp.467-472.

Cullen, J., Joyce, J. Hassall, T. and Broadbent, M. (2003) Quality in higher education: from monitoring to management. *Quality Assurance in Education*, 11(1), pp. 5-14.

Curran, C. (1989) Resource Factors: Recurrent Costs. In UNESCO and International Council for Distance Education, *Developments in Distance Education in Asia: An Analysis of Five Case Studies*, Paris/Oslo, pp. 23-26. Available from: <http://www1.worldbank.org/disted/Management/Benefits/cost.html> (Date accessed 22/8/05).

Curtis, M. (1959) *Oxford and Cambridge in Transition 1558-1642*. In Preston D.S. (2002) *The evolution of the English university mission*. Paper presented at The Idea of Education Conference 3rd to 4th July 2002, Mansfield College, Oxford.

Curtis, P. (2005) *Financial fears for 11 universities*. *Education Guardian*. Available from: www.education.guardian.co.uk/universitiesin crisis/story/0,12028,1460256,00.html (Date accessed: 11/03/06).

Daiches, D. (1981) *The Companion of Scottish Culture*. London: Butler and Tanner Ltd.

Davies, D. (1998) The Virtual University: a learning university. *Journal of Workplace Learning*, 10(4), pp. 175-213.

Davies, J., Hides, M.T. and Casey, S. (2001) Leadership in higher education. *Total Quality Management*, 12(7-8), pp. 1025-1030

De La Harpe, M. (1997) Walking the economic highway. *Campus Review*, 1-8 October, pp. 9.

Deal, T. and Kennedy, A. (1982) *Corporate Cultures: The Rites and Ritual of Corporate Life*. Addison- Wesley, USA.

Dearing, R. (1997). *Higher Education in the Learning Society*. London: Stationery Office.

Dearnley, C., Dunn, G. and Watson, S. (2006) An exploration of on-line learning access by non-traditional students in higher education: A case study. *Nurse Education Today*, Article in Press.

Deese-Roberts, S. and Keating, K. (2000) Integrating a library strategies peer tutoring program. *Research Strategies*, 17, pp. 223-229.

Denison, D.R. (1990) *Corporate Culture and Organisational Effectiveness*. New York: Wiley.

Department for Education and Skill (2000) *Labour Market and Skill Trends*. DfES Publications, Nottingham.

Department for Education and Skills (2003) *The Future of Higher Education*. Printed by the UK Stationery Office Limited on behalf of Her Majesty's Stationery Office.

Department for Trade and Industry (2005) *Education overview*. Available from: www.dti.gov.uk (Date Accessed: 11/01/06).

DeShields Jr, O. W., Kara, A. and Kaynak, E. (2005) Determinants of business student satisfaction and retention in higher education: applying Herzberg's two factor theory. *International Journal of Educational Management*, 19(2), pp128-139.

Dicken, P. (1998) *Global Shift: Transforming the World Economy*. London: Paul Chapman.

Dimmen, A. and Kyvik, S. (1998) Recent changes in the governance of higher education institutions in Norway, *Higher Education Policy*, 11, pp. 217-228.

Edinburgh University (2005). *The University of Edinburgh Strategic Plan*. Available from: <http://www.ed.ac.uk/> (Date accessed: 20/06/05).

Edinburgh University (2005). Management School and Economics. Available from: <http://www.managementschool.ed.ac.uk/> (Date accessed: 20/06/05).

European Foundation for Quality Management (2006). *Introducing Excellence*. Available from: www.efqm.org (Date accessed: 22/04/06).

Elmuti, D., Kathawala, Y. and Manippallil, M. (1996) Are total quality management programmes in higher education worth the effort? *International Journal of Quality and Reliability Management*, 13(6), pp. 29-44.

ENTO (2004) *Skills Foresight Report 2004 for PAULO Sector*. Available from: http://www.lifelonglearninguk.org/documents/docs/paulo_skills_ foresight_2004_v4_final_version.doc (Date accessed: 7/03/06).

Etzkowitz, H., Webster, A., Gebhardt, C. and Terra, B.R.C. (2000) The Future of the University and the University of the Future: Evolution of ivory tower to entrepreneurial paradigm. *Research Policy*, 29, pp. 313-330.

Euromonitor (2005) *Global Market Information Database*. Available from: <http://www.gmid.euromonitor.com/Default.aspx> (Date accessed: 23/02/06).

Florida, R. (2002) *The rise of the creative class and how it's transforming work, leisure, community and everyday life*. New York: Basic Books.

Francis, K., Fitzgerald, K., Lacey, R., Hancock, K., Ockendon, D. (2000) The Effects of Globalisation on Education. Available from: www.ssn.flinders.edu.au/global/globl002/2000book/lifeand%20effects%20of%20glob%20on%20education.htm (Date accessed 24/05/04).

Furlong, A. and Forsyth, A. (2003) *Socio-economic disadvantage and experience in higher education*. Available from: www.jrf.org.uk (Date accessed: 16/02/06).

Futureskills Scotland (2002) *Skills in Scotland: The Employers' View*. Available from:
http://www.scottishenterprise.com/publications//shareddocs/fss_survey_results.pdf
(Date accessed: 20/10/03).

Fletcher, B.C. and Jones, F. (1992) Measuring organisational culture: The cultural audit. *Managerial Auditing Journal*, 7(6), pp. 30-36.

Florida, R. (2002) *The Rise of the Creative Class: And how it's Transforming Work, Leisure, Community and Everyday Life*. USA: Basic Books Publishing.

Frankema, K.B. (2001) On managing cultural integration and cultural change processes in mergers and acquisitions. *Journal of European Industrial Training*, 25(3), pp. 192-207.

Geertz, C. (1973) *The Interpretation of Cultures*. Basic Book, New York.

Gera, S. and Mang, K. (1998) The Knowledge-based Economy: Shifts in Industrial Output. *Canadian Public Policy*, XXIV(2).

Gibbons, M. and Gunmmett, P. (1984) *Science, Technology and Society Today*. Manchester University Press.

Gibbons, M (1998) Higher Education Relevance in the 21st Century. Available from:
www.wds.worldbank.org (Date accessed: 28/04/06).

Gibbs, G. and Jenkins, A. (1992) *Teaching Large Classes in Higher Education: maintaining quality with reduced resources*. Kogan Page, London.

Gibbs, P. and Iacovidou, M. (2004) Quality as Pedagogy of confinement: is there an alternative. *Quality Assurance in Education*, 12(3), pp. 113-119.

Gibson, J.W. and Herrera, J.M. (1999) How to go from classroom base to online delivery in eighteen months or less: A case study in online program development. *The Journal of Higher Education*, 26(6), pp. 57-60.

Goldin, C. and Katz, L.F. (1999) The shaping of higher education: The formative years in the United States 1890 to 1940. *Journal of Economic Perspective*, 13 (1), pp 37-62.

Goldsmith, M., Stewart, L. and Ferguson, L. (2005) Peer learning partnership: An innovative strategy to enhance skill acquisition in nursing students. *Nurse Education Today*, Article in press.

Gosling, D. (2004) The impact of a national policy to enhance teaching quality and status, England, the United Kingdom. *Quality Assurance in Education*, 12(3), pp. 136-149.

Government Actuaries Department (2006) *Population Projection Background*. Available from: <http://www.gad.gov.uk/> (Date accessed: 5/02/06).

Gradstein, M. and Kaganovich, M. (2004) Aging population and education finance. *Journal of Public Economics*, 88, pp. 2469-2485.

Gregory, K.L. (1983) Native-view paradigm: multiple cultures and cultures conflict in organisations. *Administrative Science Quarterly*, 28, pp. 359-376.

Gretton, A. (2003) Do We Really Look Like That: Using One EFQM Approach to Benchmark Progress Towards Investors in People. Available from: www.hesda.org.uk (Date accessed: 20/06/05).

Gunasekaran, A., McNeil, R.D. and Shaul, D. (2002) E-Learning: research and applications. *Industrial and Commercial Training*, 34(2), pp. 44-53.

Guskin, A.E. and Marcy, M. (2003) *Dealing with the future: Principles for creating a vital campus in a climate of restricted resources*. Available from: www.pfhe.org/docs/ChangeFinal.pdf (Date accessed: 10/03/06).

Haigh, J. (2004) Information technology in health professional education: why IT matters. *Nurse Education Today*, 24, pp. 547-552.

Halls, J. (2005) Theory wrapped in context: bridges between academic and industrial worlds. *Industrial and Commercial Training*, 37(6), pp. 279-285.

Halsey, A.H. (2000) Further and higher education. In Halsey, A.H. and Josephine (2004) *Twentieth-Century British Social Trends*. Macmillan Press Ltd.

Hara, N. and Kling, R. (1999) Students' frustration with a web based distance education course. Available from: www.firstmonday.dk/issues/issue4_12/index.html (Date accessed: 18/11/05).

Harman, G. (1999) Vouchers or "student centred funding": the 1996-1998 Australian review of higher education financing and policy. *Higher Education Policy*, 12, pp. 219-235.

Harris, R. G. (2001) The Knowledge Based Economy: intellectual origins and new economic perspectives. *International Journal of Management Reviews*, 3(1), pp. 21-40.

