

**THE CATHOLIC EDUCATION OFFICE (CEO) SYDNEY AS A LEARNING
ORGANIZATION AND ITS PERCEIVED IMPACT ON
STANDARDS**

Submitted by

Mark Turkington

B.Sc. (Med) (Hons)., Dip. Ed., Grad. Dip. RE., M. Ed. Admin., M. Ed (RE).

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Australian Catholic University
Research Services
Mt. St. Mary's Campus
1A Barkers Road
Strathfield NSW 2135
Australia

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Statement of Sources

This thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma. No other person's work has been used without due acknowledgement in the main text of the thesis. The thesis has not been submitted for the award of any degree or diploma in any other tertiary institution. All research procedures reported in the thesis received the approval of the Human Research Ethics Committee of the Australian Catholic University.

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Mark Turkington

27th April 2004

ABSTRACT

The Catholic Education Office (CEO) Sydney is a large non-government education authority which administers the systemic, Catholic schools of the Archdiocese of Sydney, Australia. The system consists of 148 primary and secondary schools with an enrolment of some 62,000 students.

The major research question was: What characteristics of a learning organization can be identified in the Catholic Education Office (CEO) Sydney and are these perceived to raise standards in systemic schools of the Archdiocese of Sydney?

Like all western education systems the CEO Sydney is immersed in constant change and is expected to account for improving educational standards within the system.

The learning organization with its emphasis on adaptability and continuous improvement was considered an appropriate framework within which to conduct this research.

The study consisted of two main parts the first investigated the CEO Sydney as a learning organization using a survey questionnaire distributed, using a dedicated web site, to a sample of primary and secondary principals in the system and a smaller number of senior CEO Sydney personnel. The response rate was 91%. This was complemented by examination of relevant CEO Sydney documentation and policies.

The definition of the learning organization adopted for the study consisted of eight characteristics each of which formed a scale in the questionnaire. The eight characteristics adopted were: 'Systemic Thinking and Mental Models', 'Continuous Improvement of Work', 'Taking Initiatives and Risks', 'Ongoing Professional Development', 'Trusting and Collaborative Climate', 'Shared and Monitored Vision/Mission', 'Effective Communication Channels' and 'Team Work and Team Learning'. This part of the study was essentially a quantitative one, with the data subjected to descriptive, statistical analysis complemented by some clarifying and contextualising qualitative data.

The second part of the study investigated the perceived relationship between the CEO Sydney and its learning organization characteristics and the standards in three curriculum outcome

areas (religious education, literacy and numeracy). This part of the study was also quantitative using descriptive statistics complemented by Pearson correlation, multiple regression and canonical correlational analyses. Once again some relevant contextualising qualitative data was gathered.

Five demographic groups (gender, role, region (principals only), years of experience as a principal and age) were examined to see if there were any differences in the extent to which the various learning organization characteristics and curriculum outcomes were identified by each group.

The results of this study indicated that the CEO Sydney exhibited many of the characteristics of a learning organization with particular strengths in ‘Continuous Improvement of Work’, ‘Systemic Thinking and Mental Models’ and ‘Shared and Monitored Vision/Mission’. The weakest characteristic was ‘Taking Initiatives and Risks’.

Demographic group analysis of this data revealed that there were no statistically significant differences in the responses of the different demographic groups.

The results also indicated that there were correlations between the CEO Sydney as a learning organization and raising standards particularly in religious education and literacy and less so in numeracy.

Finally, the study made a number of recommendations for the further development of the CEO Sydney as a learning organization and ways that it can further raise standards in the schools of the system.

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GLOSSARY.

ABS	Australian Bureau of Statistics
ACCIR	Australian Catholic Commission for Industrial Relations
ACU	Australian Catholic University
ADSL	Advanced Digital Subscriber Line
ASSC	Archdiocesan Schools Staffing Committee
BST	Basis Skills Test (NSW)
CCER	Catholic Commission for Employment Relations (NSW)
CDR	Compact Disc Recordable
CEC	Catholic Education Commission (NSW)
CEO	Catholic Education Office (Sydney)
ELLA	English Language and Literacy Assessment (DET, NSW)
ES	Effect Size
ESL	English as a Second Language
HSC	Higher School Certificate
ICT	Information and Communication Technology
LANS	Local Area Network Technician
LEA	Local Education Authority (UK)
MANOVA	Multivariate Analysis of Variance
N	Number
NCEC	National Catholic Education Commission
PPPR	Personnel Performance Planning and Review
R	Multiple Correlation Coefficient
RE	Religious Education
S.D.	Standard Deviation
SACS	Sydney Archdiocesan Catholic Schools' Board
SMS	Simple Message Sending
SNAP	Secondary Numeracy Assessment Program
SPSS	Statistical Package for the Social Sciences (Version 11.5)
SQL	Structured Query Language
SRD	School Review and Development
TESOL	Teaching English to Students of Other Languages
VIF	Variance Inflation Factor
VPN	Virtual Private Network

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In the present western political, economic and educational climate there is significant emphasis on the capacity of schools and school systems to respond to rapid change and improve the performance of schools and the standards of student achievement (Kemp, 1999). Schools and school systems are increasingly accountable for their performance to parents, the community, governments and various other stakeholders such as Churches and Boards that support them. Hill and Crevola (1999) emphasized the demands for high quality education in the twenty-first century by claiming that no country could settle for anything less than a world-class education system if it wished to ensure social cohesion and ongoing economic prosperity.

There is much public interest and scrutiny of the educational standards of schools and of school systems. The onset in the late 1990s of an outcomes-based curriculum in New South Wales (NSW), Australia including a standards referenced assessment up to the NSW Higher School Certificate (Board of Studies NSW, 2003), has re-emphasized the work of schools and school systems in terms of school and student performance and educational standards. Education and student achievement is high on the national and state agendas of both major Australian political parties and of the electorate generally.

The increasing demands on school systems for adaptability, accountability and continuous improvement suggested that the learning organization might be a useful framework within which to analyse modern school systems. Learning organizations are responsive, adaptable, flexible bodies committed to continuous improvement and linked together by systemic thinking, shared mental models and a unifying vision and mission (Senge, 1990, Rosengarten, 1999). Consequently they are ideally equipped to adapt to and cope with a rapidly changing environment and to generate ongoing improvement.

Using the framework of the learning organization, this study investigated the Catholic Education Office (CEO) Sydney to determine, from the perceptions of principals and senior CEO Sydney personnel, which learning organization characteristics (as defined for this study) were present within the CEO Sydney. The study then investigated whether these

characteristics were perceived to be associated with the raising of standards in religious education, literacy and numeracy in years K-12 across the schools of the Sydney Catholic school system. These three learning areas were chosen because they are part of the core curriculum in the Catholic school and all three have been strategic priorities in the CEO Sydney for a number of years.

This study also indicated strategies and policy directions that the CEO Sydney could pursue in the future to further the development of the CEO Sydney as a learning organization and its support of schools in raising the standards of education.

A brief overview and introduction to this research is provided in this chapter. It outlines the context in which the research was conducted, the identification of the research problem, the purpose of the research and the major and sub-major research questions. It also outlines the significance, assumptions and limitations of the research and includes the definitions used in the study. The chapter concludes with an overview of the thesis.

The context within which this research was conducted was highly significant for the ultimate interpretation and relevance of its findings. The next section provides an overview of the historical and contemporary contexts within which the CEO Sydney operates.

1.2 CONTEXT OF THE STUDY

The first 140 years of Catholic education in Australia is regarded as its first phase. During that time Catholic schools were relatively independent and closely linked to the parishes, parish priests and to the religious congregations.

The early governors in the convict colony of New South Wales were instructed by the British government to promote elementary education, ideally in a Christian school. Many of the Catholics in the colony were poor, Irish convicts and they had to wait till 1820 to access the first Catholic school, established by Father John Therry and staffed by poorly trained, lay people who were barely literate. The schools expanded through the mid 19th century until, by 1863, there were 122 Catholic schools in NSW (Luttrell, 1996). These were mostly small, elementary schools staffed by Irish, lay teachers and employed by the local priest (Luttrell, 2003). There was a minimal degree of accountability for such schools except to the local

parish priest. The preservation of the faith in a less than supportive Protestant environment was a central purpose of these early Catholic schools (O'Farrell, 1992).

In 1848 the NSW government organized schools into two main groupings, the first being the National schools, the forerunner of state schools, controlled by a National Board of Education. The other grouping was made up of schools from the four main churches – Anglican, Catholic, Methodist and Presbyterian and they were funded through a Denominational Schools' Board (Luttrell, 1996). In 1866 the government replaced the two Boards with a single Council of Education which was to become the forerunner of the NSW Department of School Education. Under this arrangement Catholic schools were disadvantaged financially and up until the 1870s Catholic schools were dependent on the NSW Government for payment of the salaries of the lay teachers who ran the schools.

The second phase of Catholic education in Australia was from 1870 to 1970 and can be categorised as the era of the religious sisters, brothers and priests in Catholic Education. This phase coincided with the first Vatican Ecumenical Council, Vatican I (1868-1870), that was called to redefine Catholic teachings and doctrine (Crotty, 2002). In 1880 the government, under Sir Henry Parkes, abolished funding for denominational schools. The Bishops of the colony rallied and recruited members of religious congregations to teach and run Catholic schools, thus avoiding the need to pay lay teachers' salaries. By 1950 at least 90 per cent of Catholic teachers were members of religious congregations (Luttrell, 1996). Accountability was restricted to the religious congregation and the local priest.

The third phase of Catholic education in Australia started in the mid-1960s and was influenced heavily by the renewal of the Church in the second Vatican Council (1962-1965) and the declining numbers of religious sisters, brothers and priests. Lay people once again responded to the call to teach in Catholic schools (D'Arbon, Duignan, Duncan, Dwyer & Goodwin, 2001). In response to a financial crisis at this time, the Archbishop of Sydney, decided to centralise all the finances of the parish and regional (secondary) schools in Sydney (Luttrell, 1996). This was the beginning of the CEO in Sydney and progressively Church, government and educational bodies began to use and rely on this centralised body, the CEO Sydney, as the coordinating authority for Catholic systemic schools in Sydney. Schools which are coordinated by the CEOs are referred to as systemic schools as defined in section 1.6. This was an era of more explicit accountability.

Today Catholic schools in Australia enjoy considerable esteem and strong community acceptance (Ryan, Brennan, & Willmetts, 1996). One could legitimately claim that the foundational purposes of Catholic schools have been achieved. The poor, repressed, Irish working classes, have, over succeeding generations, found themselves and other migrant Catholic groups contributing to all professional groups of the nation. Indeed, "The Australian Catholic education system, and its parallels in health and social welfare, are an enduring monument to the imagination of the early Bishops, priests and laity in the colony" (Uren, 1996, p.6).

The transition years from religious to lay leadership have been smooth. Government financial support for Catholic schools is strong and "the arrangements in Australia are better than those existing in most, if not all, other countries" (Canavan, 1999, p.21). Catholic schools have been supported, in adapting to the rapidly changing governmental, societal and Church environment, by evolving CEOs and Commissions across the nation. These agencies have made and continue to make a significant contribution to the robust state of Catholic education in the nation today.

1.2.1 The emergence and organization of CEO Sydney

Each Catholic Diocese and Archdiocese in Australia has a Catholic Education Office or equivalent, established by the Bishop or Archbishop and accountable to a relevant Diocesan or Archdiocesan Catholic Schools' Board. The CEO Sydney is one of the largest, non-government education authorities in Australia and like the 28 CEOs across Australia, it is a relatively young organization in the Australian Catholic Church, with its humble beginnings dating from 1939 (Luttrell, 1996). A number of the challenges that confronted the young, emerging CEO Sydney in the early 1980s, including role definition and clarification, have been progressively addressed and are now well understood (Canavan, 1986). These organizational challenges around role clarification are common to other matrix organizations (Davis & Lawrence, 1978). The CEO Sydney is a formal, complex matrix organization exhibiting the characteristics of a bureaucracy as perceived by Weber (1958) and those of a loosely-coupled system (Weick, 1976).

The CEO Sydney in 2004 has eight teams/directorates organized in a matrix (central/regional) organizational structure. There are three regional teams (East, Inner West and South) and five central teams (Executive Director's Support, Religious Education and Curriculum, Human

Resources, Financial Services and Information and Communications Technology) located at Leichhardt, a suburb in central Sydney. Each team is led by a Director and is accountable through that Director to the Executive Director of Schools who is the Chief Executive Officer of the CEO Sydney and accountable to the Chairman of the Sydney Archdiocesan Catholic Schools' (SACS) Board.

Many factors, including federal and state government legislation, funding and curriculum development, have contributed to the development and growth of the CEO Sydney which now offers services including religious education and curriculum support, leadership development, human resources functions, support and leadership in Information Communication Technology (ICT), financial services and school building and refurbishment.

The emergence of CEOs has facilitated the smooth transition from a religious to a lay workforce, with the delegation of the role of employer to the Executive Director in the case of the CEO Sydney. These significant changes have occurred against a background of continuing growth in Catholic school enrolments across the nation (Canavan, 2001). The next section provides some of the statistical features of Catholic education in Australia and in the Archdiocese of Sydney and highlights the significant role that Catholic education plays in Australia today.

1.2.2 Overview of Contemporary Catholic Education in Australia and in the Archdiocese of Sydney

Some of the broad statistical features of Catholic education in Australia and Sydney are captured in Table 1.1. These statistics highlight the significance of Catholic schools across the Australian education system as they educate one-fifth of the nation's children. They also highlight the significant place that the CEO Sydney occupies in the Australian Catholic school system educating approximately 10% of all students in Catholic schools in the nation.

Non-government schools enjoy broad funding support from both state and federal governments. The combined federal and state per capita grants generate about 80% of the recurrent income of the Catholic systems and, not surprisingly, governments demand accountability for educational standards. Without this government financial support the Catholic school system in Australia would collapse. The funding situation for Catholic schools in Australia compares very favourably with other western countries (Canavan, 2003),

including the United States of America, where the separation of Church and state requires that only small amounts of government funding is allocated to Church schools. In the CEO Sydney, for 2002, \$84.2 million was provided by the State Government and \$210.7 million was provided by the Federal Government in recurrent grants (Sydney Archdiocesan Catholic Schools' [SACS] Board & Catholic Education Office [CEO], Sydney, 2002c). The remaining recurrent income comes from school fees (15%) and other sources (5%).

Table 1.1 Some overarching statistics - Catholic Education in Australia and in Sydney-2002

% of Australian students in government schools	68.8%
% of Australian students in Catholic schools	19.9%
Number of students in Catholic primary schools in Australia	368, 987 (Sydney systemic 36,514)
Number of students in Catholic secondary schools in Australia	287,205 (Sydney systemic 25,451)
Number of Catholic schools in Australia	
-Primary schools	1239
-Secondary schools	327
-Combined	115
-Special	16
Total	1697
Number of Catholic systemic primary schools in the Archdiocese of Sydney	115
Number of systemic secondary schools in the Archdiocese of Sydney	35
Number of teachers in systemic primary schools Archdiocese of Sydney (Full-time equivalents)	2112.3
Number of teachers in systemic secondary schools Archdiocese of Sydney (Full-time equivalents)	1783

Source: Australian Bureau of Statistics, 2002; National Catholic Education Commission, 2003

In addition to the systemic schools described above, religious congregations are responsible for 20 independent, private Catholic schools in the Archdiocese of Sydney. These are mostly secondary schools with an upper primary, single-sex, section in many cases. These schools are accountable to the superior of the religious congregation usually through a school board and are loosely linked to the Catholic systemic schools. They tend to cater for the more affluent Catholic families and charge tuition fees for non-boarding students ranging from \$2,000 to \$13,000 per student per annum. Those students who board pay additional fees. The state and federal recurrent government grants for these schools are usually less than for the systemic Catholic schools given the economic capacity of the parents in these independent Catholic schools to pay higher fees.

Catholic school systems, like the CEO Sydney, therefore liaise closely with the state government and community bodies, on a broad range of issues including funding, curriculum, registration of schools and accountability for educational standards. This context of increased accountability for educational standards at system level was a key consideration in this research. The next section provides a broad overview of the organizational dimensions of Catholic Education in Australia.

1.2.3 The National, State and Archdiocesan Administrative Structure of Catholic Education

The CEO Sydney, which was the focus of this study, is closely connected to a number of other Catholic educational bodies at the federal and state level. The National Catholic Education Commission (NCEC) was established in 1969 by the Australian Catholic Bishops' Conference to advise the Bishops on matters that affect Catholic Education federally (NCEC, 2004). The NCEC is the main body to liaise with the federal government on a range of issues including the recurrent grants for students in Catholic schools and the federal government capital budget for Catholic schools. The Bishops have also established an Australian Catholic Commission for Industrial Relations (ACCIR). This body advises the Bishops on federal employment and industrial legislation that impacts on Catholic schools and Church agencies generally. The advice offered to the CEO Sydney by these bodies is crucial for the effective leadership and management of the Sydney Catholic school system.

At the state level, two equivalent bodies have been established to support Catholic education. These are the New South Wales Catholic Education Commission (CEC) and the Catholic Commission for Employment Relations (CCER). These two bodies coordinate state matters, including some industrial negotiations. Increasing pressure from governments regarding the distribution of funds necessitated the establishment of these commissions (Canavan, 1986).

The CEO Sydney reports to the Archbishop of Sydney through the SACS Board which is the key body to which the CEO Sydney accounts for a wide range of its functions including the standards of education in systemic schools. The state and federal administrative structure of Catholic education is summarised in Figure 1.1.

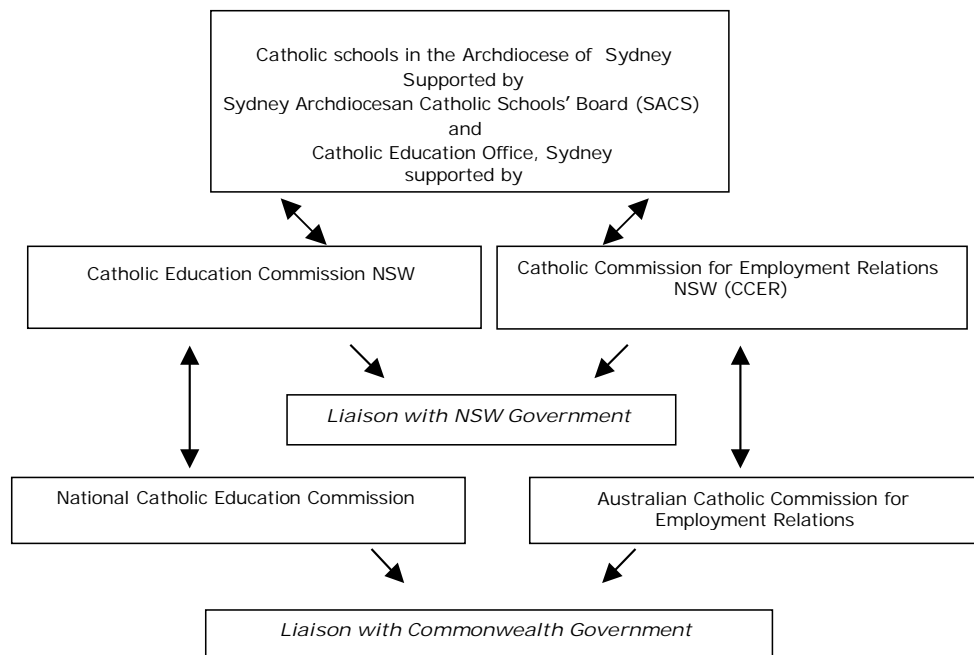


Figure 1.1 – Administrative structure of Catholic Education in Australia, NSW and Sydney.

In 2002 the CEO Sydney administration employed 225 full time staff (SACS Board & CEO, Sydney, 2002c) in a variety of roles ranging from support service roles, like payroll, through to senior system leadership. The total system annual budget for 2002 was \$381 million dollars and the component of this budget devoted to the operation of the CEO Sydney was 5% or \$19.07 million (SACS Board & CEO, Sydney, 2002c).

1.2.4 The Charter of the CEO Sydney

The Charter of the CEO Sydney specifies its broad religious, educational, leadership and support roles. The Charter is a significant guiding set of principles for the organization and as such is relevant to the context, design and specific focus of this study.

The roles, functions and Charter for the CEO Sydney (SACS Board & CEO Sydney, 1995a) states that the role of the CEO Sydney is to provide leadership and service to Catholic schools in the Archdiocese of Sydney, thereby enhancing the quality of education of the students enrolled in Catholic schools.

It further states that the CEO Sydney is involved in:

1. Planning and developing effective teaching and learning programs encompassing the Key Learning Areas, with primacy given to Religious Education.
2. Supporting these programs with appropriate teacher development.
3. Implementing and reviewing effective processes of monitoring and accountability for the Registration and Accreditation of systemic schools within the requirements of the NSW Education Act (1990).
4. Providing, within the limit of available funds, services that meet the particular learning needs of individual students (SACS Board & CEO, Sydney, 1995a).

The language of the Charter emphasizes improvement, review, standards and accountability for educational standards for schools and an explicit role for the CEO Sydney to provide leadership and support for the schools of the system in their efforts to raise standards. This emphasis within the Charter highlights the importance of this study in relation to the role that the CEO Sydney plays in continuous improvement and raising standards. In fact the Charter highlights the responsibility that the schools and CEO Sydney collectively share for the enhancement of quality Catholic education.

In terms of this study, it is interesting to examine the language used in the roles and functions Charter for the CEO Sydney (SACS Board & CEO Sydney, 1995a). For example, it states that the CEO Sydney has a role to lead and direct the implementation of effective religious education programs in all primary and secondary schools as well as monitoring and accounting for the implementation of the mandatory requirements of the NSW Education Act, 1990, (e.g. Education Act, 1990, NSW Government) on behalf of the Board of Studies NSW. Other roles and functions of the CEO Sydney are described by a range of terms including 'informing', 'supporting' and 'ensuring'.

From the examination of the Charter of the CEO Sydney, it is apparent that there are a number of areas in which the CEO Sydney is mandated to direct and lead and other areas where its role is to support and inform. The context in which this study was conducted was one where educational authorities, like the CEO Sydney, have increasing legislative and community responsibilities to account for the improvement of educational standards. In this sense the accountability expectations of the CEO Sydney have broadened and developed much further than the Charter developed in 1995 envisaged.

The Mission Statement of the CEO Sydney is another public and official document that reinforces the expectations of the CEO Sydney in influencing quality teaching, learning and educational standards.

1.2.5 The Mission of the CEO Sydney

The Mission Statement of the CEO Sydney states that, in partnership with schools, parents, the community and the Sydney and Australian Catholic Church, the CEO Sydney will ensure quality teaching and learning by providing a stimulating and challenging curriculum which links faith and culture and which also promotes schools as places of learning and excellence (SACS Board & CEO Sydney, 2000b). Once again, this public document reinforces the significant role the CEO Sydney should play in enhancing the quality of education offered in the schools of the system.

This study was conducted within the framework of the Mission and Charter of the CEO Sydney. Within these foundational statements the CEO Sydney is mandated to support the enhancement of quality education and educational standards for students. Other equivalent, international authorities, like Local Education Authorities (LEAs) in the United Kingdom, operate within a much more explicit, formal, legislative framework which guides their work and defines their accountabilities for raising standards (Lee & Derrington, 2000). The experience from these other systems is significant for this study, particularly their approach to raising educational standards.

The next section of this chapter captures some recent contextual developments within which the CEO Sydney functions.

1.2.6 Recent contextual developments in the CEO Sydney

This study, which focused on the CEO Sydney as a learning organization and its association with raising standards, was conducted in the midst of a very active and rapidly changing context in which governments, parents and the Church of Sydney were determining more of the educational agenda and in which they also have increasing expectations about the educational performance of students, schools and the system.

Appendix A shows the organizational role and functions charts for the CEO Sydney. As can be seen from these charts the organization performs a wide variety of roles as it has responded to the demands of governments, parents and the Church. The role and functions charts highlight the Human Resources, Religious Education and Curriculum, Financial Services and ICT functions now carried out by the CEO Sydney. This captures the recent, complex contextual background against which the CEO Sydney exercises its educational leadership and management role and within which this study was conducted. Indeed, the CEOs of Australia are unique in terms of the services they provide by comparison with Catholic school systems anywhere else in the world (Canavan, 2003).

The overall context in which this study was conducted was one which reflected the historical origins of the Catholic school system in Australia and Sydney and which was set in a relatively new organizational phenomenon within the Australian Catholic Church itself. The context was significantly shaped by:

1. The Charter and Mission of the CEO Sydney.
2. Increasingly by the legislative demands of state and federal governments which fund Catholic school systems so extensively.
3. By Church authorities which have increasing expectations concerning the religious education curriculum and other outcomes of Catholic schools.

The context is one focused on improving standards of educational performance and characterized by continuous and rapid change.

Having described the broad and dynamic context of this study and the accountability demands generated by this context, the next section of this chapter describes the steps that led to the identification of the research problem.

1.3 IDENTIFICATION OF THE RESEARCH PROBLEM

Since there are now such great demands on the CEO Sydney for improved educational performance this research focused on the association between the CEO Sydney and its perceived impact on standards. The framework within which this analysis was conducted was

that of the learning organization. The next section outlines the relevance of the learning organization as a meaningful framework within which to locate this research.

1.3.1 The relevance of the learning organization

In times of unprecedented, external and internal change and high community expectations for improved student, school and school system performance non-government school systems like the CEO Sydney, need to be committed to continuous improvement and responsiveness to change underpinned by systemic thinking, flexibility and adaptability. Such learning organizations are most effective when connected and driven by systemic thinking, a pressure for continuous improvement, a shared vision, mission, goals and mental models (Senge, 1990).

A learning organization is characterized by organizational learning, whereby deeper understandings and knowledge are applied to improve the performance of the organization, and better quality service is provided to students and schools. Within such an organization there needs to be a solid commitment to professional development, team work and team learning and an open and honest exchange of ideas, opinion and talent in a collaborative climate (Rosengarten, 1999).

Thus, one of the distinctive features of any learning organization is that its structures, processes and dynamics allow it to readily adapt to a rapidly changing environment. A learning organization is adaptable, flexible and committed to continuous improvement and has an inbuilt capacity to learn and to change as an organization (Garvin, 2000). The application of the learning organization concept to an organization like the CEO Sydney, which is subject to continuous change and is expected to deliver continuous improvement in standards across the system, is therefore appropriate and relevant for this study.

These broad characteristics are those of a modern learning organization whose prime purpose is to improve the quality of its services and performance by utilising the resources it has at its disposal in the most effective ways (Garvin, 2000; Rosengarten, 1999; Senge, 1990). This was a most relevant framework within which to examine the CEO Sydney as a modern organization aiming to fulfill its Charter and Mission and striving to raise the standards of education in the schools it leads and supports.

In this era of greater accountability, education authorities like Local Education Authorities (LEAs) in the United Kingdom, School Districts in the USA and Canada, and Departments of Education and Catholic Education Offices in Australia, find themselves immersed in, and responding to, rapid and continuous change and role redefinition, with the federal and state governments in Australia playing a much more explicit and significant role in setting the educational agenda and generating change. The establishment of national goals for schooling and national benchmarks for literacy and numeracy in Australia (Commonwealth Department of Education, Science and Training, 2003), have been examples of such federal government changes, complemented by regular, standardised testing across key stages of primary and secondary education.

Therefore the learning organization was considered to be a very appropriate framework within which to situate this study and examine the CEO Sydney as an organization which aims to improve the standards of education of schools in the system and the levels of student performance. The concept of the learning organization is examined in greater detail in chapter two.

Having described the context and the identification of the research problem the next section provides details of the emergence of the research question.

1.3.2 Emergence of the research question

The major research question emerged against the background of raising educational standards and school improvement generally. These emphases have become a much more explicit feature of CEO Sydney priorities and planning during the years 1998 to 2002. The latest strategic management plan, *Sydney Catholic Schools Towards 2005-mark 2* (SACS Board & CEO Sydney, 2000b), is much more focused on outcomes and performance indicators closely referenced to, "Church and system documents and policies, national goals/benchmarks/targets, NSW Board of Studies documents, current research and assessment data and relevant legislation" (SACS Board & CEO, Sydney, 2000b, p.6). This illustrates the impact of the changing contemporary context on schools and school systems.

Recent Annual Archdiocesan Schools Agendas (e.g. SACS Board & CEO Sydney, 2002b) are much more explicit about outcomes, performance indicators and targets with progress being reported in the Annual Reports of the SACS Board and CEO Sydney (e.g. SACS Board & CEO Sydney, 2002a). Inspection of CEO Sydney team plans (1998 – 2002), particularly

regional and Religious Education and Curriculum team plans (e.g. Catholic Education Office Sydney, 2002d), indicated that there is much greater emphasis, at team level, in developing and implementing strategies that focus on target setting, analysis and interpretation of student performance data and the raising of standards particularly in the core areas of religious education, literacy and numeracy.

It is against this background and the context outlined earlier that the research question emerged. In the next section the purpose of the research is described.

1.4 PURPOSE OF THE RESEARCH

The overall purpose of this research was to identify which characteristics of a learning organization could be identified in the CEO Sydney and, in doing so, determine to what extent the CEO Sydney could be regarded as a learning organization.

Additionally, the research then sought to examine whether there was any perceived association between the characteristics of a learning organization identified in the first part of the study and raising standards in religious education, literacy and numeracy in the primary and secondary, systemic Catholic schools of the Archdiocese of Sydney. The period from 1998 to 2002 was chosen as the timeframe for the study because they were years during which the CEO Sydney's explicit, public and strategic interests were focused on the improvement of teaching and learning and raising standards in the schools of the system. It was therefore a relevant timeframe in which to situate the study. The purpose of the research is developed further in section 3.2.

This research was guided and shaped by the major research question and its supporting sub-questions which are described in the next section.

1.5 THE MAJOR RESEARCH QUESTION AND SUB-QUESTIONS

Previous major reviews and research on the CEO Sydney (Canavan, 1986; Hughes, 1995) devoted little attention to the impact of the organization on raising standards in schools (Appendix B). In this study the concept of a learning organization provided the theoretical framework within which such an investigation could occur (sections 1.3.2 and 2.3).

The relevance of a learning organization, as a means of responding to rapid change and improvement in organizational effectiveness led to the following major research question:

What characteristics of a learning organization can be identified in the Catholic Education Office (CEO) Sydney and are these perceived to raise standards in systemic schools of the Archdiocese of Sydney?

The answer to this major research question was approached through the following three sub-questions:

1. What characteristics of a learning organization can be identified in the CEO Sydney?
2. Are there differences in the extent to which various learning organization characteristics and curriculum outcomes are identified by the demographic groups surveyed?
3. What relationships are perceived to exist between the learning organization characteristics of the CEO Sydney and raising standards in religious education, literacy and numeracy?

The first sub-question teased out the first part of the major research question and sought to determine which learning organization characteristics were present and whether some characteristics were more strongly perceived to be present than others and, if so, to propose some explanations for this.

The second sub-question was an extension of the first sub-question and helped investigate whether there were any differences, in the identification of learning organization characteristics and curriculum outcome scales, between some of the demographic groups and, if so, to propose some reasons for these differences. The five groups considered as part of this study were gender, role (primary/secondary principalship or CEO Sydney senior personnel), regional membership (principals only), length of experience as a principal and the age of respondents.

The third sub-question responded to the second part of the major research question and investigated any associations that might exist between the CEO Sydney as a learning organization and the standards in religious education, literacy and numeracy. The reasons for this are examined more closely in Section 3.2.

There is a need to keep a broader view of education and learning in perspective in a study such as this which is very focused on a particular empirical and specialised view of

educational standards and effectiveness. The education and formation of young people in schools is obviously a more holistic and complex human activity than portrayed in the analysis and conclusions drawn from this study.

Proximal factors closest to the instructional process are much more important than distal factors such as the state or district factors. Classroom effects are also of far greater significance than school effects (Wang, Haertel & Walberg, 1993). At the centre of primary and secondary education is the critical and dynamic interaction between the teacher and the student (Evans, 2002) and this study did not explicitly investigate this critical social and learning interaction nor did it suggest any causal relationship between the work of the CEO and the effectiveness of classroom teaching. However some writers claim that the local district can encourage and enable reform but educational reform does not and cannot happen at any level apart from the classroom (Ware & Savoie, 2000).

It was important to define clearly some key terms, including raising standards and the definition of a learning organization and its characteristics, adopted and modified for this study from Rosengarten (1999). An overview of these key definitions is included in the next section of this chapter.

1.6 DEFINITION OF KEY TERMS

Five key definitions are included below and they helped focus the study, but did not embrace all aspects or dimensions of any one key term. For example the term ‘raising standards’ has very broad connotations. In this study the definition adopted focused on improvement of educational standards as specified in the Annual Archdiocesan Agendas, 1998-2002 (e.g. SACS Board & CEO Sydney, 2002b) with an emphasis on data gathered from standardised, state and local assessments in religious education, literacy and numeracy. This study has therefore adopted definitions for key terms which have helped provide a common language and framework for the research.

1. **A learning organization:** A learning organization is an organization which excels in organizational learning and outcomes. This definition is developed in greater detail in section 2.3.3.

2. **Systemic schools:** These are schools which fall under the direct authority of the CEO Sydney. The vast majority of Catholic schools in the Archdiocese of Sydney are systemic schools.
3. **Catholic Education Office (CEO) Sydney:** The CEO Sydney is the agency accountable to the Catholic Archbishop of Sydney through the SACS Board for the leadership and management of the systemic, Catholic, primary and secondary schools in Sydney. In this study the CEO Sydney, which has central and regional offices, was viewed as a whole and respondents were encouraged to record their perceptions of the overall, global services provided by the CEO Sydney.
4. **System:** The term 'system' is used throughout this thesis and refers to the systemic primary and secondary schools and the CEO Sydney.
5. **Raising Standards:** Raising standards referred to an improvement in the quality of teaching and learning in three key curriculum areas (religious education, literacy and numeracy) which resulted in better student learning outcomes as determined and monitored by regular school assessments, observations, standardised, state testing and benchmarking and is described more fully in section 2.6.

The next section of this chapter provides an outline of the significance of this research generally and specifically for the CEO Sydney.

1.7 SIGNIFICANCE OF THE RESEARCH

This research was significant for the following reasons:

1. This research on the CEO Sydney builds on previous major studies in 1986 (Canavan, 1986) and 1994/1995 (Hughes, 1995) and provided some longitudinal data on developments that might have occurred across those years. There were a small number of common items from previous studies which assisted in this study and served broader purposes than this study. These previous studies are described in Appendix B.
2. This study was timely and significant because Catholic schools and school systems are increasingly expected to provide evidence of standards of student performance and greater accountability to relevant federal and state governments, parents, the community and to the Church. There are now national goals for schooling in Australia (MCEETYA, 1999) with national benchmarks in literacy and numeracy and in May 2001, the Australian College of Education drafted a 'National Declaration for Education 2001' in

which standards for student performance in a number of areas including literacy and numeracy were clearly articulated and emphasized (ACE, 2001).

Funding of non-government school systems in Australia is increasingly linked by governments to school and school system performance against these established national benchmarks in literacy and numeracy (Kemp, 1999). A recent Federal Minister of Education stated that systems and schools were going to be held more accountable for outcomes consistent with worldwide trends in Western countries. He claimed that new, rigorous national literacy, and numeracy benchmark tests were delivering the first real improvements in a quarter of a century (Kemp, 1999). All schools, including non-government schools, have reported on aspects of the national goals in the *National Report on schooling in Australia* (MCEETYA, 2000) and from 1999 onwards this Report contained quantitative data on national literacy performance including reading, beginning at Year 3.

Yet another review of non-government schools in NSW (Grimshaw, 2002) was established, by the State Minister for Education in 2000 to ensure that non-government schools met appropriate standards of financial and educational accountability and were fairly funded. In a society where state and federal governments fund non-government schools so extensively, Catholic systems need to be able to demonstrate that the expenditure of tax-payer funds on their systems, including the administration in the CEO Sydney, does make a difference to the educational outcomes and standards for students. This study was significant because it investigated the impact of the CEO Sydney on standards and researched this broad area of accountability.

It is noteworthy that in the recently published CEO Sydney Strategic Management Plan, *'Sydney Catholic Schools Towards 2005, Mark 2'* (SACS Board & CEO Sydney, 2000b) the national goals for schooling formed a significant part of the document. This contrasts with the previous Strategic Management Plan launched in 1995 (SACS Board & CEO Sydney, 1995b) which had little reference to any national or state policy or goals statements. Priority 3 of the Strategic Management Plan mark 2 plan, Outcome 3.1 emphasizes that measurable improvement in student literacy with reference to system guidelines and targets, and State and National benchmarks will occur. This example illustrates the extent to which the Catholic school system is now interacting with and, to some extent, being shaped by federal and state government educational and political

goals and objectives. This study is significant because it investigated the association between the CEO Sydney and raising educational standards in the context of these ever expanding accountabilities. Thus there is an increasing amount of legislation that impacts directly and indirectly on schools. The federal and state courts, the Parliaments of Australia, the relevant Unions, the many and varied educational and community bodies all impact on schools and the CEOs in their demands for accountability (e.g. Education Act, 1990, NSW Government).

3. Additionally, Catholic schools are expected to provide high quality religious and faith formation and general education in an increasingly pluralistic and secular society. During the past ten years, through the CEO Sydney, there has been substantial curriculum development in primary and secondary religious education and these curricula have been revised during 2002 and 2003 and complemented by a series of purpose-designed textbooks to support Religious Education from K-10 (CEO Sydney, 2003). Church documents like *'The Catholic School on the Threshold of the Third Millennium'* (Congregation for Catholic Education, 1998) examines what makes a Catholic school distinctively Catholic and challenges schools and school systems to produce high quality religious education curricula and supporting materials.

The Church also has increasing expectations concerning the standards in its schools particularly in religious education. With the complex interrelationships that now form the fabric of modern societies, the Catholic school system and the CEO Sydney are influenced by, and expected to interact with, a wide range of interest groups, agencies and external authorities as well as a changing Church and community all with their own expectations regarding standards. This study is significant in that it investigates aspects of the work of the CEO Sydney and standards in religious education.

4. The study is also significant because the examination of Catholic Education Offices, in the way outlined in this research and within the framework of the learning organization, has not been conducted previously in Australia. Accordingly, the present study of one large, Australian CEO, builds upon and extends previous research on learning organizations in other industries and schools, but is innovative in respect to its specific application to a body like the CEO Sydney. This study drew on a significant and growing body of research on the effectiveness of LEAs in the United Kingdom (Audit Commission, 2003) and School Districts in the United States (Thompson, 2003) and their impact on raising educational standards in schools of the systems they lead and support. Hill, Crevola and Tucker (2003) have examined extensively the characteristics of

effective education authorities. These studies provided significant background for this study. Given research on learning organizations in Australia and in other countries and the particular context of the present study, it became clear that a gap in existing knowledge was evident as no one had previously examined an Australian CEO from this perspective before.

This study aimed to equip the CEO with some findings about its characteristics as a learning organization and its perceived role in the leadership of quality teaching and learning and standards across the Catholic school system. In identifying those learning organization characteristics that were underdeveloped it could provide the CEO with data from which it could develop some strategic, structural and operational directions for the future which would further enhance its effectiveness as a learning organization. A number of key assumptions facilitated the conduct of the research and these are described in the next section.

1.8 ASSUMPTIONS OF THE RESEARCH

There are three key assumptions that underpin this research including:

1. The nature of the survey population. The assumption being that principals and a small number of senior CEO personnel were the best informed, most broadly experienced and critically reflective groups to provide the data that this research sought. Their commitment to the system would promote motivation for a good return of data. This is further developed in section 3.3. where details of the research population are outlined.
2. A second assumption was that an essentially quantitative approach was the most appropriate methodology to address the major research question. There are a number of reasons for this approach in an introductory study such as this including the fact that some previous studies on learning organizations have adopted such an approach and that it is precise, logical, efficient, objective, able to be replicated and was considered the most efficient means of gathering data from the busy population being surveyed. This is further developed in chapter three, section 3.5.
3. For the methodology used the respondents answered with honesty and integrity.

1.9 BACKGROUND OF THE RESEARCHER

The researcher in this study is a member of the senior leadership team within the CEO Sydney, a position that provided unique historical and organizational insights, as well as access to data and documentation. The design of the study placed particular emphasis on the ethical considerations of confidentiality and anonymity as discussed in section 3.8.3.

1.10 OUTLINE OF THE THESIS

As well as this introductory chapter the thesis has six other chapters including chapter two which reviews the literature on the learning organization, its characteristics, its relationship to organizational learning, its application to educational agencies like the CEO Sydney and the relationship between the learning organization and raising standards in schools. The definition of a learning organization developed for this study is also detailed and justified in this chapter. There is also a review of the literature on the impact on standards of similar educational bodies in the United Kingdom and the United States.

The methodology and research design used in this study are reported in chapter three and include discussion of the aims of the research, the research population, research paradigm and design, the web-based technique used to gather the data and the statistical processes used to analyse the data. The ethical considerations and limitations of the research are also considered in this chapter. This is followed by chapter four which describes the instrument development and validation including the development of scales and the reliability and validity of the instrument. There is a discussion of the pilot study and the reliability of the questionnaire, complemented by a discussion of validity and reliability factors in the main study and the intercorrelations between scales.

The presentation of the data collected and its analysis is the subject of chapter five. This chapter provides an overview of the statistical approaches used in the study and examines each of the eight learning organization characteristics using descriptive statistics and qualitative data. This is followed by considerations of demographic group patterns within the data. The chapter concludes with a presentation of the analysis of the relationships between the learning organization characteristics and the curriculum outcome scales using descriptive

statistics, Pearson correlations, multiple regression and canonical correlations, complemented by some qualitative data.

The thesis concludes with a discussion of results in chapter six and some broad implications and recommendations of the study in chapter seven. Chapter six presents a discussion of the results in the context of the major research question and its associated three main sub-questions. The research question is discussed in the context of the data gathered, the additional information provided through examination of CEO Sydney policies, procedures and documentation and reference to the literature. Chapter seven examines the broad conclusions of the research, its implications and recommendations for theory and practice and the identification of areas for further research.

1.11 CHAPTER SUMMARY

In this chapter the researcher has attempted to provide a broad overview of the context within which this research was conducted. The emergence of CEOs across Australia and in Sydney specifically has been described as has the Charter and Mission of the CEO Sydney and their brief to improve the quality of teaching and learning and standards in the schools of the system.

A significant part of the context is the complex, rapidly changing external and internal environment and the increased demands for improved performance and accountability to government, the community and, where relevant, the Church, for the student outcomes of education. The concept of a learning organization was therefore introduced as a useful framework within which to examine the CEO Sydney and its impact on standards. The research question therefore examined the perceived impact of the CEO Sydney on standards using the learning organization framework.

Research of this type, with this specific focus, has not been conducted in Catholic school systems in Australia before and as such could be of some future significance for the future assessment of CEOs and other school systems and their impact on the quality of educational standards.

A review of the literature related to the learning organization, its definitions and characteristics, is presented in the next chapter as is an examination of the literature on the educational impact of systems, such as school districts in the United States and Local Education Authorities (LEA) in the United Kingdom

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This study combines two broad areas, namely that of the learning organization and the impact of education systems, like the CEO Sydney, on educational standards. It builds upon a British study conducted by Rosengarten (1999), which did not involve education systems but examined learning organizations and their characteristics in detail. Rosengarten's work was considered an appropriate frame of reference because it comprehensively drew together much of the literature on learning organizations, with particular emphasis on their characteristics, and led to the development of a learning organization questionnaire which was used to evaluate the learning organization profiles in the manufacturing industry in the United Kingdom. While Rosengarten's work has been considerably adapted for this research, it nevertheless provided an important theoretical basis and frame of reference.

In this chapter an examination of the learning organization as a concept, its definition and characteristics are presented followed by a justification for the definition, and the eight characteristics, adopted for this study. The relationship between learning organizations and the work of school systems is also included and this discussion is extended to the enhancement of educational standards (including religious education, literacy and numeracy) within that context. The literature review drew on research evidence from the United Kingdom, the United States and Canada which specified the current understandings of world-class, highly effective education systems and their features.

This literature review also incorporated material from relevant CEO Sydney publications, policies and official documentation. The broad concept of the learning organization is introduced in the next section.

2.2 THE LEARNING ORGANIZATION

The learning organization is thus proposed as one response to such a rapidly changing environment (Garvin, 1993), with its capacity not only to adapt by continually improving, but also to create, acquire and transfer new knowledge and then modify behaviour to reflect this new knowledge. According to Whitby (1995), the conceptualization of organizations has

undergone a significant paradigm shift as society has progressed from an industrial society, based on notions of mechanical production, to a post-industrial society, based on information. Organizations have moved radically away from the mechanistic creations that flourished in the post-industrial revolution to more fluid, organic and even boundary-less structures. Senge (1990) and Wheatley (1994) recognize organizations as systems, construing them as 'learning organizations' and crediting them with some type of self-renewing capacity. Learning is perceived to be the only competitive advantage in responding to a changing, dynamic and unpredictable environment and is the single most important resource for organizational renewal in the postmodern age (Hargreaves, 1995).

Rosengarten (1999), in a theoretical argument, contends that continuous improvement and systemic thinking are foundational, necessary and sufficient characteristics of any learning organization. Adaptability, flexibility and organizational learning are perceived as critical qualities if an organization is to remain relevant, and contemporary as well as improving its performance and service to clients. Therefore sustaining consistent, internal, innovation and improving quality and enhancing customer or supplier relationships are critical dynamics in the learning organization (Mills & Friesen, 1992; Swieringa & Wierdsma, 1992).

The context in which schools and school systems, like the CEO Sydney, operate is rapidly changing due in part to the politicization of education, the increasing demands of parents, pressures on resources and the impact of technology (Shaw, 2002). The global society with its increasing complexity requires citizens who, as knowledge workers, can work with and within diversity and rapid change (Drucker, 1999). Schon (1973) provided a theoretical framework that linked immersion in increasing change with the need for continuous learning, necessitating the need for continuous institutional transformation. In this context the capacity of schools to adapt to change, improve and respond to the demands of the community, depends on their capacity to engage in continuous learning as organizations (Hallinger, 1999). A learning organization is thus a valuable and promising concept, particularly in these dynamic and changing times and in organizations that wish to continuously improve their services (Johnson, 1995) such as is the case with the CEO Sydney. Indeed the learning organization concept manifests a different image of organizations to that which has dominated educational management literature to date.

Emerging throughout western education systems is a broad consensus about the expectations of schools and school systems, whereby all students, in every setting, should become literate

and numerate and acquire the capacity for life-long learning, leading to successful and satisfying work in the knowledge society (Johnston & Caldwell, 2001). Marsh (1999) contends that the vision for 21st century education is about excellence, equity, empowerment and constant improvement. In the knowledge society, low performing school systems constitute a significant impediment to economic and social progress. Education systems expect schools to account for the extent of their value-addition to the learning of students. However this accountability is now increasingly demanded of education authorities and the CEO Sydney is not excluded from such demands (Cranston, 2001; Hill, Crevola & Tucker, 2003). It is suggested that a learning organization is well suited to meet these demands.

2.2.1 Learning Organizations, Learning Communities and Life-long learning

Three terms, life-long learning, a learning community and a learning organization are used throughout this thesis. Senge's (1990) idea of a learning organization was taken up by educators and labeled a learning community. In schools such a community is demonstrated by people from multiple constituencies working together (Longworth & Kruse, 1995). Chapman (1997) describes schools as learning communities that promote responsibility for their own learning. Mitchell & Sackney (2000) in fact believe that the learning community is a preferred strategy for school improvement. A learning community is a place where, "organizational members seek out new information, resolve current and long-standing problems, work jointly, and engage in continuous learning and professional development" (Sackney, 1999 p.1).

This chapter covers in detail the definition of a learning organization which was central to this study. In relation to the third of these terms Longworth (1999) drew on The European Lifelong Learning Initiative (ELLI) and defined life-long learning as:

A continuously supportive process which stimulates and empowers individuals to acquire all the knowledge, values, skills and understandings they will require throughout their lifetimes and to apply them with confidence, creativity and enjoyment in all roles, circumstances and environments (p.2).

Further to this Delors (1996) suggests that life-long learning is a societal and cultural issue with profound implications to structures in society and education. It moves learning away from compartmentalization whilst running the risk of the emergence of a significant gap between those who can and can't function as life-long learners. Such learning is remarkably

compatible within the concept of a learning organization as is evident in the following sections.

The following section traces briefly the evolution of thinking on learning organizations and specifies the definition adopted in this study.

2.3 THE LEARNING ORGANIZATION ORIGINS AND DEFINITIONS

The literature on learning organizations is voluminous and forms part of the evolution of thinking on organizations from the socio-technical, systems view emerging in the 1950's through to the concept of an organization as an organic entity with a capacity to learn and thus continuously transform itself (Pedler, Burgoyne & Boydell, 1996). It is part of the natural evolution of the participative management themes of the 1970's. To understand the concept of a learning organization it is critical to understand organizational learning as discussed in the next section.

2.3.1 Organizational learning

The theoretical foundations for the concept of the learning organization originate very much in the seminal work of Argyris and Schon (1978, 1996) who wrote extensively on the related concept of organizational learning which they viewed as increasing an organization's capacity to take effective action. According to Dixon (1999), organizational learning is, "the intentional use of learning processes at the individual, group and system level to continuously transform the organization in a direction that is increasingly satisfying to its stakeholders" (p.6). In fact, Wang and Ahmed (2003) suggest that the understanding of the individual learning process, embracing creativity and radical innovation, is a good starting point to understand organizational learning.

The literature on organizational learning (e.g. Garvin, 1993) focuses on the processes involved in individual and collective learning inside organizations, whereas the literature on learning organizations has an action orientation which focuses on diagnostic and methodological tools which help to identify, promote and evaluate the quality of learning processes inside organizations (O'Brien, 1994; Rosengarten, 1999). The essence of organizational learning is the ability of the organization to use the considerable mental capacity of all its members to create the kind of processes that will improve its effectiveness

(Dixon, 1999). However as Leithwood, Jantzi and Steinback (1995) point out, there is little systemic evidence describing the conditions which promote or inhibit organizational learning.

A school's capacity for organizational learning is a strong predictor of pedagogical quality and achievement (Marks, Louis & Printy, 2000). Silins and Mulford (2002) contend that the level of organizational learning within a school impacts on student participation and learning and the quality of classroom work.

For school systems like the CEO Sydney, a significant challenge is to see how individual learning becomes organizational learning requiring as it does a critical and difficult unlearning of old behaviours and beliefs (Mariotti, 1999). Finger and Brand (1999) merged the two ideas together when they noted that organizational learning is the activity and the process by which organizations eventually reach the ideal of a learning organization.

A model proposed by Swiering and Weirdsma (1992), although not an explicit feature of this study, provides a theoretical insight into the ways in which organizational learning occurs. They suggest that organizational learning consists of three levels:

1. Single-loop learning which focuses on improving rules and solutions and is sought through existing insights (adaptive learning).
2. Double-loop learning where there is a renewal of insights within existing principles and is referred to as transformative learning (Argyris & Schon, 1996). The organization not only changes its actions and modes of operating in response to feedback (single-loop learning), but also reexamines its guiding assumptions and core values to bring about transformative change (generative learning).
3. Triple-loop learning, where new principles are developed.

From these considerations of organizational learning a definition for a learning organization begins to emerge and this is the focus of the next section.

2.3.2 A learning organization – background

A learning organization can apply to any group of people who need and desire to improve performance through learning (Pearn, Roderick & Mulrooney, 1995). In this study, the learning organization was not considered to be a group of individual learners. It is more:

An organization that has woven a continuous and enhanced capacity to learn, to adapt, and change into the fabric of its character. It has values, practices,

programs, systems and structures that support and accelerate organizational learning (O'Brien, 1994, p.4).

The current popularity of the learning organization concept dates from the work of Peter Senge (1990) whose work raised learning organization theory to a new height (Cullen, 1999). Senge (1990) claimed that organizations that succeed tap commitment and capacity at all levels, emphasizing continuous learning through the gradual development and mastery of five disciplines of systems thinking, personal mastery, mental models, building a shared vision and team learning (Senge, 1990). The five disciplines were concerned with shifting the mindset from parts to a whole, from people as helpless reactors to them being active participants in shaping reality and from reacting to the present to creating the future. These five disciplines are relevant for a body like the CEO Sydney which seeks to improve its performance as an organization and adapt to change effectively.

Learning organizations were described in philosophical terms as:

Organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together (Senge, 1990,p.1).

Senge's idealistic approach allowed for the exploration of abstract ideas, including the role human values play in the workplace, emphasizing that organizations must discover how to tap people's commitment and capacity to learn at all levels. This thinking relates powerfully to the intensely human work that is education in general and Catholic education in Sydney in particular.

The fundamental differences between Bureaucratic-Tayloristic organizations and learning organizations is in fact the mastery of Senge's five disciplines (Senge, 1990). In terms of this study it is worth noting that these disciplines have as much relevance from a curricular and pedagogical standpoint as they do from a managerial and administrative perspective.