Harris, R. W. (1994) Alien or Ally: TQM, academic quality and the new public management. *Quality Assurance in Education*, 2(3), pp. 33-39.

Harris, R.G. (2001) The Knowledge-based economy: intellectual origins and new economic perspectives. *International Journal of Management Reviews*, 3(1), pp. 21-40.

Harris, T. (2001) *Aston pulls out of merger talks with Birmingham*. Available from: www.education.guardian.co.uk/higher/news/story/0,9830,485085,00.html (Date accessed: 11/03/06).

Harvey, L. (2002) The end of quality? *Quality in Higher Education*, 8(1), pp. 5-22.

Harvey, L. and Green, D. (1993) Defining Quality, Assessment and Evaluation in Higher Education. *Quality in Higher Education*, 18, pp. 9-34.

Harvey, L. and Newton, J. (2004) Transforming quality evaluation. *Quality in Higher Education*, 10(2), pp. 149-165.

Haskins, C.H. (1923) *The Rise of Universities*. Itacha N.Y.

Haywood-Farmer, J. (1988) A conceptual model of service quality. In Henderson, G.D. (1937) *Religious life in seventeenth century Scotland*. Cambridge University Press.

Helmer, O. (1966) *The Use of the Delphi Technique – Problems of Educational Innovations*. Rand Corporation, Santa Monica, pp. 2-3.

Heriot-Watt University (2005) *Annual Review 2005*. Available from: <http://www.hw.ac.uk/annual-review/> (Date accessed: 20/06/05).

Heriot-Watt University (2005) *School of Management*. Available from: <http://www.sml.hw.ac.uk/> (Date accessed: 20/06/05).

Heriot-Watt (2005) *School of Engineering and Physical Science*. Available from: www.eps.hw.ac.uk/welcome/index.html (Date accessed: 20/06/05).

Hides, M. T., Davies, J. and Jackson, S. (2004) Implementation of EFQM excellence model self-assessment in the UK higher education sector – lessons learned from other sectors. *The TQM Magazine*, 16(3), pp. 194-201.

Higher Education Statistic Agency (2004) *Higher Education Statistics for the UK*. Available from: www.hesa.co.uk (Date accessed: 15/07/05).

Higher Education Funding Council for England (2005) *Key Facts about Higher Education*. Available from: <http://www.hefce.ac.uk/pubs/hefce> (Date accessed: 25/10/05).

Hill, F. M. (1995) Managing service quality in higher education: the role of the students as primary consumer. *Quality Assurance in Education*, 3(3), pp. 10-21.

Hill, J.R. (2002) Overcoming obstacles and creating connections: community building in web-based learning environments. *Journal of Computing in Higher Education*, 14(1), pp. 67-86.

Hill, P. (2004) *Men Leave Low Status Academy to Women*. Available from: www.thes.co.uk (Date accessed: 30/06/04).

Hills, J. M. and David, D. S. (2001) A Tool for Total Quality Management of Education Provision Illustrated Using Advanced Coastal Management Courses. *The TQM Magazine*, 13 (6), pp. 409-418.

Hines, A.M. (1993) Linking qualitative and quantitative methods in cross-cultural survey research: Techniques from cognitive science. *American Journal of Community Psychology*, 21(6), pp. 729-746.

Hitt, J.C. and Hartman, J.L. (2002) *Distributed Learning: A New Challenges and Opportunities for Institutional Leadership*. American Council on Education, Washington DC.

Hofmann, D.W. (2002) Internet-based distance learning in higher education. *Tech Directions*, 62(1), pp. 28-32.

Hofstede, G. (2001) *Culture's Consequences: comparing values, behaviours, institutions and organisations across nations*. Thousand Oaks, California; London: Sage Publications.

Hofstede, G., Neuijen, B., Ohayv, D.D. and Sanders, G. (1990) Measuring organisational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, 35, pp. 286-316.

Hoorebek, M.V. and Marson, J. (2005) Teaching and technology transfer as alternative revenue streams. *International Journal of Educational Management*, 19(1), pp. 36-47.

Hosie, P. (1995) Promoting quality in higher education using human resource information systems. *Quality in Education*, 3(1), pp. 30-35.

Huff, W. D. (2000) Colleges and Universities: survival in the information age. *Computers and Geosciences*, 26, pp. 635-640.

Huff, W.D. (2000) Colleges and universities: survival in the information age. *Computers and Geosciences*, 26, pp. 635-640.

Huisman, J. and Wende, M. V. D. (2004) The EU and Bologna: are supra – and international initiatives threatening domestic agendas? *European Journal of Education*, 39(3), pp. 349-357.

Janicki, T. N., Schell, G. P., and Weinroth, J. (2002) Development of a Model for Computer Supported Learning Systems. *International Journal of Educational Technology*, 3(1).

Jenkins, A. (1995) The research assessment exercise, funding and teaching quality. *Quality Assurance in Education*, 3(2), pp. 4-12.

Jenkins, A., Vignoles, A., Wolf, A. and Galindo-Rueda, F. (2003) The determinants and labour effects of lifelong learning. *Applied Economics*, 35(16), pp. 1711-1721.

Jonsson, B.A., (2005) A case study of successful e-learning: A web based distance course in medical physics held for school teachers of the upper secondary level. *Medical Engineering and Physics*, 27, pp. 571-581.

Jordan, Z.A. (1971) *Karl Marx: economy, class and social revolution*. London: Nelson.

Kanji, G.K. and Tambi, A.M. (1999) Total Quality Management in UK higher education institutions. *Total Quality Management*, 10(1), pp.129-153.

Knipe, D., and Lee, M. (2002) The quality of teaching and learning via videoconferencing. *British Journal of Educational Technology*, 33(3), pp. 301-311.

Keay, J. and Keay, J. (1994) *Collins encyclopaedia of Scotland*. London: HarperCollins.

King, D.L. (2000) New technology tools for education: What's on your agenda? *New Accountant*, pp.13-17.

Kruger, T. J. (2001) *A Virtual Revolution: Trends in the Expansion of Distance Education*. Available from: www.aft.org (Date accessed: 23/04/03).

Kotter, J. P. and Heskett, J. L. (1992) *Corporate culture and performance*. New York: Free Press and Oxford: Maxwell Macmillan International.

Kwan, P.Y.K. (1996) Application of total quality management in education: retrospect and prospect. *International Journal of Educational Management*, 10(5), pp. 25-35.

Lagrosen, S., Hashemi, R. S., and Leitner, M. (2004) Examination of the dimensions of quality in higher education. *Quality Assurance in Education*, 12(2), pp. 61-69.

Laurillard, D. (2002) *Rethinking university teaching: A framework for the effective use of learning technologies*. Routledge/Falmer, London.

Law, M.L., (2000) Managing quality of teaching and learning in the ophthalmic nursing course. *Nurse Education Today*, 20, pp. 136-140.

Layers, G. (2005) Widening participation - variations on a theme. *Journal of Access Policy and Practice*, 3(1), pp. 70-88.

Leadership Foundation (2004) *Engaging with leaders in higher education*. Available from: www.lfhe.ac.uk/ (Date accessed: 23/12/05).

Lee, C.H.M., Cheng, Y.W., Rai, S. and Depickere, A. (2005) What affects student cognitive style in the development of hypermedia learning system? *Computers and Education*, 45, pp. 1-19.

Leslie, A.M (1959) The concept of culture. *American Anthropologist*, 16(2), pp. 227-251.

Lewis, D. (1996) The organisational culture saga-from OD to TQM: a critical review of the literature. *Leadership and Organisation Development Journal*, 17(2), pp. 9-16.

Lewis, D. (2002) Five years on – the organisational culture saga revisited. *Leadership and Organisation Development Journal*, 23(5), pp. 280-287.

Lindahl, R. (2006) *The role of organisational climate and culture in the school improvement process: A review of the knowledge-base*. Available from: <http://cnx.org/content/ml13465/latest> (Date accessed: 2/04/06).

Linstone, H. A. (1970) A University for the Post-Industrial Society. *Technological Forecasting*, 1, pp. 263-281.

Lomas, L. (1999) The Culture and Quality of Higher Education Institutions: Examining the Links. *Quality Assurance in Education*, 7(1), pp 30-34.

Lomas, L., (2004) Embedding quality: the challenges for higher education. *Quality Assurance in Education*, 12(4), pp. 157-165.

Lomas, Laurie and Nicholas, Gill (2005) Enhancing teaching quality through peer review of teaching. *Quality in Higher Education*, 11(2), pp. 137-149.

Louis, M. (1986) Sourcing Workplace Culture: Why, When and How. In Kilman, Saxton and Serpa (1986) *Gaining Control of the Corporate Culture*. San Francisco: Jossey- Bass.

Mackenzie, S. (1995) Surveying the organisational culture in an NHS trust. *Journal of Management in Medicine*, 9(6), pp. 69-77.

Magolda, M.B., Terenzini, P.T. and Hutchings, P. (1998) Learning and Teaching in the 21st Century: Trends and Implication for Practice. Available from: www.acpa.nche.edu/seniorscholars/trends/trends4.htm (Date accessed: 20/3/03).

Manly, B.F.J. (2005) *Multivariate Statistical Methods: A primer*. Chapman and Hall/CRC, London.

Marra, M. (2004) Knowledge partnerships for development: what challenges for evaluation? *Evaluation and Program Planning*, 27, pp. 151-160.

Martin, J. and Siehl, C. (1983) Organisational culture and counter-culture: an uneasy symbiosis. *Organisational Dynamics*, pp. 52-64.

Martins, E.C. and Terblanche, F. (2003) Building organisational culture that stimulates creativity and innovation. *European Journal of Innovation Management*, 6(1), pp. 64-74.

Masiello, I., Ramberg, R. and Lonka, K. (2005) Attitudes to the application of a web based learning system in a microbiology course. *Computers and Education*, 45, pp. 171-185.

Mauil, R., Brown, P. and Cliffe, R. (2001) Organisational culture and quality improvement. *International Journal of Operations and Production Management*, 21(3), pp. 302-326.

Mazzarol, T., Soutar, G.N. and Seng, M.S.Y. (2003) The third nave: future trends in international education. *The International Journal of Educational Management*, 17(3), pp. 90-99

Mazzolini, M. and Maddison, S. (2005). When to jump in: the role of the instructor in online discussion forums. Available at www.sciencedirect.com (Date accessed: 14/12/05)

McClelland, C. E. (1988). To live for Science: Ideals and Realities at the University of Berlin. In Reed, D. (2004) Universities and the promotion of corporate responsibility: reinterpreting the liberal arts tradition. *Journal of Academic Ethics*, 2, 3-41.

McCredie, J. (2003) Does IT matter to higher education? *Education Review*, 38(6), pp. 14-22.

McCulloch, M. (1993) Total Quality Management: Its relevance for higher education. *Quality Assurance in Education*, 1(2).

McGovern, P. and Hope-Hailey, V. (1997). Inside Hewlett-Packard: Corporate culture and bureaucratic control. In Sackmann, S.A. (1997) *Cultural Complexity in Organisations: Inherent Contrasts and Contradictions*, Sage Publications, Thousand Oaks, California.

McWhirther, G., Courage, M. and Dixon, A.Y. (2003) Diversity in graduate nursing education: an experience in collaboration. *Journal of Professional Nursing*, 19(3), pp. 134-141.

Meek, V.L. and Wood, F.Q. (1997) The market as a new steering strategy for Australian higher education. *Higher Education Policy*, 10(3/4), pp. 253-274.

Napier University (2005) *Napier University Business School*. Available from: www.nubs.napier.co.uk (Date accessed: 20/06/05).

Napier University (2005) *Faculty of Engineering and Computing*. Available from: <http://www.napier.ac.uk/facultyengcomp/profile.htm> (Date accessed: 20/06/05).

Napier University (2005) *Faculty of Arts and Social Science*. Available from: www.napier.ac.uk/depts/fass/home.html (Date accessed: 20/06/05).

Napier University (2005) *Faculty of Health and Life Science*. Available from: <http://www.napier.ac.uk/fhls/home.html> (Date accessed: 20/06/05).

Napier University (2005) *School of Engineering Profile*. Available from: www.soe.napier.ac.uk (Date accessed: 20/06/05).

Napier University (2005) News Centre: Background Information. Available from: <http://www.news.napier.ac.uk/background/> (Date accessed: 25/02/05).

National Statistics (2005) *National Statistics online*. Available from: www.statistics.gov.uk/ (Date accessed: 21/02/06).

National Statistics (2005) *The National Statistics Socio-economic classification: user manual*. Available at www.statistics.gov.uk/ (Date accessed: 21/02/06).

Navarro, M.M., Iglesias, M.P. and Torres, P.R. (2005) A new management element for universities: satisfaction with the offered courses. *International Journal of Educational Management*, 19(6), pp. 505-526.

Novin, K.L. (2003) Filling the gaps: a research-driven approach to learning computer graphics. *Computers and Graphics*, 27, pp.347-351.

OECD (2001) *E- learning: The Partnership Challenge*. Available from: www.oecd.org (Date accessed: 23/4/04).

OECD (2004) *Innovation in the Knowledge-economy: Implication for Education and Learning*. Available from: www.oecd.org (Date accessed: 10/05/05).

OECD (1996) *The Knowledge-Based Economy*. Available from: www.oecd.org (Date accessed: 17/02/06).

OECD (2002) *Information Technology Outlook*. Available from: <http://www.oecd.org> (Date accessed 17/10/04).

Osseo-Asare, A.E., Longbottom, D., and Murphy, W.D. (2005) Leadership best practices for sustaining quality in UK higher education from the perspective of EFQM Excellence Model. *Quality Assurance in Education*, 13(2), pp. 148-170.

Ouchi, W. G. (1981) *Theory Z: how American business can meet the Japanese challenge*. Reading Mass Addison-Wesley.

Ouchi, W.G. and Wilkins, A.L. (1985) Organisational culture. *Annual Review Social*, 11, pp. 457-483.

Owlia, M. S. and Aspinwall, E. M., (1996) A framework for the dimensions of quality in higher education. *Quality Assurance in Education*, 4(2), pp. 12-20.

Parker, R. and Bradley, L. (2000) Organisational culture in the public sector: evidence from six organisations. *The International Journal of Public Sector Management*, 13(2), pp. 125-141.

Parry, K.W. and Proctor-Thomson, S.B. (2001). Testing the validity and reliability of the organisational description questionnaire. *International Journal of Organisational Behaviour*, 4(3), 111-124.

Patterson, M.G., West, M.A., Shackleton, V.J., Dawson, J.F., Lawthom, R., Maitlis, S., Robinson, D.L. and Wallace, A.M. (2005) Validating the organisational climate measure: links to managerial practices, productivity and innovation. *Journal of Organisational Behaviour*, 26, pp. 379-408.

Peter, T. J. and Waterman, R. H. (1982) *In search of excellence: lessons from America's best-run companies*. New York; Cambridge: Harper and Row.

Petrides, L.A. (2002) Web-based technologies for distributed (or distance) learning: creating learning-centred educational experiences in the higher education classroom. *International Journal of Instructional Media*, 29(1), pp. 69-77.

Pratt, G and Poole, D. (1999) Globalisation and Australian universities: policies and impacts. *The International Journal of Public Sector Management*, 12(6), pp. 533-544.

Pratt, L.R. (1995) Going public: political discourse and the faculty voice. In *Higher Education under Fire: Politics, Economics, and the Crisis of the Humanities*. ed. M. Berube and C. Nelson. Routledge, London.

Preston, D.S. (2002) The evolution of the English university mission. Paper presented at The Idea of Education Conference 3rd to 4th July 2002, Mansfield College, Oxford.

Quinn and Rohrbaugh (1983) *Competing Values Framework*. Available from: <http://www.valuebasedmanagement.net> (Date accessed: 21/01/03)

Reading, B. (1996) *The University in Ruins*. Cambridge, MA: Harvard University Press. In Reed, D. (2004) Universities and the promotion of corporate responsibility: reinterpreting the liberal arts tradition. *Journal of Academic Ethics*, 2, pp. 3-41.

Reed, D (2004) Universities and the promotion of corporate Responsibility: reinterpreting the liberal arts tradition. *Journal of Academic Ethics*, 2, pp. 3-41

Reponen, T. (1999) Is the leadership possible at loosely coupled organisations such as universities? *Higher Education Policy*, 12, pp. 237-244.

Robbins, S.P. (1996) *Organisational Behaviour: Concepts, Controversies, Applications*. Prentice-Hall, Englewood Cliffs.

Robertson, J.S., Grant, M.M., Jackson, L. (2005) Is online instruction perceived as effective as campus instruction by graduate students in education? *Internet and Higher Education*, 8, pp. 73-86.

Robson, C. (1993) *Real World Research: a Resource for Social Scientists and Practitioners-Researchers*. Oxford, Blackwell.

Rothblatt, S. (1968) *The Revolution of the Dons-Cambridge and Society in Victorian England*. London: Faber and Faber Ltd.

Rourke, J.R. (2001) Online learning: fad or fate? *Principal Leadership*, 1(9), pp. 8-14.

Ruffles, P. (2004) The future of UK research. *Strategic Direction*, 20(1), pp. 30-32.

Rumble, G. (1988) The Costs and Costing of Distance/Open Education. In J. Jenkins, ed., *Commonwealth Co-operation in Open Learning: Background Papers*. London: Commonwealth Secretariat. Available from: <http://www1.worldbank.org/disted/Management/Benefits/cost-01.html> (Date accessed: 22/08/05).

Ryan, L. and Morriss, R. (2005) Designing and managing a strategic academic alliance: an Australian university experience. *The Journal of Workplace Learning*, 17(1/2), pp. 79-87.

Saarinen, T. (2005) "Quality" in the Bologna process: From "competitive edge" to quality assurance techniques. *European Journal of Education*, 40(2), pp.189-204.

Sackman, S.A. (1992) Culture and subcultures: an analysis of organisational knowledge. *Administrative Science Quarterly*, 37.

Sadri, G. and Lees, B. (2001) Developing corporate culture as a competitive advantage. *Journal of Management Development*, 20(10), pp 853-850.

Sarles, A. (2001) A vision: the idea of university in the present age. *Organisation*, 8(2), pp. 403-415.