Garvin (2000) questioned whether behavioural change needed to occur as a defining element of learning organizations, although it is difficult to imagine real learning without subsequent behavioural change at the organizational level. A number of critics, including Bate (1990) and Johnston and Caldwell (2001), suggest that an overemphasis on systems thinking and common goals can shift the focus away from individuals and organizational members. Such an overemphasis may suggest that organizations and systems can in some way exist independently of people with the associated risk of stifling creative, independent thinking. In

a sense, there is a tension between creative thinking and working collaboratively towards common goals (Johnston & Caldwell, 2001). This is a particularly significant insight for this study because the CEO Sydney is an organization with a strong commitment to strategic management practices and system processes whilst proclaiming its intensely human dimension.

Other writers, like Zairi (1999), claim that a clear understanding of the meaning of the learning organization is problematic and elusive with definitions ranging from the philosophical, beyond traditional rational constructs, to the organic (Ojala, 1995). Although these divergent viewpoints are a reflection of the emerging theoretical understandings of learning organizations, the researcher adopted the position that the term was useful as the integration of a set of ideas on ways in which to organize work so that the often conflicting demands of organizational effectiveness and individual job satisfaction were simultaneously met. The concept may better focus aspiration rather than provide a practical guide for implementation. People in such organizations feel they are doing something that matters to them personally and to the larger world with individual and collective learning as the key. However it is acknowledged that the learning organization, although useful as an integrating concept, is not the universal remedy to a wide variety of organizational problems (Kerka, 1995) and would be enriched by a stronger reference to contemporary developments on research on learning (Cullen, 1999). Nevertheless it exerts a powerful, intuitive and practical appeal and has promise for organizations finding their way into the future (Wonacott, 2000).

Although there is no consensus on the definition of a learning organization, many definitions share common elements (Garvin, 2000; Kerka, 1995). As implied earlier Senge's (1990) definition has been criticized for failing to concretize the learning organization in objective terms and thus making it less easy to apply in a practical sense, as distinct from Garvin's definition which is easily applied, plausible, well-grounded and actionable and more attuned to the basic thrusts in this study of the CEO Sydney. There is an obvious inbuilt tension between Senge's (1990) idealistic vision of a learning organization and the profit imperative in capitalist organizations. Garvin (1993) developed a strong case in which the importance of learning as a means of improving organizational performance and effectiveness was emphasized. The learning organization was defined as one, "skilled at creating, acquiring, interpreting, transferring and retaining knowledge, and at purposefully modifying its behaviour to reflect new knowledge and insights" (Garvin, 1993, p.80).

In this study, which has an empirical emphasis, the researcher adopted a definition for a learning organization that could be operationalised, akin to that of Garvin (1993). The definition adopted for this study is clarified and justified in the next section and embraces an approach that is practical with the potential to assist in the analysis of the CEO Sydney as a learning organization.

2.3.3 Definition –learning organization

O'Brien (1994) claimed that the examination of parts of an organization and their interconnectedness often allows a better understanding of the whole and the identification of the weakest sub-sections. For the purposes of this study, the adopted definition of a learning organization relied on this approach and consisted of key components or characteristics that were broadly represented in the literature and relevant to school systems like the CEO Sydney. O'Brien (1994) suggested a number of advantages in approaching a learning organization from a sub-systems perspective including:

1. Assistance in the understanding of systemic factors that impact on the organization's ability to enhance continuous improvement. In a system everything is connected and an examination of parts of the system allows a better overview of the whole and the potential impact change to one sub-system has on others.
2. It allows a better identification of the critical areas for organizational development.
3. It facilitates the prioritizing of goals and steps for action plans.

Rosengarten (1999) argues, in a theoretical discussion, that the characteristics of a learning organization can even be ranked according to their impact on organizational learning. He concluded that the 'core' characteristics of 'Systemic Thinking and Mental Models' and 'Continuous Improvement of Work', are both necessary and sufficient to constitute a learning organization. This resonates with the conceptual cornerstone of Senge's (1990) thinking that systemic thinking, was the discipline that integrated the others, thus fusing them into a coherent body of theory and practice.

The definition adopted for this study was developed after a review of this literature on learning organizations and does not rely on the work of Senge (1990) entirely, although his foundational thinking is critical for the modern understandings of learning organizations. Johnston and Caldwell (2001) determined the extent to which the five disciplines were apparent in the management practices in three Victorian Department of School Education secondary schools and concluded that Senge's model of a learning organization provided a

helpful template for conceptualizing progress towards world-class schools. The definition adopted for this study is both inclusive of the current literature on learning organizations and useful in terms of the empirical approach adopted for this study and is as follows:

A learning organization is an organization which excels in organizational learning and outcomes. This is because the organization possesses a high degree of certain characteristics that foster the process of acquisition or generation of organizational knowledge through its members, which is intentionally used for the continuous improvement of organizational actions and outcomes (Rosengarten, 1999, p.93).

Before considering in detail the characteristics of a learning organization adopted for this study, the next section contains a brief review of some of the factors that prejudice the formation of a learning organization.

2.3.4 Inhibitors to becoming a learning organization

There are a number of factors that inhibit the formation and operation of a learning organization (O'Brien, 1994). These include;

1. Sometimes organizational leaders and middle managers spend too much time solving immediate and pressing problems, whilst the essence of an effective learning organization requires people to take quality time to think and plan strategically.
2. Top-down hierarchical organizations are also prejudicial to the formation of a learning organization.
3. The reluctance in the workforce to retrain.
4. Bureaucratic organizations with an excessive focus on systems and processes are also prejudicial to the development of learning organizations.
5. There are a number of paradoxes involved in the definitions of learning organizations. These include the fact that success requires risk taking and leadership requires sharing. Such paradoxes can create ambiguity with the understanding of the learning organization (Whitby, 1995).

A degree of caution needs to be exercised in translating the learning organization concept which originated in business and industry, directly to a non-government, Church, service industry like the CEO. However, according to Silins and Mulford (2002), there is significant, emerging evidence that the application of the research and understandings on learning organizations is an appropriate and very useful framework within which to analyse the work of schools and, by implication, school systems.

2.3.5 Leadership and the learning organization

The leadership of the learning organization is not a specific focus of this study, nevertheless it is very significant in the dynamics of any learning organization. Principals who create an environment where teachers continually learn, in fact create learning organizations actively encouraging teachers to assume informal leadership roles (Silins & Mulford, 2000), whilst at the system level the superintendent's role is to find and support such principals (O'Brien, 1994). Those who lead learning organizations must become more flexible and adaptive and school districts need to be clear about what needs to be developed in individual principal competencies to do this (Fullan, 2000).

Senge (1990) suggested that a learning organization required a non-traditional view of leadership with leaders as conceptual designers of vision and core beliefs, stewards and teachers, whilst Leithwood (1996) highlighted the significance of leadership in the development of teachers and hence outcomes for students when he stated that, "Nothing else outside the school helps create conditions in the school which foster individual and collective learning of teachers as much as school leadership" (p.1).

Such leadership of learning organizations was supported by, among other factors, inclusive, collaborative structures, and learning focused leadership (Johnston & Caldwell, 2001). The leadership practices that promote organizational learning can be conceptualized as transformational in nature using dimensions such as vision and goals, culture, structure, intellectual stimulation, individual support and performance expectation (Silins & Mulford, 2000). The critical role of leadership at system and school level is the background against which this study was conducted. The next section of this chapter systematically examines the characteristics of a learning organization adopted for this study.

2.4 CHARACTERISTICS OF A LEARNING ORGANIZATION

The work of Rosengarten (1999) was significant because in his study the characteristics of a learning organization were refined, structured and synthesized in a comprehensive manner according to how conducive they were for organizational learning. He conducted a thorough review of the literature with a view to identifying commonly recurring learning organization characteristics. Table 2.1 is an adaptation of this work and incorporates some additional, recent references gathered from the literature on schools as learning organizations.

Table 2.1: Literature Covering the Characteristics of the Learning Organization – Adapted from Rosengarten (1999)

Author (s)	Year	1	2	3	4	5	6	7	8	9	10	10.1	10.2	10.3	10.4	10.5	10.6
Argis & Schön	1978	x	x								x	x	x	x	x		x
Hedberg	1981		x						x	x							
Shrivasta	1983	x		x	x				x						x		
Fiol & Lyles	1985							x	x		x						
Puick	1988				x												
Pautzke	1989													x			
Stata	1989	x	x	x										x	x		
Senge	1990	x	x							x	x	x	x	x	x	x	
Senge	1990a		x						x			x	x		x		
Sirkin & Stalk	1990	x				x											
Klimecki <i>et al.</i>	1991			x				x	x					x	x	x	x
Nonaka	1991						x	x								x	
Leonard-Barton	1992	x	x	x	x	x			x						x		x
McGill <i>et al.</i>	1992	x	x			x		x			x				x		x
Pawlowsky	1992											x				x	
Probst	1992			x						x						x	x
Sonnenberg & Goldberg	1992	x														x	
Adler	1993						x										
Adler & Cole	1993						x										
Garvin	1993			x	x	x	x	x		x						x	
Isaacs	1993			x								x					
Kim	1993		x							x			x	x			
Kofman & Senge	1993		x							x		x				x	
McGill & Slocum	1993		x	x		x	x	x		x	x	x			x	x	x
Schein	1993a		x	x								x					x
Ulrich <i>et al.</i>	1993			x	x	x	x			x	x	x				x	x
Luthans <i>et al.</i>	1994		x	x	x			x				x	x				
O'Brien	1994		x	x	x	x	x	x		x		x			x		
Nevis <i>et al.</i>	1995		x		x		x	x		x			x	x	x		x
Johnston	1998			x	x				x			x					
Leithwood, Leonard Sharratt	1998			x	x				x						x		x
Silins & Mulford	2000				x									x	x		x
Limerick <i>et al.</i>	2000		x	x	x									x			x
Johnston & Caldwell	2001	x		x	x			x	x								
Silins & Mulford	2002	x	x	x	x		x		x	x				x	x		x
Silins, Zarins & Mulford	2002			x	x		x							x	x		x

Legend:

- 1 = Team work and team learning
- 2 = Systemic thinking and mental models
- 3 = Free vertical and horizontal flow of information
- 4 = Education and training of the whole workforce
- 5 = Learning reward system for employees
- 6 = Continuous improvement of work
- 7 = Flexibility of company strategy and employees
- 8 = Decentralized hierarchies and participative management
- 9 = Learning laboratories and constant experimentation
- 10 = Supportive corporate learning culture:
- 10.1 = Dialogue
- 10.2 = Shared interpretation of reality,
- 10.3 = Shared vision of the future,
- 10.4 = Openness & trust,
- 10.5 = Commitment & tolerance,
- 10.6 = Risk taking & responsibility

The characteristics adopted for this study were based on this material presented in Table 2.1 with a particular focus on the significant work of Rosengarten (1999) integrated with the work of Silins, Zarins and Mulford (2002), who examined secondary schools and the dimensions that characterized them as learning organizations. Team work and learning in teams, systemic thinking, effective vertical and horizontal communication, shared vision and mission and education and training of the workforce were five characteristics of a learning organization that were strongly represented in the broad literature and in the literature on schools. On the basis of this strong representation in the literature they were adopted for this study.

Continuous improvement of work was also adopted because it was foundational to the notion of a learning organization and, according to Rosengarten (1999), it was a necessary characteristic for a learning organization. Risk taking and the exercise of initiative were strongly represented in the literature on schools and were critical factors if development was to occur in any organization. Collaboration, trust and openness were characteristics that were strongly represented in school based and general literature on learning organization characteristics and were amalgamated into the final characteristic for this study and reflect the extensive presence in the literature of a supportive learning culture as important in a learning organization. Thus there were eight characteristics, distilled from an extensive survey of the literature, that were deemed to be relevant and useful for this study. How much weight can be given to these eight particular characteristics and how they blend to make a particular learning organization is a matter for further research (Hull & Read, 2003).

Although the aim was to develop characteristics that were clearly defined, conceptually distinct and independent scales, with minimal overlap, the reality was that such characteristics were not mutually exclusive and that there was some possibility of mutual dependence (section 4.4.3). This reflected the complex and highly interdependent nature of the forces that shape modern learning organizations. For example, 'Team Work and Team Learning' facilitate effective communication which often leads to the professional development of team members and is a key element in the continuous improvement of work. Similarly, 'Systemic Thinking and Mental Models' are designed by groups of people and facilitate a free flow of information within the organization. This characteristic also strongly supports 'Continuous Improvement of Work'. Overlaying and strongly interdependent with all the characteristics, is a collaborative and trusting climate and relationships that are open and honest. Thus, despite the efforts to develop eight clearly defined, conceptually independent characteristics there was some degree of interdependence and intercorrelation between the eight characteristics (Rosengarten, 1999). In the discussion of each characteristic which follows the relationship of each characteristic to the effectiveness of school systems and raising standards is also captured.

Each of the eight adopted characteristics of a learning organization are discussed in the following sections drawing on the literature and relevant supporting material from CEO Sydney policies, publications and documentation.

2.4.1. Systemic Thinking and Mental Models

The cornerstone of the learning organization is systemic thinking and, in Senge's (1990) view, it is the discipline that integrates the others. When people more fully understand the whole organizational situation, they can better create links and learn and in doing so undergo a mindshift as they realize that they are part of something larger and connected. This is enhanced when a person's view of the world (their mental models) are easily and willingly shared. Mental models are the deeply ingrained assumptions, generalisations or images about how things work in an organization that allow members to size up new situations at individual, team and organizational level and how people then take action (Senge, 1990). The mental models that are the most useful are those that view the individual, team, organization and the environment from a system's perspective with corporate change relying on changing peoples' mindsets and the culture of work (Zairi, 1999). Hayes (2003) argues a cogent case for ongoing dialogue as a critical means of developing these shared understandings on matters like curriculum, assessment and pedagogy and how these may be aligned. At the same time caution needs to be exercised in case mental models may be limiting and prejudice adaptability.

Systemic thinking and mental modeling avoids the temptation to focus on simplistic frameworks and solutions to address complex systems and problems by using a scientific approach, with decisions being based on evidence and data (Garvin, 1993). Whilst the structure and organization of jobs needs to fit the systemic view, at the same time, there needs to be some fluidity in structures and teams (O'Brien, 1994).

In an increasingly interdependent world, systems thinking is very important. Central to this characteristic is the awareness of various levels of inter-dependency and inter-connectedness. Systems theory looks to connections beyond the immediate context, allowing people to appreciate the impact of their actions and generating a more holistic understanding. Systemic thinking encourages people to see not only how the organization works but also to work openly in teams to achieve organizational goals (Worrell, 1995).

There is no doubt that in such turbulent times traditional approaches to planning are sometimes inadequate (Davies & Ellison, 1998) and schools and school systems need to be recognized as open, dynamic organizations subjected to a constantly changing environment, with the essence of strategy being outward rather than inward. Systemic thinking and mental modeling in a school system, like the CEO Sydney, relies heavily on strategic management

frameworks and processes. Within this context, at the school and system level, strategic planning must have at its core the improvement of student learning (Bell, 1998). Thus a coordinated, systemic effort to create and manage change on multiple levels simultaneously is required (Fullan, 2000; O'Neil, 1995). Yet, as Hargreaves (1995) and Schmoker (2004) claim, strategy may well be unhelpful in enabling schools to prepare for the future and adapt quickly to the external environment. They also suggest that strategy may well inhibit creativity and imaginative thinking as well as wasting much of the talent within the organization. Johnson and Scholes, (1997) claim that strategic planning can be best understood as matching the activities of an organization to its environment and to its resource capabilities.

Education tends to be extraordinarily fragmented, derived often from a theory where knowledge is cubby-holed (O'Neil, 1995). Fullan (1999) convincingly argues that the main problem with education systems is that they are intrinsically, endemically, inevitably overloaded and fragmented and therefore attention needs to be devoted to coherence and making connections. Better appreciation of systems leads to more appropriate actions. It would appear that the Strategic Leadership and Management Cycles of the CEO Sydney system is a most powerful vehicle to integrate and develop coherence and make connections across the system (SACS Board & CEO Sydney, 2000b) and to focus firmly on student learning (Bell, 1998).

There is extensive CEO Sydney documentary material, e.g. *Sydney Catholic Schools Towards 2005 Strategic Management Plan – mark 2*, (SACS Board & CEO Sydney, 2000b) that relates to this characteristic all of which is underpinned by a well-developed strategic leadership and management cycle. These cycles, outlined in Figure 2.1, aim to assist all within the CEO Sydney and the school system in their understandings of the whole organization, its links and relationships and to assist in the formation of systemic thinking and mental models.

strategic leadership and management cycles

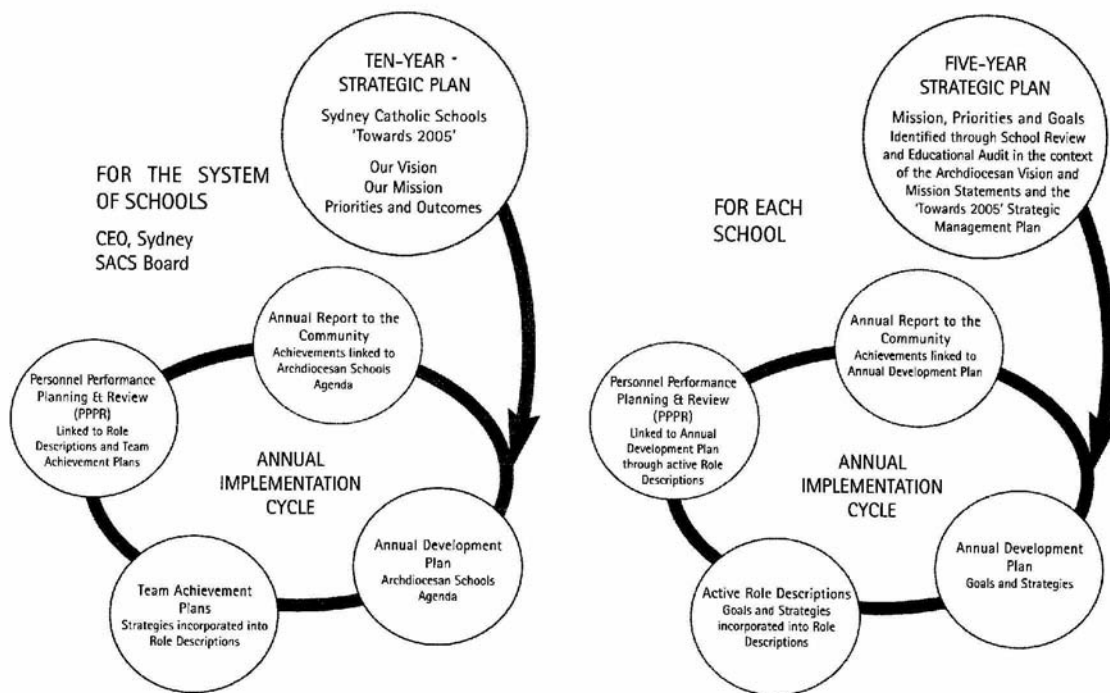


Figure 2.1 – Strategic Leadership and Management Cycles CEO Sydney.

(From 'Sydney Catholic Schools Towards 2005 Strategic Management Plan, mark 2.' SACS Board & CEO Sydney, 2000b)

Figure 2.1 outlines the Strategic Leadership and Management Cycles for the school system (SACS Board & CEO Sydney, 2000b) and illustrates how the system vision, mission, priorities and outcomes, inform the Annual Archdiocesan Agenda which provides the framework for the Team Achievement Plans and specific strategies within each of the CEO Sydney teams. The Team Achievement Plans then help establish the annual performance goals for each team member (Personnel Performance Planning and Review-PPPR). At the conclusion of the annual cycle, data is gathered from the team members and teams and an annual system report is developed. Within the schools, an analogous strategic leadership and management cycle occurs as is illustrated in Figure 2.1.

When the CEO Sydney conducts the cyclic Educational Audit and School Review and Development (SRD) processes within schools there is strong evidence of strategic management practices and systems at the school level that are analogous to those that operate at the CEO Sydney organizational level (Clark, 1998). For example school annual plans are

often organized in priority areas which reflect those of the system and which incorporate the system annual priorities. Common understandings, linkage, connection to the bigger picture, shared mental models are the essential intention of the strategic leadership and management cycles of the CEO Sydney (SACS Board & CEO Sydney, 2000b). The strategic management practices of the CEO Sydney are interpreted and reinforced in the main professional training programs of the system e.g. Catholic Schools' Leadership Program (CEO Sydney, 2001).

The value and significance of the CEO Sydney systemic approach to strategic planning (SACS Board & CEO Sydney, 2000b), lies not so much in its specific details but more so in the modelling and in the frameworks that such planning provides for schools. The system models comprehensive, strategic planning and systemic thinking, as described by Senge (1990) and Rosengarten (1999), and then encourages schools to develop their own local approaches that facilitate the achievement of their local goals and objectives within the broader strategic planning processes, vision, mission and priorities of the system. Appendix C contains further examples from the CEO Sydney policies and documentation which relates to 'Systemic Thinking and Mental Models'.

Thus 'Systemic Thinking and Mental Models' is a characteristic of a learning organization with broad literature and CEO documentary support. The next characteristic to be considered is, 'Continuous Improvement of Work' and is developed in section 2.4.2.

2.4.2 Continuous Improvement of Work

'Continuous Improvement of Work' is the second characteristic of a learning organization identified for this study and is essential for learning organizations to ensure steady organizational learning and effectiveness (Rosengarten, 1999). It is also highly reliant on data to diagnose problems and make decisions (Garvin, 1993). Continuous improvement and striving for excellence is driven by inspired members of an organization who have integrated work and learning. As Fink and Thompson (2001) summarise, "Everyone in the system needs to have a common focus on the continuous improvement of teaching and learning" (p. 239).

The new economy, where fixed capital is less important and intellectual capital and innovation is very important, demands that education systems reform and improve. According to Kelly (2000), they should also focus on new policies and structures which support the continuous improvement of student learning outcomes and higher standards. The

National Quality Schooling Framework which supports schools in planning, implementing and evaluating improvement initiatives is a recent federal example of the priority given by governments to continuous improvement (Elson-Green, 2003). Hill, Crevola and Tucker (2003) note that many improvement initiatives in the past were often doomed because there was lack of attention to the change process and inadequate support for building up the capacity of the teaching staff in schools to embed the changes. A critical challenge for systems is that they must lock in changes that lead to improvement and build on these to generate ongoing continuous improvement.

Successful school improvement requires both pressure and support (Shaw, 2002), with sustained, systemic improvement requiring both support focusing on school capacity building carefully matched by the application of appropriate pressure. An organization, like the CEO Sydney, exerts a 'pressure' for continuously improving school and system effectiveness through, review, adaptation and refinement of practice and monitoring of performance. However Palmer (Acting Director, Hammersmith Fulham LEA, pers comm., 10/7/2001) warns that it is critical that local authorities must know their schools well and intervene on the basis of broad knowledge. According to Welch (1979), some of the early research on system interventions in curriculum showed only modest impact. An interesting part of that 'pressure' for improvement and the development of a learning organization is teacher appraisal, with teachers being more actively involved in creating the shape of the appraisal process (Gunter, 1996). A similar process is in place for teachers in the CEO Sydney (CEO Sydney, 2001c).

Elmore (2002), with reference to American schools, states that they are being asked to do something new, namely engage in systematic, continuous improvement in the quality of the educational experience of students and to subject themselves to the discipline of measuring success by the metric of students' academic performance. An education authority, like a Local Education Authority (LEA) in the United Kingdom, can also nurture continuous improvement by facilitating access to research for teachers, on topics such as assistance for teachers with data interpretation (Wilson & Easton, 2003). Shkedi (1998) claims that teachers do not access or use research because of the barriers involved. However by encouraging local, school based research, a research culture is developed across the schools of the system, which contributes to continuous improvement (Ebbutt, 2002).

Examples of CEO Sydney documentation that relates to this characteristic are included in Appendix D. This material is included on the basis that it illustrates the nature of the system's

support for continuous improvement through strategies like target setting, data analysis and feedback and targeted resource intervention.

During the past 20 years, three significant, system studies have examined the CEO in the Archdiocese of Sydney with a view to continuous improvement of its operations, management and effectiveness. An interesting evolution has occurred in these studies as the nature and needs of the organization have changed. The study of Canavan (1986) focused almost exclusively on the roles, responsibilities, structures and goals of the CEO. Whilst the review of 1994/1995 (Hughes, 1995) developed the first Strategic Management Plan for the system and embarked on an ambitious collaborative process to develop a system Vision and Mission. The study of Dinham, Scott and Sawyer (2001) focused on making a difference to student outcomes and the work of a regional office of the CEO Sydney. A planned review of the CEO Sydney in mid-2004 will exclusively center on the difference the organization makes to standards and student outcomes (SACS Board & CEO Sydney, 2004). Appendix B contains a more detailed overview of these reviews. There has been an explicit and ongoing commitment of the CEO Sydney to periodic major system review and analysis of effectiveness with a view to further improvement (Canavan, 1986; Dinham, Scott, & Sawyer 2001; Hughes, 1995; Mok, 1997). There is emerging evidence suggesting that schools and school systems which are best able to adapt to change and to maintain improvement are those which are best able to evaluate their own performance (Hill, Crevola & Tucker, 2003).

Continuous improvement is an important characteristic of a learning organization and relies on learning underpinned by the exercise of initiative and some experimentation which is discussed in the next section.

2.4.3 Taking Initiatives and Risks

The third learning organization characteristic adopted for this study was, 'Taking Initiatives and Risks'. Garvin (1993) believes that organizational learning depends on taking initiatives and risks which moves the organization from a state of superficial knowledge to deeper understanding. Silins and Mulford (2002) agree that the capacity for organizational learning is enhanced when members are encouraged and supported in taking initiatives and risks. Whitby (1995) extends this thinking by suggesting that success as a learning organization may in fact require such risk taking. There is a need in a learning organization to create a reflective environment, with a degree of safety, where people can rediscover what they care

about (Senge, 1990). Indeed, "Team members must be willing to explore, experiment, fail, refine ideas, and try again until they have a seamless process that contributes to a more effective organization" (Bennis, 1962, p. 67).

Despite the broad support for the exercise of initiative and risk taking, Ulrich, Jick, and von Glinow (1993) warned that a key challenge for learning organizations is to leave ample room for people to shape a particular organizational goal according to their own interests, and at the same time, to view mistakes as learning opportunities. This creates a culture where members feel that they can take informed risks, whilst maintaining personal ownership for mistakes (McGill & Slocum, 1993).

To acquire and nurture new knowledge, the leadership of a learning organization has to tolerate, or even generate, a certain degree of risk taking, experimentation and initiative (Leonard-Barton, 1992; Mills & Friesen, 1992). A balance that needs to be struck, identified by Garvin (1993), is that leaders of learning organizations must maintain accountability and control over experiments without stifling creativity by unduly penalizing failure. A related, but crucial, issue centres around the management culture of the system so that there is enough, free room for initiative and self-responsibility. There will always be a degree of tension between conservatism and innovation and leaders are called to identify what should be controlled and what should be allowed to vary.

Innovation in a school system should be encouraged and focused on the key task of raising standards (Osler, 2001). At federal level the launch of the National Awards for Quality Schooling in 2003, highlighted the priority given to the encouragement of innovation in schools and school systems (Elson-Green, 2003). Butler (2002) believes that greater diversity in education can produce greater innovation, responsiveness and quality rather than the traditional, highly centralized systems which can be prejudicial to the creation of an innovative and creative learning organization. Some writers (Elmore, 2002) re-emphasize the value of collaborative, team work in the context of innovation and risk taking and claim that, when teachers, principals, school districts and the community work in concert, innovation and creativity can happen.

In the context of taking initiative and risks, Fullan (2000) cautions that school systems adopting reforms and innovations for which they do not have the organizational capacity to put the reform into practice, need to reconsider the innovation. He goes on to warn that *ad*

hoc projects and random professional development are the enemies of improvement. This characteristic overlaps with team learning, for it is at team level that the encouragement of questioning, challenge and debate can safely occur (Silins & Mulford, 2002).

CEO Sydney documentation and system policies reinforce local initiative and risk taking in a number of ways including:

1. The allocation to schools of an increasing 'global' staffing allocation with internal flexibilities within that staffing establishment for the exercise of local priorities and initiatives (CEO Sydney, 2004b, *Guidelines for the Allocation of Staff to Systemic Schools*).
2. The capacity and flexibilities within system processes like School Review and Development for local adaptation, customization and innovation so that the process can in fact suit local school community needs (CEO Sydney, 1999b).

Therefore the exercise of initiative and risk taking is an important part of a learning organization and critical for ongoing improvement. Another important characteristic of a learning organization is, 'Ongoing Professional Development', and it is reviewed in the next part of this chapter.

2.4.4 Ongoing Professional Development

Although this study examines the CEO Sydney as a learning organization much is being written about schools becoming learning organizations with students of all abilities receiving an education that suits their learning styles and where the school is in fact a tightly coupled professional learning organization (Dimmock, 2000; Gibson, 2003). This has implications for the professional development that a system like CEO Sydney mounts and supports.

According to Puick (1988) and Rosengarten (1999), the professional development that occurs in learning organizations focuses on helping people learn from their experiences and their innovation. There is a strong organizational commitment to the professional development of all levels of staff and functional groups within the organization including the leadership level itself whose modeling of learning is critical (Rosengarten, 1999). Professional development that is relevant, challenging and nurturing of creative, learning skills is a challenge for a body like the CEO Sydney. Noting that no education system can rise above the quality of its teaching force (Osler, 2001) a learning organization therefore needs continuous investment in its human capital and their development. According to Harris (2001), and Hopkins and

Reynolds (2001), professional development is about capacity building in staff whereby conditions are created in which staff development involves mutual learning and collaborative planning and where there is effective coordination of strategies. Senge (1990) believed that team members must be trained to engage in dialogue in the form of free and creative investigation of complex problems and that the sharing of good practice across the organization is a particularly important feature of the professional development offered within a learning organization (Ulrich, Jick, & von Glinow, 1993).

Life-long and life-wide learning are central to the knowledge economy and teacher formation and development must be seen in this context as an ongoing process with improved student outcomes as the essential measure of effectiveness. Chapman (1997) claims that the development of a professional learning community deeply rooted in the needs of students is critical. Macbeath (2000) emphasizes the role that schools and school systems play in the elevation of standards is not by exhortation and rhetoric but by, "investing longer term in the capacity of their teachers and the capacity of the school as a learning organization" (MacBeath, 2000, p.32).

Professional development of teachers is thus a priority for any educational learning organization. Every state and national report on teacher education agrees that investment in teachers' knowledge and skills is the single best option for improving students' learning (e.g. DEST, 2003). Delors (1996) captures the significance of the changing professional development context in suggesting that the demands of life-long learning and schools as learning communities impact significantly on the roles and responsibilities of teachers with implications for reskilling, retraining, indeed reinvention of the role of teacher as co-learner, coach, mentor and learning facilitator. Greater team work, community intersection and skills are demanded so that the individual learning styles of students are developed and utilised. The appropriate use of information communication technologies (ICT) is a critical component of this development. Delors (1996) goes on to suggest that given the sophistication of the task ahead, an upgrading of the status of teaching is essential if life-long learning is to become a reality. These matters are significant considerations in this study and in the work of the CEO Sydney as a learning organization if it is to develop teachers, effectively and professionally, now and into the future.

Hill and Crevola (1999) contend that strongly focused professional development which is not done to people, but shaped by participants, is a very significant means of raising standards.

Professional development must be relevant and focus on improvement of student performance (Fullan, 2000), if it is to achieve the aim of organizational learning, whilst significant improvement in teacher effectiveness is unlikely to occur with the traditional models of professional development and inservice. Hargreaves and Fullan (1991) capture this reconceptualising of professional development when they claim that practically situated learning, observation of good practice and time for reflection are the cornerstones of a more effective approach to professional development. Effective teacher learning involving opportunities for teachers to talk and share with colleagues is the most powerful means of professional learning (White, 2003). Dean (1981) goes further in suggesting that professional development is most effective when it is closely related to actual schools and classrooms. Therefore professional development could be structured by systems, like the CEO Sydney, to meet the needs of teachers but still run locally on matters relevant to them (Hazzell, 2003). It needs to be a blend that is centrally and locally determined (Fink & Thompson, 2001). Teacher professional learning needs to occur on the job in a context where they are taking action and where the environment continually encourages reflection on practice (O'Neil, 1995).

Dinham, Brennan, Collier, Deece and Mulford (2000) for example strongly emphasized the need to develop leadership capacity at the Head of Department level in secondary schools with systems facilitating networking within and across schools. Strategic teacher professional development is essential if systems are to make a real difference to student learning outcomes.

There is a significant challenge at system and school level to develop the capacity of staff in collectively improving learning (Shaw, 2002) and the creation of a professional learning community is a prime factor in determining the quality of student learning (Silins & Mulford, 2000). Marshall (2003) also believes that the right support in professional development from the local school district, focused on student learning, does in fact make a significant contribution to the education of students and educational standards. Thus a school culture that invites deep and sustained professional learning and reflection will have a powerful effect on student achievement. However there is a significant challenge at system and school level to develop the capacity of staff in collectively improving learning (Shaw, 2002). It is particularly powerful when teachers share good practice, mentor, reflect, observe and work in teams (Adams, 2002, Hill & Crevola, 1999,). For a body like the CEO Sydney, examination of the current models of professional development could be reevaluated in this context. If a learning organization is to evolve, it must, in some cases, overcome a bias for action that can

prevent this more reflective approach. This characteristic is linked very closely to continuous improvement for as people learn to help themselves and others in their own learning, continuous improvement for the organization is strengthened (Senge, 1990).

The CEO Sydney provides significant resources for professional development including four student-free days per school staff per year, further highlighting the extent of ongoing resourcing of professional development in the system (CEO Sydney, 2000). Further CEO Sydney documentary data relevant to this characteristic include:

1. The annual professional development (Inservice) guide published by the system. This document provides an overview of the main central and regional programs offered (e.g. CEO Sydney, 2001b).
2. The agenda items found on the primary and secondary Archdiocesan principals' meetings of the past five years, in which there are dedicated sections for professional development matters (CEO Sydney, 2003a).
3. The commitment to further professional development as evidenced by the agenda of the Team of Directors annual two day planning seminar (CEO Sydney, 2002e). This forum is one where the senior leadership team create, think, plan, dialogue and develop professionally.

If the members of an organization are to adapt to changing circumstances and deliver improved standards of service then ongoing professional development is an essential ingredient.

The fifth characteristic of a learning organization adopted for this study is 'Trusting and Collaborative Climate'. The climate of any organization establishes the milieu within which many of the other characteristics operate. It is therefore an important characteristic and is discussed in the following section.

2.4.5. Trusting and Collaborative Climate

In a learning organization people should be confident that they can share ideas, be listened to and that a climate of openness exists where mistakes are viewed as learning opportunities (O'Brien, 1994) and where behaviours that promote learning are rewarded. Rosengarten (1999) emphasized that in a learning organization the climate encourages dialogue, openness, trust, tolerance, shared decision-making and the empowerment of teams and individuals. He further highlights the significance of humane, psychologically comfortable organizational climates, with warm human relationships as important in the formation of learning organizations and the growth in the self-esteem of employees. Garrett (1999) summed it up when he claimed that a learning organization is not only vitally dependent on trust but can also be viewed cynically by staff when the rhetoric is perceived as insincere. In a study of the best workplaces in Australia (Hull & Read, 2003), the quality of working relationships, characterized by openness and trust, were central components of excellent workplaces.

Davis and Lawrence (1978) point out that matrix organizations, like the CEO Sydney, require that the leadership within the organization has a workable degree of trust of one another and some even argue that learning organizations cannot exist without trust (e.g. Whitby, 1995). Certainly if school reform is to be successful then trust is essential (Silins & Mulford, 2000). Leithwood, Begley, and Cousins (1994) extend this thinking to the school district and note that the context created by school districts is vital, especially the relationships established with school leaders. This is a significant observation for this study of the CEO Sydney because as a matrix organization evidence indicates that it invests a great deal of energy in developing relationships. Change is much more likely when the input of local educators is invited (Berman & McLaughlin, 1976) and organizational success can best be judged by adaptability and flexibility, a freedom to learn through experience and a freedom to change with the internal and external environment (Bennis, 1962), all of which requires trust and collaboration. This characteristic is summed up by Senge (1990) who referred to participative and reflective openness, the former helping individuals say what they think and the latter involving them in greater self-reflection.

Some documentary evidence relevant to this characteristic includes:

1. The system Vision and Mission statement (SACS Board, 2002) which was established in an extensive collaborative exercise with parents, teachers and parish priests (Hughes, 1995).
2. A number of system publications, e.g., '*Partners in Faith, Hope and Love*' (SACS Board, 1994) and '*The Privilege and the Challenge*' (SACS Board, 1994a) which proclaim and encourage collaborative leadership styles in teachers and principals.
3. Committees of the CEO Sydney and the SACS Board which are broadly representative, particularly of principals. Principals are also members of all system selection panels and contract renewal processes from the level of Director through to colleague principals (CEO, Sydney, 2003b).
4. The SRD and Educational Audit processes which involve a broad group of system personnel including peer principals and teachers with particular curriculum expertise (Audit Resource Personnel) (CEO, Sydney, 1999b).

Trust, collaboration and open, honest relationships are critical features of any learning organization and facilitate the nurturing and exchange of open and productive ideas which are the lifeblood of the adaptive and continually improving organization.

Learning organizations are united and guided in their strategic direction by a shared and monitored vision and mission, considered in the following section.

2.4.6. Shared and Monitored Vision/Mission

Rosengarten (1999) emphasized that learning organizations focus the learning efforts of their employees through a clear vision and mission. According to Fullan (1993) vision captures shared images of what an organization could become and embraces imaginative, personal and institutional growth, whilst mission is more practically focused on educating students and describes targets of what is achievable, providing enculturation and access to knowledge. Shared vision and mission create commitment, unify organizational effort and is a compelling instrument that inspires people to act and facilitates effective and real change. It also provides some stability and organizational unity in an uncertain and unpredictable external environment. However Senge, Kleiner, Roberts, Ross and Smith, (1995) caution that the purpose of shared vision and mission is to obtain commitment not compliance.

Argyris and Schon, (1978) and Luthans, Hodgetts and Lee (1994) claim that organizations that want to build a shared vision and mission continuously encourage their members to

develop their own personal vision/mission which is blended into a shared organizational vision/mission, thus creating commitment and gaining support for organizational goals. There is a significant role for leaders within the learning organization who not only must model learning, but continually energise the vision and encourage learning and improvement. Transformational leaders within the system make use of the vision and mission to secure change (Leithwood, 1992). The difference between a shared interpretation of reality and a shared vision is critical to generate creative tension within the learning organization and so enable it to act with anticipation (Senge, 1990). Despite the significant literature on vision and mission in learning organizations there is some divergence of views, for example some writers, view the learning organization vision as initiated and developed by senior management in a top-down imposed mode (Hughes & Tight, 1998), whilst others view the learning organization as a more democratic bottom-up style of organization (Watkins & Marsick, 1993). For, "although mandates can achieve compliance, they never have and never will result in widespread commitment to a shared vision" (Fink & Thompson, 2001, p.239).

Coleman (1986) suggested that a school district's ethos and vision influences the professional activities of the educators in the district and, through them, the achievement of students and is therefore indispensable to successful standards-based reform. The perceived impact of a district is very much a function of the district's contextual conditions, primarily a strong sense of internal mission and the capacity to strive towards that mission (Riley, Docking & Rowles, (1999); Rossman, Corbett & Dawson, 1986). These observations are important in the context of the major research question of this study which examines the relationship between the CEO Sydney and standards in religious education, literacy and numeracy.

A shared and monitored vision/mission thus provides a clear sense of direction for an organization like the CEO Sydney, where the most important goals are those dealing with student learning and faith formation. CEO Sydney documentation and policies emphasize vision and mission and their monitoring as the following examples indicate:

1. The system vision and mission statement, '*Vision statement for Catholic Schools*' (SACS Board, 2002) clearly articulates the broad vision within which the Catholic school operates, with particular emphasis on the religious formation of the child and the development of the whole person. The Mission statement further underpins this with its three main stems of:

- Celebrating being Catholic in Australia,
 - Ensuring quality teaching and learning, and
 - Making a difference in our world (SACS Board & CEO Sydney, 2000b).
2. The system Strategic Management cycle (Figure 2.1; section 2.4.1) assumes that school level planning occurs in the context of the system vision and mission. School Vision and Mission statements, whilst enjoying a strong, local flavour, reflect strongly the Archdiocesan Vision and Mission statement as well (SACS Board & CEO Sydney, 1995b, 2000b) and are monitored as part of the Educational Audit and SRD processes (CEO Sydney, 1999b).
 3. The Annual Archdiocesan Agendas are consistently framed within the system Vision and Mission (e.g. SACS Board & CEO Sydney, 2002b).
 4. The publication, *The Privilege and the Challenge*, (SACS Board, 1994a) links the role of the teacher in the Catholic school system in Sydney with the Archdiocesan Vision/Mission statement and broader Church documents and is offered to teachers in a spirit of service so that they can reflect on their calling and ministry as well as their professional responsibilities in the context of the Catholic Church in Sydney (SACS Board, 1994a).
 5. The Vision and Mission is a strong focus of the Catholic Schools' Leadership program that is offered to middle managers and principals in the CEO Sydney (e.g. CEO Sydney, 2001a).

The vision and mission of a learning organization are important in ensuring a unity of purpose. This characteristic is important in relationship to others, with Senge (1990) cautioning that, "without systems thinking, the seed of vision falls on harsh soil" (p. 12). However effective communication channels are necessary if the vision and mission is to be disseminated and owned. The next section presents a discussion of this characteristic.

2.4.7 Effective Communication Channels

The key to successful group dynamics is dialogue rather than debate with an emphasis on listening, suspending judgement and seeking common understanding (Lipton & Melamede, 1997). Such dialogue where thoughts and feelings are shared in an atmosphere of cooperation and harmony with a commitment to accomplishing some definite common purpose, can be thought of as the cement that binds the learning organization together and is a critical consideration in this study.

McGill and Slocum (1993) suggest that learning organizations are open systems, with highly permeable boundaries. Therefore they possess an organizational capacity to integrate external information smoothly into the organization (Luthans, Hodgetts & Lee, 1994). Learning organizations facilitate the flow of know-how and are good at knowledge generation, appropriation and exploitation (Leadbeater, 2000). Leonard-Barton (1992) claims that organizational learning happens where a continuous exchange of information occurs vertically, and horizontally across specialist areas, departments and groups, with particular attention being devoted to face-to-face methods of communication (McGill & Slocum, 1993). Rosengarten (1999) reinforces these views when he claims that multiple, open, flexible, formal and informal means of communication, free of hierarchies, facilitate effective communication. Sometimes such organizations are referred to as networked or lattice organizations with nodes and links and high degrees of non-hierarchical, informal communication.

Leithwood, Begley and Cousins (1994) argue that a significant role for the school district is to encourage in school staff and leaders, vertical and upwards continuous feedback to identify sources of incoherence in the district. Whilst emphasizing the importance of free flowing communication in a learning organization, one needs to be cautious that decision-making does not become paralysed by excessive and unnecessary sharing of information (Rosengarten, 1999).

Obviously this characteristic and its effectiveness influence a number of the other characteristics used in this study. For example, if communication is fluent and effective, then professional development is also effective as is the nurturing and development of a shared vision and mission.

CEO Sydney documentary evidence illustrates that this characteristic is the focus of a number of documents, policies and strategies, for example:

1. There are a wide variety of system produced communication channels including regular monthly mailings which include newsletters for teachers, clergy, parents and friends groups, principals and executive staff (e.g. Briefing Notes for Leaders of Religious Institutes, 4 December 1998). This is complemented by a developing electronic

means of communicating including an active CEO Sydney web site (<http://www.ceo.syd.catholic.edu.au/>).

2. The CEO & SACS Board regularly produce bulletins on a needs basis. These contain a wide variety of material ranging from curriculum and religious education matters through to discussion on contemporary topics like the education of boys (SACS Board & CEO, Sydney, 2004b).
3. Formal systematic evaluation is conducted of every major Archdiocesan Principals' meeting and of the major professional development programs offered through the system, for example Catholic Schools' Leadership Program (CSLP) (CEO Sydney, 2001a). These opportunities for evaluation are provided for principals and course participants to make recommendations to the CEO Sydney for improvement of its programs.
4. There are many committees and meetings that are convened across a system of this size. These committees have broad terms of reference (and serve a number of purposes ranging from policy development through to refinement of existing policy) and some communicate through the SACS Board monthly bulletin. For example the SACS Board has four key committees (New Schools and Rationalisation Committee, Financial Services Committee, Human Resources Committee, Religious Education and Curriculum Committee) with broad community and school membership which assists the SACS Board in its policy making role and communication (e.g. CEO Sydney, 2003b).

Many of the characteristics of a learning organization depend significantly on fluent and effective communication channels. If communication within an organization is efficient and effective then a shared vision and mission is achievable as is the united drive of the organization to improve standards. 'Team Work and Team Learning' is the eighth and final characteristic of a learning organization adopted for this study and is discussed in the next section.

2.4.8. Team Work and Team Learning

Senge (1990) emphasized that learning in organizations is a process of aligning and developing the capacities of a team to create. The team members build on personal mastery and shared vision and a systems perspective and thus can see their interdependence within their team and others. In fact processing knowledge whilst solving problems as a collective is a powerful means of changing values, beliefs and norms (Silins & Mulford, 2002). Schmoker

(2001), in reporting on highly effective school districts, emphasized the critical significance of teachers working in flexible teams to reach learning goals.

Teams are fundamental learning units of the learning organization. They are seen as cooperating work groups which gather, process, create and disseminate knowledge (Rosengarten, 1999). In a learning organization teams are made up of representatives from various levels within the organization and growth and development of individuals is nurtured within them. Honold (1991) reinforces this idea when he states that development is strengthened by placing individuals in other teams so that they can broaden their skills and gain a sense of the broader aspects of the organization. The transformations involved in becoming a learning organization include the formation of process teams working in flatter structured organizations, using initiative, continually learning, driven by customer needs and working together in multidimensional teams (Longworth, 1999). Indeed teacher professional development is most effective when it is carried out in professional learning teams (Hill & Crevola; 1999: Wehlage & Stone, 1996). Fink and Thompson (2001) asserted that the possibilities for organizational learning can never be achieved without the creation of new team-based structures and opportunities for collaborative work and learning.

Data identified from the CEO Sydney documents on this characteristic included:

1. The extensive committee and team structure of the organization as outlined in the formal committees within the organization. Although this only represents one, minor aspect of this characteristic (CEO, Sydney, 2003b).
2. The agendas of the annual planning workshop for the Team of Directors which illustrate the extensive team dynamics within that group (CEO, Sydney, 2002e).

2.5 THE LEARNING ORGANIZATION AND ITS RELEVANCE TO SCHOOL SYSTEMS

The analysis of the learning organization characteristics presented in the preceding sections of this chapter have highlighted the close relationship that exists between these characteristics and the work of school systems.

As discussed earlier in this chapter learning organizations are a means of conceptualizing contemporary organizations that need to adapt to rapid change, provide enhanced services to their clients and are well positioned to adapt and modify their services. Organizations need to develop a capacity for fast-paced innovation and learn to love change (Peters & Waterman, 1988). Change is seen as evolutionary and dynamic and its management demands continuous learning and adaptation (Fullan & Miles, 1992). A learning organization essentially improves its performance and builds its capacity to manage change (Corcoran & Goertz, 1995) and is therefore an ideal framework within which to examine school systems in a rapidly changing environment (Gunter, 1996).

In the school setting, the analogous research site for this study, Silins and Mulford (2000) linked productive high schools with the concept of organizational learning:

There is a small but growing support for the importance of this concept in understanding and then being able to initiate and act on successful school reform (p.2).

Schools and school systems are confronted with a new vision of excellence with its broad and systemic challenges. Stringfield (1995) claims that such challenges require a systemic approach from school systems to make sure that all schools within the system function as high reliability, excellent organizations. Hill, Crevola and Tucker (2003) further assert that system level effects on schools can be powerful and systems can be designed or reinvented to make them more effective. School systems too need a sophisticated capacity to adapt and cope with change with greater attention devoted to the effective means and processes for achieving change rather than focusing on the substance of the change itself (Fullan, 2001). Ongoing improvement is thus more likely when a comprehensive, systems approach is adopted. This involves the design and alignment of the major elements that contribute to student performance (Hill, Crevola & Tucker, 2003). As well, Hargreaves (2001) emphasizes that high leverage strategies that have a large impact on outcomes with relatively low levels of teacher effort are most effective. Thus school systems are increasingly focused on continuous improvement and raising standards and are appropriately examined in the context of learning organizations.

O'Day (2002) explored the relationship between school organization and student learning and argued that a combination of administrative and professional accountability (focused on instruction) presented a more promising approach for lasting school reform. She raised a

significant question about the uncertainty of external forces and their potential impact on school operations.

Learning organizations are required to enhance the skills of their workforce and invest in significant professional development. Improvement requires ongoing and substantial investment in building these staff skills (Hill, Crevola & Tucker, 2003). Senge (2000) also suggests that the key to successful and high standards in schools is the development of the school's capacity to learn. Therefore a key role for systems is to support learning about learning, especially among principals. The current teacher-centred instructional model that characterises many secondary classrooms needs reinvention. In terms of the explicit goals of life-long learning, particularly in terms of nurturing a love for learning, there is an urgent need for a much greater convergence of theoretical and practical elements and styles of learning throughout the educational experience of students (Chapman, 1997).

Thus a major responsibility of school systems in the 21st century is the development of skills in school leaders so that they can nurture and establish their school communities as learning communities, developing life-long learning, addressing both pedagogy and content. The formation of happy, well-balanced and adjusted young people is also a critical dimension of the learning community. Flynn and Mok (2002) has consistently identified these quality human elements as characteristic of Catholic schools.

The former Federal Shadow Minister for Education, Michael Lee, spoke about laying the foundations of the knowledge nation (Lee & Derrington, 2000). Of schools he spoke of the need to graduate young people who have inquiring minds, a thirst for knowledge and skills for the workplace and most importantly they will, "need to be able to undertake a lifetime of learning as the nature of work and training changes" (Lee & Derrington, 2000, p.34). A learning organization has a strong commitment to the professional development of its workforce so does the work of an effective school system and its work in raising of standards.

It would be easy to understate the extent of the challenge facing educators and educational leaders at this time. The new educational paradigm has been described as a move, "away from schools as dispensers of information and towards their being places helping people acquire skills of learning, deliberation and judgement; the values of toleration, respect for others and consideration of their interests; and the humane virtues of sensitivity, interpersonal and intercultural understanding, and co-operation" (Aspin, 1997, p.171). This demands

exercising initiative and taking risks, also related to the characteristics of a learning organization.

Hill, Crevola and Tucker (2003) summarized the most critical lessons that have been learnt for school systems that wish to improve student learning. These lessons are well documented in the literature. Many of these lessons relate closely to the characteristics of a learning organization, some of which have been covered in the previous discussion. Some additional ones include:

1. Improvement is more likely when there is consensus and working towards common goals within the school system about the major, cognitive outcomes of schooling, where high expectations of student achievement are embedded in well-designed performance standards, aligned assessment and targets. Indeed there is a need to refocus the mission of school systems and redesign how they operate so that meeting standards comes first (Hill & Crevola, 1999). This relates to the shared and monitored vision and mission of a learning organization.
2. Improvement requires a research-mindedness and the constant collection and analysis of evidence and data to investigate what is effective. Improvement of teaching standards demands a more rigorous, evidence-based approach to the evaluation of various teaching approaches. However O'Day (2002) emphasizes the fact that having data and information is both problematic and essential with the key being its use and interpretation. It also requires focusing on the differentiation of teaching approaches for different students so that, while standards remain constant, time and support for individual students must be allowed to vary. Continuous improvement of work in a learning organization is similarly driven by the collection and analysis of data and a relentless focus on the best mechanisms for improvement.
3. Change in school systems requires alignment of policies, resources and processes to support the improvement agenda over time. Trust needs to be established with all participants in any full-scale system reform. This relates closely to a trusting and collaborative climate of a learning organization (Hill, Crevola & Tucker, 2003).

An OECD study of 11 countries found that schools which displayed unusually high levels of teacher quality were characterized by a 'symbiotic relationship' between the school, the district and the community based on pressure and support exercised under a shared vision and set of values (OECD, 1994). Given these considerations, the learning organization is a most

relevant framework within which to examine school systems and the challenges confronting them. The next section of this chapter teases out the meaning of raising standards as adopted for this study.

2.6 THE DEFINITION OF RAISING STANDARDS ADOPTED FOR THIS STUDY AND ITS JUSTIFICATION

A significant feature of this study was to investigate the relationship between the CEO Sydney as a learning organization and raising standards. It was therefore important to carefully define raising standards and to justify that definition. Standards, as defined by Carr and Harris (2001), are statements that identify the essential knowledge and skills that should be taught and learned in schools.