Sathe, V. (1985) *Culture and Related Corporate Realities: Text, Cases and Readings on Organisational Entry, Establishment and Change*. Richard D.Irwin, Homewood, IL.

Saunders, M., Lewis, P. and Thornhill, A. (2003) *Research Methods for Business Students*. Pearson Education Limited, England.

Sayed, Yusuf (1993) A perspective on quality in education: the quest for zero defects. *Quality Assurance in Education*, 1(2).

Schein, E. (2000) Sense and nonsense about culture and climate. In Patterson, et al. (2000) Validating the organisational climate measure: links to managerial practices, productivity and innovation. *Journal of Organisational Behaviour*, 26, pp. 379-408.

Schein, E.H. (1992) *Organisational Cultures and Leadership*. Jossey-Bass.

Schrum, L. (2000) Guarding the promise of online learning. *Education Digest*, 66(4), pp. 43-47.

Schrum, L. (2002) Oh, what wonders you will see: distance education past, present, and future. *Learning and Leading with Technology*, 30(3), pp. 6-21.

Scottish Executive, (2004) Higher Education Review: The Competitiveness of Higher Education in Scotland. Available from: <http://www.scotland.gov.uk/library5/lifelong/hce3s-00.asp> (Date accessed: 25/05/05).

Scottish Funding Council for Further and Higher Education (2005) *Higher Education in Scotland: A Baseline Report 2004*. Tayburn Corporate.

Sculley, J. (1989) The Relationship Between Business and Higher Education: a Perspective on the 21st Century. *Communications of The Association for Computing Machinery*, 32 (9), pp. 1056-1061.

Sekaran, U. (2003) *Research Methods for Business: a skill building approach*. New York: Wiley.

Shaw, M. and Green, H. (1999) Continuous professional development: emerging trends in the UK. *Quality Assurance in Education*, 7(3), pp. 169-177.

Silverman, J. (1998) Qualitative research: meanings or practice? *Journal of Information Systems*, 8, pp. 3-20.

Sinclair, J. and Collins, D. (1994) Towards a quality culture? *International Journal of Quality and Reliability Management*, 11(5), pp. 19-29.

Sloan, D. (1971) *Scottish Enlightenment and the American College Ideal*. New York: Teachers College Press, Columbia University.

Smircich, L. and Morgon, G. (1982) Leadership: the management of meaning. *Journal of Applied Behavioural Science*, 18(7), pp. 257-273.

Smircich, L. (1983) Concepts of culture and organisational analysis. *Administrative Science Quarterly*, 28(3), pp. 339-358.

Smith, A. (1910) *The wealth of a nation: Part 2*, London: J. M. Dent and Sons Ltd., New York: E. P. Dutton and Co. Inc.

Smout, T.C. (1997) *A Century of the Scottish Culture 1830-1950*. London: Fontana Press.

Soler, E. A. (2002) Relationship between teacher-led versus learners' interaction and the development of pragmatics in the EFL classroom. *International Journal of Educational Research*, 37, pp. 359-377.

Song, L., Singleton, E.S., Hill, J.R. and Koh, M.H. (2004) Improving online learning: Student perception useful and challenging characteristics. *Internet and Higher Education*, 7, pp. 59-70.

Srikanth, G. and Dalrymple, J. (2003) Developing alternative perspective for quality in higher education. *The International Journal of Educational Management*, 17(3), pp. 126-136.

Srikanthan, Gitachari and Dalrymple, John. (2005) Implementation of a holistic model for quality in higher education. *Quality in Higher Education*, 11(1), pp. 69-81.

Strydom, J.F., Zulu, N. and Murray, L. (2004) Quality, culture and change. *Quality in Higher Education*, 10(3), pp. 207-217

Tallent-Runnels, M.K., Lan, W.Y., Fryer, W., Thomas, J.A., Cooper, S. and Wang, K. (2005) The relationship between problems with technology and graduate students' evaluations of online teaching. *Internet and Higher Education*, 8, pp. 167-174.

Tan, K. and Kek, S. (year) Service quality in higher education using an enhanced SERVQUAL approach. *Quality in Higher Education*, 10(1), pp. 17-24.

Taylor, Andrew and Hill, Frances (1993) Quality management in education. *Quality Assurance in Education*, 1(1).

Taylor, P. and Walker, A. (1998) Policies and practices towards older workers: A framework for comparative research. *Human Resource Management Journal*, 8(3), pp. 61-76.

Teichler, U. (1999) Higher Education Policy and the World of Work: changing conditions and challenges. *Higher Education Policy*, 12, 285-312.

Thomas, R. and Harris, V. (2000) Teaching quality and staff research: are there connections: a case study of a metropolitan university department. *Quality Assurance in Education*, 8(3), pp. 139-146.

Tilling, M.V., (2002) The Dialectic of the University in Times of Revolution Echoes of the Industrial Revolution. Available from: <http://www.idealibrary.com> (Date accessed: 25/03/05).

Tin, T.B. (2003) Does talking with peers help learning: the role of expertise and talk in convergent group discussion tasks. *Journal of English for Academic Purposes*, 2, pp. 53-66.

UKCOSA (2005) *Higher Education Statistics*. Available from: www.ukcosa.org.uk (Date accessed: 11/01/06).

United Nation (2005) *World Population Prospects: The 2004 Revision Population Database*. Available from: <http://esa.un.org/unpp/> (Date accessed: 20/12/05).

Vallejo, I.N. (2001) *Quality student support services for distance education learners: Factors contributing to student satisfaction*. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA.

van der Wende, M.C. (2000) The Bologna declaration: enhancing the transparency and competitiveness of European higher education. *Journal for Studies in International Education*, 4(2), pp. 3-11.

van der Wende, M.C. (2001) Internationalisation policies: about new trends and contrasting paradigms. *Higher Education Policy*, 14, pp. 249-259.

Van, D.G.C., (1997) *The Virtual Campus: Technology and Reform in Higher Education*. ERIC Clearing House on Higher Education, Washington DC.

Vaughan. M and Archer, M.S. (1971) *Social Conflict and Educational Change in England and France, 1789-1884*. Cambridge: University Press.

Vignoles, A., Galindo-Rueda, F. and Feinstein, L. (2004) The labour market impact of adult education and training: A cohort analysis. *Scottish Journal of Political Economy*, 51(2), pp. 266-280.

Vonderwell, S. (2003) An examination of asynchronous communication experiences and perspectives of students in an online course: A case study. *Internet and Higher Education*, 6, pp. 77-90.

Wall, P.S. and Sarver, L. (2003) Disabled student access in an era of technology. *The Internet and Higher Education*, 6, pp. 277-284.

Washington, M. and Hacker, M. (2005) Why change fails: knowledge counts. *Leadership and Organisation Development Journal*, 26(5), pp. 400-411.

Wende, W. V. D. (2001) The international dimension in national higher education policies: What has changed in Europe in the last five years? *European Journal of Education*, 36(4), pp. 431-441.

Wilkins, A. L. and Ouchi, W. G. (1983) Efficient cultures: exploring the relationship between culture and organisational performance. *Administrative Science Quarterly*, 28, pp. 468-481.

Wilkinson, I.A.G. (2002) Introduction: peer influences on learning: where are they? *International Journal of Educational Research*, 37, pp. 395-401.

Williams, G. (1997) The market route to mass higher education: British experience 1979-1996. *Higher Education Policy*, 10(3/4), pp. 275-289.

Williams, G., Liu, S.S. and Shi, Q. (1997) Marketisation of higher education in the People's Republic of China. *Higher Education Policy*, 10(2), pp. 151-157.

Williams, P., Sullivan, P. and Miller, A. (2003) *The New QAA Framework and the EFQM Excellence Model: A Way Forward for Universities*. Available from: www.hesda.org.uk (Date accessed: 20/06/05).

Wilson, A.M. (2001) Understanding organisational culture and the implications for corporate marketing. *European Journal of Marketing*, 35(3/4), pp. 353-367.

Wilson, T. and Whitelock, D. (1998) Monitoring the on-line behaviour of distance learning students. *Journal of Computer Assisted Learning*, 14, pp. 91-99.

Woods, R.H. (2002) How much communication is enough in online courses? exploring the relationship between frequency of instructor-initiated personal email and learners' perceptions of and participation in online learning. *International Journal of Instructional Media*, 29(4), pp. 377-394.

World Education Report (2000) *The Right to Education: Towards Education for all Throughout Life*. UNESCO Publishing.

Wresh, W., Arbaugh, J. B., and Rebstock, M. (2005) International online management education courses: A study of participation patterns. *Internet and Higher Education*, 8, pp. 131-144.

Yorke, M. (1994) Enhancement led higher education? *Quality Assurance in Education*, 2(3), pp. 6-12.

Yorke, M. (1999) Assuring quality and standards in globalise high education. *Quality Assurance in Education*, 7(1), pp. 14-24.

Zammuto, R. F. and Krakower, J.Y. (1991) Quantitative and qualitative studies of organisational culture. *Research in Organisational Change and Development*, 5, pp. 83-114.

APPENDIX 1: First Student Expectations Questionnaire

The Student Expectations Survey: 2003/2004

SECTION A: This section is designed to gather background information for statistical analysis only.