The accountability movement of the late 1980's sought to define standards, measure progress towards those standards and hold schools publicly accountable (Hill, Crevola & Tucker, 2003). Chapter one (section 1.2) highlighted the context in which this study was conducted, well captured by the former Federal Minister for Education's claim that in order to build confidence in schooling an explicit commitment to clearly defined, high standards was required (Kemp, 1999). An important reality for the CEO Sydney in the past five years has been a greater demand for accountability for school performance to the government, the Church, parents and the broader community. This is highly relevant for this study which focuses on standards and the systems role in developing them. Accountability for progress in the areas specified in the system Mission statement and Charter has, until recently, been borne mainly by the schools (section 1.2.4 & 1.2.5).

System processes, like the Educational Audit, seek to evaluate current school performance and collaboratively develop plans for the further enhancement of teaching and learning and raising the standards of education in Catholic schools. These system processes are significant sources of direct and indirect support for schools in raising standards.

In the United States, 'The No Child Left Behind act', of January 8 2002, aimed to ensure that all children reached challenging standards in reading and math and that the academic achievement gap that exists due to race and/or socio-economic group was closed (Neill, 2003). Standardised tests are being used across most western education systems to measure student progress and annual yearly progress. They are criticized by some as a limited means

of adequately assessing so much of a child's development and the richness of a curriculum relevant to life in the 21st century (Pedulla, 2003), by failing to measure higher order skills (Danielson, 2002). Marshak (2003) emphasizes the extent of opposition among some educators when he claims that standardized testing has been described as being based in the industrialized model of schooling rather than the postindustrial model that integrates personalization with academic and personal success for every child. Shaw (2002) goes further in asserting that holding the dispossessed to the same standards as those more fortunate only serves to exacerbate inequality.

Head teachers and Directors of LEAs in the United Kingdom are calling for a less high status and more reliable approach to testing. They claim that performance tables and a heavy-handed target regime have had a negative impact on the quality of learning and the well-being of students and has the potential to undermine confidence in their learning (Reay & Wiliam, 1999). For example, improvement, even in value-added scores in mathematics might be achieved by increasing curriculum time and resources at the expense of other worthwhile goals or an overemphasis on key stage testing and target setting may in fact dominate the hard thinking required for educational policy development and pedagogical practice at system and school level (Earl, Fullan & Leithwood, 2000; Jones, Tanner & Treadaway, 2000). The narrowing of the curriculum and the diversion of attention from reforms of pedagogy and structure in schools may be unintended consequences of such testing regimes. Fink & Thompson (2001) emphatically state that learning standards are sometimes too narrowly conceived. Classroom-based, broad, formative assessments are useful tools for improving learning (Black & William, 1998) as clearly articulated in a constructivist theory of learning (Shephard, 1991).

Flynn (1985) concludes that Catholic schools have a unique, positive effect on academic performance of students which he related to the broad pervading values, ethos, morale and pastoral care of Catholic schools. There is emerging evidence that the value and aims of Catholic schools do in fact influence the standards of academic performance (Arthur, 2003). There is obviously an inherent danger in focusing just on standardized testing, since no instrument or test indicates the achievement of the broad and diffuse goals of Catholic education.

Setting clear and explicit standards that allow teachers to set challenging but realistic expectations for students as they progress in their learning is an expectation of the Board of

Studies in NSW in the implementation of new syllabuses in Years 7 to 10 (Board of Studies, 2003a). In this context raising the standards in religious education, where the CEO devises and supports the curriculum was a key area for investigation.

Since the late 1980's the accountability movement has sought to define standards, measure progress towards those standards and hold schools publicly accountable for them (Hill, Crevola & Tucker, 2003). Carnoy, Loeb & Smith (2001), supported by Hill and Crevola (1999), indicate that there is research evidence to support the proposition that accountability measures using regular testing and publication of school results are associated with improved student learning outcomes. Standardized testing has value as one kind of assessment device within the broader context of student assessment since it can identify some significant aspects of student progress. This has been the essential approach to raising standards adopted for this study, focusing on performance essentially in standardized (NSW) tests in literacy and numeracy in years three, five, seven, ten and religious education in year six. Additionally, a definition of raising standards based on standardized test data also lends itself to the empirical approach adopted in the study. The definition of raising standards, based on Carnoy, Loeb & Smith (2001) used in this study is as follows:

Raising standards: referred to an improvement in the quality of teaching and learning in three key curriculum areas (religious education, literacy and numeracy) which resulted in better student learning outcomes as determined and monitored by regular school assessments, observations, standardised, state testing and benchmarking (e.g. the Basic Skills Tests (Years 3 and 5), ELLA (English Literacy and Language Assessment) (Year 7), SNAP (Secondary Numeracy Assessment Project) (Year 7) and the School Certificate (Year 10) and the Higher School Certificate (HSC) (Year 12). For religious education the Year 6 religious education test is one such Archdiocesan assessment.

In adopting a definition of this nature, the study utilised a number of the aims, performance indicators and outcomes from the Annual Archdiocesan Agendas 1998-2002 (SACS Board & CEO Sydney, 1998, 1999, 2000a, 2001, 2002b) that implicitly or explicitly referred to raising standards. These were then used to generate items for the questionnaire. Therefore the impact of system target setting, system processes, including SRD and the Educational Audit, and strategic planning generally were relevant aspects of raising standards for the CEO Sydney and some items in the questionnaire captured this. The impact of professional development in

literacy, numeracy and religious education and its relationship to raising standards was also tested in this study.

Having defined 'raising standards' the next sections present the research evidence on the impact of educational authorities on raising standards of education in the United Kingdom and United States.

2.7 EDUCATIONAL AUTHORITIES IN THE UK AND USA AND THEIR IMPACT ON RAISING STANDARDS

It is important to re-emphasize that, "when it comes to improving teaching and learning, the most important action happens at the level of the schools and classrooms" (Hill, 2000, p.137) and although a LEA is acknowledged as contributing to school improvement the assessment of its impact was largely indirect (Derrington, 2000). Thus the best guarantee of a world-class education system is a relentless professionalism that is never satisfied with itself or its achievements (Osler, 2001). Even though this is recognized, Caldwell (2000) claims that there is little direct evidence of the link between schools and outcomes, further highlighting the central and unique role of the student-teacher relationship. Nevertheless, in recent years, school systems have been projected into the forefront of the standards debate in schools as Rohlen (1999) emphasizes when he states that systems have been criticized for their failure to produce citizens who possess learning processes that better fit the way work is evolving.

Large-scale, top-down driven educational reform has a poor record of success, is difficult and rarely impacts beyond a few schools or classrooms (Elmore, 1996; Fullan, 2000). A key principle in Scottish reform to improve quality, as articulated by Osler (2001), is that the most effective way to improve the quality of education for students is to expect schools to take responsibility for their own quality assurance and to take steps through their local development plan to change. Realistic, clear and limited target setting was a critical part of the Scottish strategy to raise standards and there was evidence that standards had improved as a result.

Improvement cannot be imposed. External bodies seek to influence what happens inside schools on the assumption that such intervention can determine change using rules to control the behaviour of individuals. A number of writers including Elmore, (1996) and O'Day

(2002) imply that mandates from such external bodies have little impact on the quality of teaching and learning. Fullan (2000) sounds a cautionary note claiming that large-scale improvement in primary schools takes from two to three years, in secondary schools from five to six years and across a school district perhaps six to eight years. Not surprisingly teachers, in fact, do not recognize their school districts as nurturing exemplary teaching or impacting on standards (Allington, 2002). The key question is what is the most appropriate balance between external and internal control so that student outcomes are achieved and accountabilities met.

School educational authorities are increasingly required to take more responsibility for providing curriculum and instructional support, facilitating the sharing of good practice and overseeing the raising of educational standards generally. Good teaching should not have to work against the organizational grain. Neither top-down, nor bottom-up strategies for educational reform work. What is required is a sophisticated blend of the two. System-wide improvement demands district wide leadership, political will and the capacity to implement outcome-based accountability (Wong, 2000).

Recent international research evidence (Riley, Docking & Rowles, 1999), although cautious in its findings, points to the key role to be played by education authorities in the pursuit of higher standards. Hill and Crevola (1999) states that the primary tasks of state and school districts are to determine standards and set system-wide and school-specific annual targets. Systems also need to focus support services to assist in the attainment of those targets, to establish clear accountability arrangements; to conduct periodic testing to measure achievement of targets and to share good practice. The establishment of state and local systems of accountability has been important for leverage of change in low performing schools.

There is a body of research which focuses on, and analyses, the role of educational authorities and their impact on raising standards and school improvement (Earl, Fullan & Leithwood, 2000; Audit Commission & Ofsted, 2001; Audit Commission, 2003). These studies provide evidence that education systems have a commitment to ongoing improvement, higher standards, to reviewing their effectiveness and, in doing so, exhibit many of the characteristics of learning organizations central to this study of the CEO Sydney. System wide standards, intervention and support are required to improve student performance (Wong, 2000), with the

associated challenge being that systems need to reduce the emphasis on control and administration and rebuild around things that only the systems can do.

Significant learning has occurred in the United Kingdom in LEAs and in the United States and Canada in school districts. For example, the Ontario Institute for Studies in Education (OISE) of the University of Toronto, was invited to review the National Literacy Strategy (NLS) and National Numeracy Strategy (NNS) in Britain. These National Strategies have well-developed performance standards and resources with support and pressure explicitly focused on changing teaching practice in literacy and numeracy, consistent with the best views and research on learning in these areas. The review indicated that there was modest but significant gains in literacy and numeracy standards across the United Kingdom and identified the key role played by LEAs. The initial LEA intervention was to set targets and nurture the sharing of good practice but the key impact was through an approach to teacher development that concentrated on building teacher capacity. It was through these means that the LEA had its greatest impact on teachers and the quality of literacy and numeracy (Earl, Fullan & Leithwood, 2000). Further consideration of the LEA impact on standards follows.

2.7.1 Local Education Authorities in the United Kingdom

The LEAs in the United Kingdom perform many functions similar to those of the CEO Sydney. Therefore they are a useful frame of reference. An LEA is the education component of the democratically elected local council, which provides management and leadership to a group of schools (Whitbourn, Mitchell & Morris, 2000). Although schools retain the main responsibility for their own improvement, schools and the LEAs work in partnership to raise standards (Low, 1999).

The powers and authority of the LEAs were specified in the Education Act 1997 and the Schools Standards Framework Act, 1998. The role of an LEA involves, "setting strategic objectives and negotiating targets, allocating resources to priorities, and providing monitoring, challenge, support and where necessary, intervention" (Audit Commission & Ofsted, 2001, p.3). Her Majesty's Chief Inspector stated that, "If standards are to rise, the performance of LEAs must also improve" (Ofsted, 1999, p.20). The White Paper ('Excellence in Schools') captured that the key functions of the LEAs were to, "challenge schools to raise standards continuously and to apply pressure where they do not" (Lee & Derrington, 2000, p.28). An effective LEA challenges schools to improve themselves and is ready to intervene where there

are problems. It leaves those schools alone that are functioning well. The principle of intervention in inverse proportion to success is foundational to the current work of the LEAs in the UK. In fact, Neill (2003) suggests that education authorities should intervene where discrepancies in educational outcomes occur but that this must be done with great care if it is to succeed. Accountability must mean support first, not punishment. The School Standards Framework Act, 1998 required LEAs to produce strategic development plans focusing on student and school improvement. These insights and findings are of direct relevance to the work of this study which examines the impact of the CEO Sydney on standards.

The most significant research, of relevance for this study, focuses on the evidence from LEA monitoring and the impact that LEAs are having on raising standards. "The golden thread, running through everything an LEA does, is the obligation to promote and support educational improvement and high standards of achievement" (Whitbourn, Mitchell & Morris, 2000, p. 38). This is achieved through strong local, political leadership, collaboration and cooperation. The relationships between local authorities and schools are critical and recourse to the legislative powers of intervention are a last resort. The LEA has a clearly defined, legislative responsibility to improve standards, in partnership with the schools and school leadership. This publicly shared responsibility is a sound basis for a collective effort to raise standards and improve educational outcomes for students. Lee and Derrington (2000) maintain that the shared statutory responsibility for school improvement has helped collegiality. The shared and explicit responsibility for raising standards in the CEO Sydney is not as clearly specified in its Charter as it is in the legislation for LEAs (section 1.2.4).

There is now emerging in the UK a very extensive body of data around the difference that the LEAs make to educational standards in schools. These data is derived from inspections of LEAs by the Office for Standards in Education (Ofsted) and the Audit Commission. The aim of inspection was, "to review and report on the way LEAs perform their functions, and to determine how authorities support pupils and contribute to school improvement and high standards of achievement" (Ofsted, 1999, p.20).

The inspection team makes judgements of an LEA through analysis and discussion of evidence supported by a system of numerical judgements which aid comparability. The numerical judgements are based on clearly defined criteria publicly available in the Ofsted document, *"Inspection of Local Education Authorities. Grade criteria for Inspection Judgements"* (Ofsted, 1999). Many of the areas in which judgements are made are directly

relevant to student standards, including strategy for school improvement, strategic management and special education provision.

The "authorities report that the inspection itself, the preparation for it, and the activity following it has led to improvement" (Bird, 1999, p.9). This observation is worthy of note for the CEO Sydney. However pre-inspection preparation consumed a disproportionate amount of resources at the expense of post-inspection follow-up (James, 1999). There is a need for more rigorous follow up of action plans that are developed from LEA inspections (James, 1999). There was a proliferation of bureaucracy and formal plans at the LEA level, with some 17 plans expected annually from schools including the Education Development Plan (EDP). Whether this time-consuming commitment to formal planning is commensurate with outcomes in terms of raising standards and school improvement is questionable. The EDP is the cornerstone of the school improvement strategies for LEAs. These plans vary in their strategic sophistication and in the degree to which schools own them. LEAs have been much more successful in their planning, delivery and impact where prescription is explicit as in the National literacy and numeracy policies.

There is now a significant pool of data which clarifies the role of the LEA and how it can impact on standards. LEAs regularly self-review and are the subject of external scrutiny. They are also the subject to 'Best Value' legislation Local Government Act, 1999 which means that efficiency, economy and effectiveness also need to be regularly evaluated.

2.7.2 Research Data

Ofsted (Office for Standards in Education) is cautious in drawing any definitive conclusions following the first round of LEA inspections and data accumulation (Audit Commission & Ofsted, 2001). There is some early evidence that LEAs do support schools in raising standards but this is from a low base and is certainly not consistent across LEAs, some 30% of which perform poorly. Performance is not related directly to LEA size or even to the socio-economic profile of the area. However the worst performing LEAs tend to serve the most disadvantaged areas. A relevant finding perhaps for the CEO Sydney which serves a highly multicultural, poorer community. The inability of some to target support where it is most needed is common, some still operate out of a model which seeks to serve all schools in an undifferentiated manner. Interestingly the ethos of a LEA carried more weight than the quality of its services suggesting that by its focus, style, well-defined relationships with

schools, communication and activities, an LEA can make a difference (Riley, Docking & Rowles, 2000)

These data suggest that effective LEAs have clear, shared definitions of monitoring, challenging, intervention and support. They target their resources; they consult well; they are well led; focus on improvement and they have viable strategies to enhance the schools' own capacity to sustain continuous improvement. The English research refers to the 'LEA effect' which is predicated on the view that LEAs can assist schools to raise standards through well-targeted provision of challenge and support including an appropriate targeting of resources (Audit Commission & Ofsted, 2001). When the support is of a good quality then the 'LEA effect' is significant. Socio-economic factors are still the most significant factors overall. "The success or otherwise of LEAs is, however, most likely to be judged by their effectiveness in raising expectations and overcoming the effects of socio-economic disadvantage" (Audit Commission & Ofsted, 2001, p.6). It is noteworthy that 40% of failing primary schools were located in the poorest areas. There is a very significant challenge for educational authorities, like LEAs and CEOs, to target class as a cause of social exclusion. Interestingly Condron & Roscigno (2003) in examining funding and school success in five curriculum areas suggested that schools that spend more exhibit higher levels of academic achievement.

The main means by which LEAs support and encourage school improvement is through literacy and numeracy initiatives, supporting self-evaluation, target setting and data analysis, with a combination of factors more important in predicting overall LEA performance than any single factor (Riley, Docking & Rowles, 2000). This is of significance for this study because the CEO Sydney has also embarked on system-level programs in religious education, literacy and numeracy. Indeed school systems do not collect data they 'revere' it, as Marzano (2003) goes on to state they are not satisfied until data has life and meaning for every teacher and generates productive action.

The research further indicates that more than half school staff and governors believe they need LEAs to help them improve, with primary schools believing they are essential and secondary schools not wanting the professional isolation that less contact with LEAs would imply. Most head teachers and schools receive substantial support from LEAs (Lee & Derrington, 2000), "whilst 85% of head teachers surveyed, rated LEA support overall as satisfactory or better" (Bird, 2000, p.7), across a wide range of school functions.

The strategic overview and shared vision the LEA provides is of great significance in the standards question (Wilkins, 2000). This unifying force is significant and once again is a distinctive characteristic related to learning organizations and hence for this study. The most effective LEAs (and school districts) are united by a shared vision and a common sense of purpose as are all successful learning organizations (Wilkins, 2000).

Lee and Derrington (2000) raise a significant and worthwhile point when they state that "while the LEA contributions to school improvement can be evaluated in terms of the quality of processes and relationships, it may be unrealistic to attempt to assess its impact on pupil outcomes" (Lee & Derrington, 2000, p.29). Much of the LEA support is indirect and therefore it is perhaps unrealistic to attempt to link its impact on student outcomes in that context, as has been emphasised already in this chapter. There are many, complex forces and factors that shape the education of students and generate the standards in a school. To disentangle each of the stakeholder's contribution is simply not possible. This needs to be a significant cautionary backdrop to this study and to any simplistic interpretation of some of the work of LEAs in the United Kingdom or indeed to the work of CEO Sydney.

In a Catholic system, where the mission is founded on a religious base, it would be inappropriate to judge the effectiveness of a body like the CEO Sydney simply on the basis of a series of quantitative or semi-quantitative relationships. This study is set in the Catholic school system in Sydney which proclaims the care of the whole person, body, mind and spirit, most of which is not measurable. In an age where value addition, targets and benchmarks dominate some quarters in education, the challenge for the Catholic education sector is to keep all these issues in balance and in the context of the development of the whole child. Catholic schools, and CEOs, are first and foremost centres of evangelisation (Congregation for Catholic Education, 1998).

There is supporting research evidence from the school districts in the United States and Canada and these are briefly summarized in the next section.

2.7.3 School Districts in the USA and Canada

The work of Coleman and LaRoque (1990) in Canadian school districts note that, "educators should be concerned about the quality of school districts, just as they are about the quality of

schools" (p.1). They go on to adopt a broad view of the school district as a social institution and maintain and argue strongly that a school district's quality is not described by measures on standardised tests. The district ethos or shared set of values and attitudes and how they go about their business is a very significant factor in high student achievement and even in cost effectiveness and, interestingly, in defining a learning organization. Coleman and LaRoque highlight the pivotal role of the school district when they state that, "no substantial improvement in the quality of education in north America is possible without a model of the good school district" (Coleman & LaRoque, 1990, p.10).

Coleman and LaRoque (1990) also draw an interesting comparison between the work done on effective schools and its translation to effective school districts. "The good school pursues concurrently academic and nurturance purposes" (Coleman & LaRoque, 1990, p.19), as does a good school district. "A comprehensive notion of district quality must include consideration of the 'ethos' prevailing in the district" (Coleman & LaRoque, 1990, p.22). Such an ethos has classroom, school and district level consequences and has a learning focus along with foci in accountability, change, commitment, care and community. There is, in Coleman and LaRoque's work, a nice balance between the improvement of standards and the ethos that must characterise an effective school district just as it characterizes a learning organization. Their interdependence is a powerful reminder of the need to have people at the centre of education and district deliberations.

Diagnosis, evaluation and feedback are characteristics of high performing US school districts just as they are of high performing LEAs. The use of data to tailor programs is also a feature. Data are well used in high performing districts as are efforts to generate shared working knowledge (Coleman & LaRoque, 1990). Systems are awash with data. The challenge is to utilise it effectively as a learning device to help inform and develop school and system based policy and practice and to encourage schools to more actively monitor their own performance. Without the data, "schools can neither assume responsibility for, nor be held accountable for their instructional practices and outcomes' (Coleman & LaRoque 1990, p.90). Once again the pressure for continuous improvement is part of an effective school district and a learning organization. Asera, Johnson and Ragland (1999) find that effective school districts create a sense of urgency about academic achievement.

Castallo (1999) in his analysis of superintendent evaluation in US school districts, argues that a well executed evaluation focuses fundamentally on whether students are receiving the best

education. "Ultimately the purpose of evaluation of any school employee should be to improve the quality of education" (Kowalski, 1998, p.43). The superintendent's performance evaluation should be linked to school improvement and the raising of standards. Stein (1995) claims that superintendents should be required to develop more comprehensive annual plans focusing on educational leadership. After all, "the quality of leadership provided by educational administrators significantly influences the quality of schools" (Stufflebeam, 1995, p. 305), by influencing principals and teachers and through them students in classrooms (Cullen, 1995). Superintendent evaluation must be grounded in student progress and development. Although this work focuses on the superintendent and effective evaluation of their role, it highlights, once again, the significant potential for influence that educational bodies like school district offices and the CEO possess.

Previous sections of this chapter have reviewed the broad literature on the impact of school systems on standards generally. The following section complements this material by briefly examining some specific insights in the areas of religious education, literacy and numeracy which were the specific curriculum foci of this study.

2.7.4 System impacts on standards in religious education, literacy and numeracy

One of the most significant challenges associated with district-wide models of reform is the need to systematically reach every school and every classroom whilst honouring the variability that exists among schools. One-size fits all, imposed, district reform rarely works as a model (Amico, Harwell, Stein & van den Heuvel, 2001). In response to external pressures from the community and parents, schools and school systems have placed far greater emphasis on literacy and to a lesser extent on numeracy. This work is supported by Asera, Johnson and Ragland (1999) who find that effective school districts create a sense of urgency about academic achievement. Political leaders link our national prosperity and our democracy to a flexible, dynamic and highly-skilled, literate and numerate workforce (Hill & Crevola, 1999). Systems have supported such programs through the investment of considerable sums of money (CEO Sydney, 2003). In Church schools a similar pressure is exerted in the area of religious education and faith formation.

Religious Education

There is very little published research on the standards in religious education and the relationship to system leadership and initiatives. Ivers (2004) identified the highly significant focus that Australian Dioceses have devoted for many years to the development of curriculum and resources for teachers. He claims that there are two approaches:

1. Focusing on resources.
2. Focusing on the way teachers use resources.

Each curriculum project aims to reshape and enhance the quality of classroom teaching of religious education, but such an ambitious outcome requires more than simply providing quality resources. There is very limited research on the dynamics and significant factors that specifically operate in the religious education classroom and a stronger research and theory base needs to be developed (Crotty, 2004; Ivers, 2004).

The CEO Sydney has produced a number of Bulletins that provide a diagnostic breakdown of the results of the annual Archdiocesan Religious Education test administered in Year 6. As well individual schools receive detailed, diagnostic feedback on their performance. These school and system Bulletins publish data that may be useful to the schools and the system in their religious education programming and staff development (SACS Board & CEO Sydney, 2003).

Literacy and Numeracy

Martyn Cribbs (Head Standards and School Development, Towers Hamlets LEA, pers. comm., 12 July, 2001) claimed that competence in literacy and numeracy are the very foundations for success in learning and life and that the literacy and numeracy improvements in the United Kingdom would not have happened without the work of LEAs. With schools and the LEAs in close partnership, working towards targets and drawing on closely targeted intervention, literacy and numeracy standards have advanced. An interesting observation raised by Hill (2000) was that there is greater clarity about literacy standards and frameworks than there is for numeracy and the rationale for the improvement in numeracy is less well established than for literacy, although the arguments are parallel. He postulates that the role of numeracy in everyday life is perhaps not as obvious, the mathematics education of primary

teachers is not as strong and there is substantial pressure on literacy in multicultural societies. However Hargreaves (2002) raised the concern that such an emphasis on literacy and numeracy at system level may lead to greater curriculum uniformity and less creativity and ingenuity.

A major study in Wales on standards in mathematics both reinforced the centrality and significance of the classroom factors but also affirmed the system initiatives (Jones, Tanner & Treadaway, 2000). A major exploration of the school district responses to mathematics reforms by Spillane (2000) indicated that the leaders of such districts often failed to grasp the full import of such reforms which tended to reduce the effectiveness of such reforms. Spillane (2002) found that the behaviourist perspective on teacher learning dominated among district officials, which may lead to a less effective implementation of full-system initiatives, like mathematics curricula.

The CEO Sydney commenced an Archdiocesan Numeracy strategy in 2002 with a particular focus on the retraining of Numeracy focus teachers in all primary schools. The framework and emphasis for this strategy was good pedagogy and how young children learn to think mathematically. According to Fraser and Alice (2003), the greatest impact of this relatively new strategy was the nurturing of reflective practice, independent thinking and the exercise of initiative, but they go on to caution that such a strategy has the potential to be perceived as top-down initiative with teachers, "perceiving themselves as the deliverers of the change, rather than the key people in the on-going development of the strategy-in-action in their schools" (Fraser, 2003, p.6).

2.8 CHAPTER SUMMARY

In this chapter a review of the literature on learning organizations, their definition in relationship to organizational learning and their characteristics, was presented. This research project was based on the work of Rosengarten (1999) who comprehensively and systematically summarized the literature on learning organizations and their characteristics. This work was supplemented by recent work on the analogous research site for this study, namely schools. The eight characteristics of a learning organization adopted for this study were identified, justified and described, drawing on evidence from the literature and from official documentation, policies and publications of the CEO Sydney.

The literature on school systems and their relationship to learning organizations and their impact on standards and school improvement was presented in the second part of the chapter, along with a discussion of the term ‘raising standards’. Evidence from the United Kingdom and the United States and Canada was presented.

The next chapter presents details on the methodology and research design adopted for this study.

CHAPTER 3

METHODOLOGY AND RESEARCH DESIGN

3.1 INTRODUCTION

The methodology and research design used in this study including a statement of the purpose of the research, details of the research sample, the research paradigm, the overall research design and an overview of the development of the survey instrument are described in this chapter. Scale development, validity and reliability, phases of the study, data analysis and internal and external design validity, are also included as are details of the questionnaire administration using a dedicated web site, and the recording, security and disposal of data. This chapter concludes with a consideration of a number of ethical issues including informed consent, confidentiality and anonymity. The limitations of the research design for the study are also part of the conclusion of the chapter. The clarification of the main purpose of the research which helped establish a clear focus and direction is the subject of the next section.

3.2 PURPOSE OF THE RESEARCH

The major purpose of this study, as introduced in section 1.4, was to examine which characteristics of a learning organization could be identified in the CEO Sydney and, in doing so, to determine to what extent the CEO Sydney could be regarded as a learning organization.

The researcher then tested the perceived association between the characteristics of a learning organization, identified in the first part of the study, and raising standards in religious education, literacy and numeracy across the primary and secondary, systemic Catholic schools of the Archdiocese of Sydney.

The study was confined to the period from 1998 to 2002 to focus it on a time period which coincided with the latter part of the first Strategic Management Plan for the system (SACS Board and CEO, Sydney, 1995b). During this period the explicit, public and strategic interests of the CEO Sydney were concentrated on raising the standards of education in

religious education, literacy and numeracy in the schools of the system. Religious education, literacy and numeracy, were chosen for this study for the following reasons:

1. These three critical areas in the curriculum of a Catholic school span both primary and secondary schools and have figured prominently in CEO Sydney policies, priorities and strategic focus during the years 1998-2002 (e.g. SACS Board & CEO, Sydney, 2000a).
2. These curriculum areas have attracted considerable financial and human resources that have been invested in resource development and the professional development and retraining of teachers (e.g. CEO Sydney, 2002b).
3. They are three curriculum areas that the system has explicitly named in its Annual Archdiocesan Agendas from 1998 to 2002 and for which it has publicly identified annual team strategies, performance indicators, outcomes and targets (e.g. SACS Board & CEO, Sydney, 2000a).
4. The system has access to reliable, longitudinal, state-wide testing data, in literacy and numeracy, and Archdiocesan testing data in religious education (Year 6).
5. Restricting the study to these three curriculum areas ensured that the research topic was manageable.

The Charter and Mission for the CEO Sydney clearly identify its educational leadership responsibilities as described in sections 1.2.4 and 1.2.5. This study aimed to establish whether the CEO Sydney was perceived by principals and some senior CEO personnel as a body that translates the Charter and Mission into discernable outcomes and improvement in educational standards.

This was the first evaluative study of any CEO in Australia as a learning organization and its perceived relationship with raising standards. Therefore one purpose of the study was to provide some important information to the CEO Sydney about its impact on standards within the Sydney systemic Catholic schools. The study may also provide information to other Catholic Education Offices and educational authorities generally to assist in their strategic planning and in their identification of areas for further research.

One of the key elements in the design of this research project was to select the source of the data. It was deemed that a sample of principals and a sample of senior CEO Sydney personnel were in the best position to provide the data that would help answer the major research question and its associated sub-questions (refer section 1.5). They formed the research sample described in the next section.

3.3 RESEARCH SAMPLE

The two main groups which were invited to respond to the questionnaire were:

1. A sample of the primary and secondary, systemic principals of the Archdiocese of Sydney, and
2. A sample of senior CEO Sydney personnel.

These two groups were selected to help answer the major research question and associated sub-questions, because they were considered to be the best-informed sources due to their close working relationships with, and understandings of, the CEO Sydney and their understanding of standards in religious education, literacy and numeracy. These groups had the broadest and most detailed working knowledge of the characteristics of the CEO Sydney and its interaction with schools.

3.3.1 Primary and secondary principals

This group comprised 136 primary and secondary, systemic principals of the Archdiocese of Sydney. The principal, in Archdiocesan systemic schools, was considered to be the person with the most comprehensive understanding of the school and all its programs and was publicly regarded as the most significant leader in all aspects of the local Catholic school, including its educational dimensions. This leadership role has been reinforced and developed during the period 1998 - 2002 as the responsibility for school performance and educational standards has focused more significantly on the instructional leadership of the principal (CEO Sydney, 1999a). Principals in the Catholic systemic schools in Sydney are expected to lead the teaching and learning agenda and to be 'head teachers' in their schools.

Principals were also responsible for the employment, induction and formation of teaching staff and to provide leadership of significant system processes like School Review and Development (SRD) and the Educational Audit (CEO Sydney, 1999b). They were appointed to their positions by the CEO Sydney; they were inducted into the role of principal by the CEO Sydney and they were accountable to the Executive Director of Schools for the educational and religious standards in their schools. Principals were therefore the most significant school representatives in terms of regular, consistent interaction with the CEO Sydney.

Those in their first year of principalship were not included in this study because of their lack of experience in the position. Principals with at least one year's experience were considered to be in a better position to make judgements about the characteristics of the CEO Sydney and the effectiveness of system processes and other CEO Sydney initiatives that focus on raising standards in schools. Acting principals were not surveyed for similar reasons.

3.3.2 Senior CEO Sydney personnel

The second group surveyed consisted of 23 senior CEO Sydney staff. In the CEO Sydney there were a number of senior people who were regularly in contact with schools through system processes, including SRD, and whose roles engaged them significantly on the quality of teaching and learning in schools. These senior people were Regional Consultants and Education Officers. Regional Consultants are the direct supervisors of principals and usually have a cluster of 12 to 14 schools accountable to them. Education Officers fill a broader variety of roles in the organization, some with a very specific educational focus. Those invited to participate in this study had expertise and experience in SRD and Educational Audit processes and were therefore in roles which involved working with schools on matters closely related to teaching and learning, curriculum and educational standards.

The six Directors and the Executive Director were not surveyed because they were deemed to be too close to existing policies and practices. The inclusion of their responses could introduce positive bias towards the policies and practices of the CEO Sydney with the potential contamination of results.

3.4 RESEARCH PARADIGM

This research essentially relied on a positivist approach using quantitative data, measurement and numerical analysis to draw conclusions (Neuman, 2000). Research conducted within this approach attempts to minimise bias and considers only natural phenomena and their relations. It aims to minimize the impact of the subjective framework on the phenomena being described (Borg & Gall, 1983). It was considered to be appropriate given that a number of previous studies on learning organizations and their characteristics have adopted a similar approach (Johnston & Caldwell, 2001; O'Brien, 1994; Rosengarten, 1999) and also because analysis of characteristics or sub-systems helped in the understanding of the systemic factors

that impacted on the organization and its effectiveness. This approach aimed to identify characteristics that were strongly represented and those that needed development.

The researcher therefore adopted a design orientation for the study that was mainly quantitative and employed a deductive approach emphasizing a fixed sequence of steps and detailed planning before data collection and analysis (Neuman, 2000). Some of the benefits of a quantitative approach are its precision, logic, efficiency, objectivity, ability to be replicated and identification of patterns in the large amounts of data (Krathwohl, 1998). It was also considered to be the most efficient means of gathering a significant amount of data from the busy population being surveyed. A self-administered, web-based questionnaire was the means by which quantitative data was gathered.

Much of the previous research conducted on the CEO Sydney (Canavan 1986; Dinham, Scott, & Sawyer 2001; Hughes 1995; Mok & Kobler 1997) was also of a quantitative nature and used carefully constructed questionnaires focusing on principal and senior CEO Sydney staff perceptions (Appendix B). Hence a quantitative approach in this study built on the previous studies of the CEO Sydney, although these previous, major studies had different emphases and descriptors. Similar studies in LEAs in the UK also used quantitative research methodologies (Riley, Docking, & Rowles, 1999).

This research paradigm drew on an *ex post facto* component in the examination of demographic factors and learning organization characteristics and a correlational component in the examination of the association between the learning organization characteristics and curriculum outcomes.

Ex post facto explanations are those inductively developed after making observations. The data are gathered retrospectively where the effect of one variable on the other has already occurred naturally and is observed after the fact (*ex post facto*) or as it occurs (Krathwohl, 1998). This study investigated whether one or more pre-existing conditions had possibly caused subsequent differences in one or more dependent variables. In *ex post facto* research there is no manipulation of conditions as in experimental research because the presumed cause has already occurred before the study was initiated (McMillan & Schumacher, 2001). The *ex post facto* approach was appropriate in this study since the cause and effect relationship did not lend itself to an experimental design (Borg & Gall, 1983). The demographic variables and the learning organization characteristics were not subject to

experimental manipulation. The *ex post facto* approach however, presented a number of challenges including the difficulty of choosing between competing explanations without gathering further evidence (de Vaus, 1995).

The final identification of each of the learning organization characteristics, as described in section 6.2, relied significantly on quantitative data supplemented by qualitative data gathered through the analysis of the first open-ended question and additional data derived from relevant, official system policies, publications and documentation. Reichardt and Cook (1979) offer good arguments in support of combining quantitative and qualitative methods, in fact Howe (1985) argues there are no good reasons for avoiding combinations of quantitative and qualitative methods in research and vice versa.

Inferential statistics underpinned this study. That is, inferences about the population as a whole were made from the sample of the population who responded to the questionnaire. By relying on probability sampling inferential statistics provided a precise way of examining the confidence of inferring from sample data to the population (Neuman, 2000). Inferential procedures were appropriate in this study because two important conditions were met, namely:

1. There was a target population to which an inference could be made.
2. Appropriate sampling was used so that the sample represented the population (Popham & Sirotnik, 1993).

In this study, a very large and representative sample of the population responded to the questionnaire, with a 91% response rate (see section 4.4.1). The population here is identified as the senior educational leadership group of the Catholic school system namely all principals and senior CEO personnel whose roles bring them into close contact with the teaching and learning agenda in schools. This high response rate strengthened the confidence with which inferential statistics were applied.

Generalizations were therefore made from empirical observations of samples (those who responded) to constructs in the principal and senior CEO personnel population and statistical tests were applied to see if descriptive results were due to random factors or to real relationships and whether observed phenomena represented a significant departure from what might be expected by chance alone (Popham & Sirotnik, 1993). The next section of this

chapter presents an overview of the design of the study followed by a brief discussion of the development of the survey instrument and the phases of the study.

3.5 RESEARCH DESIGN

The overall research design is represented in Figure 3.1 and consisted of two main parts. The first part examined the relationships between demographic factors (the independent variables) and the eight characteristics of a learning organization (the dependent variables). The second part examined the relationship between the eight learning organization characteristics (which now form the independent variables) and the standards in religious education, literacy and numeracy (which now form the dependent variables).

3.5.1. Overall design of study

The research design sought to answer the major research question and sub-questions through three main steps:

1. The identification of the CEO Sydney as a learning organization and the presence, or otherwise, of the eight learning organization characteristics. This was determined using descriptive statistics from the questionnaire supplemented by qualitative data derived from the first open-ended question and from the document analysis of key system policies, publications and documentation.
2. The relationship between demographic groups and the identification of learning organization characteristics was examined using Multivariate Analysis of Variance (MANOVA), supplemented by Effect Size indices.
3. Correlational analyses were used to examine the relationships between each of the learning organization characteristics and the curriculum outcome scales of religious education, literacy and numeracy. This was supplemented by qualitative data derived from the second open-ended question.

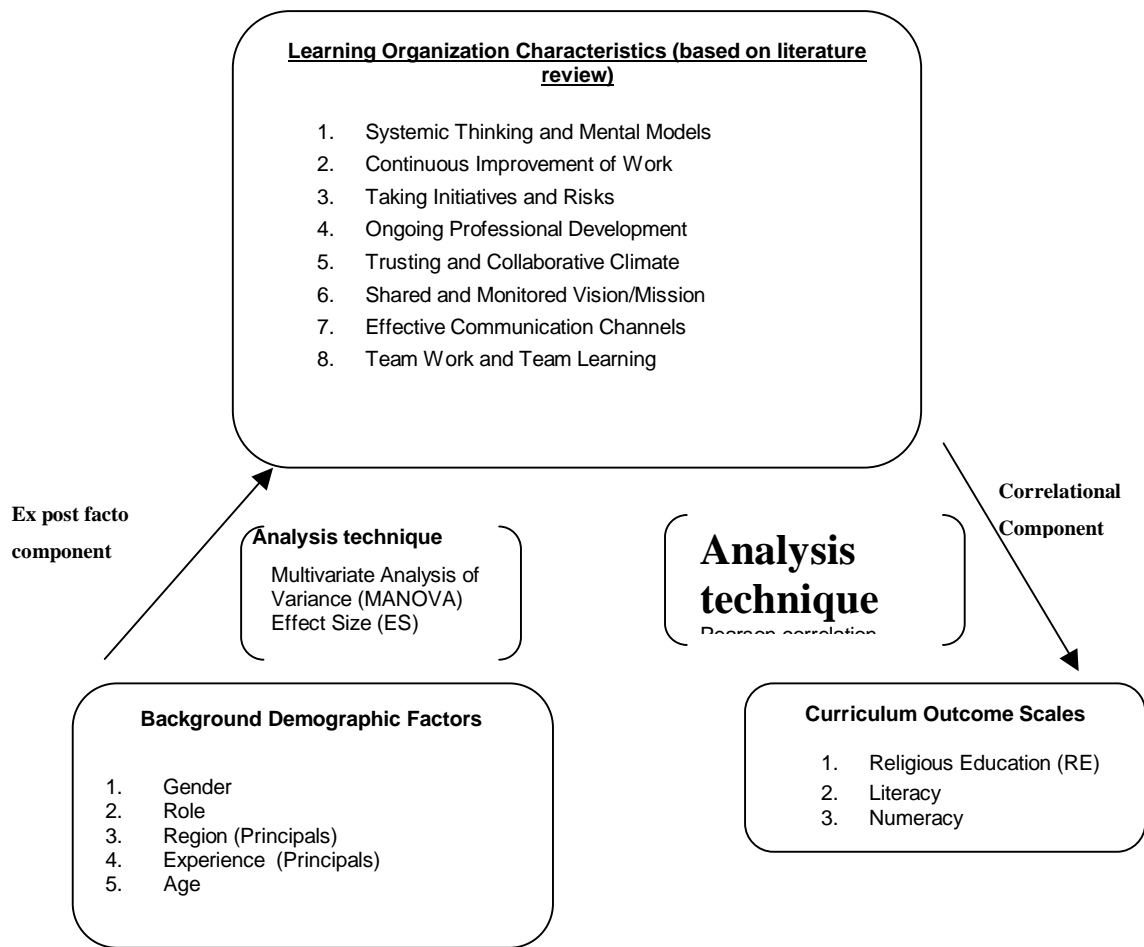


Figure 3.1 – Overall Research Design

3.5.2 Development of the Survey instrument including scale development, and the assessment of instrument validity and reliability

The instrument development strategy for this study can be described as intuitive-rational (Fraser, 1986; Hase & Goldberg, 1967). This approach relied on the researcher's intuitive understanding of the dimensions to be assessed (Dorman, 1994) and is discussed more fully in section 4.2.1 where instrument development, validity and reliability is discussed in detail.

3.5.3 Phases of study to answer the major research question and sub-questions

The construction of the instrument, described fully in chapter four, was followed by a pilot survey and then the main phase of data collection. The analysis and synthesis of data from the questionnaire then helped address the major research question and sub-questions.

There were thus two main phases in this research. The first was the field-testing of the instrument as a pilot survey, conducted over 12 days in late February 2003 with 24 principals and eight senior CEO Sydney personnel being asked to participate. The instrument was then refined. The second and main phase of the study was conducted over 19 days in mid-March 2003 with 136 principals and 23 senior CEO Sydney personnel asked to participate. Chapter 4 (sections 4.3 & 4.4) provides details of these phases of this study and Figure 3.2 summarises its developmental sequence.



3.6 DESIGN VALIDITY ISSUES

Validity issues are considered under two headings; namely internal and external design validity.

3.6.1 Internal design validity

Internal design validity is concerned with the extent to which extraneous variables and hence sources of error or threats were accounted for or controlled in this study. Identified categories of threats and possible sources of extraneous variance included researcher bias, the timing of the research, and the extent and nature of non-responders (Campbell & Stanley, 1963). It was important in a study such as this, to minimise threats to internal validity to maintain the integrity of the data collected. Some possible threats included:

1. Extraneous events: One possible threat to internal validity was a significant, extraneous event that could have impacted on respondents. The questionnaire was distributed on March 7th 2003 and officially concluded on March 21st. This period was week seven and eight of the first school term in 2003. It was a period with no obvious, systemic 'events' that could be construed as impacting on the validity of the data collected. The period was characterised by school and system level stability. At the local school/CEO team level there may well have been some significant extraneous event that could have some bearing on responses but the researcher was not aware of such factors. Two chronically ill principals were excluded from the data collection when the extent of their absence became obvious.
2. Subject effects: There were a wide variety of subject effects that could have presented a potential threat to the internal design validity. The research setting, instructions on the questionnaire, the nature of the research and other factors, including the Hawthorn effect (McMillan & Schumacher, 2001) (whereby people tend to act differently because they realise that they are subjects in research), could have influenced responses. The appropriate length of the questionnaire was carefully considered during the instrument's development and the specialisation and nature of the population was relevant in these considerations. Dillman (1978) suggested that mail questionnaires in the general population could include up to 125 items. This questionnaire was limited to 126 items and 2 open-ended questions. The researcher did not seek, individual or school identification and went to significant lengths to keep 'at arm's length' from individuals

and their institutions (section 3.8.3). At no stage of the research was any individual or school identified. This was clearly articulated and enacted before, during and after the period of data collection (Appendix F). Nevertheless a subject effect is always a possible part of such research despite the significant steps that were taken in this research to minimise it.

3. Other effects: Attrition was not an issue in this short term period of data collection and neither was randomisation or selection. Response rates (section 4.4.1) indicated that all sub-groups within the population were well represented. Similarly, experimenter effects in this self-administered questionnaire, conducted 'at arm's length' from the researcher (section 3.8.3), were judged to be minimal. Statistical regression, pre-testing, instrumentation effects, maturation, diffusion of treatment, and treatment replications were not considered to be significant and many of these were not factors and did not apply in this study (McMillan & Schumacher, 2001).

3.6.2 External design validity

The external design validity refers to the generalization of findings from this particular piece of research within its particular sample to other groups (population external validity) and settings (ecological external validity). The Hawthorne effect also was one factor in these considerations which could have affected both internal and external validity. Caution was exercised in the translation of full group patterns to sub-groups within the group surveyed (McMillan & Schumacher, 2001). This study was conducted in one particular Catholic system in Australia. It drew heavily on the perceptions of a significant proportion of a key leadership group within that population. The CEO Sydney has a particular culture and approach to strategic planning and leadership and a very explicit focus on the instructional leadership of principals. The specific findings in this study were thus restricted to the CEO Sydney. However it is possible that other CEO systems and public education systems in Australia could have similar organizational dynamics and these findings may have some relevance for these systems.

3.7 SURVEY ADMINISTRATION

Table 3.1 provides an overview of the timeline adopted for the data collection phase of this study.

Table 3.1 – Summary of Timelines/Administrative Procedures for the Main Study.

Date	Administrative Procedure
February 28 th	E-mail/Letter to all principals and senior personnel involved in the study from the Executive Director of Schools (Appendix G).
March 7 th	Information letter posted and e-mailed to participants with details of study, web site URL, user names and passwords (Appendix F). Questionnaire posted on web site.
March 13 th	First reminder e-mail/letter to participants (Appendix H).
March 20 th	Final reminder e-mail/letter to participants . Extension of time till March 24 th .
March 25 th	Data collection concluded.
March 27 th	Thank you e-mail/letter to all participants.

3.7.1. Data collection – web site

For this study the collection of quantitative and qualitative data was achieved using a database driven web site on a dedicated server. The Sydney Catholic school system has a well-established electronic communications environment which facilitates the reliable and efficient connection of school sites and CEO Sydney offices for accessing the internet, curriculum resources and e-mail for students and staff as appropriate (Dante Telecommunications Systems, 2002). There were well-developed and reliable local area networks (LANs) in all the schools of the system and the CEO Sydney has its own Virtual Private Network (VPN). Connectivity to the internet was via ADSL and satellite in over 90% of schools in the Archdiocese of Sydney. This includes a dedicated communications ‘Schoolsnet’ server patched into a 10/100 managed switch for improved network performance.

During the past five years, principals and senior CEO Sydney personnel have participated in a wide range of professional development programs that have enhanced their skills in the use of intranet and internet technology generally (CEO Sydney, 2001b). Thus it was deemed appropriate to use a web-based method of data collection. The web site for this study was broadly accessible from school and CEO Sydney office sites and also from remote locations, should respondents have wished to complete the questionnaire from home or elsewhere.

The use of web sites to collect high quality survey research data was relatively new and was a significant, innovative feature of this study. The benefit of web surveys for this research included the mass collection of data and the potential to tap into significant numbers of respondents at relatively reduced costs (Couper, 2000). In its broader application, internet surveying runs the risk of saturating people with surveys and hence generating low response rates with the risk that such proliferation of web-based surveys will make the good surveys indistinguishable from the poorer ones and thus devalue the whole web based surveying exercise. This was not an issue for the sample involved in this study as this was the first time the CEO Sydney VPN had been used for data collection in this way. The high response rate in this study supports this assertion.

The pilot and the main data collection phases were both carried out using a purpose built, secure, password protected, database driven web site. The web site was developed using ASP (Active Server Pages), VB script and Java Script under a Microsoft 2000 Advanced Web Server environment.

In this research, 85.4% of those who responded did so using the web site whilst the remaining 14.6% of respondents elected to use paper responses. The design of this web-based questionnaire took into account the research conducted by Couper, Traugott, and Lamias (2001) which focused on the importance of the physical design of the web site. Couper, Traugott, and Lamias (2001) investigated the use of progress indicators, multi-item screens (where related items are grouped) and radio buttons. Of these only multi-item screens were used. Maintaining survey quality and minimising error thus required a judicious use of the multimedia possibilities of the web based survey. Whilst the use of technology had the potential to minimise 'no responses' and measurement error, there was a need to avoid distracting the respondents and thus affecting the honesty and accuracy of responses. The scales were grouped together in simple, clearly organized screens. There are time and efficiency gains and fewer non-substantive responses when items are grouped together in this way and correlations are slightly higher among grouped items (Couper, Traugott, & Lamias, 2001).

In the pilot study respondents said that they enjoyed the experience of using a web-based questionnaire and that it was user friendly and time efficient. However the familiarity, competence and comfort of some respondents with such technology was variable and following the pilot phase of the study the option of a paper based submission was

strengthened for those who were uncomfortable or lacked the necessary skills to complete the questionnaire using the web site.

The challenge of anonymity and confidentiality were significant factors in utilising web based data collection as discussed in greater detail in section 3.8.3. The use of specific user names and passwords ensured that respondents could only submit one response to the questionnaire. The software was designed to track who had responded and only allowed one response per participant. However respondents could edit their responses at any time during the survey period. The decision to use web based surveying as a means of data collection with this population was taken because it was carefully targeted and the population was highly motivated (Neuman, 2003).

Access to the web site for participants was provided through a password using a registered system elearning domain name and a specific URL address. Access to the web survey was only possible following authentication by the user at a log in welcome screen which required a specific user name and a password. The user name and password were devised by an Administrative Assistant who informed all participants of these details (Appendix F). The researcher had no access to the web site and was not given details of user names or passwords. At all stages of the research, the researcher had no knowledge of participant or school identification as outlined in the information letter to participants in Appendix F.

The hard copy and web site versions of the questionnaire contained three sections, Parts A, B and C (Appendix E). Part A was for the collection of participant background demographic information. To respect the privacy of individuals, they could omit any question in this section if they wished. Part B was to examine the characteristics of a learning organization and consisted of 88 closed-response items divided into eight sections. Each section contained items that formed a scale and related to one of the characteristics of a learning organization adopted for this study (section 2.4). Part C examined the relationship between the learning organization characteristics and the impact of the CEO Sydney on standards. It contained 38 items in three sections (religious education, literacy and numeracy). The qualitative data gathered from the two open-ended questions, at the end of the questionnaire, helped determine which learning organization characteristics of the CEO Sydney had the greatest impact on schools and how, in the context of the learning organization, the CEO Sydney can better support the raising of standards in schools. Thus the two open-ended questions were linked very closely to the major research question.

3.7.2 Data Recording, Security and Disposal

During the pilot development of the questionnaire and in the main study, survey data and the questionnaire were stored on a secure, password protected, relational database (Microsoft SQL server 7), resident on CEO Sydney's elearning web server housed in a purpose built data facility by a CEO preferred contractor. Primary Network Administration of the server was provided by specialist CEO staff in liaison with the contractor's own Network Administrator. The questionnaire data was backed up via standard SQL server 7 maintenance routines onto local hard drives on the server. This involved daily backup of the SQL server 7 database. There was a twice daily automated backup of the entire server to tape which was stored offsite. Manual checks were conducted daily on the system to ensure data integrity throughout the survey period. Notification to the CEO Sydney system administrator via email and mobile SMS of up and down time were also programmed via polling to the server at five minute intervals. This enabled immediate action in case of system failure including remote management of the server via Terminal Services.

Direct access to the server was limited to key personnel and protected through standard Microsoft user validation. The same validation applied to CEO Sydney system administrators accessing the server remotely through Terminal Services Client. The database was thus secure and password protected and was accessible only by a coding specialist responsible for the development and maintenance of the web site. The server on which the web site was housed was closely monitored and had a 99.9% on line availability during the period of data collection.

Data extracts from the web site were also recorded on a local server housed at the CEO Sydney. The backup regime at this level was as follows:

1. Access to the local server was limited and protected by password protection through all levels.
2. Locally at the CEO Sydney, the data was stored on CD Roms (CDR). These CDRs were stored in dedicated, lockable filing cabinets in the regional CEO Sydney safe.

The data gathered from the returns was collated in a Microsoft Excel spreadsheet and then downloaded into the Statistics Package for the Social Sciences, (SPSS, Version 11.5) for

analysis (SPSS, 2002). Additionally the primary data files for the pilot and main studies were stored on ACU premises in the project supervisor's office in a locked filing cabinet, as stipulated by the ACU Human Research Ethics Committee (HREC) guidelines. Data will be disposed of after complying with the requirement to retain data for a minimum of five years. CDRs will then be destroyed, electronic data will be deleted and hard copy data will be shredded.

3.7.3 Data analysis techniques

Three sets of data analyses were used in this study.

1. The first set of analyses involved the use of descriptive statistics to examine the eight characteristics of a learning organization and the three curriculum outcomes of religious education, literacy and numeracy. The raw scale data mean, median, range, standard deviation and skewness were the main descriptive statistics used in this part of the study because they provided the most fundamental ways of summarising and organizing large amounts of data (McMillan & Schumacher, 2001). The interpretation of data from descriptive statistics was done cautiously recognising that such interpretation can oversimplify data (Borg & Gall, 1983).
2. The demographic group analysis employed descriptive statistics, Multivariate Analysis of Variance (MANOVA) and Effect size (ES). This study examined data which can often be best understood by examining many variables simultaneously (McMillan & Schumacher, 2001). Multivariate Analysis of Variance (MANOVA) is an extension of Analysis of Variance involving two or more dependent variables and was an appropriate statistical technique in this study where there were several dependent variables (the eight learning organization characteristics) which were all measuring different aspects of the same cohesive theme. The great benefit of MANOVA was that all dependent variables were considered in the one analysis (Borg & Gall, 1983) which meant that it was more parsimonious than univariate or bivariate analysis and thus was able to provide an overall relationship between the set of dependent variables and the independent variables (Dorman, 1994).

MANOVA determined whether several groups differed on more than one dependent variable. In the present study each subject in a MANOVA had a score on eight dependent variables (the eight learning organization characteristics). Stevens (2002) suggests that researchers need to be conscious of the number of dependent variables used

in a MANOVA. If too many variables are included, without a theoretical rationale, then small or negligible differences on most of them may obscure a real difference(s) on a few of them, with the multivariate test mainly detecting error in the variables without detecting any reliable overall difference. Generally, the power of MANOVA declines as the number of dependent variables increases (Stevens, 2002). In this study the eight dependent learning organization characteristics had a clear theoretical rationale (section 2.4) and eight variables were within generally accepted approaches to the use of MANOVA.

To compare learning organization characteristics according to five demographic variables in the present study (viz. gender, role, region (principals), experience as a principal, and age group), a series of one-way MANOVA tests were performed on the data. In all of these tests, the eight learning organization characteristics constituted the set of dependent variables. While two and three-way MANOVAs would have been preferred to check for interaction effects among the independent variables, the relatively small sample would have resulted in empty cells in such analyses. Accordingly the decision was made to use one-way MANOVAs.

Statistical significance does not necessarily imply educational significance (McMillan & Schumacher, 2001). Effect size (ES) is an indicator that is widely used to illustrate the strength or magnitude of a difference or relationship along with measures of statistical significance. ES is a very helpful method for assessing the practical significance of relationships and group differences as long as it is applied carefully and used as an aid to interpretation. In the present study, the ES index d was calculated as the difference between the means of two groups divided by the scale standard deviation. It recorded the strength or magnitude of the practical or meaningful difference between means and complemented measures of statistical significance. An ES index over 0.33 has practical significance, in other words the effect is large enough to make a worthwhile difference in the outcome (Borg & Gall, 1983). In this study those group characteristics where effect size was over 0.50 were regarded as moderate and those over 0.80 were regarded as large noting that such categorization is arbitrary, yet reasonable like many conventions (Cohen, 1977).

3. The third set of data analyses involved correlational statistics which were used to test whether a relationship or association existed between two or more variables and to determine the direction and strength of the relationship. The advantage of correlational

analysis was that it permitted simultaneous studies of several variables (McMillan & Schumacher, 2001). In the simple correlations used in this study, Pearson's product moment correlation coefficient was used because the variables in this study were continuous scores and because it has a small standard error (Borg & Gall, 1983). The explained variance, R^2 , indicated the percentage of variance in one variable that was accounted for by another variable or set of variables (Neuman, 2000). The application of correlational statistics does not permit causal relationships to be inferred. Some variables do have a direct influence on others but correlation techniques might not identify this condition (Chase, 1967). Another complementary statistical technique used in this study was multiple linear regression which explored the relationship between several independent variables (the learning organization characteristics) and one dependent variable (the curriculum outcome) (Borg & Gall, 1983).

Canonical correlation extended multiple linear regression by including more than one dependent variable in the analysis. Canonical correlation is a multivariate correlation technique in which a combination of several predictor variables is used to predict a combination of several criterion variables (Borg & Gall, 1983). The goal of canonical correlation is to analyze the relationships between two sets of variables with sets of variables on each side being combined to produce a predicted value that has the highest correlation with the predicted value on the other side (Tabachnick & Fidell, 2001). Canonical correlation is a multivariate correlation technique in which a combination of several predictor variables is used to predict a combination of several criterion variables (Borg & Gall, 1983).

In this study the predictor variables were the eight learning organization characteristics and the criterion variables were the three curriculum outcome variables of religious education, literacy and numeracy. Canonical correlation identified which set of predictor variables best predicted which set of criterion variables. Canonical correlations have appeared more frequently in studies such as this where a number of variables are included in the study. It was most useful in this study where exploratory relationships were being investigated to determine how a large number of variables related to one another.

The next section of this chapter considers some of the ethical issues that were significant in the design of this research.

3.8 ETHICAL CONSIDERATIONS

3.8.1 General

An Application for Ethics Approval of Research Projects with Human Participants was submitted to the Human Research Ethics Committee (HREC) of the Australian Catholic University (ACU) in January 2003. The HREC granted approval for this research involving human subjects on February 13th 2003 (Appendix I). It was submitted and approved as a research project with 'minimum risk to participants'. Also included was a statement of formal approval for the research from the Executive Director of Catholic Education in the Archdiocese of Sydney (Appendix J). Details of the gathering, security and disposal of data and the dissemination of results were also part of the Application to HREC.

3.8.2 Informed Consent

Ethical research must balance the needs of the researcher, and the value of gaining knowledge, against the values of non-interference in the lives of others (Neuman, 2000). Issues of confidentiality and anonymity were significant in this research as the researcher was in a senior leadership (Regional Director's) supervisory, delegated employer/employee relationship with about a quarter of those surveyed (Singer, von Thurn, & Miller 1995). The completion of a consent form was not required of participants for two reasons:

1. To provide an additional, explicit means of further strengthening confidentiality and anonymity.
2. Because this research was deemed to involve minimal risks to the welfare of participants, the mere completion and return of the survey electronically or in written form was deemed to be evidence of the participants' informed consent (Krathwohl, 1998).

3.8.3 Confidentiality and Anonymity

Confidentiality was a significant part of the planning and execution of this study. The data gathered were only used for the research purposes stated and the information gathered was not divulged to others in any way that might allow it to be linked to any particular person. Data were only presented in aggregated form.

Anonymity was also a significant part of the planning and execution of this research. While the Administrative Assistant for the project did know the identities of individuals, this information was never disclosed to the researcher. In order to protect the identity of individuals, data were passed on from the Administrative Assistant to the researcher only in coded form.

Given the senior role of the researcher in the CEO Sydney, a number of steps were taken to secure anonymity and confidentiality. These included:

1. No participant was asked to sign the survey or disclose their name or the name of their school.
2. The data were returned to a password protected, secure website, designed by an external consultant. The researcher could not access the data and had no entry rights or passwords. An Administrative Assistant had authorised access to the web site for the purpose of data gathering and monitoring only.
3. Participant background information, user names and passwords were coded by the Administrative Assistant before it was passed onto the researcher.
4. No signed consent form was requested.
5. The Administrative Assistant allocated user names and passwords for participant access to the web site. The researcher was not privy to this information.

An essential question to answer was whether anonymity was necessary to get accurate replies (Borg & Gall, 1983). The need for assuring anonymity varies from one situation to another and given the issue of captive populations (like employees) it needed to be carefully preserved so that respondents felt free to express their opinions in an open and honest way. This was a significant feature of the planning and execution of this research.

3.9 LIMITATIONS OF RESEARCH DESIGN

Like most research there are threats to internal and external validity in the design (McMillan & Schumacher, 2001). In this study some of the limitations of the research design were as follows:

- 1 The study was restricted to the Catholic school system in the Archdiocese of Sydney because the characteristics of the Catholic Education Office (CEO) in Sydney were deemed to be sufficiently different to those in other CEOs. The maturity of the CEO Sydney as an organization and its very significant and strategic focus on teaching and learning and standards across the schools of the system were significant factors in this decision.
- 2 The role of the researcher as a senior member of the leadership team in the CEO was a possible limitation in terms of his relationship to some of the participants and the possible effect this might have on the results of data collection. The researcher's role as a Director of one of the three geographical regions was carefully considered in the research design. The confidentiality and anonymity steps taken throughout the pilot and main study have been noted in the previous section. These were scrupulously adhered to and were tested in the pilot evaluation. Whilst subject effects can never be eliminated there were significant steps taken to maximise respondent willingness to respond in an open and honest way. In this study the strong emphasis on quantitative analysis helped reduce the possibility of bias arising from personal assumptions.
3. The use of a Likert-type attitude scale with its inherent strengths and weaknesses. The major limitation in this approach was that respondents may have felt some pressure to respond as societal, professional or political pressures dictated rather than as their own, individual opinion or belief dictated. Even those, 'with little or no information about a particular topic will often still express an opinion in order to conceal their ignorance or because they feel social or professional pressure to express an opinion' (Borg & Gall, 1983, p. 423). In this study the respondents were all senior leaders in either the school or CEO Sydney and as such were more likely to be well informed, knowledgeable and interested in the matters raised in the questionnaire. The respondents' knowledge and expertise was an important factor in the interpretation of attitude data (Borg & Gall, 1983).
4. The application of the learning organization concept to an educational body, like the CEO, was relatively new. The learning organization body of research has strong foundations in industry and business and there has also been some sound investigation of schools as learning organizations (Silins & Mulford, 2002). However this study applied the concept to a non-government educational authority and the application of the learning organization concept to a non-government education system required some adaptation to the learning organization frameworks and thinking that emerged from industry.

5. The characteristics of a learning organization adopted for this study have been distilled from a number of sources. Such a dissection into eight characteristics has the potential to limit the overall, holistic understanding of the learning organization and can be construed as limiting the broader, more integrated understanding of an organization. However such a dissection into sub-sections can also assist in the clarification of those systemic parts of an organization that are particularly strong or need development.
6. The limited and specific definition of raising standards adopted for the study, with its focus on measurable student and school outcomes, is a further limitation of the research and is discussed in detail in section 2.6.
7. The study was restricted to only three curriculum outcome areas, namely religious education, literacy and numeracy. In restricting it to these three areas the research findings may not be applicable across the curriculum.

3.10 CHAPTER SUMMARY

The case for an essentially quantitative methodological approach to this research and the research paradigm and design adopted were developed in this chapter. Important issues of internal and external design validity were considered, as were the ethical issues of confidentiality and anonymity given the role that the researcher plays in the CEO Sydney. A particularly innovative feature of this research was the collection of data using a dedicated, password protected web site. This chapter discussed this innovation in detail.

The next chapter provides details of the development and validation of the survey instrument and outlines the arguments supporting the choice of a self-administered questionnaire and its structure and development. It also provides details of the scale development and the reliability and validity of the scales.

CHAPTER 4

DEVELOPMENT AND VALIDATION OF INSTRUMENT

4.1 INTRODUCTION

This chapter provides details of the development and validation of the instrument used to gather the data in this study. This development included scale formation, considerations of validity and reliability and instrument refinement through a carefully designed pilot process.

How the survey instrument was developed, its reliance on an intuitive-rational approach, the criteria for the instrument development and the nature of the survey items are considered in section 4.2 of this chapter.

4.2 DEVELOPMENT OF SURVEY INSTRUMENT

Instrument development was a critical phase of the study. It aimed to develop a questionnaire that was clearly organized, reliable, unambiguous and valid and that provided adequate coverage of the essential components of the learning organization and curriculum outcomes adopted for this study. The survey instrument used was developed using the intuitive-rational approach to instrument and scale development (Hase & Goldberg, 1967).

This section outlines this approach and the main criteria that underpinned the instrument development. It also outlines the rationale for the selection of closed-format and open-ended components of the questionnaire and the development of individual scales. The reasons for the adoption of the intuitive-rational approach to instrument and scale development for this study are outlined in section 4.2.1.

4.2.1. Intuitive – rational approach

The intuitive-rational approach to constructing scales (Hase & Goldberg, 1967) is one which compares favourably with other primary scale construction strategies including empirical, theoretical and factor analytical methods and it was on this basis that it was adopted for this

study. This approach relies on the researcher's and other experts' intuitive understanding of the dimensions assessed (Fraser, 1986). Three main steps were followed:

1. The identification of conceptually distinct, salient dimensions (the eight learning organization characteristics and the three curriculum outcome areas) from the literature, from CEO Annual Agendas and from researcher and expert opinion.
2. Item writing and scrutiny of the items in terms of face validity, readability and scale allocation.
3. Field testing of the instrument and item analysis to check on the important scale characteristics of internal consistency and discriminant validity.

The instrument relied on the development of scales whose scores were interpretable when the scale was internally consistent (Cronbach, 1951; Fraser, 1986). A high degree of discriminant validity was sought in the design of each scale so that each measured a dimension not measured by other scales and thus avoided the confounding of results and inefficiency within scales (Campbell & Stanley, 1963). Ideally, such discriminant validity is sought in the design of each scale although in reality it may not happen.

Consistent with the intuitive-rational approach, advice was sought from a number of experts at various stages of the instrument development. A number of CEO Sydney curriculum advisers with expertise in the key areas of religious education, literacy and numeracy provided advice on the items in those areas. These advisers were not part of the survey sample. All Directors of the CEO Sydney, who were not part of the research group, were invited to scrutinise the evolving instrument and to offer feedback. Three CEO Sydney Directors, with considerable expertise in research, curriculum and religious education provided detailed feedback on the questionnaire during its development. This broad, expert input during the instrument development was intended to enhance the validity of the scales. The instrument was developed using clearly defined criteria as discussed in the next section.

4.2.2 Criteria for instrument development

The questionnaire was constructed in the light of the literature review which led to the definition and characteristics of the learning organization (sections 2.3 & 2.4) and curriculum outcomes adopted for this study. It took into account the fact that surveys, like other

scientific and technical tools, need to be carefully constructed and used in appropriate ways (Bradburn & Sudman, 1988).

Six main criteria guided the overall instrument development. These were:

1. The first part of the survey instrument had to provide a good coverage of the learning organization characteristics as identified from the literature and as adopted for this study (section 2.4).
2. The second part of the survey had to provide good coverage of 'raising standards' in religious education, literacy and numeracy. The scales developed here relied, as much as possible, on published system aims, outcomes and performance indicators for the period 1998 to 2002 (e.g. SACS Board & CEO Sydney, 2001).
3. There were to be several internally consistent scales.
4. The scales in the instrument were to be mutually exclusive, consistent with general psychometric principles.
5. Ceiling and basement effects were to be avoided.
6. The instrument was to be relatively economical to administer.

The actual items used in the questionnaire drew on information from a number of sources these included:

1. Existing instruments, related to the learning organization concept, used outside educational settings (O'Brien, 1994; Rosengarten, 1999).
2. Instruments employed within educational settings (Johnston & Caldwell, 2001), including relevant extracts from instruments used in previous studies of CEO Sydney (Canavan, 1986; Hughes, 1995).
3. Original items, specific for this study, generated by the researcher and tested in the pilot survey.

Improving the design of the survey questions through careful evaluation (Schwarz & Sudman, 1996) was a most important methodological issue in this study and necessitated a carefully planned, executed and evaluated pilot. Careful consideration was also given to the nature of the survey items including the use of closed-format items as discussed in the next section.

4.2.3 Nature of survey items: Closed-format items

The purpose of this research was to provide group responses which was well served by closed-format items (McMillan & Schumacher, 2001). Therefore the questionnaire for this study consisted mostly of closed-format items which avoided interviewer bias, were easy and

efficient to apply and easy to code. For this particular study they were also a means of handling a large amount of easily categorized data and allowed respondents to answer items fairly quickly.

Using closed-format items however did not permit observation of participants and the probing of responses. The researcher was unable to control the conditions under which the questionnaire was completed and who actually completed it. Given the essentially closed-format nature of the questionnaire, there were no meaningful opportunities for respondents to qualify their answers.

All these factors could have produced a loss of some accuracy in this study (McMillan & Schumacher, 2001; Oppenheim, 1992). Closed-format items can also suffer from what is termed 'acquiescent response set problems' (de Vaus 1995), whereby respondents just agree with statements regardless of content or may be cued with respect to possible answers by structured items. Context effects, whereby respondents use cues provided by other items in the questionnaire or by the response alternatives, are ubiquitous and cause complex interactions in response to attitude questions. The design of this questionnaire took into account the likelihood of such context effects by keeping individual items clear, simple, specific and unambiguous. No individual items in any scales produced extreme positive or negative results which could be construed as having some impact on items that followed in that scale (Sudman, Bradburn & Schwarz, 1996). The pattern of group and individual responses indicated that context effects were not evident in this study.

Having decided to use closed-format items as the essential feature of the questionnaire, the next section further considers the specific nature of these items.

4.2.4 Nature of survey items: Five-point Likert design

All 126 closed-format items in the questionnaire were of the same style using a 5 point Likert scale item design (Appendix E). This style was adopted for the efficient quantification and comparison of results and to make it easier for busy respondents to reply. It was considered a useful approach to test the major research question using the scales developed. A five-point scale was used with 5 points allocated for 'Strongly Agree', 4 points for 'Agree', 3 points for 'Neutral Opinion', 2 points for 'Disagree' and 1 point for 'Strongly Disagree'.

The option of a neutral, non-attitude choice, was provided as an attempt to reduce fictitious opinions and to identify those respondents with no opinion. The neutral opinion avoided the distortion of results that could occur when respondents who were genuinely of neutral opinion were forced into a category that did not reflect their position. The neutral opinion can sometimes lead to clustering of opinion around that option. In the total data gathered the neutral option represented 11.8% of all choices which suggested that clustering was not excessive across the whole questionnaire.

If respondents lacked sufficient information or the knowledge to respond to an item they could select, ‘can’t make a valid judgement’, which was scored as a missing value for the purpose of statistical calculation. Respondents were also provided with the ‘unanswered’ option if they did not want to respond to a particular item. This was also scored as a missing value for the purpose of statistical calculation as described in section 5.1.1. The software written for the web site used to administer the questionnaire and collect the data, necessitated that every item have a response, hence the ‘unanswered’ option. Scale percentage responses to these three options are illustrated in Table 4.1.

Table 4.1 Scale percentage distribution for ‘Neutral Opinion’, ‘Can’t make a valid judgement’ and ‘Unanswered’ options.

Characteristic	Neutral opinion %	Unanswered %	Can’t make a valid judgment %
<i>Learning Organization Characteristics</i>			
Systemic Thinking And Mental Models	6.2	0.4	2.8
Continuous Improvement of Work	6.1	0.4	1.7
Taking Initiatives and Risks	17.8	1.0	5.9
Ongoing Professional Development	14.5	1.1	3.0
Trusting and Collaborative Climate	16.7	0.9	5.9
Shared and Monitored Vision/Mission	9.7	1.0	6.3
Effective Communication Channels	11.0	1.4	4.3
Team Work and Team Learning	14.6	1.7	14.0
<i>Curriculum Outcome Scales</i>			
Religious Education	10.4	1.0	5.3
Literacy	9.5	0.9	9.6
Numeracy	12.6	2.3	12.6

There were five negatively worded items in the questionnaire as summarised in Table 4.2. These were included to test whether respondents were concentrating on the wording of items and to monitor context effects. Two of these (Items 25 and 74) were from previous studies of the CEO (Canavan, 1986; Hughes, 1995). In fact there were eight items in this questionnaire that were included in the 1994/1995 review (Hughes, 1995) and/or the 1986 study (Canavan, 1986). They were included to provide some longitudinal, comparative data on

principal/senior CEO personnel attitude to see if it had changed over time and to what extent it might have changed. These insights assisted in the discussion of results in chapter six.

Table 4.2 Negatively worded items in questionnaire

Item No	Wording of Item
25	The CEO is concerned more with regulations rather than service.
47	The CEO exerts too much influence on decision making at school level.
69	The CEO is unreceptive to input from schools.
74	Dialogue between the schools and the CEO is limited.
81	Teams within the CEO have insufficient representation from teachers.

When all factors were considered, a self-administered, essentially closed-format questionnaire completed electronically using a dedicated web site (section 3.7.1), was taken to be the most appropriate instrument format and administrative technique to use with this relatively homogenous, highly educated, busy and motivated population. Such a questionnaire not only generated data that helped clarify the major research question and sub-questions but also facilitated comparisons of individual items and scales for the demographic groups involved.

The use of two open-ended questions was considered a valuable addition to the questionnaire and the quality of the data it generated as described in the next section.

4.2.5 Nature of survey items: Open-ended questions

Two open-ended questions were included at the end of the questionnaire and, although the two questions were worded so that they advanced the major research question, they also allowed respondents to express a broad range of opinions and idiosyncratic differences. Open-ended questions exert the least amount of control over respondents and in this study they were a means of supplementing, humanising and contextualising the quantitative findings (McMillan & Schumacher, 2001). They were also appropriate for the highly literate, professional population involved.

Like most open-ended questions they posed the challenge of categorization and scoring with an inherent potential for bias and subjectivity. They were carefully categorised and analysed to avoid potential bias and misclassification (de Vaus, 1995). However the data derived from the open-ended questions were essentially used to supplement the quantitative findings. Thus a strongly reliance on closed-format questions, with the associated potential to distort results,

was avoided through the collection of both quantitative and some qualitative data (Neuman, 2000).

The final instrument developed for this study was organized into scales each consisting of 9 to 13 items. The quantitative data and analysis in this study relied essentially on scales whose development is described in the next section.

4.2.6 Development of individual scales

Scales were used extensively in the questionnaire employed in this study because they allowed fairly accurate assessments of beliefs, perceptions or opinions. A linear scaling model was adopted using a five-point Likert response format as discussed in section 4.2.4. This was well suited to a study such as this where attitude patterns were being examined. Likert scales were used because they are a popular scaling procedure and perform well when it comes to a reliable, rough ordering of people with respect to a particular attitude (Oppenheim, 1992). The Likert scales were easily constructed, provided a broader range of responses and included some items which were not directly related to the attitude in question but which enabled a deeper and more subtle exploration of the ramifications of the attitude. Attitude interrelationships were also explored using a Likert scale (Borg & Gall, 1983).

Likert scales, however, lack technical reproducibility and, in this study, the same total score could have been generated by many possible combinations of item scores. For similar reasons, the neutral point was difficult to interpret. The use of attitude scales also suffers the disadvantage of direct self-report measures whereby the researcher can never be sure of the degree to which the respondents' answers reflect their real attitudes. However the 5 point Likert scale is no more advantageous or disadvantageous when compared with more complex scoring methods like the Thurstone scales and on this basis was chosen for this study (Oppenheim, 1992).

Table 4.3 provides an overview of the scales developed for the study and includes a brief scale description and a sample item from each scale. The items developed for each scale covered a range of elements within that scale as discussed in section 2.4.

Table 4.3 Overview of individual scales – Eight Learning Organization Characteristics and three Curriculum Outcomes.

Scale Name	Scale Description	Item No	Typical Item	N items
<i>Learning Organization Characteristics</i>				
1. Systemic Thinking and Mental Models	The better people understand the whole organizational situation the better they can create links and learn. This is enhanced when the mental models (a person's view of the world) are easily and willingly shared.	56	The interrelationship between the school and the CEO is understood by principals.	10
2. Continuous Improvement of Work	The organization exerts a 'pressure' for improving its effectiveness through review, adaptation and refinement of practice and monitoring performance.	16	School Review and Development has encouraged schools to become more active in their own self-review.	11
3. Taking Initiatives and Risks	Learning is encouraged through experimentation, trying different approaches and flexibility of thinking.	31	The CEO promotes inquiry.	12
4. Ongoing Professional Development	There is a strong organizational commitment to the professional development of all levels within the organization. This needs to be relevant, challenging and nurture creative, learning skills.	34	Professional development is carried out systematically by the CEO.	11
5. Trusting and Collaborative Climate	The climate of the organization encourages dialogue, openness and trust, tolerance, shared decision-making and the empowerment of teams and individuals.	54	Decisions in the system are taken at the appropriate level (i.e. the principle of subsidiarity).	13
6. Shared and Monitored Vision/Mission	Shared vision/mission creates commitment and unifies organizational effort. It provides a clear sense of direction.	61	The system Vision encompasses your personal vision for Catholic education.	9
7. Effective Communication Channels	Free flow of information vertically and horizontally around the organization and with the external environment. Multiple formal and informal means of communication exist. Open and clear communication channels are essential in organizational learning.	71	The CEO has effective communication channels with schools.	13
8 Team Work and Team Learning.	Teams as fundamental learning units of the learning organization. Teams as cooperating work groups which gather, process create and disseminate knowledge. Teams made up of representatives from various levels within the organization.	85	The CEO believes that the most important organizational decisions are made in teams.	9
<i>CurriculumOutcomeScales</i>				
Religious Education*	These included the impact of system developed primary and secondary RE curricula, system processes, the implementation of systemic testing in Year 6 RE, teacher accreditation and professional development on standards in RE .	94	The quality of teaching and learning in Religious Education has been improved through the implementation of the system curriculum documents (<i>Celebrating Our Journey/Faithful to God Faithful to People</i>).	13
Literacy*	These included the impact of system processes, state testing, system target setting , support with data interpretation, teacher professional development on literacy standards.	104	Classroom instruction in literacy has been enhanced by CEO initiatives.	13
Numeracy*	These included the impact of system processes, state testing, system target setting, support with data interpretation, teacher professional development on numeracy standards.	120	CEO analysis and interpretation of test data in numeracy/mathematics has contributed to improved teaching and learning outcomes.	12

*These 3 scales were derived from the published outcomes, performance indicators and aims as published in the Archdiocesan Agendas 1998-2002 (SACS Board & CEO Sydney, 1998, 1999, 2000a, 2001, 2002b) which related to raising standards in religious education, literacy and numeracy.

The religious education, literacy and numeracy items were constructed after close reference to the respective priorities (two, three and four) from the CEO Sydney Annual Archdiocesan Agendas 1998 to 2002 (SACS Board & CEO Sydney, 1998, 1999, 2000a, 2001, 2002b). These Agendas contain specific aims, outcomes and performance indicators in the broad curriculum areas of religious education, literacy and numeracy. The items developed were based on a selection of those aims, outcomes and performance indicators that explicitly or implicitly referred to raising standards in the three curriculum areas. These public, system publications were considered a sound basis on which to construct the outcome variables given their priority in the strategic planning of the CEO Sydney.

The questionnaire was not arranged in any hierarchy of scales (ordering) nor were any scales internally ordered from broader to more specific items (funnelling). This was considered unnecessary in the light of feedback from the pilot phase of the instrument development (see section 4.3) and the highly educated, relatively homogenous nature of the group surveyed, where the knowledge and expertise of the respondents was an important factor in interpreting the attitude data (Borg & Gall, 1983).

The implementation of a pilot study was critical in the refinement of the questionnaire and its validation. The details of this are included in the next section.

4.3 VALIDATION DATA – PILOT STUDY

Central to the development of the instrument was a carefully planned and evaluated pilot study which was conducted over a period of twelve days in late February 2003.

The instrument was piloted for three main reasons:

1. There was no current instrument available to identify learning organization characteristics in a non-government school system like the CEO Sydney and to further examine the relationship of these learning organization characteristics with raising standards.
2. To establish confidence in the scales, the structure and administration of the instrument and thereby to enhance the quality of the data gathered in the main study, thus refining and developing the questionnaire through the identification of issues, ideas and approaches that were not foreseen prior to the pilot.

3. To permit a check on statistical characteristics of each scale and analytical procedures and to validate the instrument and determine the reliability of its scales (using Cronbach's alpha coefficient) see Table 4.4 (Cronbach, 1951).
4. To check for ambiguity and lack of clarity in items and to determine that the items were meaningful for the pilot population and thus enhance their face validity (McMillan & Schumacher, 2001).
5. To evaluate the use of a dedicated web site as a means of administering the questionnaire and collecting data.

This pilot study aimed to reduce the number of weak items progressing into the main study and was also a means of examining apparently unproblematic items that produced spurious negatives or positives. Words, layout, administrative practices, including the use of web-based collection of data, a feel for the problem, and sequence of items were all evaluated (Borg & Gall, 1983). During the pilot evaluation respondents were encouraged to think aloud as a means of identifying question defects (Schwarz & Sudman, 1996). Such evaluative techniques clearly allowed the researcher to understand how respondents retrieved information to make a judgement on a particular question. Data gathered from the pilot resulted in scales with known statistical characteristics in each scale.

The sample used in the pilot phase of the study needed to reflect the mix anticipated in the main survey sample. These details are described in the next section.

4.3.1 Sample – pilot phase of questionnaire development

The sample selected for the pilot phase of this study was a representative sub-group of the intended main survey group with similar characteristics to that group (Krathwohl, 1998; McMillan & Schumacher, 2001; Oppenheim, 1992). It was considered inappropriate to test the questionnaire in another diocesan education system as approaches to strategic planning, system processes and instructional leadership have unique dimensions in the Archdiocese of Sydney. The curriculum outcome measures were also specific to the CEO Sydney Annual Archdiocesan Agendas (SACS Board & CEO Sydney, 1998, 1999, 2000a, 2001, 2002b).

The pilot sample consisted of 24 principals (8 from each of the three educational regions) and 8 senior CEO Sydney personnel. There were six primary and two secondary principals from each region. Some authors (McMillan & Schumacher, 2001), suggest that pilot sample size

should be greater than 20 so that an estimate of reliability can be done and to indicate that there is sufficient variability in the answers to investigate various relationships. This pilot sample size met this requirement.

The senior CEO Sydney personnel in this phase consisted of one primary consultant from each region, a secondary consultant from one region, two members of the Religious Education and Curriculum team, one member from Human Resources and one from Financial Services. The sample was selected in similar gender proportions to the main group to be surveyed. There was a slight bias in favour of personnel with some senior experience and some background in research and survey work so that the further refinement of the instrument could draw on this expertise to critique its structure, content and format. The next section presents the response rates for the pilot phase of the questionnaire development.

4.3.2 Response rates- pilot phase of questionnaire development

There was a 94% response rate to the questionnaire developed for the pilot phase with high response rates from primary principals (94%), secondary principals (83%) and CEO personnel (100%). These high response rates were the product of appropriate preliminary and follow up procedures and a highly motivated and sizable sample which had significant interest in the content of the main research question and the study as a whole.

An important part of the development of the questionnaire was the determination of its reliability. In this study this was determined using Cronbach's alpha coefficient as described in the next section of this chapter.

4.3.3 Reliability- pilot phase of questionnaire development

After the pilot phase of the questionnaire the scales were examined with Cronbach's alpha coefficient using SPSS version 11.5 (SPSS, 2002). The scale alpha coefficients were in the range 0.79 to 0.93. Scales are deemed to be reliable when the alpha coefficient exceeds 0.70 (de Vaus, 1995). Thus the scales used in the pilot phase of the questionnaire were deemed to be reliable. Table 4.4 below summarises the results of these analyses as well as some descriptive statistics for the scales in the pilot phase of the study.

Table 4.4 Pilot Scale Statistics – Eight Learning Organization characteristics and three Curriculum Outcome Scales. (N=32)

SCALE NAME	N items in scale	Cronbach alpha	Scale Mean	Scale SD	Mean per Scale item
<i>Learning Organization Characteristics</i>					
Systemic Thinking and Mental Models	10	0.79	39.73	4.25	3.97
Continuous Improvement of Work	11	0.90	45.71	5.50	4.15
Taking Initiatives and Risks	14	0.85	45.29	7.10	3.28
Ongoing Professional Development	11	0.84	39.00	5.88	3.55
Trusting and Collaborative Climate	14	0.93	48.84	9.19	3.48
Shared and Monitored Vision/Mission	9	0.87	33.60	5.24	3.73
Effective Communication Channels	14	0.89	48.09	8.65	3.44
Team Work and Team Learning	9	0.80	29.76	4.50	3.26
<i>Curriculum Outcome Scales</i>					
Religious Education	18	0.80	64.70	7.03	3.60
Literacy	14	0.83	50.05	6.72	3.60
Numeracy	12	0.84	42.67	4.50	3.88

One outcome of this pilot work was to reduce the size of the item pool by statistical means (Oppenheim, 1992). The determination of reliability also examined the influence of individual items within a scale. If a particular item poorly correlated with the sum of the remaining items its removal, from the scale, occurred because it was not consistent with the remaining items. As a result there was an improvement in Cronbach's alpha coefficient for the amended scale (de Vaus, 1995). Therefore those items whose correlations were poor and whose elimination enhanced the alpha coefficient and hence the reliability of a given scale were identified and either rewritten or deleted from the scale, reducing the total number of closed items by 10. The pilot provided a valuable opportunity to further refine the instrument. The approach used in the evaluation of the pilot is described in the next section.

4.3.4 Pilot evaluation

A formal, systematic evaluation of the pilot questionnaire was conducted mainly by telephone with 60% of participants from the pilot. The specific outcomes of this evaluation are presented in Appendix K. The pilot evaluation confirmed that there was a high degree of interest in the questionnaire and that it was a stimulating exercise for the majority of respondents. A significant finding from the pilot debriefing was that respondents stated that they were able to participate in the pilot honestly and openly and were reassured by the steps taken to preserve confidentiality and anonymity. Items were generally rated as clear and unambiguous.

A valuable technique which was used to investigate the influence of item order and context, as well as specific item wording, was to encourage pilot respondents to ‘think out loud’. This technique is a means of examining the psychological sources of survey responses (Bishop, 1992).

The main modifications that followed the pilot evaluation process included:

1. The reduction of the total number of items from 136 to 126.
2. Clarification of the instructions and definitions included in the questionnaire.
3. Strengthening of the option to use a paper-based, written response for respondents who were uncomfortable using a web-based response method.
4. The elimination of items with low correlation coefficients.
5. Refinement of the open-ended questions so that the wording was more closely linked to the major research question.
6. The inclusion of an additional option entitled ‘Can’t make a valid judgement’ for each closed-format item to determine the extent to which respondents lacked knowledge or information on particular items.

In the light of the pilot phase the questionnaire was refined and improved as were aspects of its administration as discussed in the next section.

4.4 VALIDATION DATA – MAIN STUDY

The main study was conducted, over 19 days, in mid-March 2003 and 159 principals and senior CEO personnel were invited to participate. Details of the sample surveyed in the main study were provided in section 3.3. It was decided to invite the pilot group of 32 respondents to also participate in the main study. This was done for a number of reasons including:

1. The pilot exercise was conducted to validate the constructs within the population.
2. The final questionnaire was a refined, improved and changed version of the pilot and thus the issue of a ‘practice’ effect was not applicable given that the final instrument differed from the one used in the pilot.
3. Practical considerations were significant and it was considered important to maintain the sample size given that the study focused on a limited sample of 159 participants (23 senior CEO personnel and 136 principals).

Members of the pilot group were informed that they would be invited to participate in the main questionnaire and did so willingly. The next section describes the response rates for the main questionnaire.

4.4.1 Main study – Response Rates

Low response rates can sometimes be a challenge in closed-format questionnaires but can be improved in targeted, well-educated groups, such as the survey population in this study, as the figures in Table 4.5 indicate (Oppenheim, 1992).

Table 4.5 Overall and group Response Rates Main Study.

Group	Region /Team [^]	Number Surveyed	Number Returned	% Returned	Group % Return
Primary Principals	A	34	30	88.24	91.26
	B	37	33	89.19	
	C	32	31	96.88	
Secondary Principals	A	9	8	88.89	84.85
	B	11	10	90.91	
	C	13	10	76.92	
Senior CEO personnel Regional	A	3	3	100	100
	B	4	4	100	
	C	4	4	100	
Senior CEO personnel Central (Leichhardt)	D	6	6	100	91.76
	E	4	4	100	
	F	2	1	50	
Total		159	144	90.57	

[^]Regions (A, B, C) and Teams within Central CEO Leichhardt (D, E, F) identified by letters

The response rates for the main study were high and very similar to the pilot study. The overall rate was 90.57% made up of primary principals (91.26%), secondary principals (84.85%), and senior CEO personnel (95.65%). These response rates were a product of a number of factors including careful preplanning, strong administrative processes and support, server reliability, appropriate follow up procedures, and discretionary extension of time for completion of the questionnaire for those who needed it. Reminders (e.g. see Appendix H), were provided as part of the administrative procedures of the questionnaire.

The validity and reliability were critical considerations for the main questionnaire and are discussed in the next section.

4.4.2 Main study - Validity and Reliability

It is far easier to establish the reliability of an instrument than it is to establish its validity (Borg & Gall, 1983). This study carefully considered scale reliability, to ensure there was a measure of internal consistency in the set of scale items, and that there was purity and consistency of the measure. Scale reliability refers to the probability of obtaining the same results again if the measure was duplicated (Oppenheim, 1992). Scale Reliability was established in this study, as mentioned in section 4.3, using the internal scale consistency method usually associated with Cronbach's alpha coefficient (Cronbach, 1951). This is a commonly used instrument (Fraser 1986) which was useful in this study where items were not scored dichotomously. This method, which relies heavily on classical scaling theory, yields a measure in the form of a correlation coefficient (Oppenheim 1992).

In this study the Cronbach alpha values were all in excess of 0.70 and ranged from 0.79 through to 0.90 as shown in Table 4.6. Thus all the scales used in this study were reliable to an acceptable extent (de Vaus, 1995). If items correlated highly with each other the scale was internally consistent and thus more likely to be measuring the same homogenous variable.

Table 4.6 Scale Validation-Main study (N=144)

Scale Name	N items in scale	Cronbach alpha	Scale Mean	Scale SD	Mean per Scale item
<i>Learning Organization Characteristics</i>					
Systemic Thinking and Mental Models	10	0.79	39.80	4.37	3.98
Continuous Improvement of Work	11	0.87	45.62	5.08	4.15
Taking Initiatives and Risks	12	0.90	38.32	7.90	3.19
Ongoing Professional Development	11	0.89	40.03	6.30	3.64
Trusting and Collaborative Climate	13	0.90	45.17	8.00	3.47
Shared and Monitored Vision/Mission	9	0.85	35.67	4.40	3.96
Effective Communication Channels	13	0.82	46.17	6.56	3.55
Team Work and Team Learning	9	0.84	30.64	5.30	3.40
<i>Curriculum Outcome Scales</i>					
Religious Education	13	0.82	49.35	6.16	3.80
Literacy	13	0.88	49.88	7.20	3.84
Numeracy	12	0.89	43.89	6.85	3.66

The main difficulty in assessing the validity of attitude questions in this research was the lack of criteria. Criterion groups, people with known attitudes who can form a benchmark, are notoriously hard to find (Oppenheim, 1992). The instrument used for this study had no precedents and was developed specifically for the study. As such, its validity could not be cross-referenced or trialed against existing constructs.

As with most abstract phenomena, assessments of validity must be indirect and, in this study, the face validity of the scales, whereby the researcher made a subjective judgement as to what the questionnaire measures, was an important process (Wiseman & Aron, 1970). As well, content validity aimed to have a well-balanced sample of the content domain to be measured in each scale. Feedback from the expert group during the questionnaire development and following the pilot, described in section 4.2, was significant in this determination. The validity of intuitive-rational scales relies partly on the subjective opinions of the investigators and other experts (Dorman, 1994; Fraser, 1986). Relevance was a significant component of validity determination. In this study there was a significant effort to develop scales that were reliable and that were characterised by content validity.

As the instrument was developed, the aim was to develop conceptually distinct scales. In the concluding section of this chapter the statistical intercorrelations of the scales are examined and discussed.

4.4.3 Main study – Intercorrelations

This study adopted the eight learning organization characteristics as described and justified in chapter two (section 2.4). The eight characteristics were conceptually distinctive and had a sound theoretical basis. Table 4.7 summarises the intercorrelation matrix for the Pearson correlations between each of the eight learning organization characteristics. Table 4.8 summarises the intercorrelation matrix for the three curriculum outcome scales.

There were 28 correlations for the eight learning organization characteristics and if each had been tested for significance at the .05 level then at least one significant result ($28 \times .05$) could have been expected to occur by chance alone, making it difficult to separate the chance effect from real associations. A way to correct for this was to set the test of significance at a more stringent, conservative level using the Bonferroni Inequality (Stevens, 2002). The conservative application of this inequality required the planned Type I error for each of the 28 analyses to be set at the family-wise level divided by the number of analyses (i.e. $.05/28 = .002$) (Dorman, 1994). Thus the significance level was adjusted accordingly.

Table 4.7 Intercorrelation matrix for eight learning organization characteristics using Pearson correlations

Learning Organization Characteristics	1	2	3	4	5	6	7	8
1. Systemic Thinking and Mental Models	-							
2. Continuous Improvement of Work	.72*	-						
3. Taking Initiatives and Risks	.60*	.72*	-					
4. Ongoing Professional Development	.55*	.71*	.75*	-				
5. Trusting and Collaborative Climate	.54*	.62*	.80*	.73*	-			
6. Shared and Monitored Vision/Mission	.53*	.55*	.53*	.59*	.59*	-		
7. Effective Communication Channels	.66*	.71*	.71*	.73*	.80*	.53*	-	
8. Team Work and Team Learning	.56*	.67*	.70*	.71*	.76*	.55*	.75*	-

* $p < .002$

Table 4.8 Intercorrelation matrix for the three curriculum outcome scales using Pearson correlations

<i>Curriculum Outcome Scales</i>	Religious Education	Literacy	Numeracy
Religious Education	-		
Literacy	.44*	-	
Numeracy	.02	.58*	-

* $p < .01$

These data indicated a moderate correlation among the eight learning organization scales ranging from 0.53 for ‘Shared and Monitored Vision/Mission’ with ‘Effective Communication Channels’ (with 28% of their variance in common) through to 0.80 for ‘Taking Initiatives and Risks’ with ‘Trusting and Collaborative Climate’ (with 64% of their variance in common). A similar conclusion is drawn for the curriculum outcome scales. These data suggested that there is some statistical overlap in the scales and what they measure. However, because of the clear conceptual distinctiveness of the learning organization characteristics and the curriculum outcome scales, it was considered appropriate to maintain the distinct scales.

4.5 CHAPTER SUMMARY

In this chapter the development and validation of the instrument was described including the reliance on the intuitive-rational approach to instrument and scale development. Included were the criteria for the development of the instrument and the justification for the use of closed-format, 5 point Likert scale items complemented by two qualitative, open-ended items.

Details of the validation of the instrument through a pilot phase with discussion of instrument reliability were also presented. Validation data for the main study was also described in detail and included response rates, reliability and intercorrelations.

In the next chapter the results of the analysis of the quantitative and qualitative data gathered through the survey are presented.

CHAPTER 5

PRESENTATION OF RESULTS OF QUANTITATIVE AND QUALITATIVE DATA ANALYSIS

5.1 INTRODUCTION

This chapter reports the results of the quantitative and qualitative data gathered through the questionnaire. The CEO Sydney as a learning organization is examined using the eight characteristics identified for this study. Both quantitative and qualitative data are presented on each characteristic as well as demographic group data. Associations between the learning organization characteristics and the curriculum outcome scales (religious education, literacy and numeracy) are reported in terms of correlational data, supplemented by qualitative data. The chapter is therefore organized around answering the three key sub-questions that underpin this study as presented in section 1.5.

Statistical analyses for this study were conducted using the Statistical Package for the Social Sciences (SPSS) version 11.5 (SPSS, 2002). There were a number of approaches to the statistical information and analysis of data that were relevant to the research and these are presented in Section 5.1.1.

5.1.1 Overview- Statistical approaches, information and data

This section includes the relevant statistical approaches, information and data that applied across the whole study. Table 5.1 provides a comprehensive summary of the statistical data gathered.

Table 5.1 – Overview Statistics for the eight Learning Organization Characteristics and the three Curriculum Outcome Scales

Scale Number	Scale Name	N of items	Scale Mean	Scale Median	Scale S.D.	Scale Range	N Valid	N Missing	Skewness	Scale Mean per item ^a	Rank ^b
<i>Learning Organization Characteristics</i>											
1	Systemic Thinking and Mental Models	10	39.79	40.00	4.37	22.00	117	27	-0.42	3.98	2
2	Continuous Improvement of Work	11	45.62	46.00	5.08	25.00	121	23	-0.42	4.15	1
3	Taking Initiatives and Risks	12	38.32	40.00	7.90	41.00	82	62	-0.62*	3.19	8
4	Ongoing Professional Development	11	40.03	41.00	6.30	32.00	106	38	-0.49	3.64	4
5	Trusting and Collaborative Climate	13	45.17	47.00	8.00	36.00	86	58	-0.48	3.47	6
6	Shared and Monitored Vision/Mission	9	35.67	36.00	4.40	20.00	81	63	-0.21	3.96	3
7	Effective Communication Channels	13	46.17	48.00	6.56	31.00	83	61	-0.81*	3.55	5
8	Team Work and Team Learning	9	30.64	31.00	5.30	26.00	78	66	-0.03	3.40	7
<i>Curriculum Outcome Scales</i>											
	Religious Education	13	49.35	49.00	6.16	32.00	88	56	-0.10	3.80	2
	Literacy	13	49.88	51.00	7.20	38.00	67	77	-0.80*	3.84	1
	Numeracy	12	43.89	46.00	6.85	36.00	63	81	-0.73*	3.66	3

* $p < .05$

a Scale mean divided by number of items.

b Note the Rank is based on Scale mean per item and ranks the Learning Organization Characteristics separately from the Curriculum Outcome Scales

Some of the relevant statistical approaches that applied across the whole study are summarised below:

1. The level of significance for statistical tests was set at .05 with the Bonferroni Inequality employed where multiple tests of significance were conducted (Stevens, 2002).
2. In this study all skewness measures were negative which meant that the distribution of variable scores peaked to the right (Krathwohl, 1998; McMillan & Schumacher, 2001). Of the 11 scales, four had statistically significant skewness ($p < .05$), which meant that they significantly departed from normality. These were, 'Taking Initiatives and Risks', 'Effective Communication Channels' and the two curriculum outcomes of 'Literacy' and 'Numeracy' (Table 5.1). In these cases the median was an effective measure of central tendency.
3. Throughout the statistical analysis, as described in section 4.2.4, a five-point scale was adopted with 5 points allocated for 'Strongly Agree', 4 points for 'Agree', 3 points for 'Neutral Opinion', 2 points for 'Disagree' and 1 point for 'Strongly Disagree'.
4. In this study, if a respondent selected 'can't make a valid judgement' or 'unanswered', their responses were categorised as 'missing' values for the statistical calculations in SPSS version 11.5 (SPSS, 2002). The system assignment of a missing value was the approach adopted in this study and missing values were excluded from the statistical calculations for each scale. 'N valid' in Table 5.1 refers to the number of respondents who did not use any missing values in a given scale whilst 'N missing' records how many did. There are two ways to handle missing values in SPSS. The first way, adopted in this study, is to assign a system-missing value whereby a period is assigned when no value is entered for a numeric variable. The second approach, referred to as user-missing values, assigns values that identify missing data, if the researcher knows why it is missing, and then flags this as missing for calculation purposes (SPSS, 2002). This approach was not used because tracing reasons for missing responses would jeopardize the confidentiality/anonymity dimensions of this study. Although the system assignment of a missing value, has reduced the number of respondents for some scales, (e.g. 'Team Work and Team Learning'), it is in accordance with accepted procedures in SPSS (SPSS, 2002).
5. It is noteworthy that even though the two open-ended questions were at the end of the questionnaire the response rate was high, with 110 (76%) respondents answering question one, to varying degrees and 113 respondents (78%) answering question two to varying degrees.

The first open-ended question was:

From your experience in the Sydney Catholic School system comment on those learning organization characteristics of the CEO which have the greatest impact on schools.

An analysis was carried out on the 110 responses to this first question. The analysis grouped respondents into three groups (i) primary principals, (ii) secondary principals and (iii) senior CEO Sydney personnel. Responses were analysed and then categorized into one of the eight learning organization characteristics. Some verbatim comments are used in the data presentation that follows. A summary of the response pattern to open-ended question one is presented in Appendix L.

The second open-ended question was:

In what ways can the CEO better support the raising of standards in schools?

Respondents were encouraged to answer this question in the context of the learning organization definition adopted for this study. An analysis was carried out on the 113 responses to the second open-ended question. The analysis divided responses into three groups (i) primary principals (ii) secondary principals and (iii) senior CEO Sydney personnel. The responses were then analysed and categorized under the eight learning organization characteristics. A summary of the response pattern to open-ended question two is presented in Appendix L. Some verbatim comments from the second open-ended question helped contextualize the quantitative data presented in section 5.4.7.

6. From the graphical representation below there are three broadly defined groupings of the scale mean per item and therefore, for the purpose of systematising this discussion the following descriptors were used throughout this chapter and the subsequent discussion of results in chapter six:

Strongly supported	-	Scale mean per item > 3.8
Moderately supported	-	Scale Mean per scale item 3.3 – 3.8
Weakly supported	-	Scale mean per item < 3.3

These three categories were devised for the purpose of description and have no statistical basis.

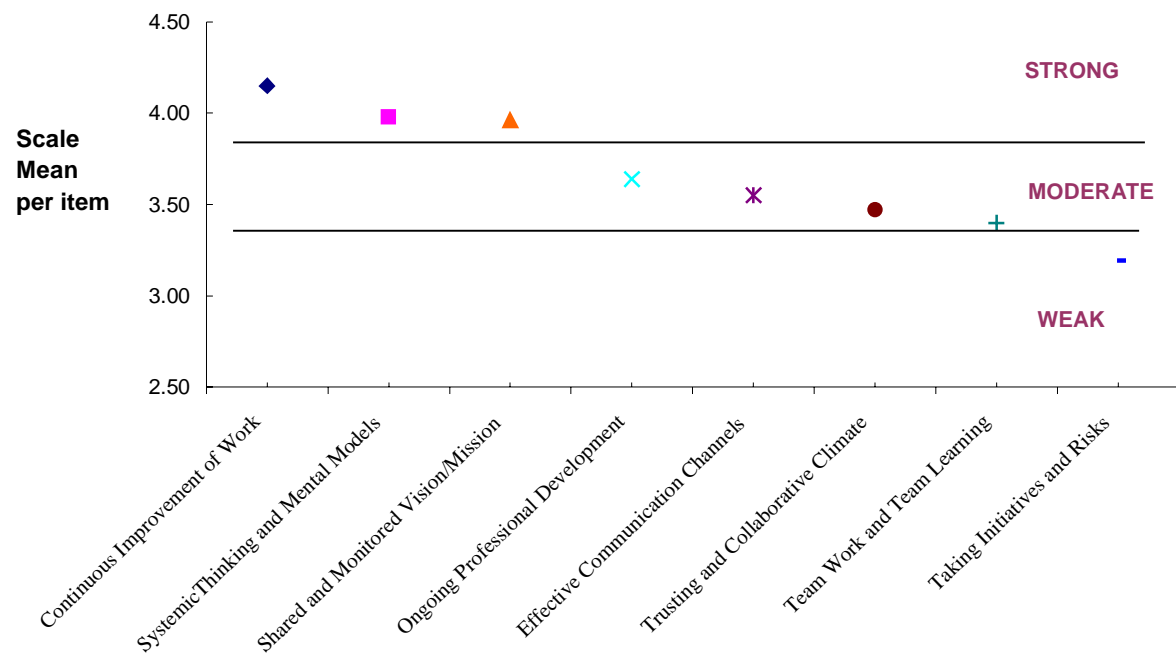


Figure 5.1- Mean per scale item - Graphical representation

5.2 IDENTIFICATION OF LEARNING ORGANIZATION CHARACTERISTICS

The data presented in this section of the chapter addresses the first sub-question (section 1.5) in this study namely: What characteristics of a learning organization can be identified in the Catholic Education Office (CEO) Sydney?

5.2.1 Characteristic 1 – ‘Systemic Thinking and Mental Models’

This characteristic of a learning organization relates to the fact that when members of an organization more fully understand the whole organizational structure they can create better links and learn (section 2.4.1). This is enhanced when a person’s view of the world (their mental models) are easily and willingly shared. Table 5.2 presents the item-by-item raw data for this first characteristic and includes the percentage of responses in each category in brackets.

Table 5.2 Responses for Characteristic 1: ‘Systemic Thinking and Mental Models’-Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
1	Principals have a clear understanding of the Strategic Management Cycle used by the CEO.	0 (0.0)	2 (1.4)	0 (0.0)	64 (44.4)	75 (52.1)	1 (0.7)	2 (1.4)
2	The respective roles and responsibilities of central and regional directorates/offices within the CEO are clear.	1 (0.7)	14 (9.7)	5 (3.5)	85 (59.0)	36 (25.0)	1 (0.7)	2 (1.4)
3	Strategic Management practices encouraged by the CEO help schools address their annual priorities.	0 (0.0)	3 (2.1)	6 (4.2)	76 (52.8)	57 (39.6)	0 (0.0)	2 (1.4)
4	The CEO helps link Catholic schools together.	0 (0.0)	11 (7.6)	12 (8.3)	72 (50.0)	47 (32.6)	0 (0.0)	2 (1.4)
5	The CEO develops in principals an understanding of how the school system and the external agencies relate to each other.	0 (0.0)	19 (13.2)	10 (6.9)	87 (60.4)	22 (15.3)	2 (1.4)	4 (2.8)
6	The interrelationship between the school and the CEO is understood by principals.	0 (0.0)	3 (2.1)	1 (0.7)	90 (62.5)	47 (32.6)	1 (0.7)	2 (1.4)
7	There is adequate consultation with principals on the development of the Annual Archdiocesan Agenda.	10 (6.9)	65 (45.1)	26 (18.1)	27 (18.8)	2 (1.4)	0 (0.0)	14 (9.7)
8	The CEO is effective in addressing long-term, systemic challenges confronting the Catholic school system in Sydney.	0 (0.0)	11 (7.6)	15 (10.4)	89 (61.8)	26 (18.1)	1 (0.7)	2 (1.4)
9	CEO induction programs for principals help participants understand the broad context within which the Catholic school system operates.	0 (0.0)	2 (1.4)	11 (7.6)	93 (64.6)	31 (21.5)	0 (0.0)	7 (4.9)
10	There is a broad understanding among principals of the CEO’s structure, processes and systems and how they are interrelated.	0 (0.0)	8 (5.6)	3 (2.1)	105 (72.9)	25 (17.4)	0 (0.0)	3 (2.1)
Totals		11 (0.8)	138 (9.6)	89 (6.2)	788 (54.7)	368 (25.5)	6 (0.4)	40 (2.8)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA = Unanswered, CMVJ = Can’t make a valid judgement.