Name: _____

Matriculation Number: _____

Sex: Male Female

Age: _____

From: UK the EU Overseas

How would you describe yourself? Please indicate how much each of the following factors relates to you. Please place an "X" on the line as shown in the example.

Not at all

very much

EXAMPLE: *Hard working*

_____ **X** _____

a. Sociable

b. Independent

c. Explore new things

d. Organised person

e. Plan for the future

f. Carefully considered choice of program

g. Risk taker

h. Confident

i. Hard working

SECTION B: This section is designed to gather information about your **expectation** as a student at Napier University

1. Of the following teaching methods used to deliver knowledge on your programme, how do you want it to be organised? Please indicate how important these factors are to you as a student. Please place an "X" on the line as shown in the previous example

- | | <i>Not at all</i> | <i>Very
Much</i> |
|--|-------------------|----------------------|
| a. Traditional type of lecture
(From lecturer to student) | _____ | |
| b. Computer- based learning packages | _____ | |
| c. Individual sessions with teaching staff | _____ | |
| d. Tutorials/ seminars | _____ | |
| e. Group work | _____ | |
| f. Practical tuition to develop skills | _____ | |
| g. Self learning through project etc | _____ | |

2. How do you prefer your programme to be organised? Please give percentage contribution of each option (**total= 100%**).

- | | | |
|-------------------------------|-------|--------------------|
| a. Lectures | _____ | <i>e.g.</i>
30% |
| b. Seminars/ tutorials | _____ | 30% |
| c. Labs/ workshops/ practical | _____ | 20% |
| d. Self- study | _____ | 20% |

3. Of the following assessment methods, which type of assessment methods do you prefer on your course as a student? On the scale of **0 (do not prefer)** to **10 (strongly prefer)**, please indicate your preference for each of the following options.

- | | |
|-------------------------------|-------|
| a. Written examination | _____ |
| b. Multiple- choice questions | _____ |
| c. Oral presentations | _____ |
| d. Projects/ dissertations | _____ |
| e. Group assignment | _____ |
| f. Individual assignment | _____ |
| g. Self assessment | _____ |
| h. Peer assessment | _____ |
| i. Course work | _____ |

4. Of the following computing facilities at Napier, how important are these to you as a student? On the scale of **0 (very unimportant)** to **10 (very important)**, please indicate the importance for each of the following options.

- a. Quality of computers _____
- b. Accessibility of computers _____
- c. IT support _____
- d. Students e-mail _____
- e. Web access _____

5. Of various type of non- academic support at Napier, how important are these to you as a student? On the scale of **0 (very unimportant)** to **10 (very important)**, please indicate the importance for each of the following options.

- a. Sports facilities _____
- b. Student support (Financial, Accommodation, Disability,) _____
- c. Social support _____

6. How would you expect to interact with academic staff? Please rank these in order of expectation from **1 (most expected)** to **3 (least expected)**.

- a. Individually (outside class time) _____
- b. In class contact only _____
- c. E-mail _____

7. Besides obtaining a qualification at Napier, how important are these factors to you in your student life? On the scale of **0 (very unimportant)** to **10 (very important)**, please indicate the importance for each of the following options.

- a. Meet new people _____
- b. Develop skills _____
- c. Intellectual growth _____
- d. Increase confidence _____
- e. Have a good time _____
- f. Meet partner _____
- g. To obtain employment _____
- h. To engage in future academic/
Professional study _____

8. How important is the reputation of a university to you? Please indicate how important these factors are to you as a student. Please place an "X" on the line as shown previously.

	<i>Not at all important</i>	<i>Extremely important</i>	<i>No Idea</i>
a. Internationally	_____	_____	<input type="checkbox"/>
b. Nationally	_____	_____	<input type="checkbox"/>
c. Locally	_____	_____	<input type="checkbox"/>
d. With employers	_____	_____	<input type="checkbox"/>
e. Research reputation	_____	_____	<input type="checkbox"/>
f. Position in "University League Table"	_____	_____	<input type="checkbox"/>

Thank you and all the best

APPENDIX 2: Second Student Expectations Questionnaire

The Student Expectations Survey: 2003/2004

Name: _____

Matriculation Number: _____

SECTION A: This section is designed to gather information about your expectation about your expectation as a student at Napier University

1. Of the following teaching methods used to deliver knowledge on your programme at Napier University, how do you want it to be done? Please indicate how important these factors are to you. How effective do you think they have been in the first semester? Please place an "X" on the line as shown in the example.

Not at all

Very much

EXAMPLE: Traditional teaching _____ X _____

	IMPORTANCE	EFFECTIVENESS	NOT APPLICABLE
	<i>Not at all</i>	<i>Not at all</i>	
	<i>Very much</i>	<i>Very much</i>	
a. Traditional type of lecture (From lecturer to student)	_____	_____	<input type="checkbox"/>
b. Computer-based learning packages	_____	_____	<input type="checkbox"/>
c. Individual sessions with teaching staff	_____	_____	<input type="checkbox"/>
d. Tutorials/ seminars	_____	_____	<input type="checkbox"/>

e. Group work	_____	_____	_____	_____
f. Practical tuition to develop skills	_____	_____	_____	_____
g. Self-learning through project etc	_____	_____	_____	_____

2. How was your programme been organised at Napier University in the first semester? Please give percentage contribution of each option (total= 100%).

a. Lectures	_____	<i>e.g.</i> 30%
b. Seminars/ tutorials	_____	30%
c. Labs/ workshops/ practical	_____	20%
d. Self- study	_____	20%
TOTAL :	100%	100%

3. Of the following assessment methods at Napier University, please indicate the importance of assessment methods on your course, on the scale of 0 (very unimportant) to 10 (very important). Approximately what percentage of assessment was done in the first semester?

	IMPORTANCE (0 – 10)	ACTUAL % IN SEMESTER 1 (Total= 100%)	NOT APPLICABLE
a. Written examination	_____	_____	_____
b. Multiple- choice questions	_____	_____	_____
c. Oral presentations	_____	_____	_____
d. Projects/ dissertations	_____	_____	_____
e. Group assignment	_____	_____	_____
f. Individual assignment	_____	_____	_____
g. Self assessment	_____	_____	_____
h. Peer assessment	_____	_____	_____
i. Course work	_____	_____	_____
		TOTAL: 100%	

4. Of the following computing facilities at Napier University, please indicate how **IMPORTANT** are these to you, on the scale of 0 (very unimportant) to 10 (very important). Please indicate how well you were **SATISFIED** in the first semester for each of the following options, on the scale of 0 (very dissatisfied) to 10 (very satisfied).

	IMPORTANCE (0 – 10)	SATISFACTION (0 – 10)	NOT APPLICABLE
a. Quality of computers	___	___	___
b. Accessibility of computers	___	___	___
c. IT support	___	___	___
d. Students e-mail	___	___	___
e. Web access	___	___	___

5. Of the following range of library facilities at Napier University, please indicate how **IMPORTANT** are these to you, on the scale of 0 (very unimportant) to 10 (very important). Please indicate how well you were **SATISFIED** in the first semester for the following options, on the scale of 0 (very dissatisfied) to 10 (very satisfied).

	IMPORTANCE (0 – 10)	SATISFACTION (0 – 10)	NOT APPLICABLE
a. Resources/ Availability of books	___	___	___
b. Opening hours	___	___	___
c. Space	___	___	___
d. Computer facilities	___	___	___
e. Advisory service	___	___	___

6. Of various type of non- academic support at Napier University, please indicate how **IMPORTANT** are these to you, on the scale of 0 (very unimportant) to 10 (very important). Please indicate how well you were **SATISFIED** in the first semester for the following options, on the scale of 0 (very dissatisfied) to 10 (very satisfied).

	IMPORTANCE (0 – 10)	SATISFACTION (0 – 10)	NOT APPLICABLE
a. Sports facilities	___	___	___
b. Student support (Financial, Accommodation, Disability, ...)	___	___	___
c. Social support	___	___	___

7. How would you expect to interact with academic staff at Napier University? Please rank these in order of expectation from 1 (most expected) to 3 (least expected). Please indicate how well those expectations were **SATISFIED** in your first semester, on the scale of 0 (very dissatisfied) to 10 (very satisfied).

	PREFERENCE (1 – 3)	SATISFACTION (0 – 10)	NOT APPLICABLE
a. Individually (outside class time)	_____	_____	_____
b. In class contact only	_____	_____	_____
c. E-mail	_____	_____	_____

8. Besides obtaining a qualification at Napier University, please indicate how **IMPORTANT** are these factors to you, on the scale of 0 (very unimportant) to 10 (very important). Please indicate how well you were **SATISFIED** in obtaining those factors in your first semester, on scale of 0 (very dissatisfied) to 10 (very satisfied).

	IMPORTANCE (0 – 10)	SATISFACTION (0 – 10)	NOT APPLICABLE
a. Meet new people	_____	_____	_____
b. Develop skills	_____	_____	_____
c. Intellectual growth	_____	_____	_____
d. Increase confidence	_____	_____	_____
e. Have a good time	_____	_____	_____
f. To obtain employment	_____	_____	_____
g. To engage in further academic/professional studies	_____	_____	_____

9. What do you feel about the reputation of Napier University on the following options? Please place an "X" on the line as shown previously.

	<i>Very Weak</i>	<i>Very Good</i>	<i>No Idea</i>
a. Internationally	_____	_____	<input type="checkbox"/>
b. Nationally	_____	_____	<input type="checkbox"/>
c. Locally	_____	_____	<input type="checkbox"/>
d. With Employers	_____	_____	<input type="checkbox"/>
e. Research reputation	_____	_____	<input type="checkbox"/>
f. Position in "University League Tables"	_____	_____	<input type="checkbox"/>

SECTION B: This section is designed to gather information on the future of Napier University over the next 10 years time

1. To what extent do you agree or disagree about Napier University?

	Strongly Agree (1)	Agree (2)	Neither agree Nor disagree (3)	Disagree (4)	Strongly Disagree (5)
a. Napier University will continue to grow	[]	[]	[]	[]	[]
b. Napier University will become more internationally Recognised	[]	[]	[]	[]	[]
c. Napier University will remain as it is now	[]	[]	[]	[]	[]

2. In the next 10 to 20 years, what do you think is likely to be the most popular subject area at Napier University? Kindly choose 3 most popular and 3 least popular from the following options.

a. Health Studies	_____	_____
b. Mathematics	_____	_____
c. Computing	_____	_____
d. Engineering	_____	_____
e. Economics	_____	_____
f. Accounting	_____	_____
g. Business Studies	_____	_____
h. Social Science Studies	_____	_____
i. Humanities	_____	_____
j. Law	_____	_____
k. Languages	_____	_____
l. Creative arts	_____	_____
m. Multi-disciplinary	_____	_____
n. Others (please specify)	_____	_____

3. To what extent do you agree or disagree with the following statements?

	Strongly Agree (1)	Agree (2)	Neither agree Nor disagree (3)	Disagree (4)	Strongly Disagree (5)
a. Napier should cover a few ranges of subject areas.	[]	[]	[]	[]	[]
b. Napier should cover a broad range of subject areas.	[]	[]	[]	[]	[]
c. Napier should become more vocational.	[]	[]	[]	[]	[]
d. Napier should remain as how it is now.	[]	[]	[]	[]	[]

4. What method of information delivery will Napier University adopt in 10 to 20 years time? Kindly choose 3 most important and 3 least important from the following options.

	3 most important	3 least important
a. Lectures	_____	_____
b. Computer based learning	_____	_____
c. Tutorials/ seminars	_____	_____
d. Individual sessions with teaching staff	_____	_____
e. Group work	_____	_____
f. Practical tuition to develop skills	_____	_____
g. Self learning through project	_____	_____
h. Work placement	_____	_____
i. Others (please specify)	_____	_____

5. To what extent do you agree or disagree with the following statements about the traditional four years undergraduate programme at Universities in Scotland over the 10 to 20 years time?

	Strongly agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly disagree (5)
a. Should be compressed to 3 years	[]	[]	[]	[]	[]
b. Increase to a longer period interspaced with periods of work	[]	[]	[]	[]	[]
c. Increased demand in distance learning	[]	[]	[]	[]	[]
d. Will remain as it is now	[]	[]	[]	[]	[]

6. To what extent do you agree or disagree with the following statement about student body at Napier University in 10- 20 years time?

	Strongly agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly disagree (5)
a. There will be more females than males	[]	[]	[]	[]	[]
b. The will be more part- time students than full- time	[]	[]	[]	[]	[]
c. The students body will consist of more mature student	[]	[]	[]	[]	[]
d. The students body will remain as it is now	[]	[]	[]	[]	[]

7. To what extent do you agree or disagree with the following statements about the embracing of technology at Napier University?

	Strongly agree (1)	Agree (2)	Neither agree nor disagree (3)	Disagree (4)	Strongly disagree (5)
a. Embracing technology will eliminate classroom	[]	[]	[]	[]	[]
b. Embracing technology will eliminate traditional lecture	[]	[]	[]	[]	[]
c. Embracing technology will facilitate distance learning	[]	[]	[]	[]	[]
d. Embracing technology will attract a larger student market	[]	[]	[]	[]	[]
e. Napier University will remain as it is now	[]	[]	[]	[]	[]

8. List and explain three changes Napier University needs to make to be dynamic in the future.

Thank you and all the best

APPENDIX 3: Final Student Expectations Questionnaire

The Student Expectations Survey 2003/2004

Name: _____

Matriculation Number: _____

Sex: _____

SECTION A: This section is designed to gather further information on responses obtained in the previous student expectations survey. Some of the key findings on how future shape of Napier University would look like in 20 years time, presented. On the scale of 0 (**Strongly Disagree**) to 10 (**Strongly Agree**), kindly indicate by placing an "X" on the line, to what extent Napier should implement those.

1. The majority of the respondents agreed Napier University would continue to grow and become internationally recognised over the next 20 years time. Do you think Napier University should grow and become internationally recognised to compete globally?

Strongly Disagree

Strongly Agree

2. Computing, Business Studies and Engineering are the most popular subjects at Napier University. Do you think Napier University should concentrate and develop more new courses in these areas?

Strongly Disagree

Strongly Agree

a) Computing

b) Business Studies

c) Engineering

3. Mathematics and Statistics, Languages and Laws are the least popular subject area at Napier. Do you think Napier University should cease to offer these on all programme?

Strongly Disagree

Strongly Agree

a) Mathematics and Statistics

b) Law

c) Languages

4. Will responses number 2 and 3 affect Napier University's reputation?

Strongly Disagree

Strongly Agree

5. The majority of the respondents agreed that Napier University would cover fewer ranges of subject areas and become more vocational. Do you think Napier University should:

Strongly Disagree

Strongly Agree

a) Specialised in fewer subject areas _____

b) Be more vocational _____

6. Many students have stated that Napier University would increase the length of the standard four years undergraduate programme interspaced with periods of work and also increase distance learning. Do you think this will attract larger student share, part-time and mature student to come to Napier University?

Strongly Disagree

Strongly Agree

a) Increase the length of four years undergraduate programme interspaced with periods of work. _____

b) Increase distance learning _____

7. Many students think that Napier University will consist of more female, part time and mature students in the next 20 years time. Do you think Napier University should mainly focus on supporting this group of students?

Strongly Disagree

Strongly Agree

8. Embracing technology at Napier University will facilitate distance learning, attract larger student market and eliminate traditional lecture. Do you think by embracing technology at Napier University:

Strongly Disagree

Strongly Agree

a) Facilitate distance learning _____

b) Will eliminate traditional lecture _____

c) Attract larger student share _____

9. Napier University should devote a lot of resources to increase its International, National, Local and Employers reputation. Do you agree with this given that this will results in greater student staff ratio.

Strongly Disagree

Strongly Agree

10. Napier University should produce more research. Do you agree with this given that it will be at the expense of student provision?

Strongly Disagree

Strongly Agree

APPENDIX 4: Results of the Comparison between the First and Second Surveys

Table 1: Comparison between the first and second surveys for the respondents expectations of learning methods by levels of study (mean score and p-value)

	First survey	Second survey	p-value	Satisfaction
First year undergraduate				
<i>Traditional lecture</i>	6.5	6.8	0.45	6.7
<i>Computer-based learning</i>	5.9	6.7	0.08	6.4
<i>Individual session with teaching staff</i>	7.2	6.4	0.09	6.7
<i>Tutorials/seminars</i>	7.1	6.9	0.52	6.8
<i>Group work</i>	5.4	6	0.21	6.3
<i>Practical tuition to develop skills</i>	7.4	7	0.34	6.7
<i>Self learning</i>	6.5	6.3	0.63	6.3
Final year undergraduate				
<i>Traditional lecture</i>	6.3	7.2	0.03	6.9
<i>Computer-based learning</i>	5.7	6.3	0.18	6.6
<i>Individual session with teaching staff</i>	6.5	6.7	0.63	7
<i>Tutorials/seminars</i>	6.6	7.1	0.24	6.8
<i>Group work</i>	5.9	5.4	0.36	5.1
<i>Practical tuition to develop skills</i>	7.3	7.4	0.67	6.8
<i>Self learning</i>	6.5	7	0.24	6.9
First year postgraduate (full-time)				
<i>Traditional lecture</i>	6.2	6.7	0.19	6.4
<i>Computer-based learning</i>	5.7	5.5	0.73	5.3
<i>Individual session with teaching staff</i>	6.4	6.7	0.37	6.7
<i>Tutorials/seminars</i>	7.4	7.2	0.43	6.7
<i>Group work</i>	6.6	7.2	0.89	6
<i>Practical tuition to develop skills</i>	7.6	7.1	0.26	6.6
<i>Self learning</i>	6.6	7.2	0.06	7.4
First year postgraduate (part-time)				
<i>Traditional lecture</i>	6.6	6.6	0.97	6.4
<i>Computer-based learning</i>	4.4	3.8	0.28	3.9
<i>Individual session with teaching staff</i>	5.6	5.3	0.58	5.9
<i>Tutorials/seminars</i>	6.5	6.3	0.58	6.4
<i>Group work</i>	6.4	6.2	0.61	6.3
<i>Practical tuition to develop skills</i>	6.5	6.5	0.86	5.7
<i>Self learning</i>	5.8	6.4	0.14	6.5