The distribution of the responses for this scale is illustrated in Figure 5.2 and shows that the majority of respondents (80.2%) either strongly agreed or agreed with the items in this scale, whilst 6.2 % were of a neutral opinion and 10.4% strongly disagreed or disagreed. The percentage ‘unanswered’ was 0.4% and ‘can’t make a valid judgement’ was 2.8%.

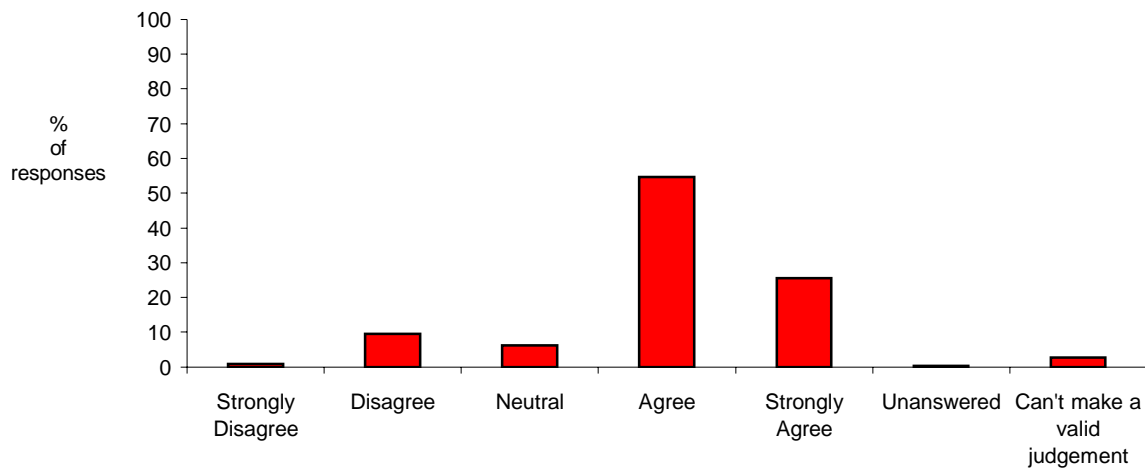


Figure 5.2 Descriptive Statistics – ‘Systemic Thinking and Mental Models’

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144)

Seven items (items 1, 2, 3, 4, 6, 9,10) had a mean score of 4.00 or more. Only one other scale (Characteristic two - ‘Continuous Improvement of Work’) had a greater proportion of items with a mean over 4.00. These seven items related to clarity of understanding of the CEO Sydney strategic management cycle, clarity of roles and responsibilities between central and regional offices in the CEO Sydney, the value of strategic management practices for addressing school annual priorities, the role of the CEO Sydney in linking schools together, the clarity of understanding by principals of the CEO Sydney / school interrelationships, the value of principal induction in developing a clear understanding of the context within which the Catholic school system operates and a breadth of understanding of CEO Sydney structure, processes and systems and their interrelationships.

It is noteworthy that item 7, which relates to the adequacy of consultation with principals on the Annual Archdiocesan Agenda (e.g. SACS Board & CEO, Sydney, 2002b), is the only item in this scale whose mean is below 3.00. It is one of 10 items in Part B (88 items) of the questionnaire with a mean below 3.00. This could relate to items in other scales (e.g. item 78) where communication and collaboration have not been perceived strongly by respondents or it may indicate that respondents don’t have enough data or knowledge given the significant number of respondents who cannot make a valid judgement on the item.

The 10 items in this scale had a mean of 39.79 (or 3.98 per item) and this ranked this scale as the second most strongly supported scale relating to learning organization characteristics in the CEO Sydney (Table 5.1). The scale standard deviation of 4.37 was the lowest of any scale in Part B and indicated that responses were relatively tightly clustered by comparison

with other scales. These data suggested that a significant majority of respondents perceived that ‘Systemic Thinking and Mental Models’, as defined for this study, and as determined by the 10 items in this scale, was a characteristic that was strongly supported and could be identified in the CEO Sydney.

Data from the open-ended question – ‘Systemic Thinking and Mental Models’

This qualitative data was gathered simply to contextualise and humanise the quantitative data and therefore was not subject to extensive analysis. The user Id numbers associated with each comment are the identifiers allocated to each respondent at the beginning of the study (section 3.9.3). They are included to demonstrate that the comments represent a broad cross section of respondents.

In the first open-ended question, 53 of the 110 respondents (48%) identified ‘Systemic Thinking and Mental Models’ as one of the learning organization characteristics that had a great impact on schools. A number of respondents highlighted the value of the system’s systemic thinking and planning as a means of linking schools with the CEO Sydney. The responses below are indicative of this:

The more connected and contextualised we can be as an organization the more school personnel will demonstrate support and become involved in the initiatives.

Primary Principal, User Id 27

The use of the Strategic Management Plan and the process involved is not only a powerful tool of organization but also assists all who participate in linking their role in the organization and at the same time gives a glimpse of the bigger picture.

Primary Principal, User Id 105

I feel that principals are very much encouraged to be part of the whole system of schools in the Archdiocese (characteristic one).

Primary Principal, User Id 34

Systemic thinking and mental models – this is well entrenched within the Archdiocese and allows for a uniform approach and common understandings.

Primary Principal, User Id 91

There was support for the strategic management practices adopted and modeled by the CEO Sydney as the following illustrate:

The CEO Strategic Management Plan is an excellent model for system management and if implemented effectively should be a good platform for promoting growth in knowledge and therefore the effectiveness of schools.

CEO Personnel, User Id 7

Systemic thinking and mental models.... we do this well... we have a close understanding of the process for development and the challenges in education and we communicate clearly within the system around these issues.

Secondary Principal, User Id 146

Strategic planning processes and accountability processes are highly developed in the Sydney Archdiocese and have had a very real impact on the general professionalism of principalship and educational practice in our schools.

Secondary Principal, User Id 63

A number of respondents affirmed the value of system processes like the Educational Audit and School Review and Development in relationship to this characteristic:

Education Audit has greatest impact.

Secondary Principal, User Id 152

The system processes of School Review and Development and Educational Audit have impacted very positively on learning outcomes and strategic planning and development in schools.

Primary Principal, User Id 75

5.2.2 Characteristic 2 – ‘Continuous Improvement of Work’

This characteristic refers to the learning organization exerting a ‘pressure’ for improving its effectiveness through review, adaptation and refinement of practice and monitoring performance (section 2.4.2). Table 5.3 presents the item-by-item raw data for this characteristic and includes the percentage of responses in each category in brackets.

The distribution of responses for this scale is illustrated in Figure 5.3 and indicates that the great majority of respondents (86.6%) either strongly agreed or agreed with the items in this scale whilst 6.1% were of a neutral opinion and 5.2% strongly disagreed/disagreed. The percentage ‘unanswered’ was 0.4% and 1.7% were ‘can’t make a valid judgement’.

Table 5.3 Responses for Characteristic 2: ‘Continuous Improvement of Work’-Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
11	The CEO is committed to improving its own effectiveness.	0 (0.0)	2 (1.4)	10 (6.9)	93 (64.6)	39 (27.1)	0 (0.0)	0 (0.0)
12	The CEO is focused on improving the quality of Catholic education provided in the schools	0 (0.0)	1 (0.7)	5 (3.5)	62 (43.1)	76 (52.8)	0 (0.0)	0 (0.0)
13	The CEO regularly evaluates the effectiveness of its services with a view to improving them.	2 (1.4)	8 (5.6)	9 (6.3)	91 (63.2)	22 (15.3)	1 (0.7)	11 (7.6)
14	The CEO seeks feedback from principals so that it can improve its performance	5 (3.5)	34 (23.6)	23 (16.0)	67 (46.5)	9 (6.3)	1 (0.7)	5 (3.5)
15	The Educational Audit is a system process that supports the improvement of teaching programs in schools	0 (0.0)	4 (2.8)	2 (1.4)	77 (53.5)	60 (41.7)	0 (0.0)	1 (0.7)
16	School Review and Development has encouraged schools to become more active in their own self-review.	0 (0.0)	1 (0.7)	4 (2.8)	79 (54.9)	58 (40.3)	1 (0.7)	1 (0.7)
17	School Review and Development encourages school improvement	0 (0.0)	2 (1.4)	5 (3.5)	78 (54.2)	58 (40.3)	1 (0.7)	0 (0.0)
18	The CEO is committed to curriculum development in schools.	0 (0.0)	7 (4.9)	6 (4.2)	81 (56.3)	49 (34.0)	0 (0.0)	1 (0.7)
19	The CEO has a high expectation for school improvement.	0 (0.0)	0 (0.0)	2 (1.4)	69 (47.9)	71 (49.3)	1 (0.7)	1 (0.7)
20	The CEO is effective in challenging schools to perform better	1 (0.7)	10 (6.9)	16 (11.1)	87 (60.4)	23 (16.0)	2 (1.4)	5 (3.5)
21	Strategic Management practices encouraged by the CEO help schools improve the quality of their teaching and learning	0 (0.0)	5 (3.5)	15 (10.4)	95 (66.0)	27 (18.8)	0 (0.0)	2 (1.4)
Totals		8 (0.5)	74 (4.7)	97 (6.1)	879 (55.5)	492 (31.1)	7 (0.4)	27 (1.7)

Note: Percentages are shown in parentheses SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA = Unanswered, CMVJ = Can't make a valid judgement.

There were eight items in this scale with a mean above 4.00. Items 12 and 19 were two of these and had the strongest means in the scale indicating that respondents perceived that the CEO Sydney is focused on improving the quality of Catholic education and that it has high expectations for school improvement.

Also noteworthy were the responses to items 15, 16 and 17 which explicitly referred to the system processes of School Review and Development (SRD) and the Educational Audit. These three items had means above 4.00 and indicated the strong support of respondents for the role system processes play in continuous improvement. The one exception to the trend of high means in this scale was item 14 with a mean of 3.35. This item related to the CEO

Sydney seeking feedback from principals so that the organization could improve its performance.

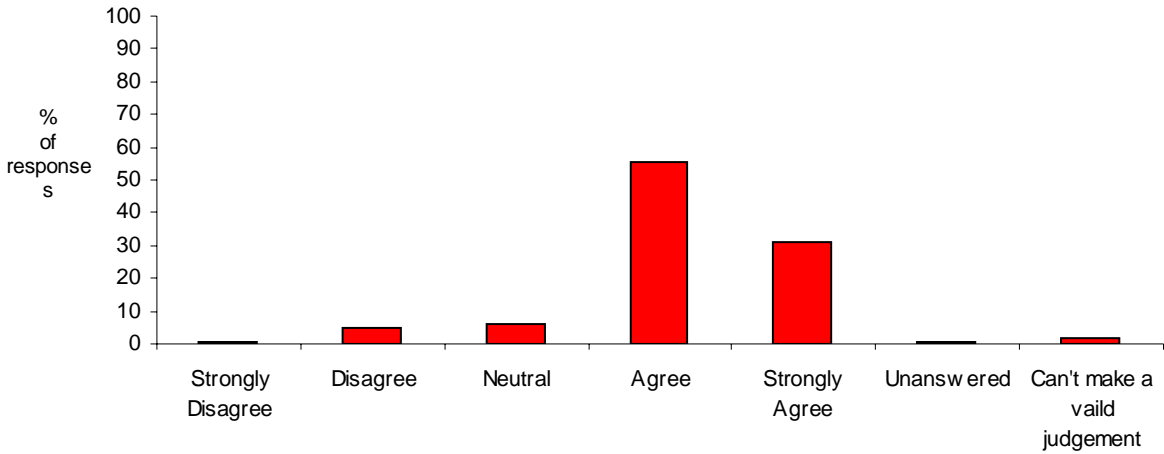


Figure 5.3 Descriptive Statistics – ‘Continuous Improvement of Work’

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144).

The 11 items in this scale have a mean of 45.62 (or 4.15 per item) which ranks this scale as the most strongly supported scale relating to the characteristics of a learning organization in the CEO Sydney (Table 5.1). The standard deviation of 5.08 indicated that responses were relatively tightly clustered. These data suggested that a significant majority of respondents perceived that ‘Continuous Improvement of Work’, as defined for this study, and as determined by the 11 items in this scale, was a characteristic that was strongly supported and could be identified in the CEO Sydney.

Data from the open- ended questions-‘Continuous Improvement of Work’.

In the first open-ended question, 50 of the 110 respondents (45%) identified ‘Continuous Improvement of Work’ as one of the characteristics of the CEO Sydney that has a strong impact on schools. Some captured the significance of this aspect of the work of the CEO Sydney as follows:

The CEO efforts in encouraging continuous improvement has impacted positively on schools and, in my opinion, has raised standards and ensured improved learning outcomes.

Primary Principal, User Id 75

A number of comments linked system processes to the work of the CEO Sydney in continuous improvement as shown in the sample below:

The characteristic of continuous improvement, particularly via SRD, Educational Audit and PPPR processes has had a significant impact on schools as learning organizations. It applies subtle pressure whilst providing a certain degree of freedom for schools.

Primary Principal, User Id 13

The School Review and Development process has gone a long way in changing the culture of school learning. Schools even at the most basic level are learning to critique the quality of education provided by examining their practice and provision of curriculum and are focused on improving learning outcomes for students.

CEO personnel, User Id 149

Some respondents, whilst acknowledging that the ‘Continuous Improvement of Work’ characteristic is a feature of the CEO Sydney, cautioned against a narrowing of educational focus and the potential of such a direction to detract from the core purposes of the Catholic school:

There is also a commitment to continuous improvement but this often has a very narrow focus often around confirming quantitative improvement in literacy, numeracy and Religious Education. There is limited emphasis on promoting quality in curriculum development and helping schools to establish integrated curriculum frameworks.

CEO personnel, User Id 72

Pressure down to constantly improve via processes and structures though worthy in intent and content, becomes burdensome in volume and takes away the core purpose of schools.

Primary Principal, User Id 64

5.2.3 Characteristic 3 - ‘Taking Initiatives and Risks’

This characteristic identifies experimentation, risk taking and flexibility of thinking as important features of a learning organization (section 2.4.3). Table 5.4 presents the item-by-item raw data for this third characteristic and includes the percentage of responses in each category in brackets.

Table 5.4 Responses for Characteristic 3: 'Taking Initiatives and Risks'- Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
22	The CEO is an innovative organization.	4 (2.8)	35 (24.3)	22 (15.3)	70 (48.6)	9 (6.3)	1 (0.7)	3 (2.1)
23	Experimentation is recognised by the CEO as a means of learning.	5 (3.5)	37 (25.7)	40 (27.8)	49 (34.0)	3 (2.1)	1 (0.7)	9 (6.3)
24	The CEO's organizational structure accommodates the changing needs of schools.	3 (2.1)	33 (22.9)	34 (23.6)	60 (41.7)	6 (4.2)	0 (0.0)	8 (5.6)
25	The CEO is concerned more with regulations rather than service	2 (1.4)	30 (20.8)	21 (14.6)	78 (54.2)	9 (6.3)	0 (0.0)	4 (2.8)
26	The CEO initiates change.	2 (1.4)	21 (14.6)	22 (15.3)	91 (63.2)	5 (3.5)	1 (0.7)	2 (1.4)
27	The CEO responds to change	1 (0.7)	12 (8.3)	12 (8.3)	103 (71.5)	10 (6.9)	3 (2.1)	3 (2.1)
28	The CEO tries to anticipate major changes that are likely to occur in education	2 (1.4)	22 (15.3)	11 (7.6)	83 (57.6)	18 (12.5)	3 (2.1)	5 (3.5)
29	This is a school system where it is 'alright to make mistakes'.	5 (3.5)	50 (34.7)	37 (25.7)	43 (29.9)	4 (2.8)	0 (0.0)	5 (3.5)
30	Principals feel that they can take risks in their leadership role.	5 (3.5)	54 (37.5)	33 (22.9)	39 (27.1)	5 (3.5)	1 (0.7)	7 (4.9)
31	The CEO promotes inquiry.	3 (2.1)	32 (22.2)	33 (22.9)	60 (41.7)	5 (3.5)	5 (3.5)	6 (4.2)
32	The Regional CEOs have a high level of influence on decision-making within the system.	1 (0.7)	20 (13.9)	19 (13.2)	54 (37.5)	10 (6.9)	2 (1.4)	38 (26.4)
33	Principals have a high level of influence on decision making within the system.	12 (8.3)	71 (49.3)	24 (16.7)	24 (16.7)	2 (1.4)	0 (0.0)	11 (7.6)
Totals adjusted for negative item 25		52 (3.0)	465 (26.9)	308 (17.8)	706 (40.8)	79 (4.6)	17 (1.0)	101 (5.9)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA = Unanswered, CMVJ = Can't make a valid judgement.

The distribution of raw responses for this scale is illustrated in Figure 5.4 and shows that 45.4% of respondents either strongly agreed or agreed with the items in this scale, whilst 17.8% were of neutral opinion and 29.9% strongly disagreed or disagreed. The percentage 'unanswered' was 1.0% and 5.9% selected, 'can't make a valid judgement', the majority of which were generated in item 32 which indicated that some respondents did not have enough knowledge or information to judge whether the Regional offices of the CEO Sydney had a high level of influence on decision making or not.

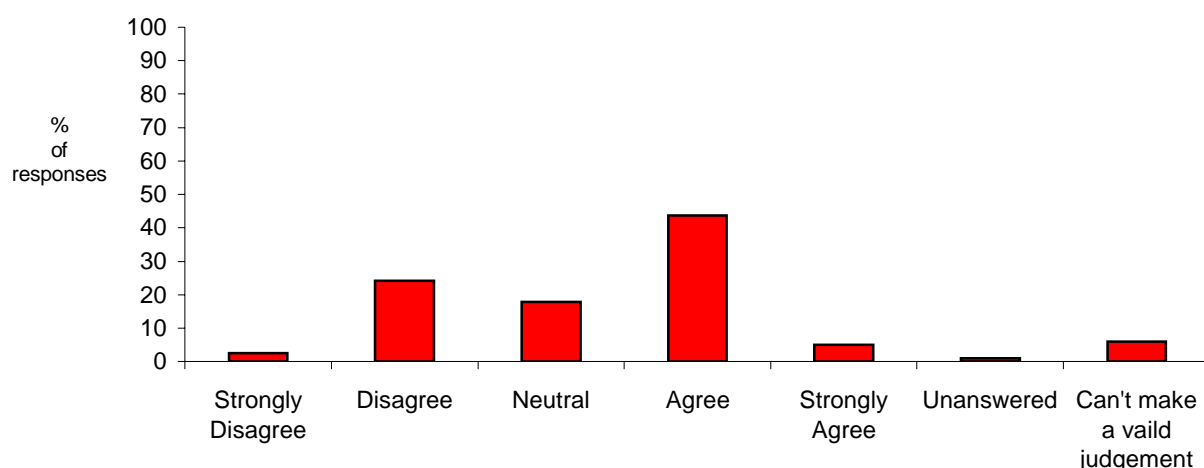


Figure 5.4 Descriptive Statistics—‘Taking Initiatives and Risks’

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144).

There were four items in this characteristic whose mean was below 3.00 (there were ten such items in the whole of Part B of the questionnaire). These items were 23, 29, 30 and 33. Items 23, 29 and 30 indicated that the majority of respondents either strongly disagreed/disagreed or had a neutral opinion on whether experimentation was recognised by the CEO Sydney as a means of learning, whether it was ‘alright to make mistakes’ in the system and whether principals could take risks in their leadership. Item 33 related to the degree of influence principals have on decision making within the system. It was the item with the lowest mean not only in this scale but also in the whole of Part B with 57.6% of respondents either strongly disagreeing/disagreeing with this item. There were no items with means above 4.00 in this scale. Item 25 was a negatively worded item and was reverse scored for statistical purposes.

The 12 items in this scale had a mean of 38.32 (or 3.19 per item) which ranked this scale as the least supported learning organization scale (Table 5.1). The standard deviation of 7.90 and a range of 41 indicated that by comparison with other scales in Part B this scale had scores that were more dispersed. These data suggested that ‘Taking Initiatives and Risks’, as defined for this study, and as determined by the 12 items in this scale was the least and most weakly supported of all scales in this survey.

Data from the open-ended questions relating to ‘Taking Initiatives and Risks’

In the first open-ended question, six of the 110 respondents (5.3%) identified ‘Taking Initiatives and Risks’ as one of the learning organization characteristics of the CEO Sydney that was significant for schools. One primary principal referred to the use of greater local discretionary funding in recent years as a means of facilitating school level innovation:

Over recent years, there has been a lot more freedom for schools to try new initiatives and funding has been provided to support these.

Primary Principal, User Id 129

Consistent with the questionnaire data a number of comments on this characteristic indicated that the CEO Sydney was not encouraging of innovation or risk taking including the following:

Generally speaking new and expansive patterns of thinking are not nurtured. At times the emphasis on measurable test results appears to drive the agenda. This means there are short-term improvement gains but little emphasis on changing entrenched mental models. There is a sense that you’re only as good as your last test results.

CEO personnel, User Id 28

The system does not encourage experimentation and this means that it does not encourage creative solutions/challenging of old assumptions that hamper goal achievement...it does not trust schools to make good decisions...subsidiarity needs to be made real.

Secondary Principal, User Id 146

My experience here is that the bureaucratic structure and aspects of the culture of the organization work against flexibility and risk taking.

Primary Principal, User Id 132

5.2.4 Characteristic 4- ‘Ongoing Professional Development’

‘Ongoing Professional Development’ characterises the learning organization as having a strong commitment to the professional development of all its personnel. The professional development offered needs to be relevant, challenging and to nurture creative learning skills (section 2.4.4). Table 5.5 presents the item-by-item raw data for this characteristic and includes the percentage of responses in each category in brackets.

Table 5.5 Responses for Characteristic 4: ‘Ongoing Professional Development’- Raw data and percentages.

Item No	Item	SD	D	N/O	A	SA	UA	CMVJ
34	Professional development is carried out systematically by the CEO	0 (0.0)	15 (10.4)	10 (6.9)	99 (68.8)	17 (11.8)	1 (0.7)	2 (1.4)
35	The professional development of school staffs is a priority for the CEO.	0 (0.0)	13 (9.0)	14 (9.7)	93 (64.6)	21 (14.6)	2 (1.4)	1 (0.7)
36	The professional development offered by the CEO is closely tied to real school needs.	3 (2.1)	18 (12.5)	31 (21.5)	79 (54.9)	12 (8.3)	1 (0.7)	0 (0.0)
37	Ongoing professional development for principals has been encouraged by the CEO	1 (0.7)	9 (6.3)	9 (6.3)	95 (66.0)	26 (18.1)	1 (0.7)	3 (2.1)
38	The professional development offered by the CEO encourages creativity	4 (2.8)	50 (34.7)	46 (31.9)	28 (19.4)	2 (1.4)	3 (2.1)	11 (7.6)
39	Professional development offered by the CEO encourages the sharing of good practice between schools.	1 (0.7)	32 (22.2)	18 (12.5)	78 (54.2)	10 (6.9)	2 (1.4)	3 (2.1)
40	Professional development offered by the CEO for teachers supports better classroom practice	0 (0.0)	3 (2.1)	10 (6.9)	105 (72.9)	23 (16.0)	0 (0.0)	3 (2.1)
41	The CEO has created a climate of continuous professional improvement across the school system	0 (0.0)	11 (7.6)	16 (11.1)	87 (60.4)	25 (17.4)	3 (2.1)	2 (1.4)
42	The CEO makes good use of external personnel and sources in the provision of professional development.	1 (0.7)	36 (25.0)	35 (24.3)	54 (37.5)	6 (4.2)	1 (0.7)	11 (7.6)
43	The CEO develops professional development programs that respond to system performance in standardised tests (e.g. Basic Skills Test (BST), English Language and Literacy Assessment (ELLA)).	1 (0.7)	15 (10.4)	15 (10.4)	91 (63.2)	16 (11.1)	1 (0.7)	5 (3.5)
44	The CEO communicates effectively with principals about their professional development needs	4 (2.8)	34 (23.6)	26 (18.1)	67 (46.5)	4 (2.8)	3 (2.1)	6 (4.2)
Totals		15 (1.0)	236 (14.9)	230 (14.5)	876 (55.3)	162 (10.2)	18 (1.1)	47 (3.0)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA=Unanswered, CMVJ = Can’t make a valid judgement.

The distribution of the responses for this scale is illustrated in Figure 5.5 and shows that 65.5% of respondents either strongly agreed or agreed with the items in this scale, whilst 14.5% were of a neutral opinion and 15.9% of respondents either strongly disagreed or disagreed. The percentage ‘unanswered’ was 1.1% and ‘can’t make a valid judgement’ was 3.0%.

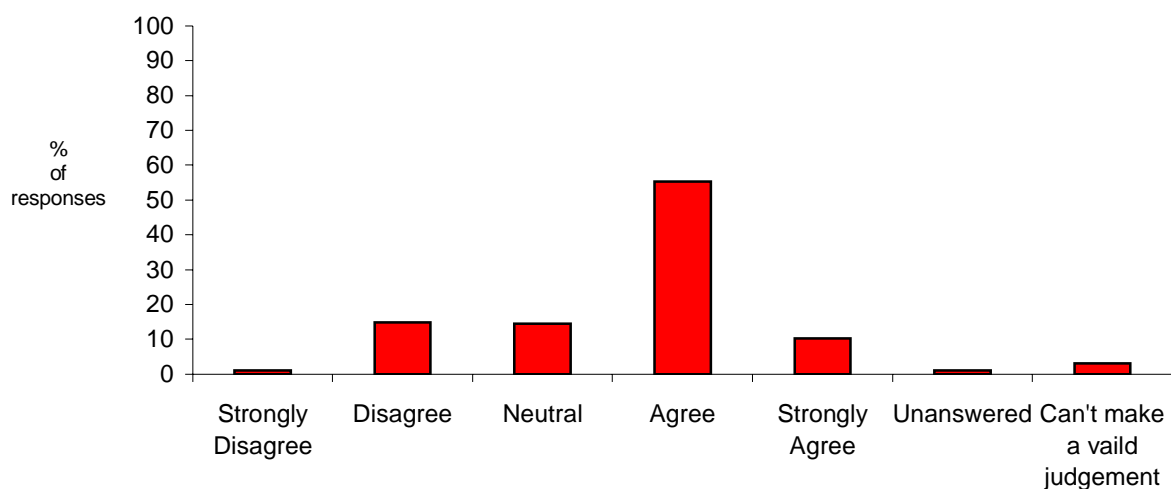


Figure 5.5 Descriptive Statistics - 'Ongoing Professional Development'

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144).

Items 37 and 40 had a mean above 4.00 and suggested high support for the CEO Sydney encouragement of ongoing professional development of principals and that the professional development offered by the CEO Sydney was strongly perceived to impact on classroom practice. Item 42 also had a low mean and related to the CEO Sydney use of external personnel and resources in the provision of professional development.

Item 38 was the only item with a mean below 3.00 in this scale. It related to the professional development offered by the CEO Sydney and its encouragement of creativity. This result is consistent with the weakly supported perception of 'Taking Initiatives and Risks' as reported in section 5.2.3.

The 11 items in this scale had a mean of 40.03 (or 3.64 per item) and ranked this scale as the fourth most strongly supported (Table 5.1). The standard deviation of 6.30 indicated that the scores were more broadly distributed relative to other scales. These data indicated that 'Ongoing Professional Development', as defined for this study and determined by these scale items, was perceived to be a characteristic that was moderately supported and identified in the CEO Sydney.

Data from open-ended questions – ‘Ongoing Professional Development’

In the first open-ended question, 57 of the 110 respondents (52%) identified ‘Ongoing Professional Development’ as one of the learning organization characteristics of the CEO Sydney that was important for schools. This was the strongest support for any characteristic in this open-ended question. The following quotes illustrate general support for specific programs and the significance of the sound professional development being offered:

The best learning process the CEO has provided, was the Early Literacy training for teachers. It was effective because grade groups of teachers were inservice. All heard the same message at the same time and had about five days inservice over the year to trial things and discuss ways of putting into practice what they had learnt.

Primary Principal, User Id 167

The professional development has always been relevant, appropriately challenging, and allowing for creativity. As a leader now, I see this characteristic of the CEO as having a critical impact on all aspects of our schools and CEO management as effective learning organizations.

Primary Principal, User Id 33

Some comments suggested that a broad approach to professional development is valued and that the CEO Sydney has adapted some of its programs accordingly:

There has always been a strong emphasis from the system to support professional development and to explore a variety of models for this to take place.

Primary Principal, User Id 129

The characteristics of the CEO that bring about most significant educational change and improvement happen when the sharing of best practice is facilitated by colleagues within and outside our system and when the value of professional learning support groups are encouraged.

Primary Principal, User Id 16

Some comments related professional development to the specific strategic management and annual development plans in schools:

The support offered in the areas of RE, literacy and numeracy have had a long lasting effect on the schools. Schools are also supported and encouraged to undertake professional development underpinned by their individual Strategic Management Plan and the Annual Development Plan.

CEO personnel, User Id 20

Whilst some comments challenged the CEO Sydney to broaden its approach to professional development:

I believe professional development has been significant, but is limited in what it can achieve in its current forms. The notion of developing people professionally needs to be embraced with a focus on life-long learning and creation of new knowledge rather than Professional Development as a product given to individuals which leads to changed practice.

CEO personnel, User Id 58

5.2.5 Characteristic 5 – ‘Trusting and Collaborative Climate’

This characteristic of a learning organization refers to an organizational climate that encourages dialogue, openness and trust, tolerance, shared decision-making and the empowerment of teams and individuals (section 2.4.5).

Table 5.6 presents the item-by-item raw data for this characteristic and includes the percentage of responses in each category in brackets.

Table 5.6 Responses for Characteristic 5: ‘Trusting and Collaborative Climate’-Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
45	There is mutual trust between principals and the CEO.	1 (0.7)	26 (18.1)	20 (13.9)	80 (55.6)	9 (6.3)	0 (0.0)	8 (5.6)
46	The CEO is responsive to good ideas from schools.	1 (0.7)	22 (15.3)	26 (18.1)	77 (53.5)	9 (6.3)	2 (1.4)	7 (4.9)
47	The CEO exerts too much influence on decision making at school level.	5 (3.5)	31 (21.5)	29 (20.1)	67 (46.5)	4 (2.8)	1 (0.7)	7 (4.9)
48	The CEO values diversity of opinion.	6 (4.2)	50 (34.7)	34 (23.6)	36 (25.0)	5 (3.5)	1 (0.7)	12 (8.3)
49	Principals have the opportunity to participate in significant system-level policy development.	4 (2.8)	56 (38.9)	26 (18.1)	41 (28.5)	3 (2.1)	0 (0.0)	14 (9.7)
50	Sensitive issues can be raised for discussion with the CEO.	5 (3.5)	25 (17.4)	20 (13.9)	79 (54.9)	7 (4.9)	2 (1.4)	6 (4.2)
51	CEO structures encourage collaboration.	3 (2.1)	27 (18.8)	30 (20.8)	69 (47.9)	8 (5.6)	1 (0.7)	6 (4.2)
52	Principals are valued by the CEO.	2 (1.4)	6 (4.2)	10 (6.9)	85 (59.0)	40 (27.8)	0 (0.0)	1 (0.7)
53	CEO intervention is carried out sensitively.	1 (0.7)	9 (6.3)	20 (13.9)	85 (59.0)	14 (9.7)	1 (0.7)	14 (9.7)
54	Decisions in the system are taken at the appropriate level (i.e. the principle of subsidiarity).	4 (2.8)	20 (13.9)	24 (16.7)	81 (56.3)	6 (4.2)	1 (0.7)	8 (5.6)
55	The individual needs of principals or senior members of the CEO are served by the organizational structure of the CEO.	1 (0.7)	26 (18.1)	31 (21.5)	60 (41.7)	9 (6.3)	5 (3.5)	12 (8.3)
56	Participants in CEO professional development are encouraged to share their ideas through dialogue.	0 (0.0)	14 (9.7)	12 (8.3)	95 (66.0)	16 (11.1)	1 (0.7)	6 (4.2)
57	Discussions among colleagues in the system are honest and candid.	7 (4.9)	28 (19.4)	31 (21.5)	59 (41.0)	8 (5.6)	1 (0.7)	10 (6.9)
Totals adjusted for negative item 47		39 (2.1)	376 (20.1)	313 (16.7)	878 (46.9)	139 (7.4)	16 (0.9)	111 (5.9)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA=Unanswered, CMVJ = Can't make a valid judgement.

The distribution of raw responses for this scale is illustrated in Figure 5.6 and indicates that 54.3% of respondents strongly agreed or agreed with the items in this scale, whilst 16.7% were neutral and 22.2% either strongly disagreed or disagreed. The percentage ‘unanswered’ was 0.9% and ‘can’t make a valid judgement’ was 5.9%.

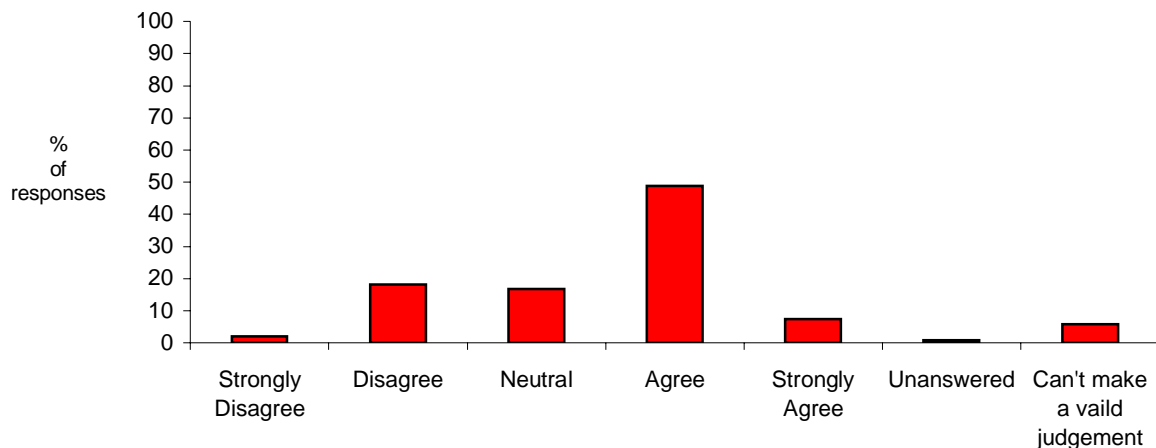


Figure 5.6 Descriptive Statistics – ‘Trusting and Collaborative Climate’

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144).

Item 52, with a mean above 4.0, indicated that respondents perceived the CEO Sydney as valuing principals and item 53, with a mean of 3.86, suggested that the CEO Sydney does intervene sensitively. Item 49 was the only item with a mean below 3.00, indicating that principals did not feel that they exert enough influence on system level policy development. The honesty and openness of discussions among colleagues in the system was another item (57) with a low mean.

The 13 items in this scale had a mean of 45.17 (or 3.47 per item) and this ranked this scale sixth of the eight adopted for the study (Table 5.1). The standard deviation for this scale of 8.00 was the highest of all characteristics and indicated a relatively dispersed group of scores as did the range of 36. These data suggested that a ‘Trusting and Collaborative Climate’ was moderately supported as a learning organization characteristic of the CEO Sydney, as defined for this study and determined by the 13 items in the scale.

Data from open- ended questions – ‘Trusting and Collaborative Climate’

In the first open-ended question, 14 of the 110 respondents (13%) identified the characteristic of a ‘Trusting and Collaborative Climate’ as one of the characteristics of the CEO Sydney that

impacted on schools. The respondent perceptions in this section were divided. Some supportive comments included:

The CEO is an organization with a large degree of trust founded mainly on the association of senior people who are known by many people in schools.

Secondary Principal, User Id 131

The climate and relationship of teachers to CEO has developed significantly. There is a dialogue between CEO and school which is more open.

CEO personnel, User Id 35

Some emphasized the importance of a trusting and collaborative climate as a means of underpinning the expression of other learning organization characteristics:

But characteristic 5 is vital for any of the characteristics to be successful.

Primary Principal, User Id 74

Some responses highlighted the apprehensions and barriers that were perceived in this area:

This area is affected from time to time by a feeling that input to the higher levels of CEO leadership is expected to follow the 'party line' and that dissent from this is not acceptable.

Primary Principal, User Id 132

The climate is not trusting and collaborative. There are few people who risk a contrary view. I do. I do not experience difficulties as a result of this and have been encouraged and supported to explore possibilities. This is not the view of the majority though and there is little trust.

Secondary Principal, User Id 146

I believe that the system suffers from a lack of trust in itself and in its personnel that is reflected in the emphasis and mind set of most of its Professional Development initiatives that certainly do not take risks, do not value the insights of practitioners and find refuge in the weakest of all arguments the 'appeal to authority'.

Secondary Principal, User Id 127

A number of comments, particularly from secondary principals, called for a greater system commitment to the principle of subsidiarity:

The principle of subsidiarity is espoused but not necessarily followed.

Secondary Principal, User Id 18

5.2.6 Characteristic 6 – 'Shared and Monitored Vision/Mission'

This characteristic refers to the fact that a learning organization presents a shared vision and mission which creates commitment and unifies organizational effort thereby providing a clear sense of direction (section 2.4.6).

Table 5.7 presents the item-by-item raw data for this characteristic and includes the percentage of responses in each category in brackets.

Table 5.7 Responses for Characteristic 6: ‘Shared and Monitored Vision/Mission’- Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
58	The system Vision statement (<i>Vision Statement for Catholic Schools SACS Board, 1998, 2002</i>) unites the CEO and schools.	0 (0.0)	3 (2.1)	20 (13.9)	90 (62.5)	28 (19.4)	1 (0.7)	2 (1.4)
59	The system Vision/Mission statement informs the Vision/Mission statement development in schools.	0 (0.0)	1 (0.7)	13 (9.0)	98 (68.1)	29 (20.1)	0 (0.0)	3 (2.1)
60	The system Vision/Mission statement is used in policy development in schools.	0 (0.0)	14 (9.7)	16 (11.1)	87 (60.4)	20 (13.9)	2 (1.4)	5 (3.5)
61	The system Vision encompasses your personal vision for Catholic education.	0 (0.0)	4 (2.8)	10 (6.9)	88 (61.1)	40 (27.8)	2 (1.4)	0 (0.0)
62	The Vision/Mission for the system was established collaboratively.	0 (0.0)	10 (6.9)	21 (14.6)	60 (41.7)	7 (4.0)	3 (2.1)	43 (29.9)
63	Schools and the CEO have a shared sense of direction.	1 (0.7)	8 (5.6)	10 (6.9)	97 (67.4)	22 (15.3)	3 (2.1)	3 (2.1)
64	The CEO monitors the implementation of school Vision/Mission.	1 (0.7)	12 (8.3)	12 (8.3)	94 (65.3)	18 (12.5)	0 (0.0)	7 (4.9)
65	The CEO monitors the school curriculum to ensure that it is aligned with the school Vision/Mission.	1 (0.7)	14 (9.7)	15 (10.4)	97 (67.4)	12 (8.3)	1 (0.7)	4 (2.8)
66	The system Vision/Mission statement is used with the induction of teaching staff in schools.	0 (0.0)	11 (7.6)	9 (6.3)	92 (63.9)	17 (11.8)	1 (0.7)	14 (9.7)
Totals		3 (0.2)	77 (5.9)	126 (9.7)	803 (62.0)	193 (14.9)	13 (1.0)	81 (6.3)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA=Unanswered, CMVJ = Can’t make a valid judgement.

The distribution of raw data for this characteristic is illustrated in Figure 5.7 and shows that 76.9% of respondents strongly agreed/agreed with the items in this scale, 9.7% were neutral and 6.1% strongly disagree/disagree. The percentage ‘unanswered’ was 1.0% and ‘can’t make a valid judgement’ was 6.3%, half of which was derived from item 62 which suggested that some respondents were uncertain about the extent of collaboration involved in the development of the system vision and mission in 1994/1995.

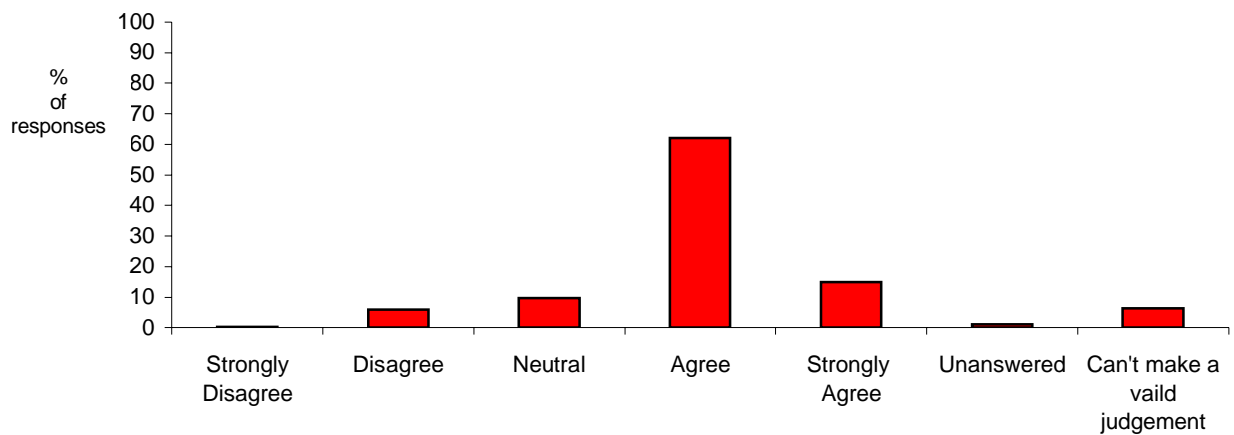


Figure 5.7 Descriptive Statistics – ‘Shared and Monitored Vision/Mission’

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144).

This scale included no items with a mean below 3.00 and four items (items 58, 59, 61, 63) with means of 4.00 or above. These four items related to the power of the system Vision and Mission statements in uniting the CEO Sydney and the schools and generating a shared sense of direction. The system vision and mission has an impact in informing school vision and mission development and suggested that the system vision and mission encompassed the respondents’ personal vision for Catholic education (Item 61).

The nine items in this scale had a mean of 35.67(or 3.96 per item) and ranks this scale as the third most strongly supported learning organization scale (Table 5.1). The small standard deviation of 4.40 and range of 20 indicated that the scores were clustered and not too dispersed. These descriptive data suggested that a ‘Shared and Monitored Vision /Mission’, as defined for this study, and as determined by the nine items in this scale was strongly supported as a learning organization characteristic.

Data from open-ended questions –‘Shared and monitored Vision / Mission’

In the first open-ended question, 44 of the 110 respondents (40%), identified ‘Shared and Monitored Vision/Mission’ as one of the learning organization characteristics of relevance to schools. Some respondents once again linked system strategic management practices to this characteristic whilst others restated the significance of a shared vision/mission:

The Vision for the Archdiocese has provided the vision for individual schools to formalise a mission statement in response to the Archdiocesan Vision and through the process of school review the mission is linked closely to the priorities that have been named at the Archdiocesan level. The clear sense of direction is evident in the development of the schools' annual plans.

CEO personnel, User Id 149

This is the strongest area as CEO and schools share a distinct vision and mission which is articulated and followed by schools and school staff. These are developed in collaboration in strategic planning.

CEO personnel, User Id 35

The value of a shared and monitored vision and mission and its unifying power was articulated as follows:

When the system developed its Vision and Mission and went about articulating this throughout the system in a big way, I believe it really helped bring the system of schools together.

Primary Principal, User Id 13

The CEO makes explicit its vision in the context of a changing social, theological and educational world. It is focused on making this link to the contemporary culture and also explicitly proud to be Catholic. The CEO works hard to share this vision with school leaders.

CEO personnel, User Id 37

The shared vision is the impetus from which the other characteristics flow, particularly the continuous improvement in services available to the students.

Secondary Principal, User Id 137

We have a strong sense of shared vision and mission...this is not delivered by the mission statement but there automatically. I don't refer to the statement, but know we are 'strongly coupled' around this.

Secondary Principal, User Id 146

Having set an overall vision and determined its mission we are 'joined in battle' to our 'head office'. These are clearly delineated and publicly named at every opportunity. Society, in its wildest sense, seems clear as to our reason for being.

Secondary Principal, User Id 18

One respondent linked the shared vision and mission to the general climate in the following terms:

It is the shared vision and mission that has created the present positive climate.

Primary Principal, User Id 140

Another comment linked the shared vision and mission to professional development:

Shared and monitored Vision/Mission has focused professional development effort, ensured common purpose across system schools and hence teachers and engendered pride in the level of achievement across the system.

Primary Principal, User Id 14

5.2.7 Characteristic 7 – 'Effective Communication Channels'

This characteristic of a learning organization refers to the free flow of information vertically and horizontally within the organization and with the external environment and can occur

through a variety of formal and informal means. Open and clear communication channels are essential in organizational learning (section 2.4.7). Table 5.8 presents the item-by-item raw data for the seventh characteristic and includes the percentage of responses in each category in brackets.

Table 5.8 Responses for Characteristic 7: ‘Effective Communication Channels’- Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
67	The CEO encourages the sharing of good practice.	0 (0.0)	17 (11.8)	16 (11.1)	89 (61.8)	20 (13.9)	0 (0.0)	2 (1.4)
68	A wide variety of communication channels exist for schools to communicate with the CEO.	0 (0.0)	16 (11.1)	12 (8.3)	97 (67.4)	18 (12.5)	1 (0.7)	0 (0.0)
69	The CEO is unreceptive to input from schools.	2 (1.4)	14 (9.7)	26 (18.1)	84 (58.3)	9 (6.3)	1 (0.7)	8 (5.6)
70	The expectations of the CEO are clear.	0 (0.0)	10 (6.9)	10 (6.9)	104 (72.2)	16 (11.1)	4 (2.8)	0 (0.0)
71	The CEO has effective communication channels with schools.	0 (0.0)	13 (9.0)	14 (9.7)	97 (67.4)	18 (12.5)	1 (0.7)	1 (0.7)
72	Archdiocesan Principals’ meetings encourage a free, two-way flow of information.	22 (15.3)	57 (39.6)	33 (22.9)	28 (19.4)	1 (0.7)	2 (1.4)	1 (0.7)
73	Regional Principals’ meetings encourage a free, two-way flow of information.	0 (0.0)	19 (13.2)	9 (8.3)	74 (51.4)	37 (25.7)	2 (1.4)	3 (2.1)
74	Dialogue between the schools and the CEO is limited.	1 (0.7)	54 (37.5)	12 (8.3)	62 (43.1)	6 (4.2)	4 (2.8)	5 (3.5)
75	The CEO is an organization that actively communicates with external agencies.	0 (0.0)	7 (4.9)	14 (9.7)	72 (50.0)	10 (6.9)	5 (3.5)	36 (25.0)
76	The CEO clearly communicates the rationale behind the school staffing allocation.	6 (4.2)	42 (29.2)	12 (8.3)	66 (45.8)	5 (3.5)	1 (0.7)	12 (8.3)
77	The CEO provides quality advice to schools on new legislation.	1 (0.7)	4 (2.8)	6 (4.2)	94 (65.3)	37 (25.7)	2 (1.4)	0 (0.0)
78	There are adequate channels for principals to make suggestions for the improvement of CEO services.	4 (2.8)	50 (34.7)	31 (21.5)	43 (29.9)	3 (2.1)	1 (0.7)	12 (8.3)
79	Information Communication Technologies (ICT) have been used effectively to improve the flow of information between schools and the CEO.	7 (4.9)	31 (21.5)	10 (6.9)	77 (53.5)	16 (11.1)	2 (1.4)	1 (0.7)
Totals adjusted for negative items 69 and 74		55 (2.9)	412 (22.0)	205 (11.0)	909 (48.6)	184 (9.8)	26 (1.4)	81 (4.3)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA=Unanswered, CMVJ = Can’t make a valid judgement.

The distribution of raw data is illustrated in Figure 5.8 and shows that 58.4% of respondents strongly agreed/agreed with the items in this scale, 11.0% were neutral and 24.9% strongly disagreed/disagreed. The percentage ‘unanswered’ was 1.4% and ‘can’t make a valid judgement’ was 4.3%, with item 75 accounting for most of the ‘can’t make a valid judgement’

option. This suggested that some respondents may not have had enough information or knowledge about the extent of active communication that the CEO Sydney conducts with external agencies.

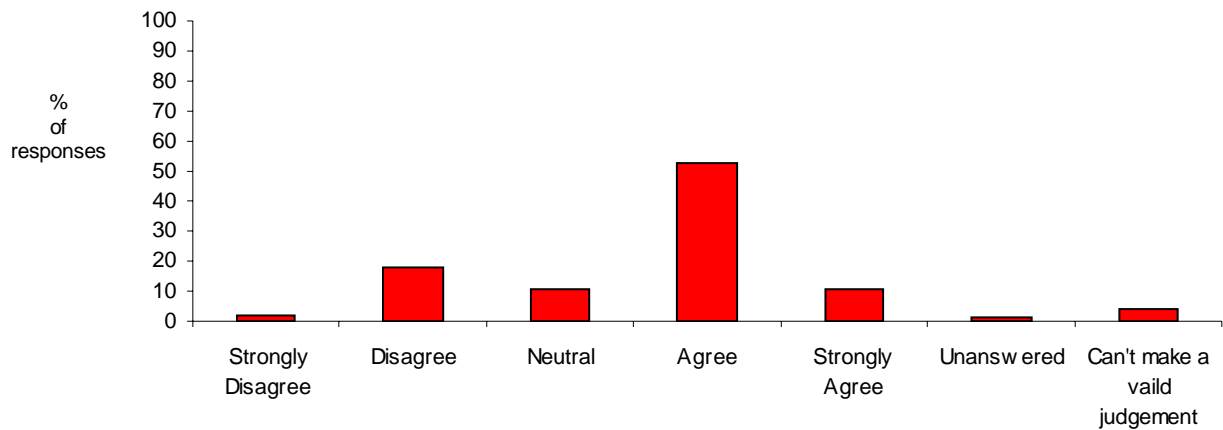


Figure 5.8 Descriptive Statistics – ‘Effective Communication Channels’

Note: The percentage is the number of raw responses as a percentage of the total number of scale responses. (N=144).

Items 72 and 78 had means below 3.00. Item 72 related to Archdiocesan principals’ meetings encouraging two-way communication and was the lowest scoring item of all those in Part B. Item 78 referred to the provision of adequate channels of communication for principals to make suggestions for the improvement of CEO Sydney services. Apart from items 72 and 78, all other items in this scale had means very close to 4.00. This indicated that most aspects of communication being tested in this scale were perceived highly by respondents.

The 13 items in this scale have a mean of 46.17 (or 3.55 per item) which ranked this scale fifth of the eight learning organization characteristics (Table 5.1). The pattern of responses indicated that, based on the items selected for this scale, the characteristic of ‘Effective Communication Channels’, as defined for this study, was moderately supported as a learning organization characteristic in the CEO Sydney.

Data from the open-ended questions – Characteristic 7- ‘Effective Communication Channels’

In the first open-ended question, 24 of the 110 respondents (22%) identified ‘Effective Communication Channels’ as one of the learning organization characteristics that had an

impact on schools. The following comments capture the importance placed on effective communication by respondents:

The extent to which there are effective communication channels has a significant impact on schools. This impacts upon all other characteristics.

Primary Principal, User Id 89

Perhaps the most impressive feature of this environment is the ability of key CEO staff to listen empathetically and actively.

Secondary Principal, User Id 96

Some respondents made suggestions for the improvement of communication including:

However, deeper communication at a mutual level, as colleague to colleague, is not strong across all levels of the system. There are hierarchies that protect levels from exposure to those below or above them through open and respectful communication. There is neither the time nor the willingness often to hear what people really think, nor for people to be upfront enough to say what they think for fear of loss of professional credibility with the leaders in the system.

CEO Personnel, User Id 76

However external agencies should be used more frequently, the CEO needs to be exposed to thinking other than that of the CEO!!

Primary Principal, User Id 91

There were some significant comments that challenged the effectiveness of current communication methods and their potential to make excessive demands on schools:

Effective communication channels – at a Regional level and through Regional Consultants effective communication is realized, however from an Archdiocesan perspective it is very much a bureaucratic model where decisions are passed down and then disseminated.