Table 2: Comparison between the first and second surveys for respondent expectations of programme organisation by level of study (mean percentage and p-value)

	First survey	Second survey	p-value
First year undergraduate			
<i>Lectures</i>	29.87	33.72	0.07
<i>Seminars/Tutorials</i>	26.54	27.31	0.00
<i>Labs/workshops/practical</i>	25.77	19.23	0.00
<i>Self-study</i>	17.82	19.74	0.00
Final year undergraduate			
<i>Lectures</i>	31.49	33.21	0.56
<i>Seminars/Tutorials</i>	24.35	23.21	0.00
<i>Labs/workshops/practical</i>	23.39	13.81	0.00
<i>Self-study</i>	20.77	29.77	0.00
First year postgraduate (full-time)			
<i>Lectures</i>	28.03	32.33	0.05
<i>Seminars/Tutorials</i>	24.61	17.25	0.00
<i>Labs/workshops/practical</i>	24.01	15.5	0.00
<i>Self-study</i>	23.35	34.92	0.00
First year postgraduate (part-time)			
<i>Lectures</i>	34.87	42.66	0.03
<i>Seminars/Tutorials</i>	20.81	12.45	0.00
<i>Labs/workshops/practical</i>	19.66	10.57	0.00
<i>Self-study</i>	24.66	34.32	0.00

Table 3: Comparison between the first and second surveys for respondent expectations of assessment methods and the students view on actual percentage delivered at Napier University (mean score and p-value)

	First survey	Second survey	p-value	Actual Percentage delivered in semester one
First year undergraduate				
<i>Written examination</i>	4.44	6.11	0.07	25.68
<i>Multiple-choice questions</i>	7.49	5.61	0.05	4.91
<i>Oral presentation</i>	3.64	5.61	0.00	6.21
<i>Projects/dissertations</i>	6.15	6.39	0.38	8.92
<i>Group assignment</i>	6.1	6.33	0.89	11.05
<i>Individual assignment</i>	6.21	6.61	0.04	13.06
<i>Self assessment</i>	5.9	6.03	0.02	9.72
<i>Peer assessment</i>	5.46	4.61	0.00	5.68
<i>Course work</i>	7.28	7.39	0.01	19.69
Final year undergraduate				
<i>Written examination</i>	4.98	6.76	0.17	32.76
<i>Multiple-choice questions</i>	6.05	2.59	0.21	0.54
<i>Oral presentation</i>	5.21	4.05	0.80	4.26
<i>Projects/dissertations</i>	6.48	6.81	0.67	12.98
<i>Group assignment</i>	5.88	5.07	0.01	11.55
<i>Individual assignment</i>	7.33	6.26	0.00	10.71
<i>Self assessment</i>	5.76	4.24	0.00	4.13
<i>Peer assessment</i>	4.74	3.6	0.00	2.13
<i>Course work</i>	7.1	7.71	0.00	22.93
First year postgraduate (full-time)				
<i>Written examination</i>	5.1	7.07	0.01	21.39
<i>Multiple-choice questions</i>	5.87	2.45	0.03	1.86
<i>Oral presentation</i>	4.77	6.51	0.02	9.13
<i>Projects/dissertations</i>	6.75	7.05	0.00	12.36
<i>Group assignment</i>	5.4	6.06	0.94	9.44
<i>Individual assignment</i>	7.02	8.04	0.00	16.39
<i>Self assessment</i>	4.9	5.36	0.00	4.68
<i>Peer assessment</i>	4.47	4.5	0.00	4.5
<i>Course work</i>	7.2	8.16	0.00	28.79
First year postgraduate (part-time)				
<i>Written examination</i>	4.81	5.98	0.02	24.2
<i>Multiple-choice questions</i>	6.11	1.29	0.41	0.48
<i>Oral presentation</i>	4.87	6.04	0.24	13.67
<i>Projects/dissertations</i>	6.74	6.64	0.00	9.82
<i>Group assignment</i>	5.83	5.51	0.00	14.15
<i>Individual assignment</i>	7.17	7.98	0.00	25.56
<i>Self assessment</i>	5.23	3.53	0.00	3.24
<i>Peer assessment</i>	4.7	3.49	0.00	3.46
<i>Course work</i>	7.26	7.73	0.96	20.27

Table 4: Comparison between first and second surveys for respondent expectation of university reputation by country origin (mean score and p-value)

	First survey	Second survey	p-value
Home students			
<i>International</i>	4.5	4.6	0.00
<i>National</i>	6.2	4.5	0.00
<i>Local</i>	6.7	5.6	0.00
<i>With employers</i>	7.9	6	0.00
<i>Research reputation</i>	5.6	5.5	0.00
<i>Position in University League table</i>	5.4	4	0.00
EU students			
<i>International</i>	7.4	4.7	0.00
<i>National</i>	6.5	4.3	0.00
<i>Local</i>	6.3	4.8	0.01
<i>With employers</i>	8.1	5.3	0.00
<i>Research reputation</i>	6.2	4.9	0.00
<i>Position in University League table</i>	6.2	3.8	0.00
Other overseas students			
<i>International</i>	6.8	4.4	0.00
<i>National</i>	5.8	4.1	0.00
<i>Local</i>	4.5	5.1	0.19
<i>With employers</i>	7.1	5.2	0.00
<i>Research reputation</i>	6.4	5.1	0.00
<i>Position in University League table</i>	6.3	3.6	0.00

Table 5: Comparison between the first and second surveys on respondents expectations of other factors besides obtaining a qualification at Napier University by level of study (mean score and p-value)

	First survey	Second survey	p-value	Satisfaction
First year undergraduate				
<i>Meet new people</i>	7.3	7.9	0.02	8
<i>Develop skills</i>	8.7	9.1	0.08	8
<i>Intellectual growth</i>	8.6	8.8	0.06	7.9
<i>Increase confidence</i>	8.1	7.9	0.30	7.5
<i>Have a good time</i>	7.5	7.6	0.69	7.2
<i>To obtain employment</i>	8.3	8.5	0.00	6.2
<i>To engage in further studies/ professional study</i>	7.7	7.7	0.00	6
Final year undergraduate				
<i>Meet new people</i>	8.3	8	0.24	6.9
<i>Develop skills</i>	8.9	8.7	0.04	7.5
<i>Intellectual growth</i>	8.8	8.7	0.01	7.3
<i>Increase confidence</i>	8.4	8.3	0.00	7.6
<i>Have a good time</i>	8.4	7.7	0.01	7.5
<i>To obtain employment</i>	9.1	9.2	0.00	6
<i>To engage in further studies/ professional study</i>	7.9	7	0.00	6.1
First year postgraduate (full-time)				
<i>Meet new people</i>	7.2	7	0.00	8
<i>Develop skills</i>	8.8	8.9	0.00	7.5
<i>Intellectual growth</i>	8.8	8.8	0.00	7.3
<i>Increase confidence</i>	7.6	7.6	0.02	6.9
<i>Have a good time</i>	6.7	6.8	0.14	6.6
<i>To obtain employment</i>	9	8.5	0.00	6.3
<i>To engage in further studies/ professional study</i>	6.7	5.9	0.01	5.3
First year postgraduate (part-time)				
<i>Meet new people</i>	7.4	7.2	0.00	7.8
<i>Develop skills</i>	8.3	8.4	0.17	7.3
<i>Intellectual growth</i>	8.7	8.8	0.00	7.6
<i>Increase confidence</i>	7.6	7.7	0.00	6.8
<i>Have a good time</i>	6.4	6	0.39	6.2
<i>To obtain employment</i>	8.6	5.3	0.00	4.8
<i>To engage in further studies/ professional study</i>	6.5	5.9	0.01	6.2

Table 6: Comparison between the first and second surveys on respondent expectations of computing facility by level of study (mean score and p-value)

	First survey	Second survey	p-value	Satisfaction
First year undergraduate				
Quality of computers	8.4	8.4	0.00	7
Accessibility of computers	8.7	8.4	0.03	6.6
IT support	7.9	7.1	0.02	6.2
Students e-mail	7.3	7.8	0.12	7.8
Web access	8.4	8.8	0.09	8.3
Final year undergraduate				
Quality of computers	9.3	8.8	0.00	7.1
Accessibility of computers	9.6	9.4	0.00	7
IT support	8.5	7.5	0.30	5.8
Students e-mail	7.7	7.4	0.00	6.5
Web access	9.4	8.9	0.05	8.2
First year postgraduate (full-time)				
Quality of computers	8.5	8	0.00	6.4
Accessibility of computers	9.2	8.7	0.00	6.4
IT support	7.8	7.3	0.07	5.7
Students e-mail	7.1	7.2	0.00	6.3
Web access	8.5	8.5	0.22	7
First year postgraduate (part-time)				
Quality of computers	6.3	6.6	0.65	7.2
Accessibility of computers	6.6	7.2	0.01	7.6
IT support	6.4	6.6	0.65	6.7
Students e-mail	4.7	4.2	0.00	5
Web access	7.8	6.8	0.51	7.2

APPENDIX 5: Organisational Culture Assessment Instrument

How to complete the questionnaire:

1. The OCAI consists of six questions and four alternatives. Each alternative consists of three responses labelled "Now" (means that you are rating Napier University as it is currently), "Future" (means that you are rating Napier University as you think it will be in the future) and "Preferred" (means that you are rating Napier University as how you like it to be in the future).
2. For responses "Now" and "Future" give the highest number of points to the alternative that is most similar to Napier University.
3. For "Preferred" responses give the highest number of points to the alternative that is most preferred.
4. For example, in question 1, if you think alternative "A" is very similar to Napier, alternative "B" and "C" are somewhat similar, and alternative "D" is hardly similar at all, you may give 5 points for "A", 2 points each for "B" and "C", and 1 point for "D". Just be sure that the total equals 10 for each question.