Primary Principal, User Id 91

We have effective communication channels...sometimes too effective...it has allowed the system to multiply its demands and the pace of these...it multiplies control and the time spent on extraneous tasks.

Secondary Principal, User Id 146

The value of networking is captured in the following comment:

Principals seem to network very well both within and across the regions.

Primary Principal, User Id 34

5.2.8 Characteristic 8 – ‘Team Work and Team Learning’

This characteristic presents teams as the fundamental learning units within a learning organization. Teams are cooperating work groups which gather, process, create and disseminate knowledge and are made up of representatives from various levels within the organization (section 2.4.8). Table 5.9 presents the item-by-item raw data for this characteristic and includes the percentage of responses in each category in brackets.

Table 5.9 Responses for Characteristic 8: ‘Team Work and Team Learning’- Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
80	The CEO values the contributions teams make to quality policy development.	0 (0.0)	4 (2.8)	18 (12.5)	93 (64.6)	9 (6.3)	2 (1.4)	18 (12.5)
81	Teams within the CEO have insufficient representation from teachers.	10 (6.9)	66 (45.8)	18 (12.5)	27 (18.8)	1 (0.7)	2 (1.4)	20 (13.9)
82	Principals are used broadly in CEO established committees.	0 (0.0)	13 (9.0)	15 (10.4)	86 (59.7)	14 (9.7)	1 (0.7)	15 (10.4)
83	Freedom of thought is encouraged in teams established by the CEO.	3 (2.1)	26 (18.1)	23 (16.0)	62 (43.1)	3 (2.1)	2 (1.4)	25 (17.4)
84	The CEO encourages learning in teams across the system.	2 (1.4)	23 (16.0)	23 (16.0)	72 (50.0)	4 (2.8)	1 (0.7)	19 (13.2)
85	The CEO believes that the most important organizational decisions are made in teams.	2 (1.4)	25 (17.4)	22 (15.3)	49 (34.0)	6 (4.2)	4 (2.8)	36 (25.0)
86	CEO professional development enhances the skills of team work for participants.	1 (0.7)	29 (20.1)	30 (20.8)	57 (39.6)	5 (3.5)	4 (2.8)	18 (12.5)
87	Teams are the fundamental learning unit in the CEO.	2 (1.4)	23 (16.0)	27 (18.8)	56 (38.9)	6 (4.2)	3 (2.1)	27 (18.8)
88	The CEO encourages schools to use teams to enhance school management.	0 (0.0)	10 (6.9)	13 (9.0)	96 (66.7)	19 (13.2)	3 (2.1)	3 (2.1)
Totals adjusted for negative item 81		11 (0.8)	180 (13.9)	189 (14.6)	637 (49.1)	76 (5.9)	22 (1.7)	181 (14.0)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA=Unanswered, CMVJ = Can’t make a valid judgement.

The distribution of raw data is illustrated in Figure 5.9 and shows that 55% of respondents were strongly agreed/agreed with the items in this scale, 14.6% were neutral and 14.7% were strongly disagreed/disagreed. The percentage ‘unanswered’ was 1.7% and ‘can’t make a valid judgement’ was 14.0%, which was generated from a broad range of items in the scale and indicated that respondents were not sure about the nature and extent of team work and team learning in the CEO Sydney

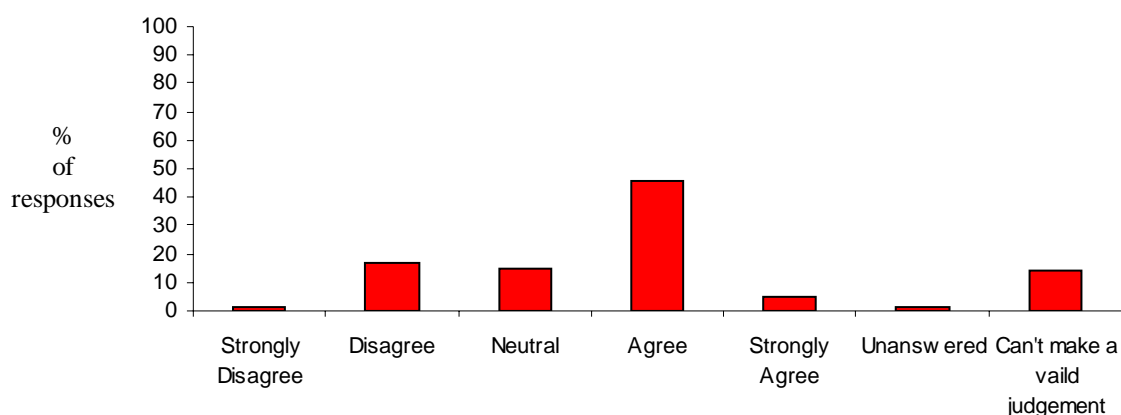


Figure 5.9 Descriptive Statistics - 'Team work and Team Learning'

Note: The percentage is the number of raw responses in each category as a percentage of the total number of scale responses. (N=144).

The data suggested that the CEO Sydney could provide greater teacher representation on CEO teams (Item 81), whilst Item 88, with a mean of 3.85, indicated that the CEO Sydney encouraged teams as a means of school management. However item 82, with a mean of 3.80, suggested satisfaction about principal representation on CEO Sydney committees. This is an interesting result given the data in other parts of the questionnaire which indicated dissatisfaction with the extent to which principals are consulted in the development of system policy. Item 81 was a negatively worded item and was reverse scored for statistical calculation. No items in this scale had a mean score above 4.00.

The nine items in this scale had a mean of 30.64 (3.40 per item) and ranked this scale as the second lowest ranking of the eight learning organization scales (Table 5.1). This suggested that team work and team learning is weakly supported as a learning organization characteristic of the CEO Sydney.

Data from open-ended question – 'Team Work and Team Learning'

In the first open-ended question, 12 of the 110 respondents (11%) identified team work and team learning as one of the learning organization characteristics of importance for schools. The views of CEO Sydney members tended to differ from those of the schools as the following illustrate:

The CEO places great value on the smaller units of team work. This enhances social connection and care of the person.

CEO personnel, User Id 37

Team work and team learning has had a significant impact on schools.

CEO personnel, User Id 158

There are no real learning teams across the system that involve school personnel. Teams have little power, tinker around the margins and have little or no influence on system priorities.

Secondary Principal, User Id 146

Of the 88 items dedicated to the eight characteristics of a learning organization adopted for this study, 21(24%) had a mean score equal to or above 4.00, 57 (65%) had a mean score equal to or above 3.00 and 10 (11%) had a mean score below 3.00.

This concludes the presentation of data that was gathered to assist in answering the first sub-question in this study relating to the CEO Sydney as a learning organization. These results indicated that the CEO Sydney possessed many of the characteristics of a learning organization as defined for this study and tested by the scales developed. The strongest characteristics were perceived to be 'Continuous Improvement of Work' and 'Systemic Thinking and Mental Models', whilst the weakest was perceived to be 'Taking Initiatives and Risks'. The following section presents data which sought to clarify whether the demographic groups surveyed displayed any significant differences in their perception of the learning organization characteristics and curriculum outcome scales.

5.3 LEARNING ORGANIZATION CHARACTERISTICS AND CURRICULUM OUTCOME SCALES FOR THE FIVE DEMOGRAPHIC GROUPS (GENDER, ROLE, REGION, EXPERIENCE AS PRINCIPAL, AGE)

This section presents the analyses of the data that was collected as a means of answering the second sub-question (section 1.5) in this study:

Are there differences in the extent to which various learning organization characteristics and curriculum outcomes are identified by the demographic groups surveyed?

To probe this sub-question two main approaches were adopted. These were the use of:

1. Scale means to report learning organization characteristics and curriculum outcome scales according to gender, role, region, experience as principal and age.

2. A one-way MANOVA with the eight learning organization characteristics as dependent variables and the demographic factors as independent variables (section 3.7.3).

As indicated in chapter three (section 3.7.3) careful application of effect size (ES) was used to aid the interpretation of the results of this section of the study and MANOVA was also used to investigate whether a relationship existed between the set of dependent variables and the independent variables. ES indices were calculated for the three curriculum outcome scales.

Collectively, MANOVA, descriptive statistics and ES indices provide a comprehensive set of data for each comparison. It should be noted that three demographic variables, team membership, highest academic qualification and highest, most recent academic qualification were included in the demographic data collection for completeness (Appendix E) but did not form part of this study or this analysis because group sizes were too small to allow for any reliable statistical analysis.

5.3.1 Comparison of learning organization characteristics and curriculum outcome scales according to gender

The MANOVA using the eight learning organization characteristics as dependent variables and gender as the independent variable was not significant $F_{(8, 22)} = 0.92$ ($p=.52$). None of the univariate F tests was significant at $p<.05$.

Table 5.10 reports the mean scale score for the eight learning organization scales and the three curriculum outcome scales according to gender across the whole respondent population. For all scales except 'Trusting and Collaborative Climate', female respondents scored higher means than males. The calculation of ES indices for the 11 gender comparisons revealed a large effect size index for Literacy (0.81) and Numeracy (0.79). For all other comparisons ES indices were small. Female respondents produced slightly higher means in most learning organization characteristics and much higher ones for literacy and numeracy, although no comparisons were statistically significant.

Table 5.10 Mean Scale Score based on Gender

	Mean Scale Score by Gender	
	Female (n=92)	Male (n=52)
<i>Learning Organization Characteristics</i>		
Systemic Thinking and Mental Models	40.31	39.00
Continuous Improvement of Work	46.47	44.18
Taking Initiatives and Risks	38.86	37.52
Ongoing Professional Development	40.80	38.75
Trusting and Collaborative Climate	44.74	45.78
Shared and Monitored Vision/Mission	36.33	34.53
Effective Communication Channels	46.50	45.71
Team Work and Team Learning	31.23	29.70
<i>Curriculum Outcome Scales</i>		
Religious Education	49.52	49.06
Literacy	52.22	46.41
Numeracy	46.22	40.78

Note: The figures in bold represent the higher scale mean.

5.3.2 Comparison of learning organization characteristics and curriculum outcome scales according to role

The MANOVA using the eight learning organization characteristics as dependent variables and the three roles (primary principal, secondary principal, senior CEO personnel) as the independent variable was not significant $F_{(16, 42)} = 0.55$ ($p=.90$). None of the univariate F tests was significant at $p<.05$.

Table 5.11 reports the mean score per scale for the eight learning organization characteristics and the three curriculum outcome scales based on role (primary principal, secondary principal or senior CEO Sydney personnel). Noteworthy is the fact that secondary principals scored the highest means on six of the eight learning organization characteristic scales and Religious Education, whilst CEO Sydney personnel scored the highest means on Literacy and Numeracy outcome scales.

The calculation of ES indices for the 33 possible comparisons under role revealed that the comparison between secondary principals and primary principals indicated a large ES index for Religious Education (1.29), whilst the comparison between primary principals and secondary principals revealed a large ES index for numeracy (0.91). Two comparisons between CEO personnel and secondary principals showed a large ES index for Religious Education (0.89) and Numeracy (0.96). For all other comparisons ES indices were small. These data indicate no statistically significant differences but suggested that primary

principals have a higher regard than secondary principals for the CEO Sydney impact on numeracy whilst the findings were reversed for Religious Education. These data could be related to the recent initiatives taken in primary numeracy and secondary religious education at the system level.

Table 5.11 Mean Scale Score based on role.

	Mean Scale Score		
	Primary Principals (n= 94)	Secondary Principals (n= 28)	CEO Personnel (n=22)
<i>Learning Organization Characteristics</i>			
Systemic Thinking and Mental Models	39.71	40.28	39.47
Continuous Improvement of Work	45.53	46.45	45.10
Taking Initiatives and Risks	37.96	39.00	38.56
Ongoing Professional Development	40.40	39.33	39.41
Trusting and Collaborative Climate	44.17	47.90	45.17
Shared and Monitored Vision/Mission	36.17	34.06	35.75
Effective Communication Channels	45.29	48.53	46.57
Team Work and Team Learning	31.05	31.17	29.17
<i>Curriculum Outcome Scales</i>			
Religious Education	47.54	55.50	50.00
Literacy	50.10	48.70	50.36
Numeracy	45.00	38.75	45.38

Note: The figures in bold represent the highest scale mean.

5.3.3 Comparison of learning organization characteristics and curriculum outcome scales according to region (principals only)

In this table the three regional teams surveyed are referred to as A, B, C respectively to honour the confidentiality and anonymity assurances under which the data was collected.

The MANOVA using the eight learning organization characteristics as dependent variables and region (principals only) as the independent variable was not significant $F_{(16, 34)} = 1.37$ ($p=.22$). None of the univariate F tests was significant at $p<.05$.

Table 5.12 reports the mean score per scale for the eight learning organization characteristics and the three curriculum outcome scales based on region for principals only. Region C scored the highest principal means on most scales including two of the curriculum outcome scales.

The calculation of ES indices for the 33 possible region comparisons revealed that region B compared with region A had a moderate ES index for ‘Trusting and Collaborative Climate’

(0.61). Region C compared with region A had a moderate ES index for ‘Taking Initiatives and Risks’ (0.58), and a large ES index for ‘Trusting and Collaborative Climate’ (1.00). The comparison of region B with region C revealed one moderate ES index for ‘Taking Initiatives and Risks’ (0.58). ES indices for all other comparisons were small.

Table 5.12 Mean Scale Score- based on Region (principals only).

	Mean Scale Score		
	Region A (n=38)	Region B (n=43)	Region C (n=41)
<i>Learning Organization Characteristics</i>			
Systemic Thinking and Mental Models	39.83	39.71	40.00
Continuous Improvement of Work	44.45	46.25	46.36
Taking Initiatives and Risks	36.96	36.92	41.53
Ongoing Professional Development	39.10	40.49	40.78
Trusting and Collaborative Climate	41.04	45.93	49.00
Shared and Monitored Vision/Mission	35.05	35.68	36.13
Effective Communication Channels	44.84	45.84	47.75
Team Work and Team Learning	31.18	31.36	30.61
<i>Curriculum Outcome Scales</i>			
Religious Education	47.55	49.48	50.21
Literacy	49.31	48.41	51.25
Numeracy	45.00	43.58	41.80

Note: The figures in bold represent the highest scale mean.

5.3.4 Comparison of learning organization characteristics and curriculum outcome scales according to experience (principals only)

The MANOVA using the eight learning organization characteristics as dependent variables and five categories of length of experience as principal as the independent variables was not significant $F_{(32, 54)} = 0.81$ ($p=.74$). None of the univariate F tests was significant at $p<.05$.

Table 5.13 reports the mean score per scale for the eight learning organization scales and the three curriculum outcome scales based on years of principal experience. The distribution of the highest means was in the most experienced (over 20 years) principals, although the curriculum outcome scales in Religious Education and Literacy had the highest means amongst less experienced principals.

The calculation of ES indices for the 110 possible principal experience comparisons revealed 19 moderate ES indices for comparisons involving the eight learning organization characteristics and all three curriculum outcome scales. There were eight large ES indices for

comparisons across five of the learning organization characteristics relating to experience as principal. As the size of some categories was small (especially for the over 20 years' experience) and therefore the number of valid responses was small, the above results need to be interpreted very cautiously. For example the ES indices under 'Trusting and Collaborative Climate' were large for comparisons between the over 20 years' experience group and the 11-15 years' experience group (1.11), the 16-20 years' experience group (1.00) and moderate for the 6-10 years' experience group (0.79), the 1-5 years' experience group (0.52) and the 11-15 years' experience group (0.59). There were no recognisable patterns in these data due to the small numbers in some categories.

Table 5.13 – Mean scale score based on years of experience as a principal.

	Mean Scale Score				
	Experience 1-5 Years (n= 44)	6-10 Years (n=35)	11-15 Years (n= 22)	16-20 Years (n= 12)	Over 20 Years (n= 9)
<i>Learning Organization Characteristics</i>					
Systemic Thinking and Mental Models	39.67	40.21	40.16	38.30	40.25
Continuous Improvement of Work	45.63	46.84	45.25	42.90	46.38
Taking Initiatives and Risks	38.19	39.21	39.00	34.78	39.33
Ongoing Professional Development	40.23	40.22	39.00	38.11	44.00
Trusting and Collaborative Climate	46.50	44.71	41.75	42.67	50.67
Shared and Monitored Vision/Mission	36.86	35.35	34.92	32.50	37.57
Effective Communication Channels	46.60	45.95	46.31	42.00	48.71
Team Work and Team Learning	32.29	31.71	30.44	24.50	30.67
<i>Curriculum Outcome Scales</i>					
Religious Education	49.72	48.12	51.47	46.43	49.50
Literacy	48.20	52.20	48.10	50.00	51.80
Numeracy	43.05	44.07	41.71	44.50	45.40

Note: The figures in bold represent the highest scale mean.

5.3.5 Comparisons of learning organization characteristics and curriculum outcome scales according to age group

The MANOVA using the eight learning organization characteristics as dependent variables and age group as the independent variable was not significant $F_{(16, 42)} = 0.99$ ($p=.49$). Two of the univariate F tests were significant at $p<.05$: Taking Initiatives and Risks [$F_{(2, 28)} = 3.64$] and Trusting and Collaborative Climate [$F_{(2, 28)} = 3.64$].

Table 5.14 shows the mean scale score according to age for each age group. For most learning organization characteristic scales and for all curriculum outcome scales the over 56 year old age group scored the highest means.

The calculation of ES indices for the 33 possible age comparisons revealed that one comparison between the over 56 year old age group and the 36-45 group had a moderate ES Index for literacy (0.69) and one comparison had a large ES index between the over 56 year old age group and the 36-45 age group for numeracy (0.83) and a moderate ES index (0.77) for the over 56 years compared with the 46-55 group.

Table 5:14 Mean scale score based on Age

	Mean Scale Score		
	Age Group 36-45 (n=31)	Age Group 46-55 (n= 76)	Age Group >56 (n=36)
<i>Learning Organization Characteristics</i>			
Systemic Thinking And Mental Models	39.29	39.73	40.24
Continuous Improvement of Work	45.57	45.09	46.83
Taking Initiatives and Risks	38.40	36.98	40.68
Ongoing Professional Development	39.76	39.24	41.23
Trusting and Collaborative Climate	46.39	43.93	46.33
Shared and Monitored Vision/Mission	36.67	34.90	36.89
Effective Communication Channels	45.32	45.18	48.77
Team Work and Team Learning	31.84	30.05	30.65
<i>Curriculum Outcome Scales</i>			
Religious Education	49.11	49.27	50.00
Literacy	48.20	49.32	53.21
Numeracy	42.25	42.65	47.94

Note: The figures in bold represent the highest scale mean.

This section has presented descriptive data and MANOVA analysis for the demographic variables gender, role, principal region, experience as principal and age. The descriptive statistics took into account effect size (ES) as complementary to tests for statistical significance using MANOVA. This section considered data which helped clarify the second sub-question examining whether there were any demographic group differences in perceptions across the learning organization characteristics and curriculum outcome scales. The previous major study of the CEO Sydney (Hughes, 1995) indicated that females were more positive than males, primary principals were more positive than secondary principals and CEO personnel were generally more positive than principals with little regional difference in the attitudes of principals. It is worth noting that this previous, major study was based on different dimensions not related to learning organizations or curriculum outcomes. This is discussed further in the next chapter (section 6.2.10).

The next section presents data that helps clarify the third sub-question in this study concerning the relationships between the learning organization characteristics and raising standards in religious education, literacy and numeracy.

5.4 RELATIONSHIPS BETWEEN LEARNING ORGANIZATION CHARACTERISTICS AND CURRICULUM OUTCOME SCALES IN RELIGIOUS EDUCATION, LITERACY AND NUMERACY

This section presents and analyses data that was gathered through the questionnaire to investigate the third sub-question:

What relationships are perceived to exist between the learning organization characteristics of the CEO Sydney and raising standards in religious education, literacy and numeracy?

These results are presented in three sections as follows:

1. The descriptive statistics for each of the three curriculum outcome scales are presented as relevant background data for this section. Table 5.1 presents the summary data including the number of items in each scale, the scale mean, scale median, scale standard deviation, scale range, N valid and N missing, scale skewness, scale mean per item and the rank order of each curriculum outcome scale as determined by the scale mean per item.
2. Pearson correlation, multiple regression and canonical correlational analyses were used in this part of the study to indicate the strength of relationships between the learning organization characteristics and curriculum outcomes. For the correlational analysis the three curriculum outcome scales are taken as the dependent variables and the eight learning organization characteristics as the independent or predictor variables. The details of each of these correlational techniques were presented in section 3.7.3.
3. Qualitative data from the analysis of the second open-ended question is presented. These data complement and help contextualise the quantitative material.

5.4.1 Religious Education

Table 5.15 presents the item-by-item raw data for religious education and includes the percentage of responses in each category in brackets.

Table 5.15 Responses for religious education – raw data and percentages

Item No	Item	SD	D	N/O	A	SA	UA	CMVJ
89	The CEO expectation that more teachers gain formal qualifications in Religious Education has led to better quality teaching and learning in Religious Education.	2 (1.4)	21 (14.6)	13 (9.0)	79 (54.9)	20 (13.9)	0 (0.0)	9 (6.3)
90	The teacher accreditation policy of the CEO has supported better quality teaching and learning in Religious Education.	1 (0.7)	22 (15.3)	14 (9.7)	81 (56.3)	20 (13.9)	0 (0.0)	6 (4.2)
91	The quality of teaching and learning in Religious Education has been enhanced through the professional development programs offered by the CEO.	0 (0.0)	10 (6.9)	10 (6.9)	99 (68.8)	19 (13.2)	0 (0.0)	6 (4.2)
92	The CEO is appropriately addressing the challenge of Religious Education in a secular society.	1 (0.7)	31 (21.5)	28 (19.4)	62 (43.1)	10 (6.9)	4 (2.8)	8 (2.6)
93	The improvement of teaching and learning for students in Religious Education is a priority for the CEO.	0 (0.0)	2 (1.4)	3 (2.1)	91 (63.2)	47 (32.6)	0 (0.0)	1 (0.7)
94	The quality of teaching and learning in Religious Education has been improved through the implementation of the system curriculum documents (<i>Celebrating Our Journey/Faithful to God Faithful to People</i>).	0 (0.0)	1 (0.7)	10 (6.9)	87 (60.4)	40 (27.8)	2 (1.4)	4 (2.8)
95	The CEO developed support materials for Religious Education, have been very helpful for teachers.	0 (0.0)	8 (5.6)	14 (9.7)	91 (63.2)	23 (16.0)	1 (0.7)	7 (4.9)
96	The CEO development of the Religious Education textbooks, 'To Know Worship and Love' will contribute to an improvement in the quality of teaching and learning.	16 (11.1)	25 (17.4)	39 (27.1)	31 (21.5)	5 (3.5)	0 (0.0)	28 (19.4)
97	Teachers' use of the curriculum documents (<i>Celebrating Our Journey/Faithful to God Faithful to People</i>) have supported improvement in student knowledge in Religious Education.	0 (0.0)	7 (4.9)	14 (9.7)	99 (68.8)	18 (12.5)	0 (0.0)	6 (4.2)
98	Assessment strategies, comparable in depth to other learning areas, have been developed, by the CEO in Religious Education.	2 (1.4)	43 (29.9)	13 (9.0)	63 (43.8)	11 (7.6)	4 (2.8)	8 (5.6)
99	The Religious Education Advisers have supported better quality teaching and learning in Religious Education.	0 (0.0)	3 (2.1)	12 (8.3)	87 (60.4)	38 (26.4)	1 (0.7)	3 (2.1)
100	System processes, especially the Educational Audit, have supported the strengthening of teaching and learning in Religious Education.	0 (0.0)	7 (4.9)	6 (4.2)	90 (62.5)	35 (24.3)	3 (2.1)	3 (2.1)
101	The implementation of objective, external examinations in Religious Education (at primary level the Year 6 RE test, at secondary level Studies of Religion at HSC) has led to better student knowledge in RE.	7 (4.9)	27 (18.8)	19 (13.2)	66 (45.8)	12 (8.3)	3 (2.1)	10 (6.9)
		29 (1.5)	207 (11.1)	195 (10.4)	1026 (54.8)	298 (15.9)	18 (1.0)	99 (5.3)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA = Unanswered, CMVJ = Can't make a valid judgement.

The distribution of the responses for this scale is illustrated in Figure 5.10 and shows that the majority of respondents (70.7%) strongly agreed or agreed with the items in the scale, whilst 10.4% were of a neutral opinion and 12.6% disagreed or strongly disagreed. The percentage ‘unanswered’ was 1.0% and ‘can’t make a valid judgement’ was 5.3%.

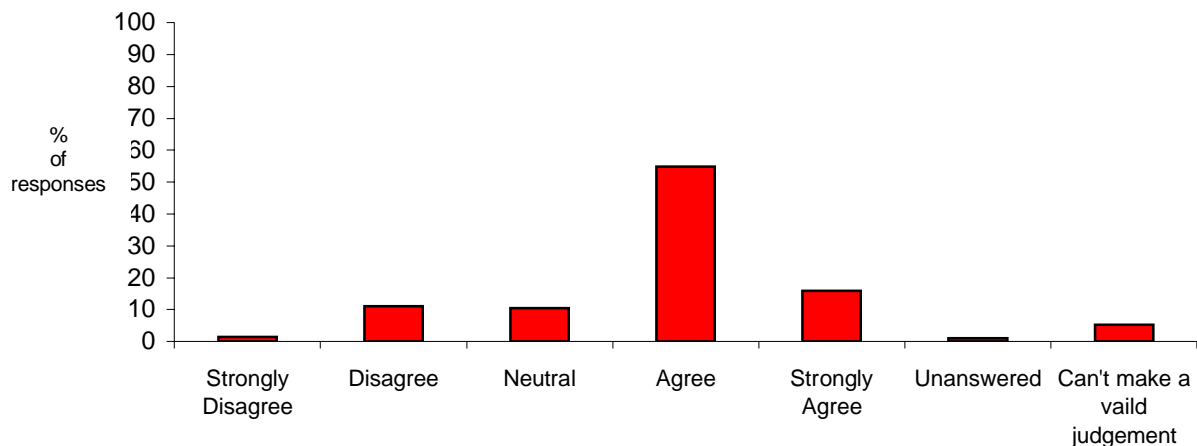


Figure 5.10 – Religious Education

Items 93, 94, 99 and 100 all scored means above 4.00. These items related to:

1. The CEO Sydney priority for the improvement of teaching and learning in religious education
2. The significance of the primary and secondary religious education curricula developed by the CEO Sydney to achieve this.
3. The acknowledgement of system processes and advisers in strengthening teaching and learning in religious education.

The lowest ranking item (96) in this scale relates to the implementation of the religious education textbook series ‘*To Know Worship and Love*’ (Catholic Archdiocese of Melbourne, 2003) and the potential of these new texts to contribute to the quality of teaching and learning in religious education. Five items in this scale had a mean close to 4.00 whilst items 92, 98 and 101 all had means below 3.50.

The 13 items in this scale had a mean of 49.00 (or 3.80 per item) and this ranked this scale as the second most strongly supported of the three curriculum outcome scales. The skewness indicated that this scale was close to normal in its shape. These data suggested that a significant majority of respondents strongly perceived that the CEO Sydney does influence the standards in religious education as defined for this study, and as determined by the 13 items in the scale.

5.4.2 Literacy

Table 5.16 presents the item-by-item raw data for literacy and includes the percentage of responses in each category in brackets.

Table 5.16 Responses for literacy – Raw data and percentages.

Item No.	Item	SD	D	N/O	A	SA	UA	CMVJ
102	The CEO has assisted schools in developing whole-school plans for the improvement of student literacy standards.	0 (0.0)	8 (5.6)	8 (5.6)	89 (61.8)	36 (25.0)	1 (0.7)	2 (1.4)
103	The CEO has provided opportunities for the professional development of school leaders in the analysis of literacy test data.	0 (0.0)	7 (4.9)	4 (2.8)	103 (71.5)	29 (20.1)	1 (0.7)	0 (0.0)
104	Classroom instruction in literacy has been enhanced by CEO initiatives.	0 (0.0)	1 (0.7)	5 (3.5)	89 (61.8)	45 (31.3)	2 (1.4)	2 (1.4)
105	System level target setting in literacy has encouraged school level target setting.	5 (3.5)	17 (11.8)	17 (11.8)	74 (51.4)	24 (16.7)	0 (0.0)	7 (4.9)
106	School level target setting has been helpful in raising standards in literacy.	5 (3.5)	24 (16.7)	21 (14.6)	63 (43.8)	17 (11.8)	1 (0.7)	13 (9.0)
107	CEO analysis and interpretation of test data in literacy has contributed to improved teaching and learning outcomes.	3 (2.1)	24 (16.7)	20 (13.9)	67 (46.5)	17 (11.8)	1 (0.7)	12 (8.3)
108	The CEO places a high priority on teacher professional development for better classroom literacy practices.	0 (0.0)	7 (4.9)	5 (3.5)	94 (65.5)	37 (25.7)	0 (0.0)	1 (0.7)
109	The CEO has provided leadership to improve the quality of literacy education for boys.	11 (7.6)	43 (29.9)	30 (20.8)	31 (21.5)	2 (1.4)	2 (1.4)	25 (17.4)
110	School Review and Development processes have contributed to the development of higher quality teaching and learning programs in literacy.	2 (1.4)	8 (5.6)	13 (9.0)	99 (68.8)	15 (10.4)	2 (1.4)	5 (3.5)
111	CEO initiatives have assisted schools in implementing strategies for improving the literacy standards for ESL (English as a Second Language) learners.	2 (1.4)	9 (6.3)	16 (11.1)	77 (53.5)	17 (11.8)	3 (2.1)	20 (13.9)
112	System programs to develop effective assessment and reporting strategies for outcomes based learning have supported higher standards in literacy.	1 (0.7)	20 (13.9)	19 (13.2)	83 (57.6)	3 (2.1)	2 (1.4)	16 (11.1)
113	CEO targeting of financial and staffing resources to those schools most in need of literacy support has led to improvement in the effectiveness of their literacy teaching and learning programs.	1 (0.7)	4 (2.8)	9 (6.3)	59 (41.0)	33 (22.9)	2 (1.4)	36 (25.0)
114	CEO targeting of regional advisory services to those schools most in need of literacy support has led to improvement in the effectiveness of their literacy teaching and learning programs.	1 (0.7)	2 (1.4)	10 (6.9)	67 (46.5)	24 (16.7)	0 (0.0)	40 (27.8)
		31 (1.7)	174 (9.3)	177 (9.5)	995 (53.1)	299 (15.9)	17 (0.9)	179 (9.6)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA = Unanswered, CMVJ = Can't make a valid judgement.

The distribution of the responses for this scale is illustrated in Figure 5.11 and shows that the majority of respondents (69%) strongly agree or agree with the items in the scale whilst 9.5% were of a neutral opinion and 11% disagreed or strongly disagreed. The percentage 'unanswered' was 0.9% and 'can't make a valid judgement' was 9.6%.

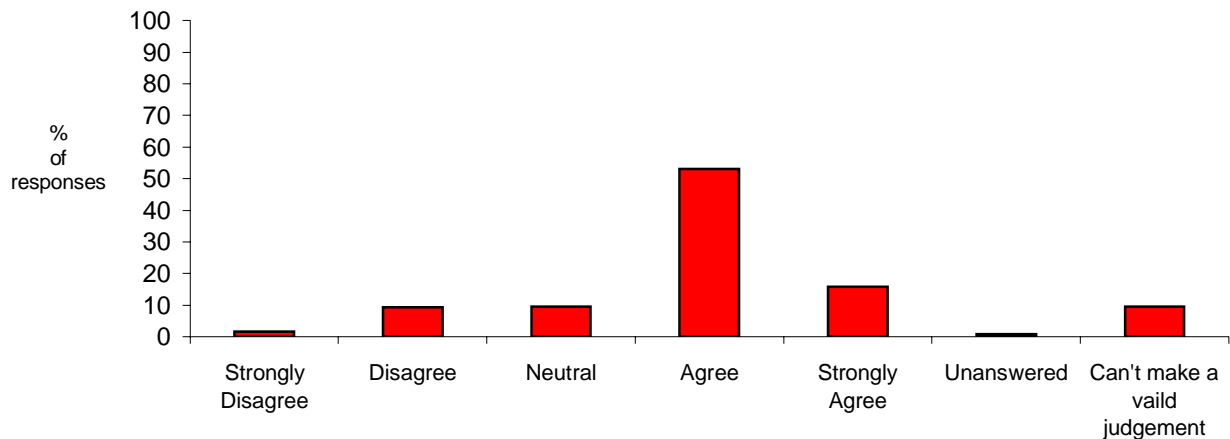


Figure 5.11- Literacy

There were six items in this scale with a mean score above 4.00 (items 102, 103, 104, 108, 113 & 114). These items related to the work of the CEO Sydney in assisting schools develop whole school literacy plans, development of skills for school leaders in analysing literacy test data and relating CEO Sydney initiatives in literacy with improved classroom instruction. They also recognised the priority that the CEO Sydney places on professional development in literacy and the positive impact of targeting financial and staffing resources as a means of improving literacy programs in those schools most in need of literacy support. The only item with a mean below 3.00 was item 109 which referred to the CEO Sydney leadership in the area of literacy and boys.

The 13 items in this scale had a mean of 49.88 (or 3.84 per item) and this ranked this scale as the most strongly supported of the three curriculum outcome scales. It has a statistically significant negative skew and the largest standard deviation (7.20) of the three curriculum outcome scales. These data suggested that a majority of respondents perceived that the CEO Sydney is strongly associated with raising the standards of literacy as defined for this study, and as determined by the items in the scale.

5.4.3 Numeracy

Table 5.17 presents the item-by-item raw data for numeracy and includes the percentage of responses in each category in brackets.

Table 5.17 Responses for Numeracy – Raw data and percentages.

Item No	Item	SD	D	N/O	A	SA	UA	CMVJ
115	The CEO has assisted schools in developing whole-school plans for the improvement of student numeracy/mathematics standards.	3 (2.1)	31 (21.5)	14 (9.7)	77 (53.5)	10 (6.9)	2 (1.4)	7 (4.9)
116	The CEO has provided opportunities for the professional development of school leaders in the analysis of numeracy/mathematics test data. (eg Basic Skills Test (BST), Secondary Numeracy Assessment Program (SNAP)).	0 (0.0)	10 (6.9)	4 (2.8)	105 (72.9)	19 (13.2)	1 (0.7)	5 (10.4)
117	Classroom instruction in numeracy/mathematics has been enhanced by CEO initiatives.	0 (0.0)	10 (6.9)	26 (18.1)	80 (55.6)	12 (8.3)	1 (0.7)	15 (10.4)
118	System level target setting in numeracy/mathematics has encouraged school level target setting.	2 (1.4)	27 (18.8)	18 (12.5)	70 (48.6)	14 (9.7)	4 (2.8)	9 (6.3)
119	School level target setting has been helpful in raising standards in numeracy/mathematics.	6 (4.2)	26 (18.1)	28 (19.4)	52 (36.1)	8 (5.6)	8 (5.6)	16 (11.1)
120	CEO analysis and interpretation of test data in numeracy/mathematics has contributed to improved teaching and learning outcomes.	1 (0.7)	28 (19.4)	26 (18.1)	66 (45.8)	7 (4.9)	5 (3.5)	11 (7.6)
121	The CEO places a high priority on teacher professional development for better classroom numeracy /mathematics practices.	0 (0.0)	9 (6.3)	13 (9.0)	89 (61.8)	27 (18.8)	4 (2.8)	2 (1.4)
122	School Review and Development processes have resulted in higher quality teaching and learning programs in numeracy/mathematics.	2 (1.4)	10 (6.9)	16 (11.1)	91 (63.2)	11 (7.6)	3 (2.1)	11 (7.6)
123	CEO initiatives have assisted schools in implementing strategies for improving the numeracy/mathematics standards of ESL (English as a Second Language) learners.	1 (0.7)	22 (15.3)	23 (16.0)	57 (39.6)	6 (4.2)	3 (2.1)	32 (22.2)
124	System programs to develop effective assessment and reporting strategies for outcomes based learning have supported higher standards in numeracy/mathematics.	0 (0.0)	22 (15.3)	25 (17.4)	70 (48.6)	6 (4.2)	3 (2.1)	18 (12.5)
125	CEO targeting of financial and staffing resources to those schools most in need of numeracy/mathematics support has led to improvement in the effectiveness of their numeracy/mathematics teaching and learning programs	2 (1.4)	8 (5.6)	12 (8.3)	59 (41.0)	13 (9.0)	4 (2.8)	46 (31.9)
126	CEO targeting of regional advisory services to those schools most in need of numeracy/mathematics support has led to improvement in the effectiveness of their numeracy/mathematics teaching and learning programs.	0 (0.0)	9 (6.3)	13 (9.0)	62 (43.1)	14 (9.7)	1 (0.7)	45 (31.3)
		17 (1.0)	212 (12.3)	218 (12.6)	878 (50.8)	147 (8.5)	39 (2.2)	217 (12.6)

Note: Percentages are shown in parentheses. SD = Strongly Disagree, D = Disagree, N/O = Neutral Opinion, A = Agree, SA = Strongly Agree, UA = Unanswered, CMVJ = Can't make a valid judgement.

The distribution of responses for this scale is illustrated in Figure 5.12 and shows that 59.3% of respondents strongly agreed or agreed with the items in the scale whilst 12.6% were of a neutral opinion and 13.3% disagreed or strongly disagreed. The percentage ‘unanswered’ was 2.2% and ‘can’t make a valid judgement’ was 12.6%. No item in this scale had a mean above 4.00, although item 121 was close (3.98). Similarly there were no items with a mean below 3.00.

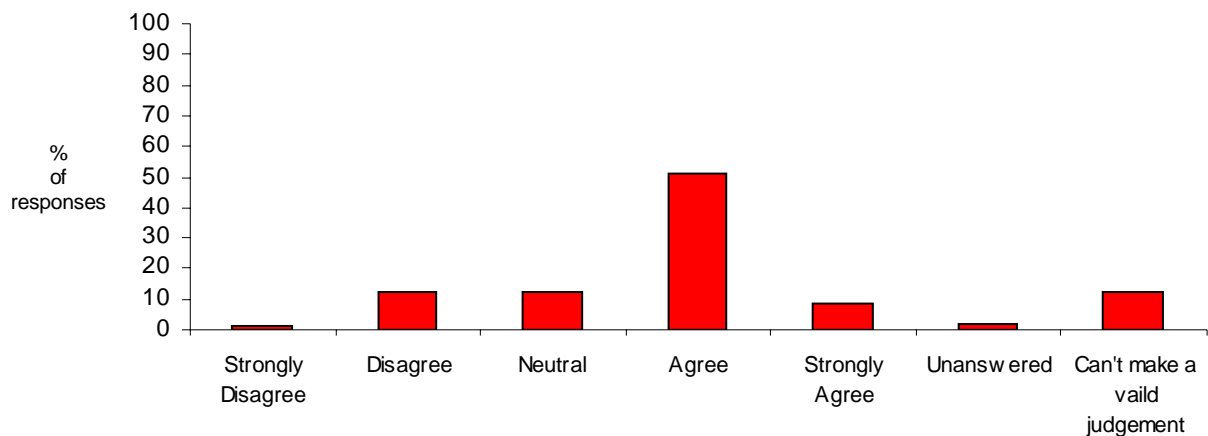


Figure 5.12 - Numeracy

The 12 items in this scale had a mean of 43.89 (or 3.66 per item) and this ranked this scale as the least supported of the three curriculum outcome scales. The negative skew was statistically significant. The percentage of respondents unable to make a valid judgement or who did not answer items within the scale was 14.6% which is a high proportion and is discussed further in chapter 6. These data indicate that the CEO Sydney influence on standards in numeracy/mathematics is not perceived to be as strong as it is in literacy and religious education and that a number of respondents were not in a position to make a valid judgement.

In conclusion of the 38 items dedicated to the three curriculum outcome scales, 10 (26%) had a mean equal to or above 4.00, 26 (68%) had a mean equal to or above 3.00 and 2 (6%) had a mean below 3.00.

The descriptive statistics presented in this section provided useful, background, quantitative results on the three curriculum outcome scales of religious education, literacy and numeracy. The focus of the next section is to investigate further the perceived association between the

characteristics of the learning organization and the curriculum outcome scales using simple correlation, multiple regression and canonical correlations (section 3.7.3).

5.4.4 Pearson correlations

The correlational matrix used in this study had eight variables in one set (the learning organization characteristics) and three in the other (the curriculum outcomes). There were 24 between correlations and if each had been tested for significance at the .05 level then at least one significant result ($24 \times .05$) could have been expected to occur by chance alone, making it difficult to separate the chance effect from real associations. A way to correct for this was to set the test of significance at a more stringent, conservative level using the Bonferroni Inequality (Stevens, 2002). The conservative application of this inequality required the planned Type I error for each of the 24 analyses to be set at the family-wise level divided by the number of analyses (i.e. $.05/24 = .002$) (Dorman, 1994). The Pearson correlation coefficients are presented in Table 5.18 with the level of significance set at this more stringent level of .002 and indicated that a total of 18 of the 24 between correlations were statistically significant.

Table 5.18 Pearson correlations between the eight learning organization characteristics and Religious Education, Literacy and Numeracy curriculum outcomes.

Scale Name	Religious Education	Literacy	Numeracy
Systemic Thinking and Mental Models	0.49**	0.39**	0.15
Continuous Improvement of Work	0.41**	0.63**	0.31*
Taking Initiatives and Risks	0.41**	0.54**	0.26
Ongoing Professional Development	0.43**	0.69**	0.50**
Trusting and Collaborative Climate	0.44**	0.62**	0.17
Shared and Monitored Vision/Mission	0.44**	0.42**	0.48**
Effective Communication Channels	0.52**	0.71**	0.25
Team Work and Team Learning	0.45**	0.52**	0.32

* $p < .01$ ** $p < .002$

The correlations between the eight learning organization characteristics and Religious Education ranged in value from 0.41 to 0.52 and indicated a moderate positive relationship between each of the characteristics and the Religious Education curriculum outcomes. All were statistically significant at $p < 0.002$. ‘Effective Communication Channels’, accounted for the highest proportion of variance in religious education outcomes (27.04%), whilst the

lowest proportion of variance in Religious Education outcomes (16.8%) was accounted for by 'Continuous Improvement of Work' and 'Taking Initiatives and Risks'.

The correlations between the eight learning organization characteristics and Literacy ranged in value from 0.39 to 0.71 and indicated a moderate positive relationship between each of the learning organization characteristics and the Literacy curriculum outcomes. All were statistically significant at $p < .002$. 'Effective Communication Channels' and 'Ongoing Professional Development' contributed 50.4% and 47.6% of variance in the Literacy curriculum outcome scale respectively, whilst 'Systemic Thinking and Mental Models' and 'Shared and Monitored Vision/Mission' contributed the least at 15.2% and 17.6% respectively.

The correlations between the eight learning organization characteristics and the Numeracy curriculum outcomes ranged in value from 0.15 to 0.50 and were generally lower than for the other two curriculum outcome scales. Two were statistically significant at $p < .002$ ('Ongoing Professional Development' and 'Shared and Monitored Vision/Mission'), whilst the remaining six characteristics were not statistically significant. 'Ongoing Professional Development' and 'Shared and Monitored Vision/Mission' contributed 25% and 24% of variance in the Numeracy outcome scale respectively, whilst 'Systemic Thinking and Mental Models' and 'Trusting and Collaborative Climate' contributed the least (2.25% and 2.89% respectively).

Clearly these correlational data indicated a moderate, positive relationship between the learning organization characteristics and the curriculum outcome scales of Religious Education and Literacy where all correlations were all significant at $p < .002$. These were much stronger than the correlations with numeracy, where only two were significant at this level.

5.4.5 Multiple regression

In the present study, the purpose of multiple regression was to investigate the relationship between the set of eight learning organization characteristics (the predictor variables) and each of the three curriculum outcome measures (the dependent variables). One potential problem in the calculation of multiple regression in a research study like this was the issue of multicollinearity among the set of predictor variables which occurs when there are moderate

to high intercorrelations among the predictors (see section 4.4.3). According to Stevens (2002), multicollinearity can have at least three effects: severely limit the size of the multiple correlation coefficient (R^2), confound the effects of the predictors due to their intercorrelations, and increase the variance of the regression coefficients which leads to unstable prediction equations.

Scale validation data reported in chapter four shows moderate to strong correlations among the eight learning organization characteristics scales (see Table 4.7). Correlations ranged from .53 for 'Shared and Monitored Vision/Mission' with 'Effective Communication Channels' to .80 for 'Taking Initiatives and Risks' with 'Trusting and Collaborative Climate'. Accordingly, multicollinearity was considered a real threat to the conduct of multiple regression analyses in the present study. To confirm this problem, a procedure outlined by Stevens (2002) was employed in which R^2 and the Variance Inflation Factor (VIF) was computed for each learning organization characteristic scale using the remaining seven learning organization characteristic scales as predictors. The VIF was computed from R^2 using the formula $VIF = 1/(1 - R^2)$. Table 5.19 shows the results for the present study.

Table 5.19 Variance Inflation Factors (VIF) for the eight learning organization characteristics.

<i>Learning Organization Characteristic</i>	R^2	$VIF = 1/(1 - R^2)$
Systemic Thinking and Mental Models	.75	4.05
Continuous Improvement of Work	.80	5.03
Taking Initiatives and Risks	.84	6.41
Ongoing Professional Development	.59	2.45
Trusting and Collaborative Climate	.86	7.04
Shared and Monitored Vision/Mission	.63	2.69
Effective Communication Channels	.68	3.16
Team Work and Team Learning	.78	4.63

While the VIF values in Table 5.19 do not indicate a severe multicollinearity problem, there is evidence of a degree of multicollinearity that could prevent the effective use of multiple regression. In line with Stevens (2002), it was decided to use principal components analysis to reduce the number of predictors. This analysis revealed only one principal component with an eigenvalue of 5.34 and extracting 66.72% of the total variance. This procedure confirmed clearly the high correlations among the eight learning organization characteristic scales. Accordingly multiple regression using these eight learning organization characteristic scales as predictor variables of each of the three curriculum outcome measures was not viable.

To complete the analysis of the relationship between the set of eight learning organization characteristics scales and each of the three curriculum outcome measures, the single principal component identified was taken as the sole predictor variable. Factor scores computed via the principal components analysis were taken as raw scores in these analyses. Thus, the multiple regression analysis was reduced to three simple Pearson correlations between this principal component variable and the three curriculum outcome measures. These correlations were .42 for religious education, .73 for literacy, and .40 for numeracy. Clearly the eight learning organization characteristics scales had a much stronger collective relationship to literacy compared to religious education and numeracy. Over 53% (0.73^2) of variance in literacy scores was accounted for by the principal components variable. These results are consistent with the simple Pearson correlations reported in the previous section.

Having presented data for simple correlations and then multiple regression it was logical to examine the canonical correlations for all learning organization characteristics and all three curriculum outcome scales. Canonical correlation extended multiple regression and examined the relationship between the two sets of variables namely the learning organization characteristics and the curriculum outcome scales. It predicted which set of predictor variables best predicted which set of criterion variables and was extremely useful in a study such as this where there were a number of variables.

5.4.6 Canonical correlations

Canonical correlation analysis revealed one of the three correlations between the set of eight learning organization characteristics and the set of three curriculum outcomes to be statistically significant ($R_c = .85, p < .05$). The results of this analysis were interpreted using an approach described by Stevens (2002). Table 5.20 shows relevant information for this significant canonical correlation. A redundancy analysis (Stewart & Love, 1969) indicated that the total variance overlap for all three canonical correlations for the eight learning organization characteristics and the three curriculum outcomes was 57.5%. For the first canonical solution described above, the eight learning organization characteristics accounted for 36.8% of the variance in the three outcome scales.

Table 5.20 Standardised canonical coefficient and canonical variate-variable correlations for the first significant canonical correlation for learning organization characteristics and curriculum outcome scales.

Variable	Standardised Canonical Coefficient	Correlation with Canonical Variate
<i>Learning Organization Characteristics</i>		
Systemic Thinking and Mental Models	-0.25	-0.78
Continuous Improvement of Work	0.19	-0.67
Taking Initiatives and Risks	-0.09	-0.66
Ongoing Professional Development	-0.10	-0.74
Trusting and Collaborative Climate	-0.06	-0.81
Shared and Monitored Vision/Mission	-0.18	-0.71
Effective Communication Channels	-0.50	-0.91
Team Work and Team Learning	-0.21	-0.75
<i>Curriculum Outcomes Scales</i>		
Religious Education	-0.76	-0.92
Literacy	-0.35	-0.75
Numeracy	-0.10	-0.32

Interpretation of the correlations between the original variables and the canonical variate and the standardised canonical coefficients revealed that higher levels of ‘Effective Communication Channels’ and to a lesser extent ‘Systemic Thinking and Mental Models’, and ‘Team Work and Team Learning’ were related positively with improved religious education and literacy outcomes.

The preceding sections of section 5.4 presented the descriptive and correlational statistics that assisted in answering the third sub-question in this study. These quantitative results were supplemented and contextualised by the qualitative results gathered through the second open-ended question in the questionnaire. An overview of this data is presented in the next section of this chapter.

5.4.7 Qualitative data

The wording of the second open-ended question was:

In what ways can the CEO better support the raising of standards in schools?

Respondents were encouraged to answer this question in the context of the eight characteristics of a learning organization adopted for this study. This question elicited some broad responses some of which were not related to the framework of the question. However much of the data was useful and helped tease out those areas that the CEO Sydney could

consider to further enhance the educational standards within the systemic schools of the Archdiocese. The analysis of the data collected in this question was carried out by assigning respondent answers to one of the eight learning organization characteristics under the three groups (i) primary principals (ii) secondary principals and (iii) senior CEO Sydney personnel. 113 (78%) of respondents answered this question to varying degrees. Some respondents nominated a number of characteristics that could be strengthened to improve standards whilst others simply nominated just one. Appendix L presents a summary of the raw data for this open-ended question.

The wording of this question encouraged respondents to be constructive in their suggestions identifying how the CEO Sydney could better support the raising of standards. A sample of the qualitative data is presented below under the eight learning organization characteristics.

‘Systemic Thinking and Mental Models’

This characteristic was nominated by 47% of respondents and some responses implied that standards could be further raised by adapting the CEO Sydney strategic management practices to allow for greater local ownership:

Encourage schools to articulate their strategic management plans in their own language. A significant number of Strategic Management plans, worded almost identically, is very suspicious of CEO domination. This has been found to affect understanding and ownership and create a sense of overwhelming among members of Executive teams.

CEO personnel, User Id 91.

‘Continuous Improvement of Work’

Amongst the 44% of respondents who identified this characteristic some suggested that the system approaches to continuous improvement needed a broader, more collaborative perspective, further supporting other data gathered through this study which suggested that a more collaborative climate would further enhance improvement:

The CEO has been effective in raising expectations and standards but more through comparison and pressure than through collaboration and open dialogue.

Primary principal, User Id 84.

‘Taking Initiatives and Risks’

Only 5% of respondents identified this characteristic with a suggestion about the need for the system to encourage and resource initiative and risk taking to a greater extent:

Characteristic 3 taking initiatives and risks requires a great deal of work and encouragement – at the moment it takes a good deal of courage and grit to try anything new.

Primary principal, User Id 122.

Schools need more independence in decision making with regard to their special needs. The financial restraints, based around staffing, restrict initiatives.

Secondary principal, User Id 152.

Further comments suggested that the CEO Sydney needs to examine the culture of the organization so that greater innovation to improve teaching and learning standards is encouraged:

We need to give attention to developing a culture which encourages risk taking and innovation within a climate of trust – I feel that the CEO needs to develop further in this area

CEO personnel, User Id 72.

‘Ongoing Professional Development’

This characteristic was the one most referred to by respondents (50%) as the characteristic through which the CEO Sydney can best support the raising of standards. Once again resourcing this area was identified as necessary if professional development was to make a difference:

More opportunities need to be provided for school executives to come together for professional development related to all aspects of ‘raising standards’- learning targets, leadership targets, even financial or Occupational Health and Safety targets.

Primary principal, User Id 13.

I think there must be much more investment in targeted professional development – that is more funds for schools to work on key areas of need rather than supply generic forms of professional development on areas that may or may not be relevant to some schools.

Secondary principal, User Id 25.

‘Trusting and Collaborative Climate’

This characteristic attracted only a few responses (12%) but those that did suggested that it was an area in which change could occur and therefore have some impact on the ongoing work of the CEO Sydney in raising standards:

There needs to be greater acknowledgement and support of and trust in schools to create and develop initiatives that are most suitable to the needs of individual schools, even if these do not fit neatly into the CEO agenda.

Primary principal, User Id 84.

‘Shared and Monitored Vision/Mission’

‘Shared and Monitored Vision and Mission’ as a learning organization characteristic was acknowledged by 39% of respondents as a means through which the CEO Sydney could better support the raising of standards. However there were some respondents who highlighted the importance of this characteristic in the whole standards question:

With regard to raising education standards, the concept of a 'shared and monitored vision/mission' is of the utmost importance. From my experience, this is the way the system affects change. Whilst sharing the vision and mission necessitates and realizes accountabilities, the pervasiveness of 'accountability' is diminished and creativity is encouraged within that common purpose and sense of direction.

Secondary principal, User Id 96.

'Effective Communication Channels'

This characteristic was identified by 21% of respondents and some suggested that the CEO Sydney needed to more effectively access information and communication from the schools and to encourage the sharing of good practice:

The CEO needs to hear, from principals, what the real needs of each school are and be prepared to back the judgement of principals in this regard.

Secondary principal, User Id 152.

Principals need to be provided with shared proven practices, that in other schools and systems, have shown to be effective.

Primary principal, User Id 16.

'Team Work and Team Learning'

Only 11% nominated 'Team Work and Team Learning' as a characteristic through which the CEO Sydney enhances standards. Some dissatisfaction was captured in the following comment:

When principals are invited to be part of system teams it seems their presence is at times tokenistic and their contribution to discussion/decision making less valued.

Primary principal, User Id 108.

There were many general responses from all three groups which suggested that the very best way in which the CEO Sydney could better support the raising of standards in schools was to secure and distribute more resources to the schools for the employment of more teaching and non-teaching staff, the reduction of class sizes and to better cater for the individual learning needs of students. Although this did not directly fit within the research focus of this study it is worth noting in this summary of the qualitative results because it was so regularly mentioned by respondents.

5.5 CHAPTER SUMMARY

In this chapter the researcher has presented a comprehensive summary and analysis of the quantitative and qualitative data that were gathered as part of the survey.

The results indicated that the CEO Sydney possesses a number of the characteristics of a learning organization some to a stronger extent than others. The results also indicated that

there were no statistically significant demographic, group differences in perceptions. Finally the correlational results indicated that there were associations between the CEO Sydney, its learning organization characteristics and the curriculum outcomes particularly religious education and literacy and less so for numeracy.

In chapter six the results of this study are discussed in the context of the major research question and three sub-questions, relevant system documentation, policies and procedures and by reference to the relevant literature.

CHAPTER 6

DISCUSSION OF RESULTS

6.1 INTRODUCTION

This chapter discusses the quantitative and qualitative data presented in chapter five and answers the major research question and associated sub-questions (section 1.5). This discussion is conducted with close reference to the literature in this field and some relevant, official policies and documentation of the CEO Sydney.

This study had few educational parallels or precursors and relied to a significant extent on analogous research in schools and industry for its theoretical framework. As such it may be regarded as a pioneering study rather than one that builds on pre-existing research. For example this study gathered, for the first time, some data on the relevance and usefulness of applying the learning organization framework to a non-government education authority like the CEO Sydney.

Figure 6.1 is a graphical representation of the eight learning organization characteristics in their rank order from highest to lowest scale mean per item as perceived by the respondents. The discussion that follows considers the characteristics in this order.

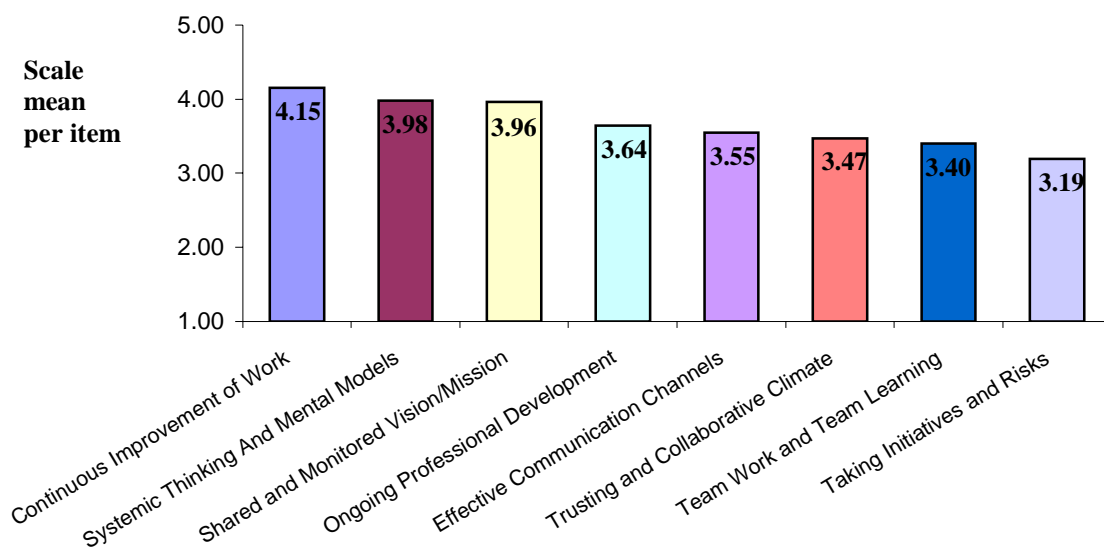


Figure 6.1 – Descriptive statistics ranking the eight learning organization characteristics from highest to lowest scale mean per item. Note the range is 1-5.

Discussing the characteristics in this order is in keeping with the Rosengarten's (1999) conclusion that the characteristics of a learning organization can be ranked according to their impact on organizational learning.

In the next section of this chapter the results for each of the eight learning organization characteristics adopted for the study are discussed under the three broad groupings, namely those which were strongly supported, those which were moderately supported and those weakly supported (section 5.1.1). This is followed by a holistic discussion and final conclusions about the CEO Sydney as a learning organization and in this context the demographic results are considered. In the final sections of the chapter the perceived association between the CEO Sydney as a learning organization and standards in religious education, literacy and numeracy are discussed.

6.2 LEARNING ORGANIZATION CHARACTERISTICS AND THE CEO SYDNEY

The learning organization characteristic which was most strongly supported by the data was 'Continuous Improvement of Work' and the least supported characteristic was 'Taking Initiatives and Risks'.

Consistent with section 5.1.1, and for the purpose of this discussion of results the following terms were applied:

- Strongly supported -Scale mean per item > 3.8
- Moderately supported -Scale mean per item 3.3- 3.8
- Weakly supported -Scale mean per item < 3.3
- Noting that the range for the scales was 1 – 5.

STRONGLY SUPPORTED CHARACTERISTICS

There were three characteristics that were strongly supported (as determined by the scale mean per item) in this study namely, 'Continuous Improvement of Work', 'Systemic Thinking and Mental Models' and 'Shared and Monitored Vision/Mission'. Although analysed as three separate entities, there is a degree of intercorrelation (section 4.4.3) and interdependence between these characteristics. For example, continuous improvement happens most effectively within a strong systemic and strategic framework, whilst both

operate within, and are focused by, the broad context of a shared vision and mission (Rosengarten, 1999). The findings of this study are consistent with Rosengarten's contention and theoretical discussion, which concluded that 'Systemic Thinking and Mental Models' and 'Continuous Improvement of Work' are both necessary and sufficient 'core' characteristics of a learning organization as determined by the contribution these two characteristics make to organizational learning. Systemic thinking establishes the broad frameworks within which quality organizational learning is pursued (Senge, 1990), whilst continuous improvement is an important imperative that keeps the learning organization going. Other learning organization characteristics, whilst necessary, are not sufficient in the determination a learning organization. The two most strongly supported characteristics in this study are those that are most consistently identified in the literature as characteristics of learning organizations (Table 2.1).

The following section discusses the three most strongly supported learning organization characteristics in detail, noting that there were no statistically significant demographic group differences within these characteristics, indicating a consistency of perception across the demographic groups.

6.2.1 Characteristic 2 - 'Continuous Improvement of Work'

Characteristic two, 'Continuous Improvement of Work', with a scale mean per item of 4.15, was the most strongly supported of the eight learning organization characteristics, with opinion clustered relatively tightly around the mean (standard deviation 5.08). 86.6% of all responses on this characteristic were either 'agree' or 'strongly agree' across the items in this scale.

The survey population recognised that the CEO Sydney had high expectations, was committed to improving its own effectiveness and demonstrated a willingness to regularly evaluate its services (Items 11,12 & 13), with some reservation about the extent to which the CEO Sydney sought feedback from principals in the process of improving its own performance (Item 14). Continuous improvement requires a commitment to learning, often informed by analysis of data and feedback to help the diagnosis of problems and improvement of performance at the system and school level (Garvin 1993; Silins & Mulford, 2002). The results of this study suggested that the CEO Sydney is an organization that gathered data on school and system performance, with a view to using that data to assist in the improvement of

performance. The CEO Sydney demonstrated accountability and its commitment to improvement in a number of ways including major full-system reviews (Canavan, 1986; Hughes, 1995). An examination of the full-system reviews (Appendix B) illustrated that there has been an evolution in the focus of such reviews from one based on internal and operational dynamics (including the effective operation of a matrix organization) and role definition (Canavan, 1986), through to a focus on an organization that was operating from a well developed Strategic Management Plan (SACS Board & CEO, Sydney, 1995b), united with the schools by a shared vision and mission, underpinned by highly refined system processes (Hughes, 1995). A proposed review of the system in 2004, will focus explicitly on the impact of the system on school performance and standards (SACS Board & CEO, Sydney, 2004a). These full-system reviews indicated not only the ongoing preparedness of the system to subject itself to scrutiny, but its increasing focus on the difference it makes to the quality of teaching and learning in schools.

System processes, such as the Educational Audit and School Review and Development (SRD), were perceived to have contributed to school improvement, better teaching programs and school self-review (Items 15,16 & 17), strongly supporting Hill, Crevola and Tucker's (2003) position that school systems which are best able to adapt to change and maintain self-improvement are those best able to evaluate their own performance. The CEO Sydney was also perceived as exerting a pressure for improvement and challenged schools to perform at a higher standard (Items 19 & 20). Respondents indicated that the system's strategic management practices assisted them in improving the quality of teaching and learning generally (Item 21).

These results are consistent with a broad range of research that identifies effective school systems as ones which delicately balance pressure and support as they play their part in school improvement (Audit Commission & Ofsted, 2001; Wong 2000). The extent of influence of educational authorities, like the CEO Sydney, on classroom practice is problematic (Whitty, Power & Halpin, 1998), however these results suggested that respondents regarded system processes as having some impact on the quality of teaching and learning. The extent and nature of this influence was not determined in this study but would be worthy of further investigation.

The qualitative results supported the broad conclusions above. However a minor critique highlighted the need for the CEO Sydney to adopt a broader view of improvement than one

simply determined by measurement through standardised testing, like BST and ELLA (section 2.6). Continuous improvement as assessed through test data was raised as a threat to the broad, liberal curriculum that some respondents believed should characterise education generally and Catholic education specifically, with its broad vision and mission based on the gospels. These results were consistent with Arthur (2003) who suggested that Catholic schools have broad and diffuse goals not determined by testing, whilst improvement in terms of student achievement should never be simply a matter of measurement through standardised tests divorced from the learning context (Pedulla, 2003; Marshak, 2003).

The CEO Sydney documentary materials described in section 2.3.1 (e.g. *The Strategic Management Plan - mark 2*) provided broad and explicit evidence of a system strongly committed to continuous improvement, with a clearly formulated strategic commitment to raising standards through a wide variety of approaches, including target setting and provision of data to schools (Appendix D). The documentation provided evidence that the CEO Sydney sought to review its own performance at a variety of levels with the purpose of further enhancement of its services to schools. The Strategic Management Plan and integrated strategic planning cycles at both the CEO Sydney and school levels were vehicles which assisted the system and schools improve their effectiveness (section 2.3.1). The strategic planning cycles were also mechanisms to assist in the standardisation of work, thereby further enhancing continuous improvement (Adler, 1993). These results further supported the conclusion that this characteristic of a learning organization was not only evident in the results of the survey but also strongly represented in a wide variety of system documentation and policies.

There was evidence in these results that, through system processes and strategic management practices, the CEO Sydney exerted a continuous challenge and pressure for improvement in the schools, matched by commensurate resource and personnel support, findings which are consistent with research on effective school systems (Hill, Crevola & Tucker, 2003).

These findings also indicated that the CEO Sydney, at the system level, encouraged a research mindedness and that the collection and analysis of data underpinned action. In doing this the CEO Sydney built a capacity for continuing change and improvement as articulated by Hill, Crevola and Tucker (2003). A culture that invests in building staff capacity and that focuses on outcomes and standards is essential in an effective school system (Shaw, 2002). Thompson (2003) argued that school systems, like the CEO Sydney, need to clearly define

standards specifying what students should know and be able to do. Analysis of CEO Sydney system documentation revealed that there is significant, system, targeted intervention of resources and personnel to address improvement in areas of identified need. This is acknowledged as one significant way school systems use to generate continuous improvement (Thompson, 2003).

These results indicated that 'Continuous Improvement of Work' was a strongly represented characteristic in the CEO Sydney and was important in its recognition as a learning organization. This was in line with Rosengarten's (1999) ranking of the same characteristic as necessary and sufficient for an organization to be classified as a learning organization. The quantitative, qualitative and system documentary data, considered, in the context of the literature, supported the conclusion that the CEO Sydney could be considered to exhibit strongly the learning organization characteristic, 'Continuous Improvement of Work'.

6.2.2 Characteristic 1- 'Systemic Thinking and Mental Models'

'Systemic Thinking and Mental Models', was the second most strongly supported characteristic with a scale mean per item of 3.98 and 80.2% of all item responses either 'strongly agree' or 'agree' across the scale. This indicated strong respondent support and understanding of the systemic processes of the CEO Sydney, including strategic management practices, and their value in linking schools together and helping them address their annual priorities (Items 1, 4, 8, & 10). There was also a commensurate understanding of roles, responsibilities and interrelationships within the organization (Items 2, 6, & 10) and between the schools, the CEO Sydney and the external environment (Items 5 & 9). Mental models are developed and strengthened as clearer understandings of the organization, teams and individuals are reinforced from a system's perspective (Senge, 1990). These findings are in keeping with the work of Worrell (1995) which supported the role systemic thinking plays in helping people understand how an organization works.

The adequacy of consultation with principals in the development of the system annual agenda was an area that generated the most negative responses in this scale (Item 7). It is noteworthy that in a scale so strongly supported, respondents raised early in the questionnaire the issue of insufficient collaboration with principals, although some 10% could not make a valid judgement, perhaps indicating that some are uncertain and lack sufficient information to make a judgement. The qualitative results reinforced these broad findings whilst further confirming

the value of system processes as a means of enhancing systemic thinking and mental modelling. It was suggested that the value of system processes in raising standards could be further enhanced by allowing greater, local customising and adaptation of system processes.

The results for this characteristic are particularly interesting as they provided recent data on the major challenge that faced the CEO Sydney as it developed in the period from 1984 to 1986 (Canavan, 1986). There was, at that time, considerable organizational dysfunction resulting from lack of clarity in roles, responsibilities and relationships within the matrix organization. The findings of this study suggested that roles, responsibilities and interrelationships were much more clearly understood by key stakeholders in the organization in 2003. There was evidence that principals and senior CEO Sydney personnel understood the links, interrelationships and systemic thinking within the organization and between the organization and the broader context within which it operates.

The qualitative results provided further evidence of the emphasis on 'Systemic Thinking and Mental Models' through a commitment to clearly articulated strategic management practices and system processes, tempered by a cautionary warning, like that of Hargreaves (1995), about strategic planning having the potential to stifle creativity and imagination. Schmoker (2004) strongly encourages system and school strategic plans to be simple, short-term, measurable statements linked to student assessments. The strategic leadership and management cycles that operate in the system and in the schools are very significant in this context (Figure 2.1). The documentary sources provided evidence of an integrated and coordinated approach to planning, leadership and management (Appendix C).

The results of this study are in keeping with the work of Silins and Mulford (2002) who suggested that in the school setting, an analogous research site for this study, organizational learning required monitoring and review of the school's mission and goals for the continual development of shared understandings, values and practices. The emphasis and expectations that the CEO Sydney places on target setting and strategic planning resonated with Hill, Crevola and Tucker's (2003) assertion that the first lesson to be learnt for education systems that wish to improve school standards is to establish a consensus about the important outcomes of schooling embedded in well defined and commonly understood performance standards with established targets (Appendix M).

The results of this study provided consistent evidence that the CEO Sydney clearly articulates and monitors performance standards within a well-defined and understood strategic framework and in doing so assists in a coordinated, systemic and coherent effort to manage change on multiple levels (Fullan, 2000). These findings are consistent with the view of Hill, Crevola and Tucker (2003) which emphasized that systemic thinking was an important component of an effective school system.

The results of the survey and the review of CEO Sydney policies and documentation supported the conclusion that, 'Systemic Thinking and Mental Models' was a characteristic strongly present in the CEO Sydney and one that in Senge's (1990) view is the discipline that has the potential to unite and integrate all the others.

6.2.3 Characteristic 6 – 'Shared and Monitored Vision/Mission'

'Shared and Monitored Vision/Mission' was a strongly supported characteristic in the quantitative results with 76.9% of responses either in the 'strongly agree' or 'agree' categories across the scale and a scale mean per item of 3.96. The unifying and guiding value of the system vision and mission was acknowledged (Items 58 & 63) as was its impact on:

1. The development of the local school Vision and Mission statement (Item 59).
2. The development of local policy development and school annual plans (Item 60).
3. The monitoring by the CEO Sydney of the local development of the Vision/Mission statement and the alignment of these local statements with the system Vision/Mission (Items 64 & 65).

There was a consistency between the respondents' personal vision of Catholic education and the broader system vision as indicated by the strong support for Item 61. This finding is supported by the insights of Argyris and Schon (1978) who emphasized the importance of consistency between personal and organizational vision and mission. Such a congruence of vision is also in keeping with the work of Luthans, Hodgetts and Lee (1994) who highlighted the role of vision/mission in creating commitment and support for organizational goals.

There was however less commitment to the collaborative development of the system Vision and Mission statement as indicated by Item 62, having the lowest mean of 3.65 in this scale. This may reflect the fact that a significant proportion of the survey population was not part of the collaborative processes which developed the system vision and mission in 1994/1995

(Hughes, 1995). There has been an average 10% turnover per annum of principals between 1995 and 2003. The relatively small standard deviation (4.40) confirmed a clustering of opinion for this characteristic. Overall the quantitative results indicated that this characteristic of the learning organization was strongly supported in the CEO Sydney and its unifying value and importance was affirmed.

The qualitative results confirmed that 'Shared and Monitored Vision/Mission', as a learning organization characteristic, had an impact on schools. A number of respondents linked the development of school Vision and Mission statements in the SRD process with the system vision and mission. Its importance as the foundation on which a system goes about improving standards was an additional insight consistent with the work of Coleman (1986) and Rossman, Corbett and Dawson (1986) who linked school district mission and ethos and the standards of student achievement. There were no statistically significant group differences or effect size indices of note for this characteristic, indicative of a similarity of perception amongst the demographic groups.

Analysis of system publications and policies revealed a strong documentary base for the articulation and dissemination of a clear and coherent vision and mission (section 2.4.6). There was strong cross-referencing to the system Vision/Mission statement (SACS Board, 2002) in other system policies and documentation, like the Catholic Schools' Leadership Program (e.g. CEO, Sydney, 2001a). This emphasized the foundational role that the system Vision and Mission statement plays in the work of Catholic systemic schools in the Archdiocese of Sydney.

The CEO Sydney development of the system vision and mission in 1994/1995 was a major collaborative venture involving thousands of participants from all stakeholder groups and it generated a Vision and Mission statement that was, and continues to be, broadly owned and implemented (Hughes, 1995). The findings of this study suggested that the vision and mission of the system is a significant unifying feature of the CEO Sydney with strong local school ownership. It is a strong foundational characteristic and one that binds the schools and the CEO Sydney together.

The findings of this study suggested that the CEO Sydney's vision and mission is well monitored and inculcated into the schools and their planning and that the vision and mission has generated a much higher level of sustained commitment even though many of the

respondents may not have been part of the collaborative development of this vision and mission. The importance of this focus on system Vision and Mission in the CEO Sydney documentation is consistent with the work of Senge (1990) who claims that the value of building a shared vision is crucial in fostering a long-term orientation and an imperative for learning. A shared vision required dialogue, reflection, ongoing articulation and mutual understanding rather than simply being imposed by senior management (Hughes & Tight, 1998).

These three learning organization characteristics were strongly supported in the findings from the questionnaire and CEO policies and documentary evidence. The next section comprises discussion of the results of those learning organization characteristics that were deemed to be moderately supported in this study.

MODERATELY SUPPORTED CHARACTERISTICS

The moderately supported characteristics were, 'Ongoing Professional Development', 'Effective Communication Channels', 'Trusting and Collaborative Climate', and 'Team Work and Team Learning' and discussion on each is contained in the following sections.

6.2.4 Characteristic 4 - 'Ongoing Professional Development'

The quantitative results indicated moderate support for this characteristic with 66.5% of respondents either strongly agreeing or agreeing with items across the scale and a scale mean per item of 3.64. There was strong support for the encouragement provided by the CEO Sydney for the professional development for principals (Item 37). The impact of system professional development was also recognised as generating professional improvement and improved classroom practice (Items 40 & 41). This strongly positive response from respondents on the relationship between the professional development offered and the outcomes in terms of better classroom practice was particularly interesting and clearly reflected system objectives as articulated in the CEO Sydney Charter and Mission (section 1.2.4 and section 1.2.5). The exact nature of this relationship was not teased out in this study but is worthy of further research. Professional development was recognised as a system priority that was conducted in a systematic way (Items 34 & 35) and that met real school needs (Item 36), including responsiveness to standardised testing data (Item 43).

Respondents however suggested that the professional development offered was less encouraging of creativity (Item 38), a finding which is consistent with the generally weaker responses to characteristic three, 'Taking Initiatives and Risks' and discussed further in section 6.2.8.

The responses to this characteristic were relatively more dispersed (standard deviation 6.30), with a significant percentage expressing a neutral opinion. The CEO Sydney's communication with principals about their professional development needs, was not strongly supported (Item 44), a finding that was consistent with the general pattern throughout this study where the CEO Sydney and its communication and collaboration with principals was identified as an area for improvement within the organization (section 6.2.5).

Analysis of relevant system documentation revealed evidence that the CEO Sydney was committed to central, regional and local school level professional development (e.g. CEO, Sydney, 2001b). There were a number of professional development programs that were more generic and that served the needs of leadership development across the Archdiocese. The best example of this was 'The Catholic Schools' Leadership Program' which was a comprehensive, staged program targeted at various leadership groups including experienced principals and preparation for principalship (CEO, Sydney, 2001a). The CEO Sydney publications reviewed in section 2.3.4, provided evidence that a comprehensive professional development program was in place which took forward the system priorities articulated in the Annual Archdiocesan Agenda for that year. Analysis of the documentation (e.g. CEO, Sydney, 2002b) revealed that the professional development opportunities offered at the regional level were more targeted to meet the needs identified by the relevant, regional groups of primary and secondary principals, assistant principals and religious education coordinators, subject and year coordinators and teachers in those regions. For example, in one region during 2003, a significant course in managing difficult people, facilitated by a skilled, external consultant, was conducted in response to the local needs of principals (CEO, Sydney, 2003c). There was evidence that the professional development took a variety of forms with a significant degree of sharing of good practice, action-research based professional development, through to hands on ICT competency development (CEO, Sydney, 2002b). The weaker response to Item 38 however indicated that respondents did not perceive such variety in approach delivering creative professional development.

These examples indicated that the CEO Sydney had a commitment to the ongoing professional development of its own staff and of the principals, assistant principals, middle managers, teachers and non-teaching staff in the schools and that this professional development program was shaped and delivered at a variety of levels from the overall system to small numbers of teachers in classrooms exchanging good practice. There was strong evidence from system documentation (e.g. CEO, Sydney, 2002b) that a wide variety of professional development models were also utilised to deliver professional development.

Senge (1990) emphasized the need in any learning organization for a strong commitment to the development of personal mastery whereby lifelong learning was nurtured through the ongoing clarification and strengthening of personal vision. If personal mastery is to be of use to the individual, the team and the organization it needs not only to be pursued from a systems' perspective but also to be in line with the needs of participants. The results of this study indicated that the CEO Sydney approach to ongoing professional development captured these dimensions in its central, regional and local approaches to professional development with their flexibilities and their encouragement of dialogue and sharing of good practice. This is in accord with Schmoker's (2004) view that the key to effective professional development is to develop communities of teachers who learn through ongoing collaboration and practice. It is noteworthy that, as Guskey (2003) argues, a carefully organized collaboration between site-based educators and district level personnel, with their broader perspectives on issues, is a means of optimising the effectiveness of professional development. These results re-emphasized the importance of collaboration in defining professional development directions and the need for the CEO Sydney to do this better as suggested in the responses to Items 44 and 42.

Critical to effective professional development is the need to assist teachers understand more deeply the content and skills that they teach and the ways that students learn those skills and content. This implies effective and systematic use of time and structured and purposeful collegiality and collaborative exchange (Guskey, 2003). These findings suggested that the CEO Sydney approach to ongoing professional development is doing this effectively through nurturing local, site or cluster based professional development. The ultimate goal of professional development in education systems must be the improvement in student learning outcomes, including scores in standardised examinations and assessments. Although there still exists in the CEO Sydney some professional development that could be regarded as "adult pull-out programs" (Kelleher, 2003) the analysis of the *'Professional*

Development/Inservice Guide 2002’ (CEO, Sydney, 2002b) as an example, revealed that there has been a greater emphasis in the past few years on system wide, longitudinal professional retraining programs for teachers in literacy, numeracy, ICT, religious education and other areas. Professional development offered by CEO Sydney sometimes embraces an action-research component with in school mentoring and professional follow-up (e.g. CEO Sydney, 2002b). In this way learning gets translated into classroom practice as the strength of response to Item 40 suggested.

Student outcomes should be the fundamental means of assessing the effectiveness of any effective professional development. The standards movement has intensified the pressure to prove that professional development is having such positive results (Kelleher, 2003), yet there still needs to be challenging opportunities for teachers to be stimulated and encouraged to be innovative in their teaching practice.

The results of this study are consistent with the insights on the value and effectiveness of professional development gathered by reviews of LEAs in the United Kingdom (Riley, Docking & Rowles, 1998). The results indicated that the CEO Sydney is effective in the development of its human capital but that more needs to be done to nurture free, creative and collaborative dialogue. Thus ‘Ongoing Professional Development’ is a characteristic that is present to a moderate degree in the CEO Sydney.

6.2.5 Characteristic 7 – ‘Effective Communication Channels’

The quantitative results ranked this characteristic as the fifth most strongly supported with a scale mean per item of 3.55 and 58.4% of responses strongly agreeing or agreeing across all items in the scale. The respondents recognised that there were a wide variety of communication channels available for schools to communicate with the CEO Sydney (Item 68) with CEO Sydney communications on matters like legislation acknowledged as being clear (Items 71 & 77). Regional principals’ meetings were characterised by two-way information flow, whilst Archdiocesan principals’ meetings, which are a much larger and more formal gathering, were not perceived as such (Items 72 & 73). The CEO Sydney communicates its expectations clearly using ICT and other means and clearly communicates the rationale behind the school staffing allocation (Items 70, 76 & 79). Respondents were unsure of the degree to which the CEO Sydney actively communicates with external agencies (Item 75). Perhaps this is because they do not have knowledge of these system activities.

Although a wide variety of channels for schools to communicate with the CEO were affirmed (Item 68), opinion was divided as to whether there were adequate channels for principals to make suggestions to the CEO Sydney about the improvement of its services (Item 78) or whether there was adequate dialogue between the schools and the CEO Sydney (Item 74). These findings relate to Leithwood, Begley and Cousins' (1994) argument that school districts need to encourage vertical and horizontal, continuous feedback to identify areas of district incoherence. A majority of respondents indicated that the CEO Sydney is unreceptive to input from schools (Item 69). These results suggested that respondents do not feel that they can communicate and make suggestions to the CEO Sydney in an open, trusting and collaborative way and that the CEO Sydney has communication channels which were perceived as vertical, top-down in style

The qualitative results indicated that because communication channels from the CEO Sydney schools are well established, this could mean that the system can more readily make demands on schools. Some respondents suggested that the communication model being used by the CEO Sydney was bureaucratic, top-down and hierarchical. This is at odds with Rosengarten's (1999) view that a learning organization requires communication that is free of hierarchies, if that is ever really possible in any organization. If standards are to improve further then the CEO Sydney needs to listen more to schools.

The calculation of MANOVA and ES indices as a vehicle for comparing the perceptions of the five demographic groups revealed that, for this characteristic, there were no statistically significant group differences or effect size indices of note, once again indicating a relative consistency of perception across these groups.

The system documentary material reviewed (section 2.3.7), provided evidence that the CEO Sydney has a broad range of communication mechanisms and strategies and that there was also a deliberate and consistent effort to elicit communications from principals and others. Yet the broad perceptions suggested that these efforts to elicit feedback from principals were not acknowledged, recognised or sufficient. These results revealed that there was some further development that needed to occur in the area of communication within the CEO Sydney, if it was to be characterised as a learning organization where information was fluently exchanged vertically, horizontally and across functional groups (Leonard-Barton,

1992). However over-communication with its potential to paralyse decision making is worthy of note in this context.

Dialogue is a critical component of Senge's vision of a learning organization, with dialogue occurring in an open and trusting climate. It is an essential building block for an organization that is to learn, develop its human capacity and be responsive to the changing environment (Senge, 1990; Lipton & Melamede, 1997). There is some evidence that such dialogue is not an obvious feature of the CEO Sydney (Item 74) and the nature of the communication within the system warrants further exploration. Although in some areas (Item 56) the CEO is perceived to encourage dialogue. In this study effective communication is critical because it underpins so many other learning organization characteristics, such as the development and ownership of a shared vision and mission (Rosengarten, 1999). The results indicate that this characteristic was moderately supported by respondents as a learning organization characteristic in the CEO Sydney, but it is an area that warrants further investigation and development.

6.2.6 Characteristic 5 – 'Trusting and Collaborative Climate'

Of the eight learning organization characteristics used in this study this one was ranked sixth with a scale mean per item of 3.47 and 54.3% of responses across all items in the scale in the 'strongly agree' or 'agree' categories with a significant proportion of responses in the neutral category (22.2%). The standard deviation of 8 and range of 36 indicated that there was a broad dispersion of responses for this characteristic and that perception was more varied than in other characteristics.

Principals perceived that they were valued by the CEO Sydney (Item 52) and when CEO Sydney intervention had to occur it was carried out sensitively (Item 53), whilst CEO Sydney professional development encouraged the sharing of ideas through dialogue (Item 56). A majority of respondents suggested that there is mutual trust between principals and the CEO Sydney (Item 45) and that sensitive issues can be raised (Item, 50), whilst the structures within the CEO Sydney encouraged collaboration (Item, 51). A majority of respondents thought that decisions were taken at the appropriate level, according to the principle of subsidiarity (Item, 54). Opinion was divided as to whether the CEO Sydney structures served the individual needs of principals or senior personnel and whether candidness and honesty characterised discussions between colleagues in the system (Items 55 & 57).

Respondent opinion was divided as to whether the CEO Sydney valued diversity of opinion, or that principals had the opportunity to participate in significant system-level policy development and whether the CEO Sydney exerted too much influence on decision making at school level (Items 47, 48 & 49). These results are consistent with findings in other parts of this study (e.g. section 6.2.5) which indicated that principals and CEO personnel perceived that they are not as engaged in broader system level decision making as they would wish.

In the qualitative results, only 17% of respondents identified this characteristic as one of the characteristics of the CEO Sydney that has a great impact on schools. Opinion was divided in this area with some acknowledging the presence of a trusting and collaborative climate whilst a number alluded to pressure to follow system policy, failure of people to offer contrary views and a failure to honour the principle of subsidiarity. Interestingly, the review of the organization, conducted in 1994/1995, found that the pressure for increased accountability, and the consequent demands on time, are thought to be at the expense of the traditional relationship of support and collegiality. Enhanced accountability requirements appeared to be in direct contrast to the expressed purpose of devolving responsibility and autonomy down the organization (Hughes, 1995).

Responses once again indicated that principals do not feel that they are sufficiently consulted on the development of policy and that decision making is over centralised and not made at the local level. These results are consistent with findings, particularly in section 6.2.5, in the area of communication and collaboration and indicated that the CEO Sydney needs to re-examine the principle of subsidiarity and its actual implementation.

The qualitative results did not identify this characteristic strongly as a feature of the CEO Sydney and questioned the barriers that existed concerning trust and collaboration and the need for a re-examination of the principle of subsidiarity. These findings are supported by the work of Garrett (1999) who suggested that the learning organization is vitally built on trust and can be a source of cynicism if the rhetoric is not viewed as sincere, whilst trust and collaboration are vital if change and learning are to occur (Berman & McLaughlin, 1976; Stata, 1989). The work of Schmoker (2004) emphasized that collaboration improved performance. These results indicated that the CEO Sydney does need to examine elements of this characteristic if it is to further enhance its profile and performance as a learning organization.

6.2.7 Characteristic 8 –‘Team Work and Team Learning’

In the case of this characteristic the quantitative results indicated that it was ranked seventh of the eight learning organization characteristics used in this study. The scale mean per item was 3.40 with 55% of respondents either strongly agreeing or agreeing with items across this scale. This scale had a very high proportion of responses (14%) in the ‘Can’t make a valid judgement’ category which indicated that some had little knowledge about teams and team dynamics within the CEO Sydney. The CEO Sydney encouragement of team work at the local school level and the value of teams in learning and in policy development was acknowledged (Items 80, 84 & 88). These findings are in keeping with the work of Silins and Mulford (2002) and Honold (1991) who emphasized the value of teams, particularly cross-functional teams, in building up broader perspectives, beliefs, values, norms and shared mental models. In fact Schmoker (2004) asserts that true school improvement demands that teachers work in well-structured, goal oriented learning teams. There was also satisfaction expressed about principal, and to a lesser extent, teacher representation on committees (Items 81 & 82).

Opinion was divided as to whether freedom of thought was encouraged within CEO Sydney established teams (Item 83); whether they were a fundamental learning unit within the CEO Sydney (Item 87) and what the system view was of decisions made in teams and their value (Item 85). Whether the CEO Sydney professional development programs enhanced the skills of team work was also uncertain (Item 86), yet Fink and Thompson (2001) claim that team work and structures, which nurture collaboration are vital for organizational learning. There were no notable demographic group differences for this characteristic.

The qualitative results indicated that CEO staff members, with their more detailed system knowledge of the application of teams and team work, had a slightly different view to that of principals, with some principals viewing invitations to participate in CEO Sydney teams as tokenistic.

Team work and team learning within the CEO Sydney were perhaps not as clearly understood by respondents, particularly principals. The survey results indicated that this characteristic was only moderately supported by respondents.

Teams are fundamental to the effective operation of a learning organization (Senge, 1990; Rosengarten, 1999) and these may be more strongly evident at the local school levels in the system. To what extent schools or indeed the system makes use of cross-functional teams is uncertain. The items in this scale did not resonate with respondents' experience and a number perhaps failed to engage or interact with their experience. Yet Schmoker (2001) identified effective school districts as nurturing teachers working in flexible teams at a variety of levels. The next section contains discussion of the weakly supported characteristic, 'Taking Initiatives and Risks'.

WEAKLY SUPPORTED CHARACTERISTIC

Although according to the criteria established for this study, 'Taking Initiatives and Risks' is categorised as weakly supported its scale mean per item of 3.19 was still above the median in the 1- 5 scale used.

6.2.8 Characteristic 3 – 'Taking Initiatives and Risks'

The quantitative results for this characteristic demonstrated that this was the least supported of the eight characteristics used in this study, with a scale mean per item of 3.19 and 45.4% of responses either agreeing or strongly agreeing across all items in the scale and 29.9% of all responses either disagreeing or strongly disagreeing. Responses were dispersed as indicated by the relatively large standard deviation of 7.90.

The CEO Sydney was considered to be responsive as an initiator of change and tried to anticipate major changes in education (Items 26, 27 & 28), with the regional offices considered to have a high level of influence on decision-making within the system (Item 32).

Opinion was divided as to whether the CEO Sydney was an innovative organization, where experimentation was recognized as a means of learning, where inquiry was promoted and indeed, whether its organizational structure met the changing needs of schools (Items 22, 23, 24 & 30) whilst noting the view of Osler (2001) who suggested that school systems should encourage innovation as long as it was focused on raising standards. The majority of respondents regarded the CEO Sydney as an organization that was more concerned with regulations than with service (Item 25). Opinion was divided as to whether the CEO Sydney was an organization where mistakes were tolerated and where principals could take risks

(Items 29 & 30). The degree of principal influence on decision-making within the system was the least supported item in this scale (Item 33). This is consistent with other results in this study which indicated that decision-making at the system level is not perceived to be highly influenced by principals.

In the qualitative results, only 5.3% of respondents nominated this characteristic as one that had a great impact on schools with comments consistent with the quantitative findings above. There were suggestions that the bureaucratic structure of the CEO Sydney and perceived lack of subsidiarity were prejudicial to innovation and further improvement of standards. There was little CEO Sydney, documentary evidence to counter these results. The allocation of some limited principal's discretionary resources in staffing however was noteworthy (CEO Sydney, 2004b) as well as some possibilities for local adaptation of SRD (CEO, Sydney, 1999b). Although there were no statistically significant group demographic differences there were some effect size indices of note. For example region C had a moderate effect size index by comparison with regions A and B, perhaps suggesting that innovation and experimentation were more likely to occur in that region or perhaps that this region was, at the time of data collection, not as strongly and strategically coupled to the system strategic management plan.

These results suggest that the CEO Sydney is not strongly perceived to be an organization that encourages innovation, risk taking or creativity at the school level or at the broader organizational level. One possible explanation for this relates to the standards movement with its emphasis on the delivery of results, often in standardised tests. This may reduce the opportunities that principals and teachers have to be stimulated by alternative ideas and pedagogical practices (Kelleher, 2003).

The weak rating of this characteristic may also reflect the strong commitment that the system has made to a 'scientific' and quantitative approach to standards, with a possible perceived weakening of formal and informal opportunities for professional development and stimulation in other areas. There is evidence in this study, that a tension exists between systemic thinking, so well developed in the CEO Sydney, and creativity, risk taking and initiative. This is a tension that has been described by Johnson and Caldwell (2001) where systemic goals and aspirations run the risk of ignoring people and their potential to contribute to the organization. The results support Schmoker's (2004) claim that systemic thinking and strategic planning limits the exercise of judgement and creativity with complex strategic plans confusing and overloading schools and teachers. Providing too much flexibility and encouragement of risk

taking always carries the risk of a return to past practices. The challenge for the organization is to encourage informed risk taking and innovation (Ulrich, Jick and von Glinow, 1993), whilst maintaining its strength in the other characteristics examined in this study. Interestingly the analysis of LEAs by Riley, Docking, Rowles and Leich (2000) reached similar conclusions when respondents failed to see LEAs as generating innovative strategies, with many viewing them as bureaucratic.

6.2.9 The CEO Sydney as a learning organization

The results of this research study demonstrated that, in terms of the characteristics adopted for this study, the CEO Sydney can be regarded as a learning organization with three of the characteristics strongly represented, namely, 'Continuous Improvement of Work', 'Systemic Thinking and Mental Models', and 'Shared and Monitored Vision/Mission'. These three strongest characteristics are also prominent as learning organization characteristics in the literature (Figure 2.1). Given the idealistic nature of the learning organization, it is suggested that the more prevalent the eight characteristics were in this study, the closer the CEO Sydney could be considered to approach the ideal of a learning organization with the overall strength of these characteristics indicative of better organizational learning outcomes.

The quantitative and qualitative results demonstrated the broad and extensive systemic approach to strategic management and planning that is evident in the CEO Sydney. Official system documentation, particularly the Strategic Management Plan (SACS Board & CEO, Sydney 2000b) highlighted the broad and integrated approach to leadership, management and planning that applied across a range of system programs including induction of principals, Archdiocesan principals' meetings and performance appraisal of system and school leaders. The survey sample recognized the CEO Sydney as an organization which strongly exhibited 'Systemic Thinking and Mental Models' as defined and described in chapter two (section 2.3.1).

Although the concept of systemic thinking and mental models is a unifying discipline in Senge's (1990) thinking, it is worth noting that in over-emphasizing the organization as the basic unit with its unique properties it is possible to ignore the contribution that individual members make to an organization (Bate, 1990). The results of this study indicated that respondents did not feel empowered or consulted as broadly as they would have liked. As well the adoption of a highly systematic approach to strategic planning and vision may in fact

impede creativity and individuality, creating a tension between individual creativity and working collaboratively for common goals (Johnston & Caldwell, 2001). Similarly a shared vision strongly supported at system leadership level may be perceived as introducing a degree of manipulation and control. This would potentially limit a readiness to learn and innovate as the commitment to shared vision and mission limits the capacity for new ideas and their generation. These results indicated that the CEO Sydney was susceptible to these warnings of Johnston and Caldwell (2001).

The lowest ranking characteristic in this study was, 'Taking Initiatives and Risks', and perhaps this is less likely to find expression in an organization where system processes are so clearly defined, where frameworks are explicit and where corporate goals and targets are so clearly established. There was a sense that leaders in the system were lacking in influence when it came to broader decision making. There was also a reluctance to experiment and some uncertainty as to how the organization viewed 'mistake making'. To what extent it is possible to combine high level systemic thinking and a culture for continuous improvement, whilst nurturing and encouraging risk taking and initiative is a challenge for the CEO now and into the future (Fullan, 2000; Garvin 1993; Hargreaves, 1995). The challenge is for schools, teachers, principals and the CEO Sydney to work in concert and, in doing so, greater creativity will happen (Elmore, 2002).

There is a fine balance that needs to be struck between local innovation and system strategic objectives, whereby individual and collective learning, so strongly emphasized in learning organization theory (Fullan, 2000; Hargreaves, 1995), needs to be connected with the strategic objectives of an organization (Dixon, 1999). This may provide an explanation in this study for, on the one hand, the relative strength of 'Systemic Thinking and Mental Modelling' as a CEO Sydney characteristic and on the other, the relative weakness of 'Taking Initiatives and Risks'.

The results demonstrated that the CEO seeks to self-improve and also encouraged schools to do so. The number of broad system reviews (Canavan, 1986, Hughes, 1995, Dinham, Scott & Sawyer, 2001) models continuous improvement at the system level as does system evaluation of significant processes like, School Review and Development and the Educational Audit (Clark, 1998). These and other system-initiated programs have encouraged a culture of self-review in the schools and system generally. Target setting for standardised testing (e.g. BST,

ELLA, SNAP, School Certificate and HSC) has similarly emphasized continuous improvement.

In conclusion, the definition of Rosengarten (1999) specifies a learning organization as one which excels in organizational learning because it has a high degree of certain characteristics that foster the process of acquisition or generation of organizational learning which is intentionally used for improving organizational actions and outcomes. The results of the eight characteristics used in this study all had a scale mean per item between 4.15 and 3.19, indicating that all characteristics were supported to varying degrees but all were above the median point of 3. In terms of the definition adopted for the study the CEO Sydney can be regarded as a learning organization.

6.2.10 Demographic group findings

The review of the CEO Sydney and SACS Board conducted in 1994/1995 noted some demographic differences across eleven dimensions of the data gathered (Hughes, 1995). Although data in this study was collected in different dimensions (the learning organization characteristics and curriculum outcome scales) some observations and comparisons are relevant. Females in 1994/1995 were more positive than males in their responses and significantly so in a number of areas, including their attitudes to the organizational structure of the CEO Sydney. In this study females are generally more positive across all scales but it was not statistically significant. In 1994/1995 primary principals were generally more positive than secondary principals, in some cases statistically so. This pattern is also evident in the review of LEAs in the United Kingdom (Riley, Docking & Rowles, 1998). However, in this study, secondary principals tended to be slightly more positive in most learning organization characteristics and religious education. CEO Sydney personnel were more positive than primary or secondary principals in the curriculum outcome areas of literacy and numeracy. None of this was significant statistically. In 1994/1995 CEO Sydney staff were significantly more positive than principals in their judgement of the effectiveness of services provided to schools as are LEA personnel in the United Kingdom (Riley, Docking & Rowles, 1998). The final comparison, based on the responses of principals in the different regions in this study indicated that Region C was slightly more positive than region A or B, whilst in the 1994/1995 study the principals in region B were slightly more positive. Statistical significance was not a factor in both studies. Interestingly when Riley, Docking, Rowles and Leich (2000) analysed the services of LEAs in seven counties they found that LEA officers

were more positive than head teachers and primary heads were generally more satisfied than secondary.

Since the last major review of the CEO Sydney, it appears that the statistically significant differences that existed, based on gender and role, appear to have become less obvious and significant. It is worth restating that the two studies had different foci and survey composition but one can speculate, that in the intervening years and in response to the last review, the CEO Sydney has embarked upon an agenda that has embraced highly effective and clearly understood strategic management practices, system processes and shared vision and mission. It has also been one increasingly focused on continuous improvement and higher standards of performance of the CEO Sydney, schools and, most significantly, students in classrooms. There has been a significant emphasis at state and CEO Sydney level on the quality of both primary and secondary education with substantial resourcing dedicated to the retraining of teachers in areas like reading, writing, ESL, ICT, literacy Years 5-8 and religious education (e.g. CEO Sydney, 2002b). The demographic data in this study indicated that the sample of principals of the Archdiocese and senior CEO Sydney personnel are a more homogenous group than their counterparts in 1994/1995. The results suggest that this may be due to this generation of leaders being more closely linked to the system vision and mission, operating with clear strategic frameworks within which to exercise their leadership.

6.3 DISCUSSION OF DESCRIPTIVE STATISTICS FOR THE THREE CURRICULUM OUTCOME SCALES

This section contains a discussion of the descriptive findings for each curriculum outcome, religious education, literacy and numeracy.

6.3.1 Religious Education

The results of the quantitative, descriptive data gathered for this curriculum outcome generated a scale mean per item of 3.80 with 70.7% of all responses either agreeing or strongly agreeing across all the items in this scale. Improvement in the teaching and learning of religious education was recognised as a priority for the CEO Sydney and this has been enhanced by the development and implementation of high quality religious education curricula, strongly supported by the religious education advisers in the regions and by the system Educational Audit (Items 93, 94, 99

& 100). These findings supported the broad conclusions drawn by Ivers (2004) about the efforts that Australian dioceses devoted to the development of resources in religious education. It was acknowledged that teachers' use of the religious education curriculum and the associated support materials has enhanced student learning outcomes as has the professional development offered to teachers (Items 91, 95 & 97). It is suggested that the CEO Sydney's expectation that teachers gain formal qualifications and gain accreditation in religious education has led to better quality teaching in religious education (Items 89 & 90). These two additional findings are encouraging, particularly the perceived impact of the curricula and professional development on student learning.

There was moderate support for the suggestion that the CEO Sydney is appropriately addressing the challenges of religious education in a secular society; that assessment is comparable to secular subjects and that testing in religious education has improved student knowledge (Items 92, 98 & 101). Respondents were unsure of the impact of religious education textbooks, on the quality of teaching and learning in this subject (Item 96). These textbooks were only at pilot evaluation stage when this survey was conducted.

6.3.2 Literacy

The quantitative data derived from the descriptive statistics for this curriculum outcome had a scale mean per item of 3.84 and 69% of responses either 'agreed' or 'strongly agreed' across the items in the scale. There was strong evidence that the CEO Sydney initiatives in literacy, including the analysis of test data, the priority given to professional development in these areas and the development of whole-school literacy plans has improved literacy standards (Items 102, 103, 104 & 108). The targeting of financial and advisory services to those schools in greatest need in the area of literacy is acknowledged as leading to improvement in teaching and learning in literacy (Items 113 & 114). Once again School Review and Development and the initiatives of the CEO Sydney in English as a Second Language (ESL) were indicated as raising the literacy standards (Items 110 & 111). School and system level target setting in literacy and test data analysis, together with support for outcomes based assessment and reporting were supported as assisting in raising the standards in literacy (Items 105, 106, 107 & 112). Opinion was divided about the impact of CEO Sydney initiatives in literacy education for boys. These findings are consistent with the work of Hill and Crevola (1999) which indicated that some of the primary roles for school districts are to set standards and support system wide targets, as well as focusing advisory and support services and clear accountability structures. These results would seem to

indicate that highly focused and targeted programs in a significant curriculum area, like literacy, is perceived to impact on standards. These results support the work of Earl, Fullan and Leithwood (2000) who suggested that building teacher capacity is the key way in which systems impact on curriculum areas like literacy.

6.3.3 Numeracy

The quantitative, descriptive statistical data for this curriculum outcome generated a scale mean per item of 3.66 with 59.4% of responses across all items in the scale either agreed or strongly agreed. However, one response in eight was in the 'can't make a valid judgement' category and another one in eight expressed a neutral opinion about this curriculum outcome. These data suggested that, for numeracy, respondents were not sure about the interaction between the system and standards and some had little information to make a judgement or had no opinion either positive or negative. Following the pilot, the term 'numeracy' was supplemented by the term mathematics to assist secondary principals in particular. This was indicative of a possible lack of clarity in the meaning of the term 'numeracy'. The skewness for this curriculum scale was statistically significant ($p < .05$) and indicated that responses significantly departed from the normal distribution. The CEO Sydney was acknowledged for:

1. Providing professional development for school leaders in the interpretation of test data.
2. Making better classroom teaching in numeracy/mathematics a system priority.
3. Targeting of resources to those schools most in need of numeracy/mathematics support which was considered to improve teaching and learning in this curriculum area (Items 116, 121 & 126).

These findings are consistent with Welch's research that emphasized the central role of the classroom and teacher development in numeracy (Jones, Tanner & Treadaway, 2000). The value of system and school level target setting in numeracy/mathematics was also supported (Items 118 & 119). CEO Sydney initiatives in numeracy/mathematics have been recognised as improving classroom instruction as has the value of the School Review and Development process and targeting of financial and advisory support (Items 117, 122 & 125). The CEO Sydney assistance with the development of whole school numeracy plans, the value of CEO provision of test data analysis, interventions for ESL students in numeracy and support for assessment and reporting all received moderate support from respondents. These quantitative data suggested that the CEO Sydney influence on standards in numeracy was not perceived to be

as strong as it is in literacy and religious education. An explanation for this difference may be due to the fact that, for literacy and religious education significant, system wide development has been ongoing throughout the years 1998 - 2002. However the numeracy strategy for the CEO Sydney is in its early stages and commenced in 2002. It is noteworthy that the full system level, impact of major programs takes at least seven or eight years to have broad impact (Fullan, 2000).

There were some interesting effect size indices in the curriculum outcome scales. For example, large effect sizes were indicated for females by comparison with males, primary principals and CEO Sydney personnel by comparison with secondary principals and the over 56 year age group by comparison with the 36 - 45 year age group. These data consolidate the more positive views of females generally in all three curriculum outcome scales and highlight the fact that the numeracy strategy has had a greater impact with primary principals and CEO personnel than it has with secondary principals. Little inference can be drawn from the age data as the number of respondents in some age categories were small.

The qualitative results in this curriculum outcome indicated that standards could further rise if system processes could be more adaptable at the school level and if there was less CEO Sydney pressure on comparisons between schools using performance data. A theme running through these responses suggested that continuous improvement needed to be considered by the CEO Sydney from a broader, more collaborative perspective. The quantitative and qualitative results indicated that respondents identified that the CEO Sydney and its strategies around numeracy were contributing to the improvement of standards in this curriculum area with further clarification required on the extent and depth of that contribution.

The following section presents the discussion of the results of the correlational analysis that examines whether there was a relationship between the learning organization and standards in religious education, literacy and numeracy.

6.4 ASSOCIATION BETWEEN CEO SYDNEY LEARNING ORGANIZATION CHARACTERISTICS AND CURRICULUM OUTCOMES

The relationships between the CEO Sydney and standards in the three curriculum outcome areas (religious education, literacy and numeracy) in schools are multidimensional and complex and characterised by a number of mediating variables operating at a multitude of

levels. Thus caution needs to be particularly noted when considering the impact of any educational authority on standards within the classroom (Fullan, 2000; Hill & Crevola, 1999). What happens in the classroom is of course essentially a function of the relationships and professional skills exercised by the teacher. Indeed those factors closest to the instructional process, such as classroom practices, are much more important than factors such as district influences, whilst at the same time classroom effects on value-added progress greatly exceed school effects (Wang, Haertel & Walberg, 1993). Some writers (DeBray, Parson & Woodworth, 2001) highlight the particular challenge of the “privatised classroom” and its prejudicial role in policy development within schools and more significantly its impact on the overall effectiveness of student learning .

The main advantage of the correlational methods used in this study was that they permitted analyses of relationships among a large number of variables, singly and in combination, as well as providing information about the degree of relationship between variables.

In discussing the relationships between the characteristics of the CEO Sydney as a learning organization and the raising of standards in religious education, literacy and numeracy it was therefore important to re-emphasize that this study did not attempt to imply any causal relationship between the CEO Sydney and standards in the three curriculum outcome areas. The over-interpretation of such statistical data was carefully monitored in this study, even though there were 18 moderate, positive, Pearson correlations, which were statistically significant at $p < .002$ (Table 5.18). Complex behaviours were being investigated in this study and caution was exercised in breaking such complex phenomenon into overly simplistic components. This researcher interpreted the correlational data in this light.