1. Dominant Characteristics		Now	Future	Preferred
A	The organisation is a very personal place . It is like an extended family.			
B	The organisation is a very dynamic and entrepreneurial place. People are willing to stick their necks out and take risks.			
C	The organisation is very results oriented. People are very competitive and achievement oriented			
D	The organisation is a very controlled and structured place. Formal procedures generally govern what people do.			
Total		10	10	10
2. Organisational Leadership		Now	Future	Preferred
A	The leadership in this organisation promotes mentoring, facilitating or nurturing.			
B	The leadership in this organisation promotes entrepreneurship, innovating, or risk taking.			
C	The leadership in this organisation promotes result-oriented focus			
D	The leadership in this organisation promotes organising or smooth- running efficiency.			
Total		10	10	10
3. Management of Employees		Now	Future	Preferred
A	The management style in this organisation is characterised by teamwork, consensus, and participation.			
B	The management style in this organisation is characterised by individual risk- taking, innovation, freedom, and uniqueness.			
C	The management style in this organisation is characterised by hard- driving, competitiveness, high demands, and achievement.			
D	The management style in this organisation is characterised by security of employment, predictability, and stability in relationship			
Total		10	10	10

4. Organisational Glue- factors that ensure Napier's smooth running		Now	Future	Preferred
A	The glue that holds the organisation together is loyalty and mutual trust.			
B	The glue that holds the organisation together is commitment to innovation and development.			
C	The glue that holds the organisation together is the emphasis on achievement and goal accomplishment.			
D	The glue that holds the organisation together is formal rules and policies.			
Total		10	10	10
5. Strategic Emphases		Now	Future	Preferred
A	The organisation emphasises human development.			
B	The organisation emphasises acquiring new resources and creating new challenges.			
C	The organisation emphasises competitive actions and achievement.			
D	The organisation emphasises permanence and stability.			
Total		10	10	10
6. Criteria for Success		Now	Future	Preferred
A	The organisation defines success on the basis of the development of human resources, teamwork, employee commitment, and concern for people.			
B	The organisation defines success on the basis of having the most unique or newest degree programme.			
C	The organisation defines success on the basis of winning in the marketplace and outpacing the competition.			
D	The organisation defines success on the basis of efficiency.			
Total		10	10	10

APPENDIX 6: Interview questionnaire

1) What is the purpose of Higher Education 10 years ago, now, and over the next 10 years?

- a) There are two Higher Education systems emerging in the UK, research-intensive University and teaching-led University. Will there be different types of University in the UK in 20 years?

2) What are and will be the strengths, weaknesses, opportunities and threats to Higher Education now and over the next 20 years?

3) List the main promoting forces of Higher Education now and over the next 20 years?

4) List the main inhibiting forces of Higher Education now and over the next 20 years?

5) In Scotland the size of the population age group 21 and under is becoming smaller. This means the number of undergraduate home students in Scotland will be smaller than it is now, even if the participation of school leavers continues to stay constant at 50 per cent. This shortfall of young people aged 21 and under means universities in Scotland will have to compete for a smaller home market which intensifies competition within the UK.

- a) What should Higher Education Institutions in Scotland do to address the competition issue?
- b) How will Higher Education expand the student numbers in the future?

6) The key student group wishing to undertake traditional undergraduate or postgraduate programs is no longer in the 17 to 21 years age bracket. The student groups are more mature and wish to enhance their existing qualifications and skills to meet the changing circumstances. These mature students in Higher Education Institutions may have additional commitments to balance with education. As a response to this, approaches to learning offered by part-time study and the availability of flexible modes of delivery is often the preferred format.

- a) At graduate level should Higher Education move beyond the traditional concept of teaching and research to a more generative concept of workplace learning? Would this be more appropriate in addressing the need of non-traditional learners?
- b) Should Universities form branch campuses in organisations or should Universities depend on technology as a platform to deliver workplace learning?
- c) Should Universities develop and deliver courses in a much shorter period integrating work time and course requirements?
- d) What subject disciplines and core abilities need to be incorporated into the curriculum of workplace learning?
- e) What problem will all these cause to Higher Education? (eg. Specification and structuring of programs, recording of learning process and demonstration of learning outcome)

7) Many think lifelong learning will be increasingly important as the median age of our society increases. However, employers think that training people age 40 and above gives a low return, primarily due to the relatively short period remaining to recoup the benefits, and also because of lost earnings during training. On the other hand, the learners themselves may be nervous about going back to the classroom and have worries about lack of time due to work, family and childcare responsibilities, and difficulties in paying for course fees.

- a) Should Higher Education be concerned with lifelong learning?
- b) What should Higher Education do to promote lifelong learning?
- c) What are the values and practices needed for Higher Education to deliver its lifelong learning concept?
- d) The implementation of a lifelong learning policy is likely to encounter resource constraints in Higher Education, employers and learners. What are the strategies needed to address this?

8) The structure of the economy in the UK has changed from agriculture to manufacturing and is now changing to knowledge based economy. In the knowledge-based economy, service sectors (e.g. Health, public administration, education, distribution, hotels and restaurants) are recording growth. So, Higher Education providers in Scotland are developing and delivering more courses that cater for the need of service industries. On the other hand, the developing nations, such as China, still have a manufacturing based economy. Some Higher Education Institutions in Scotland are pushing to expand Higher Education into China, and also enrolling Chinese students into Scottish institutions.

- a) How will the course provision for the service industries in Scotland affect the developing countries such as China?
- b) What will be the current and future critical subject area for the international market?
- c) What will be the current and future critical subject area for the UK?
- d) What kinds of skills are needed for the developing countries that are in manufacturing era?
- e) What kinds of skills are needed in service industry for the UK?

9) The majority of the academic workforces are ageing and many can be expected to retire over the next 10 years. In Scotland, 35 per cent are expected to retire within 10 years. At the same time the number of younger academic staff is getting smaller.

- a) From where will Higher Education recruit academic staff? There are difficulties in attracting applicants due to an inability to compete on salary or reward packages from other countries such as USA, Canada and Australia, and other work areas.
- b) How will Higher Education accommodate the implied loss of experience and expertise?
- c) What are the changes needed for Higher Education to attract and retain young academic staff, especially in relation to other industries? (e.g. salaries, good research facilities, status, career progression, job security).

10) Technology embracement in the Higher Education sector is shifting the traditional transmission of knowledge and instruction to student centred learning. The development in technology provides a wider option for learners to access information

and in some cases serve as a platform for the growth of distance education. In spite of the fact that a majority of today's University classrooms are still dominated by the traditional lecture, more and more technological innovations are gaining hold in the classroom.

- a) The rapid advancements in computer technology are causing one to find that within what seems to be a very short time, what was purchased is obsolete or outdated. This clearly shows that institutions need to keep upgrading computer technology to compete, which involves devoting a lot of resources. Is it worth investing in this inevitable cycle? If so, why?
- b) If distance learning becomes the more preferred method of learning, what will be the frequency and nature of student interaction with faculty members, other students, and with the lecturers?
- c) It is often said that distance learning is more cost effective than other forms of traditional education. However, the saving is unlikely to be immediate. Why do Higher Education Institutions need to invest in distance learning?

11) Reducing inequality and tackling poverty is a key issue in Scotland. One way of doing this will be through provision of education especially to lower socio-economic groups and non-traditional learners. Everyone should have the opportunity to achieve their intellectual potential irrespective of their background.

- a) Do you think Higher Education has a role to address social inequality? If so, what should Higher Education do?
- b) Are new funding mechanisms needed to combat social inequality? If so, what funding mechanisms are needed?

12) Students exchange between universities, twinning programs, and international activities such as franchising, partnership, and in certain cases establishing branch campuses in other parts of the world. These are some indicators of the emergence of global education.

- a) What are the consequences of global education to Scottish Higher Education Institutions?
- b) Globalisation of Higher Education raises issues on quality assurance, accreditation and recognition of qualifications at the foreign affiliates, as well as issues relating to the culture and values of the foreign University. Do you think a global quality assurance system and a global accreditation system is needed in Higher Education?
- c) What strategies are needed for global education? Should it be franchising, distance learning, setting up branch campus, enrolling students to Universities in Scotland, or collaborative arrangements to train and develop the staff in the overseas Universities?
- d) Do you think globalisation will encourage the staff here to migrate to overseas players? If so, what strategies are needed to safeguard our staff?

13) Do you think culture is important for Higher Education Institutions? What will be the right culture for Higher Education Institutions for now and over the next 20 years?