It is also worth restating that this research is the first of its kind in any CEO in Australia and perhaps more broadly, presents an initial examination of the relationship between an educational authority, like the CEO Sydney, and standards in religious education, literacy and numeracy.

Clearly the simple correlational data generally indicated a moderate, positive relationship between the learning organization characteristics and the curriculum outcome scales in religious education and literacy, where all correlations were all significant at $p < .002$. The correlation coefficients in literacy were generally higher than those in religious education both of which were higher than those for numeracy.

There are some interesting relationships between some learning organization characteristics and the literacy curriculum outcome scale. For example 'Effective Communication Channels' accounted for 50.4% of the variance in the literacy scale. Possible explanations for this may relate to the system's publication and communication of its literacy position papers (CEO, Sydney, 2002a; CEO, Sydney, 2002c). It may also relate to the explicit and public commitment of the system to improvement in literacy standards, publication and interpretation for schools of literacy test data (CEO, Sydney, 2003d) and the communication of system targets in this critical area (SACS Board & CEO, Sydney, 2003). These findings are consistent with the work of Hill (2000) who highlighted the need for general clarity surrounding literacy standards and frameworks at system level.

An additional relationship of note was that between the literacy curriculum outcome scale and 'Ongoing Professional Development' which accounted for 47.6% of the variance in this curriculum outcome. Possible explanations for this may relate to the strong, system emphasis on professional development in early literacy retraining for teachers, strong system training for secondary teachers and principals in the ELLA assessment and its interpretation (CEO, Sydney, 2002b) and targeted intervention of additional system resources directed at literacy initiatives (e.g. CEO, Sydney, 2002b; CEO, Sydney, 2004b). These findings support the work of Marshall (2003) and Shaw (2002) who strongly linked effective system professional development and the quality of student learning.

The curriculum outcome of religious education had 27.04% of its variance accounted for by 'Effective Communication Channels' and 24.01% accounted for by 'Systemic Thinking and Mental Models'. Once again the possible explanation for the first of these could relate to the significant communication of system policies, bulletins, curricula, teacher resources, high quality textbooks, teacher training and retraining policies and procedures, teacher accreditation and many other aspects of religious education including an on-line version of the curriculum (e.g. CEO, Sydney, 2002b). These findings resonated with the work of Ivers (2004) in his summary of the various approaches Dioceses in Australia have adopted to religious education, where he suggested that much has been invested in the funding and development and communication of resources. Whether this investment is commensurate with student outcomes is still to be determined, however, this early data suggests a relationship between the two.

The possible explanation for the association between religious education and 'Systemic Thinking and Mental Models' may relate to the priority that religious education occupies in the Strategic Management Plan for the CEO Sydney (SACS Board & CEO, Sydney, 2000b). Not only is religious education a priority in the Strategic Plan in its own right but it relates strongly with another priority dedicated to Catholic Identity. The Vision and Mission Statements (SACS Board, 2002; SACS Board & CEO, Sydney, 2000b) also have a distinctive religious dimension.

The correlations for literacy and religious education were much stronger than those for numeracy, where only two were significant at this level. Of note in numeracy was that 25% of variance was accounted for by 'Ongoing Professional Development'. The Archdiocesan numeracy strategy, which commenced in 2002 has, as its main strategy, the retraining and significant professional development of teachers, with its central framework being effective pedagogy based on the acquisition of mathematical thinking skills in children (Fraser, 2003). Secondary teachers have been significantly involved in professional development on the secondary numeracy assessment instrument (SNAP) and the interpretation of numeracy data (CEO, Sydney, 2002b).

In broad terms these findings suggested that principals and senior CEO personnel perceived that the CEO as a learning organization does have an impact on curriculum outcomes in religious education and literacy but has less impact on curriculum outcomes in numeracy (Hill, 2000). The intensive curriculum development and professional development that has occurred in religious education and literacy in the past five years, as indicated in the document analysis, has not yet been matched by equivalent system efforts in numeracy. It is also possible that there is a less common and shared understanding of the term 'numeracy' than is the case for literacy and religious education (Hill, 2000).

A theme from the literature and from this study is that educational authorities influence what happens in schools (Audit Commission 2003; Hill & Crevola 1999; Hill, Crevola & Tucker 2003; Thompson 2003). Indeed the standards movement has created a degree of urgency in school districts with pressures for results from curriculum areas to professional development. There is a significant journey ahead to strengthen the connection between adult and student learning (Kelleher, 2003). How this influence is exercised is described in a variety of ways from "pressure and support" (Hill, Crevola & Tucker, 2003) through to strategic planning, professional support and "intervention" (Hill, Crevola & Tucker, 2003; Audit Com 2003).

Related work by Dinham, Brennan, Collier, Deece and Mulford. (2000) in their review of the role of secondary Heads of Department clearly identified the fact that people in these roles saw their core business as curriculum and influencing educational outcomes. There is great potential for systems to professionally prepare people for such positions, to reconceptualise and resource the role and in doing so influence the standards of curriculum outcomes and teaching and learning in schools.

As described in section 5.4.5 the multiple regression was reduced to three simple Pearson correlations between this principal component variable and the three curriculum outcome measures. These correlations were .42 for Religious Education, .73 for Literacy and .40 for Numeracy. Clearly the eight learning organization characteristics scales had a much stronger collective effect on Literacy than they did on Religious Education and Numeracy. Over 53% of variance in Literacy scores was accounted for by the principal components variable. These results are consistent with the 24 Pearson correlations reported in the previous section.

Interpretation of the correlations between the original variables, the canonical variate and the standardised canonical coefficients revealed that higher levels of 'Effective Communication Channels' and to a lesser extent 'Systemic Thinking and Mental Models', and 'Team Work and Team Learning' were related positively with improved Religious Education and Literacy outcomes. Once again the pivotal role of effective communication is a key characteristic in the impact the system has on standards in religious education and literacy. As discussed in the section on Pearson correlations the system efforts in the production and dissemination of policies, retraining, clearly articulated statements on targets are just some of the means by which this occurs. These findings further confirm that the CEO Sydney does have an impact on raising standards in schools particularly in high profile, high investment areas like religious education and literacy. These findings support the work of researchers like Riley, Docking and Rowles (1999) who point to the key role played by education authorities in the pursuit of higher standards.

6.5 CONCLUDING COMMENTS

The major research question sought to investigate the perception of CEO Sydney as a learning organization by a key leadership group within the Catholic school system in Sydney. This was complemented by further consideration of the perceived relationship between the learning organization and standards in religious education, literacy and numeracy.

The findings of this research suggested that the CEO Sydney can be considered to be a learning organization in terms of the definition and characteristics adopted with particular strength in a number of areas. The findings also indicated a perceived relationship between the CEO Sydney as a learning organization and standards.

The discussion both implicitly and explicitly identified areas for further investigation and research and this is discussed in chapter seven.

6.6 CHAPTER SUMMARY

This chapter discussed the findings of this research project and answered the main research question. The eight learning organization characteristics adopted for this study were discussed individually with 'Continuous Improvement of Work', 'Systemic Thinking and Mental Models' and 'Shared and Monitored Vision/Mission' found to be the three most strongly represented characteristics. The weakest characteristic was 'Taking Initiatives and Risks'. Relevant CEO Sydney documentary evidence was cited as part of this discussion.

The CEO Sydney can be regarded, in a holistic sense as a learning organization with strengths and areas for development as identified above.

The discussion of demographic findings indicated a relative homogeneity of opinion across the five demographic groups considered. This may be indicative of the well established strategic and leadership frameworks that are present within the system.

Consideration of the descriptive statistics for the three broad curriculum outcome scales indicated that principals and senior CEO personnel believed that the CEO Sydney was

perceived to impact on standards particularly in literacy and religious education and less so in numeracy. The correlational analyses confirmed these findings.

The implications, recommendations and areas for further research from this study are presented in the next chapter.

CHAPTER 7

RECOMMENDATIONS OF THE STUDY

7.1 INTRODUCTION

The findings of this study have generated some significant conclusions, implications and recommendations which have both a practical and theoretical dimension. These are presented in this chapter which includes a summary of the major findings, and the major practical and theoretical implications and recommendations of the study. The chapter concludes with some suggestions for further research

7.2 SUMMARY OF MAJOR FINDINGS

The overall purpose of this study was to examine the CEO Sydney as a learning organization and then, using this framework, to investigate the perceived association between the CEO Sydney and raising standards in religious education, literacy and numeracy.

The study had no known body of research or precursor in education systems and as such could be regarded as a pioneering and innovative piece of research on a non-government, educational organization. However, there are analogues in industry and increasingly in schools, as distinct from school systems, and these formed the basis on which the investigation proceeded.

The results indicated that:

1. The CEO Sydney was in fact a learning organization with particular strengths in systemic thinking, continuous improvement and a unifying vision and mission. The characteristics of team learning, team work and risk taking and the exercise of initiative, whilst still enjoying a degree of support, were not as strongly identified as the other learning organization characteristics within the CEO Sydney.
2. There was a moderate, positive relationship between the CEO Sydney as a learning organization and educational standards particularly in religious education and literacy and less so in numeracy.
3. There were no significant demographic group differences, indicating a relative homogeneity of perception amongst respondents. Significant demographic differences

were apparent in previous, unrelated, full-system studies, using instruments with different descriptors (Hughes, 1995).

The major research question has therefore been answered in the affirmative. There were a number of learning organization characteristics including, 'Continuous Improvement of Work', 'Systemic Thinking and Mental Models' and 'Shared and Monitored Vision/Mission', that were able to be identified in the CEO Sydney and as such the organization is well positioned to respond to rapid change and to continuously improve its services to schools. Within the learning organizational framework, the CEO Sydney is perceived to be associated with raising standards particularly in religious education and literacy. The following section of this chapter presents the major practical and theoretical implications and recommendations that the findings of this study have indicated.

7.3 FINDINGS - IMPLICATIONS AND RECOMMENDATIONS

The findings suggested a number of significant practical and theoretical implications and recommendations which are relevant for both policy and practice within the CEO Sydney. Therefore they have the potential to further strengthen the CEO Sydney as a learning organization and to enhance the impact it has on the standard of education in the schools of the system. A number of theoretical implications and recommendations have the potential to contribute to deeper understandings in the broader field of educational leadership and administration at the system level. The recommendations commence with those of a practical dimension and conclude with those of a broader and more theoretical dimension.

7.3.1 Collaboration and Communication

Findings and their Implications

The results implied that collaboration, consultation and communication with principals and senior CEO personnel were not perceived to be broad or open enough and needed strengthening. Principals, in particular, identified a top-down, hierarchical and bureaucratic model of collaboration and communication, where people felt they had things 'done to them'.

Recommendations

It is suggested that to address these findings the CEO Sydney could:

1. Seek more diverse, creative and open methods of collaboration to determine the opinions of principals and senior CEO personnel, thus strengthening their input and influence in broad system decision-making and policy development.
2. Establish broader, more collaborative, cross-functional teams, committees and think tanks with stronger principal, and where appropriate, teacher representation, to assist in system decision-making and policy development.
3. Evaluate and strengthen the existing communication channels especially through the use of ICT.
4. Establish alternative, active, open and trusting channels whereby regular and fluent, 'upward' communication and feedback to the CEO Sydney can be generated from the key stakeholders in the schools, particularly principals.

7.3.2 CEO Structure

Findings and their Implications

Opinion was divided as to whether the structure of the CEO Sydney met the needs of schools. It was not possible to determine precisely what respondents meant by this. Nevertheless there was sufficient evidence to imply that perhaps the current structures of the CEO Sydney were not perceived to be meeting the needs of schools. These needs have changed over time as schools attempt to adapt to their rapidly changing environment. A possible implication is that the CEO Sydney structure needs to be modified if it is to meet needs more appropriately.

Recommendations

In relation to this challenge the CEO Sydney could examine carefully and systematically its organizational structure to see if there are any bureaucratic or structural impediments or barriers that prejudice the impact that the CEO Sydney has on standards in schools or that limit the local work of schools in raising standards. There would be some value in investigating whether there are structural features of the CEO Sydney whose refinement would lead to a more responsive and effective organization. Interestingly the review conducted in 1994/1995 (Hughes, 1995) recommended a more flexible organizational structure to accommodate the changing needs of schools.

7.3.3 Use of data

Findings and their Implications

Education authorities across the western world, need to take a more active role in strengthening ‘assessment literacy’ in the system and schools, and in the leadership of those schools (Hill, Crevola & Tucker, 2003). This applies equally well to the CEO Sydney. The informed interpretation of performance data at school level has the potential to clearly inform teaching and assessment practices within the school. This is also true for the design and conduct of the most appropriate professional development activities for staff at both system and school level. This implies that the CEO Sydney could accordingly make greater use of this data to adapt its services to schools including its professional development programs. Professional development was a characteristic that was identified in the CEO Sydney as a learning organization characteristic and the effective analysis and use of available data was an important aspect of the design of that professional development.

Recommendation

As schools and school systems become more sophisticated in their use and interpretation of data, they are less susceptible to drawing naïve conclusions. Therefore the strengthening of professional development for school and system leaders, particularly in the area of data analysis and interpretation, is a clear recommendation from this study.

7.3.4 Ongoing self-review and external scrutiny

Findings and their Implications

The results of this study clearly demonstrated that the CEO Sydney is an organization that is strongly committed to continuous improvement using a wide variety of means, including major, full-system reviews. There was broad recognition that the CEO Sydney regularly self-evaluated many of its programs, the performance of its leaders and the whole system at regular intervals. The relationship of such a commitment to self-review and continuous improvement was recognized. The implication is that if such continuous improvement at all levels within the system is to continue then an ongoing commitment to self-review and external scrutiny is required.

Recommendations

This commitment to ongoing review can be further strengthened in a number of ways including:

1. The demonstration of accountable leadership at CEO Sydney level by moving to a cycle of regular, internal self-review, followed every few years by external scrutiny and validation of the internal self-review processes of the organization (Canavan, 2003). Whether the framework for such summative evaluation is the learning organization, or some other framework, is irrelevant. However a review framework would close the accountability gap that currently exists between schools and the CEO Sydney.
2. The questionnaire used for this study, or a similar instrument, could be re-administered to the equivalent leadership group in the CEO Sydney at semi-regular intervals in the future. This would facilitate the monitoring of progress of the CEO Sydney as a learning organization with particular reference to those characteristics, like 'Taking Initiatives and Risks', which were not strong characteristics of the organization in 2003. Perhaps this could occur as a part of a mid-term review of the next Strategic Management Plan to be developed in 2004 and implemented in 2005.

7.3.5 Nurturing life-long learning

Findings and their Implications

The findings of this study indicated that the CEO Sydney is a learning organization and by implication should be nurturing life-long learning in the schools of the system. Some insights were developed into the CEO Sydney as a learning organization. The next logical phase of development for the system centers around a deliberate and explicit leadership strategy and system priority focusing on an understanding of schools as learning communities and students as life-long learners (Hill, Crevola & Tucker, 2003).

Recommendation

If the CEO Sydney is to further enhance life-long learning in the school system generally then time, energy and resources will need to be invested in developing an understanding of the meaning of life-long learning and how a system can in fact encourage and nurture it.

Therefore training leaders and middle managers to lead and reshape schools as learning communities could well be an emerging priority for the CEO Sydney and would require system and school leaders to be conversant with new concepts of knowledge and the new technologies of learning, as well as modeling continuous learning and developing the skills to align members' values and school vision (Silins & Mulford, 2002). Such development would fully exploit ICT and the knowledge about how students learn and their individual learning styles. Leadership development is critical in the development of schools as learning organizations and thus their capacity to improve performance. Such a commitment at system level could embrace a parallel re-examination of the role of subject coordinator, assistant principal, religious education coordinator and principal to determine the extent to which the instructional leadership component of these roles has been dissipated over recent years (Dinham, Brennan, Collier, Deece, & Mulford, 2000). Such analysis may require the investment of further resources so that the instructional leadership role remains central to the middle management and senior leadership roles within schools and the system.

7.3.6 Research and Development

Findings and their Implications

The findings in this study indicated that innovation, taking initiatives and risks were not strong and needed to be stimulated and encouraged across the system if the learning organization was to grow and flourish. There was some implication that mechanisms are not in place to encourage greater initiative and risk taking. This implies that research and development could be given a greater profile and emphasis at all levels within the system.

Recommendation

The CEO Sydney needs to consider the establishment of a stronger research and development (R & D) capacity at the system and school level. Such innovation could be encouraged, for example, through seeding grants to innovative, school-based projects, as well as the development of a stronger R & D component within the system, with the specific brief to initiate, encourage and nurture research and learning throughout the system. A research mindedness could be cultivated within the schools with the CEO Sydney playing a more active leadership role in interpreting and breaking open current research for teachers.

7.3.7 Strategic Management Practices

Findings and their Implications

The CEO Sydney was identified as an organization that has highly developed systemic thinking through its well-developed strategic management processes and practices at system and at school level. These strategic processes of the CEO Sydney are increasingly focused and linked to curriculum outcomes. However the findings of this study implied that creativity and innovation may be constrained in a system where systemic thinking is so strong. At the same time the value of system processes and their perceived positive impact on teaching and learning were recognized.

Recommendation

This emphasis could be further developed so that the system annual agenda and the CEO Team Achievement Plans could adopt a sharper, more school oriented learning outcomes approach. The performance indicators, and strategies developed could be much more closely linked to achievement and outcomes at the school level.

A significant challenge for the system is to encourage a greater openness to external ideas and new knowledge with a focus on creating new visions rather than reinventing existing ones (Leonard-Barton, 1992). The findings suggested that the focus on strategic processes could reduce the attention devoted to people, their learning and growth and an openness to innovation. Creativity and risk taking are essential for a learning organization to continue to improve its effectiveness and relevance (Garvin, 2000). Some recommendations to address these challenges include:

1. The development of mechanisms and processes to examine and harmonise the balance between strategic processes and creativity.
2. Having established quality system processes, policies and frameworks during the past decade, it is now time for the CEO Sydney to further devolve decision-making and encourage innovation in schools, within existing frameworks and accountabilities.
3. System processes at the local level could be adapted, thus allowing for greater local, customization of these processes, whilst still working within the broad accountability frameworks that are now well established.

7.3.8 System professional development

Findings and their Implications

There was strong evidence in this study (sections 6.3.1, 6.3.2 and 6.3.3) that those system curriculum initiatives that are most effective, and hence have the greatest impact on standards (e.g. religious education and literacy) have a systemic, well-developed, longitudinal, plan. It was found that the system invested in such programs and made the professional development and retraining of teachers a central priority within such plans (Hill, Crevola & Tucker, 2003). The relationship between professional development and improved classroom practice and outcomes is worthy of further investigation as a very significant means of impacting on standards.

At the same time, the highly strategic and systematic approach to management adopted by the CEO Sydney, although acknowledged as being very effective, may limit the nature of professional development, and in doing so, limit lateral thinking and innovation generally. The implication is that the organization does not sufficiently encourage movement beyond a narrow focus on training to embrace the fostering of an environment that facilitates learning at multiple levels, but particularly in small teams at the school level (Cullen, 1999).

Recommendation

There should be an alignment of the goals of system initiatives with the professional development offered. Such approaches are focused, selective and integrative and the evidence from this research is that they are perceived to raise standards in those curriculum areas.

This could be addressed by broadening the professional development opportunities that operate within the system in a number of ways including:

1. The encouragement of greater local, school-based professional development, and
2. The encouragement of professional development that is more action-research based with a focus on student learning.

7.3.9 Development of resources

Findings and their Implications

A by-product of this research was the generation of some self-review methodologies, questionnaires, strategies, web-based data gathering resources and materials that may be useful in the evaluation of other CEOs and education systems as learning organizations and their perceived relationship to raising standards. The implication of the initial development of the resources in this study is the need for further refinement of such materials so that future investigative work of the impact of systems can be more refined and effective.

Recommendation

The ongoing development and refinement of such resources could assist education systems use and apply such materials in the evaluation of their own profiles as learning organizations.

The use of a web-based technique to gather the data was a relatively new and creative feature of this research for the system. There is significant potential for this means of data gathering in future. Ongoing research and evaluation, at the system level, of this means of data gathering could assist in making this a more reliable and effective means of conducting research in the system in the future.

This study as well as indicating some implications and recommendations for further development also suggested areas for further, broader research. These are discussed in the following section.

7.4 FURTHER RESEARCH

This study has identified a number of dimensions of the CEO Sydney as a learning organization and has further investigated the perceived impact that it has on standards in a number of key, broad curriculum areas. An additional and valuable dimension was the generation of a number of areas that were indicative of areas for further research. These included:

1. Characteristics of a learning organization.

This research has developed and applied eight specific learning organization characteristics, after careful consideration of both the broader and school specific literature. Further investigation and research could consider whether these are the most useful characteristics to be applied for research in settings such as this. How much weight can be given to these eight particular characteristics and how they blend to make a particular learning organization is a matter for further research (Hull & Read, 2003).

Whilst there is some research about schools and school systems as learning organizations (e.g. Johnston & Caldwell, 2001) little has been done to clarify what this really means and its broader implications for school systems. Although this framework proved useful in this study, its application as a framework within which to evaluate school systems and their impact on standards is worthy of further investigation and confirmation.

This study has endeavored to make a contribution to the theory of the learning organization and organizational learning by establishing a framework that was tested in the CEO Sydney. Although there is a lack of empirical evidence and research on learning organizations and a unified agreement on definitions, a theoretical framework was developed in this study, based on learning organization characteristics (Rosengarten, 1999), and operationalised so that this empirical research could occur and therefore make a contribution to the field in general.

2. Relationship between system initiatives and curriculum outcomes.

It would appear that the deliberate efforts by the CEO Sydney in strategic planning and professional development have had a perceived positive impact on standards in a number of key curriculum areas. This is a significant and encouraging finding. However the researcher did not investigate in detail the relationship between system efforts and standards of curriculum outcomes in schools. Further investigation of this relationship would be very worthwhile with the specific aim of understanding the dynamics of the relationship. Such a theoretical analysis has the potential to enhance the extent to which organizations like the CEO Sydney can influence standards in schools and the quality of teaching and learning. A key question is to identify those activities, structures, processes and strategic management and leadership practices that nurture higher standards in

schools and how the system can further strengthen its influence on the instructional dimensions of schools.

3. Teacher professional development.

Building teacher capacity through professional development is a critical means by which an education system influences standards. A closer examination of the results of professional development in terms of their impact on student achievement and classroom practice could help tease out this critical relationship and its theoretical and practical dimensions (section 6.2.4).

4. Resource allocation and targeted intervention.

Although not a specific focus of this study, the targeted use of financial resources and personnel (e.g. advisers) in system intervention is also worthy of further discernment. Evidence suggested that such intervention and focused financial distribution was perceived to be a factor in improving educational standards. To what extent this can be refined and developed is still to be determined. Nevertheless, it is an important area for consideration and investigation.

5. Professional development and succession planning. The findings of this research highlighted the role of professional development in a learning organization. Such ongoing development is closely related to life-long learning and the development of teachers, school, and system leaders in these areas. The current and emerging generation of leaders need to be leaders of learning (Chapman, 1997). The implications of these future directions and the integral role that ICT will play in this future, have profound implications for the nature of succession planning and the development of future leaders and teachers. Research that examines leadership and teacher capacity building from this perspective would be very valuable in indicating the nature and dimensions of such succession planning initiatives and the professional formation of future teachers and leaders.

6. Application of these research findings to other Educational Systems. The Catholic school system in Sydney has some unique features including its emphasis on strategic management and its own specific system processes. Perhaps these findings are applicable to other systems but that would be mere speculation and would require further research and testing.

7.5 CONCLUSION

Any education authority in the western world at this time would no longer consider itself to be exempt from the fundamental accountability question that focuses on the role that systems play in impacting on standards of student achievement in schools (Thompson, 2003). In this study the learning organization proved to be a useful theoretical framework in which to examine these matters and one that was:

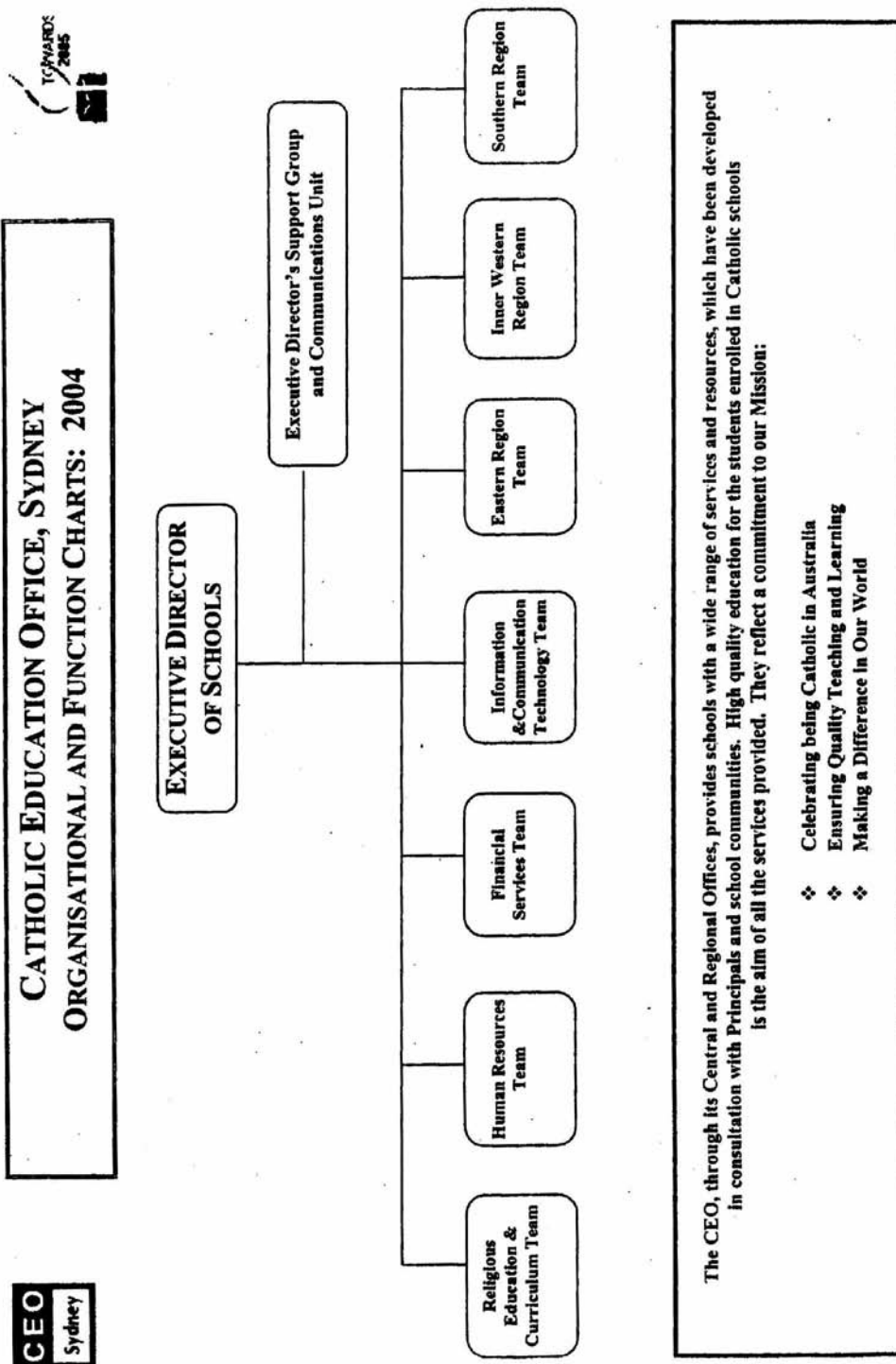
1. Contemporary and relevant to rapidly changing environments.
2. Helpful to organizations that wish to continuously improve.
3. Consistent with emerging knowledge on the impact of educational authorities on standards world-wide (Hill, Crevola & Tucker, 2003).

Some encouraging results indicated that not only was the CEO Sydney able to be considered a learning organization but that it was also perceived to influence standards in key curriculum areas in the schools of the system.

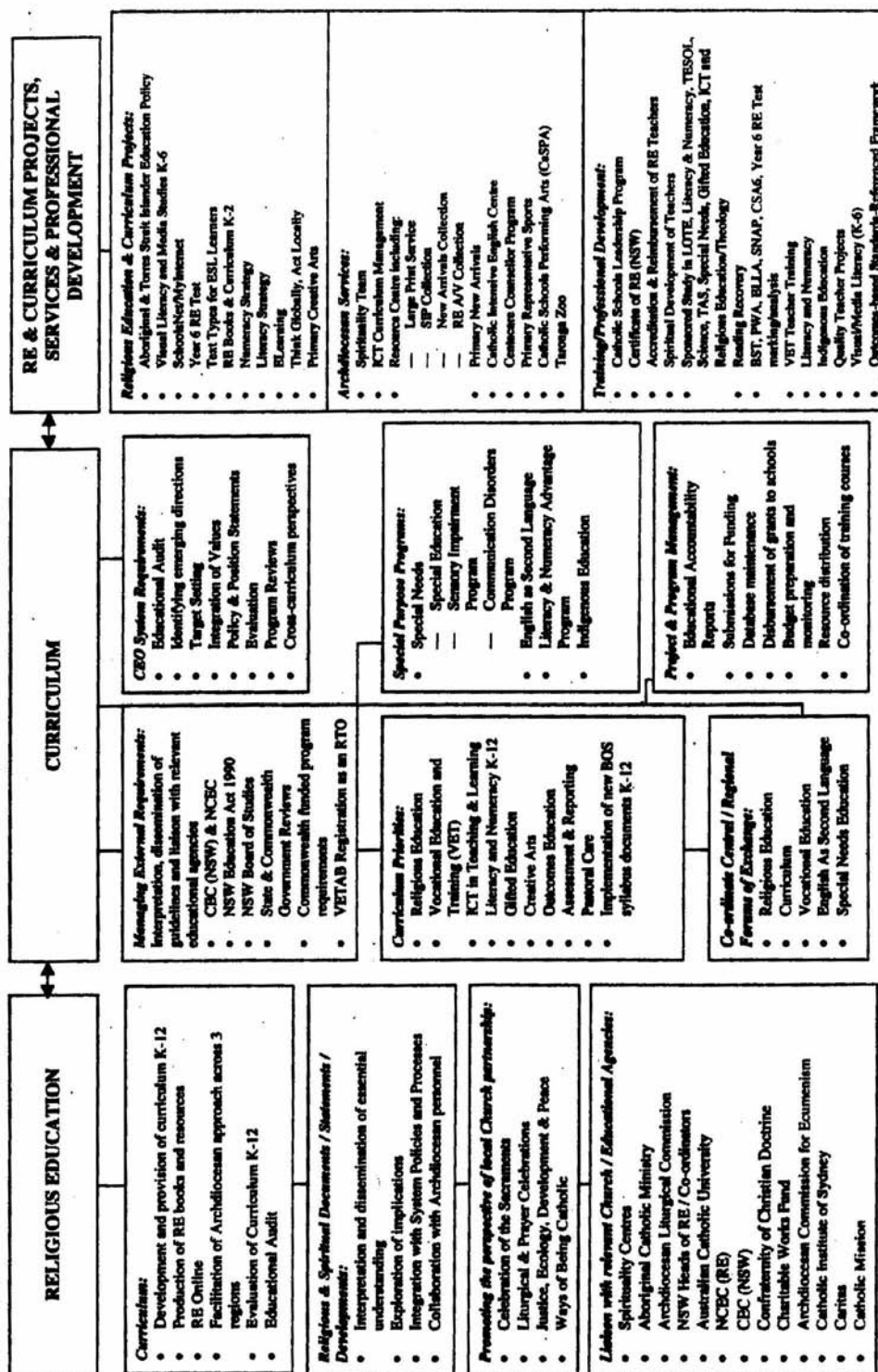
The major challenge for the future is to continue to investigate the inhibiting and supporting dynamics and factors that influence the positive impact such educational bodies have on standards. In the final analysis, there is much that such bodies can do through systemic thinking, continuous improvement, vision and mission and effective communication, all of which are important characteristics of a learning organization (Rosengarten, 1999). However a critical role that systems now and in the future will have to play is in the development of instructional leadership capacity within the teachers and leaders in the schools.

There is increasing attention, discernment and research directed to the role that systems play in influencing standards (Riley, Docking & Rowles, 1999). The findings of this study suggest that school systems are important in this critical question and that, with further development, they can become more influential in terms of raising standards.

APPENDIX A: Catholic Education Office Sydney, Organisational and Function Charts: 2004



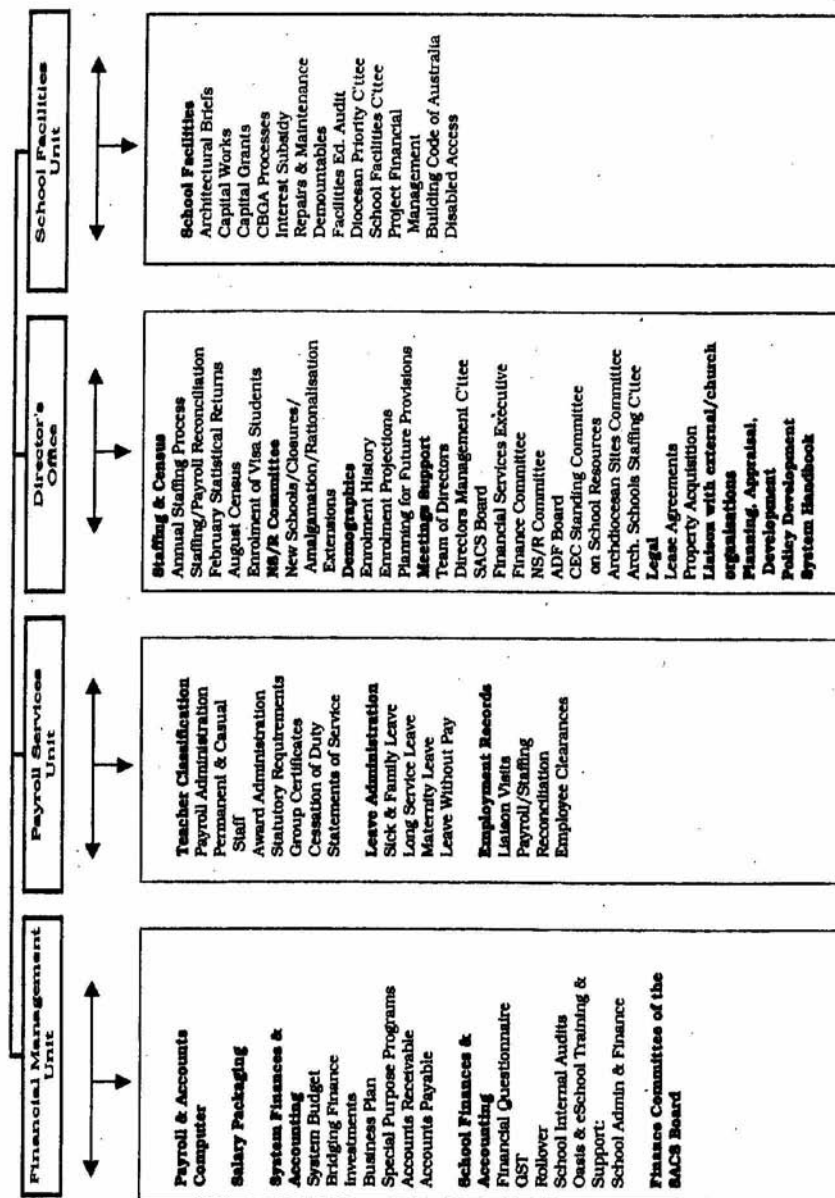
RELIGIOUS EDUCATION & CURRICULUM FUNCTIONS



[illegible]

FINANCIAL SERVICES FUNCTIONS 2004

Planning Policy → Procedures → Action → Accountability → Evaluation



INFORMATION & COMMUNICATION TECHNOLOGY FUNCTIONS

ICT Curriculum

- MyInternet
- ICT Position Paper
- ICT Teaching Skills
- ICT Standards Frameworks
- Primary E-Learning
- Secondary E-Learning
- Showcasing ICT Best Practices Site
- ICT Curriculum Resources Online
- AGQTP Project Implementation
- Computer Assessment Skills Year 6
- Computer Assessment Skills Year 10
- Benchmark Testing Data Analysis Report
- Mathematics Teaching and Learning Database
- Freeware CD Rom
- ICT Wireless Project
- Curriculum Websites
- Web Portal Development
- International Computer Drivers Licence
- Recording Analysis of all Benchmark Testing
- RE Online Development

ICT Infrastructure

- myInternet Infrastructure design & deployment
- Finance & Administration Application Replacement
- Special Ed System – Prowess
- Read & Recovery System
- Database design and development
- Windows NT & Exchange Accounts/Permissions Clean-up
- Review & Draft a CEO Password & Account Policy Research
- Draft New Standard Operating Environment
- Implement a SAN / NAS solution with auto-backup
- Injury Management System Project
- MCEETYA Data Analysis Project - MCEETYA Committee participation; Implementation of recommendations
- Treasury Management application project
- Leichhardt network deployment on to AAPT
- CEO network deployment on to AAPT network
- HR Principal Tracking Ph II Project
- List server Project
- URSYS Relationship Management
- Bulk Purchase with Acer and Harris Technology
- Thin Client development
- Network Management
- Research & Development
- Access and Security

ICT Helpdesk Support

- School Helpdesk support model
- Easchool and Acer support
- ICT Training (Inhouse)
- Genet, SAO support and maintenance
- ASI account management
- ICT minimum standards for school facility projects
- Office hardware support
- Account management if preferred support suppliers
- Lan Technicians

APPENDIX B – CEO Sydney Reviews 1985-2000

1. **1985 - 1987** Survey of Parish Primary and Regional Secondary School Principals and of the Professional staff in the Sydney CEO (Canavan, 1986). This study aimed to clarify roles, responsibilities and perceptions within the CEO Sydney with a view to improving the organizational dysfunction that existed at the time so that the Catholic school system in Sydney could project an image of efficiency and reliability and thereby enhance its effectiveness and improvement.
2. **1994 / 1995:** Review of the SACS Board and CEO Sydney for the period 1987 - 1994 with recommendations for the period 1996 - 2005 (Hughes, 1995). This was a major system review conducted by a number of researchers. Its aim was to review the effectiveness of the work of the SACS Board and the CEO for the period 1987 - 1994 and to establish clear directions for Catholic education in the decade 1996 - 2005. The review was used as the basis for the development of a comprehensive Strategic Management Plan, 'Catholic Schooling in the Archdiocese of Sydney: Towards 2005'(SACS Board & CEO, Sydney, 1995b). This review generated 65 recommendations for the improvement of the effectiveness of the CEO Sydney and the SACS Board. All of these have been actioned as at the end of 2003. Planning is underway for another major system review in mid-2004 (SACS Board & CEO Sydney,2004).

This major review gathered principal, parent, senior CEO staff and community opinion. It is noteworthy that there were 53 questions from the 1985-1987 (Canavan, 1987) study repeated in this study with a view to tracking longitudinal changes. A further observation was that of the 141 items in this 1985-1987 review only 16 explicitly related to teaching and learning, standards and curriculum which indicated not only the wide terms of reference of such a review but the contemporary emphases and the needs of the organization at the time.
3. **1997:** Report on the CEO staff Survey 1997 by Dr.Magdalena Mok and L.Nobler, School of Education, Macquarie University, December 1997 (Mok & Kobler, 1997).

In this study the same set of questions that were asked of senior CEO staff in 1994 were repeated with a view to testing any changes of CEO staff morale and efficiency that might have occurred in the period 1995 - 1997.
4. **2000:** A pilot review of the Inner Western Regional Office and its services, 'Review of the Inner Western Regional Office of the Sydney Archdiocese Catholic Education Office' (Dinham, Scott & Sawyer, 2001), examined some aspects of work of the Regional Office, what difference it makes to the work of the schools, how its services could be improved and whether resources were being used in ways that best met the needs of schools within the region. This was significant because it was the first major review that focused on the needs of schools.

APPENDIX C: CEO Sydney policies and documentation relating to 'Systemic Thinking and Mental Models'
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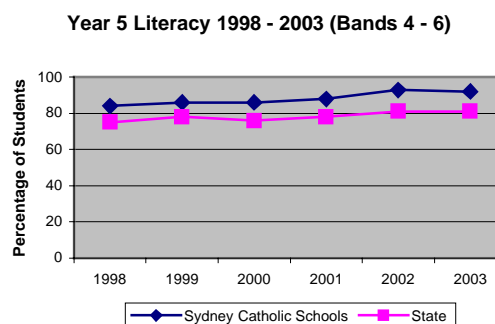
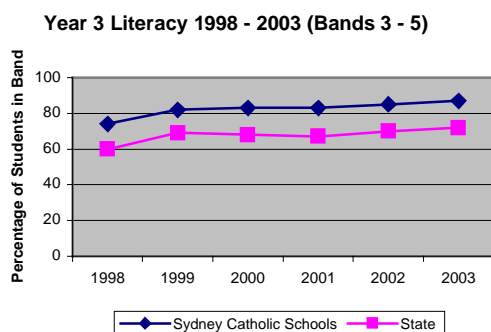
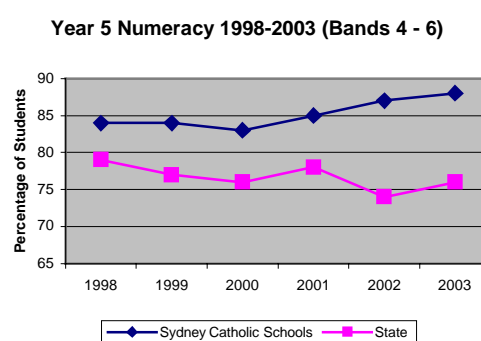
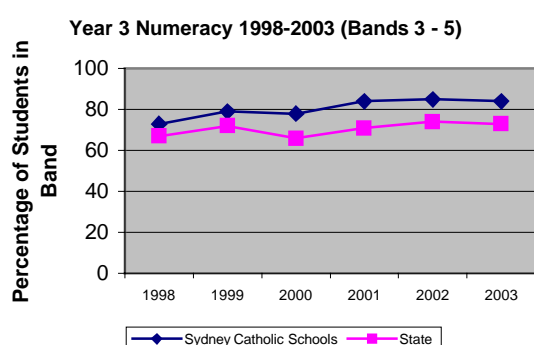
1. The Strategic Management Plan, '*Sydney Catholic Schools Towards 2005 Strategic Management Plan*' (SACS Board & CEO Sydney, 1995b) which articulates the strategic management cycles for the schools and the CEO as analogous planning and management cycles (Figure 2.1). The ten system priorities were first articulated in this publication. The Plan emerged from a very broad consultation of parents, pastors, teachers and CEO Sydney personnel. Hughes (1995) documented this review of the CEO Sydney over the years 1987 – 1994. This plan outlined the strategic management practices that were to apply in the CEO Sydney and in the schools of the system in the period 1995 to 2005.
2. The revised version of the Strategic Management Plan (SACS Board & CEO, Sydney, 2000b) incorporated an outcomes based planning framework which was attuned to the developments in state planning for curriculum K-12. It also more closely linked the CEO Sydney strategic directions and priorities to the national goals for schooling which further emphasized the link between the CEO Sydney and other educational systems (SACS Board & CEO, Sydney, 2000b).
3. The Annual Archdiocesan Agendas 1998 - 2002. These annual documents are the vehicle for translating the broad system priorities into annual aims and progress indicators (1998), supplemented by targets (1999 - 2002). The Annual Archdiocesan Agendas progressively moved to an outcomes based approach with specific outcomes, performance indicators and targets published for each priority. The schools and the CEO Sydney teams then actioned the Archdiocesan Agenda through specific school and CEO team planning and strategies. (SACS Board & CEO, Sydney, 1998 ; SACS Board & CEO, Sydney, 1999; SACS Board & CEO, Sydney, 2000a; SACS Board & CEO, Sydney, 2001; SACS Board & CEO, Sydney, 2002a).
4. Strategic Leadership and Management. A Framework of Linked processes to support Successful Learning and Effective Teaching in Catholic Schools (2000). This document combined the Strategic Leadership and Management cycles for schools with the school system leadership framework and school system planning framework along with the quality assurance framework and the integrated processes for development and

accountability (CEO Sydney, 2000a). This document illustrates the interrelationships between a number of aspects of the system.

5. The agendas of the Primary and Secondary Principals' meetings 1998-2002 demonstrate that a dedicated component of these meetings has been devoted to Strategic Leadership and Management. There was a consistent, standing item at each meeting on strategic management practices and hence the ongoing development of 'Systemic Thinking and Mental Models'. Some examples of items that appeared under these headings included, Annual Reports (2002), Scottish school system a case study (2001), Mini review of Towards 2005 (2000), Preparation of the Archdiocesan Schools Agenda 2000 (1999) and Update on progress of SRD Review (1998) (CEO Sydney, 2004a).

APPENDIX D – CEO Sydney documentation relating to 'Continuous Improvement of Work'.

1. Target setting at the school, regional and system level for standardised testing in religious education, literacy and numeracy. This is evident in increasingly explicit modes in the Annual Archdiocesan Agendas 1998 - 2002 (SACS Board & CEO, 1998; SACS Board & CEO, 1999; SACS Board & CEO, 2000a; SACS Board & CEO, 2001; SACS Board & CEO, 2002a). These Annual Archdiocesan Agendas have an emphasis on improvement across all priorities including religious education, literacy and numeracy as well as in other areas like Catholic identity, student needs and technology. Targets in a number of key areas have been reached ahead of schedule. The BST results in Years 3, 5 numeracy and literacy are presented in the graphs below.



2. System analysis and provision of data and feedback to schools from standardised testing is supplemented by individual school reports to principals and executive staff following the main state assessments and the Archdiocesan Year 6 Religious Education test. This data is provided to schools so that they can take appropriate curriculum and pedagogical action to remedy identified areas of need thus further improving their standards. The system and school capacity to improve student learning has a great deal to do with the kinds of information routinely gathered and shared with colleagues at system and school level.

3. The provision of additional, system targeted intervention, made up of financial and adviser resources, is provided to assist those schools whose performance in literacy, numeracy and religious education require intervention. The decision for intervention is judged at regional level by performance in standardised tests and other, broader data including the system Educational Audit. System intervention is in inverse proportion to need and is an illustration of system resourcing in the neediest areas so that improvement can occur (CEO Sydney, 2003)
4. The development of strong, system policy statements like the, 'Literacy K-6 Position Paper' (Catholic Education Office, 2002b) and the 'Secondary Literacy Position Paper. Literacy for learning in the secondary school: 2002 - 2004' (Catholic Education Office, 2002a) are vehicles for the further improvement of literacy standard. Precursors to these programs were, Reading Recovery, retraining of teachers in years K-3 in early intervention, literacy skills and the ongoing training of teachers in English as a Second Language (ESL) and Teaching English to Students of Other Languages (TESOL) for the highly multicultural communities that characterise the Catholic systemic schools of Sydney (CEO Sydney, 2003).
5. The system review of SRD and the Educational Audit in 1998 indicated the presence of a culture of review and evaluation, with a view to further improvement of effectiveness (Clark, 1998).
6. There was documentary evidence of the consolidation and implementation throughout the system of the annual goal setting process in the CEO Sydney entitled Personnel Performance Planning and Review (PPPR) for teachers and leaders (CEO Sydney, 2001c).

LEARNING
ORGANIZATION
QUESTIONNAIRE

CEO SYDNEY

PART A: BACKGROUND

The following background information will assist in clarifying whether there are different responses between groups such as primary and secondary principals. Please select the appropriate option in each question. If you do not wish to answer a particular question simply leave it blank. Please note carefully questions III and IV are for **PRINCIPALS ONLY** and question V is for **CEO PERSONNEL ONLY**.

- | | | | | |
|--------|--|-----------------------|----------------------|------------------------------|
| (i) | What gender are you? | <input type="radio"/> | Male | <input type="radio"/> Female |
| (ii) | What role do you fulfil? | <input type="radio"/> | Primary Principal | |
| | | <input type="radio"/> | Secondary Principal | |
| | | <input type="radio"/> | CEO | |
| (iii) | What Region are you in?
(PRINCIPALS ONLY) | <input type="radio"/> | Eastern Region | |
| | | <input type="radio"/> | Inner Western Region | |
| | | <input type="radio"/> | Southern Region | |
| (iv) | How many years have you been a
principal of a systemic
Catholic school in Sydney?
(PRINCIPALS ONLY) | <input type="radio"/> | 1-5 years | |
| | | <input type="radio"/> | 6-10 years | |
| | | <input type="radio"/> | 11-15 years | |
| | | <input type="radio"/> | 16-20 years | |
| | | <input type="radio"/> | Over 20 years | |
| (v) | What Team do you work in?
(CEO PERSONNEL ONLY) | <input type="radio"/> | Eastern Region | |
| | | <input type="radio"/> | Inner Western Region | |
| | | <input type="radio"/> | Southern Region | |
| | | <input type="radio"/> | Leichhardt | |
| (vi) | What age group are you? | <input type="radio"/> | Under 35 | |
| | | <input type="radio"/> | 36-45 | |
| | | <input type="radio"/> | 46-55 | |
| | | <input type="radio"/> | Over 56 | |
| (vii) | What is your highest academic
qualification? | <input type="radio"/> | Diploma | |
| | | <input type="radio"/> | Bachelor's Degree | |
| | | <input type="radio"/> | Graduate Diploma | |
| | | <input type="radio"/> | Master's Degree | |
| | | <input type="radio"/> | Doctorate | |
| | | <input type="radio"/> | Other | |
| (viii) | In which broad area is your highest,
most recent qualification? | <input type="radio"/> | Administration | |
| | | <input type="radio"/> | Curriculum | |
| | | <input type="radio"/> | Education | |
| | | <input type="radio"/> | Pastoral Care | |
| | | <input type="radio"/> | Religious Education | |
| | | <input type="radio"/> | Theology | |
| | | <input type="radio"/> | Other | |

PART B

This part of the questionnaire has been grouped under the eight (8) characteristics of a learning organization adopted for this study. Please make use of the definitions page to clarify the meaning of each of these characteristics.

Please note every statement requires a response.

Please indicate how strongly you agree or disagree with each statement by ticking the option that best represents your opinion. If you do not wish to respond to a particular statement then please tick the 'UNANSWERED' option or if you cannot make a valid judgement on a particular statement (due to lack of knowledge or information on the matter) please tick the 'CAN'T MAKE A VALID JUDGEMENT' option.

Primary and secondary principals please respond to these items from your broad observations, knowledge and understandings of the work of the CEO with particular reference to the CEO's work and impact on your school.

Senior CEO personnel please respond to these statements from your broad observations, knowledge and understandings of the work of the system and/or principals.

CHARACTERISTIC 1: SYSTEMIC THINKING AND MENTAL MODELS

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
1.	Principals have a clear understanding of the Strategic Management Cycle used by the CEO.							
2.	The respective roles and responsibilities of central and regional directorates/offices within the CEO are clear.							
3.	Strategic Management practices encouraged by the CEO help schools address their annual priorities.							
4.	The CEO helps link Catholic schools together.							
5.	The CEO develops in principals an understanding of how the school system and the external agencies relate to each other.							
6.	The interrelationship between the school and the CEO is understood by principals.							
7.	There is adequate consultation with principals on the development of the Annual Archdiocesan Agenda.							
8.	The CEO is effective in addressing long-term, systemic challenges confronting the Catholic school system in Sydney.							
9.	CEO induction programs for principals help participants understand the broad context within which the Catholic school system operates.							
10.	There is a broad understanding among principals of the CEO's structure, processes and systems and how they are interrelated.							

CHARACTERISTIC 2: CONTINUOUS IMPROVEMENT OF WORK

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
11.	The CEO is committed to improving its own effectiveness.							
12.	The CEO is focused on improving the quality of Catholic education provided in the schools.							
13.	The CEO regularly evaluates the effectiveness of its services with a view to improving them.							
14.	The CEO seeks feedback from principals so that it can improve its performance							
15.	The Educational Audit is a system process that supports the improvement of teaching programs in schools.							
16.	School Review and Development has encouraged schools to become more active in their own self-review.							
17.	School Review and Development encourages school improvement.							
18.	The CEO is committed to curriculum development in schools.							
19.	The CEO has a high expectation for school improvement.							
20.	The CEO is effective in challenging schools to perform better.							
21.	Strategic Management practices encouraged by the CEO help schools improve the quality of their teaching and learning.							

CHARACTERISTIC 3: TAKING INITIATIVES AND RISKS.

22.	The CEO is an innovative organization.							
23.	Experimentation is recognised by the CEO as a means of learning.							
24.	The CEO's organizational structure accommodates the changing needs of schools.							
25.	The CEO is concerned more with regulations rather than service.							
26.	The CEO initiates change.							
27.	The CEO responds to change.							
28.	The CEO tries to anticipate major changes that are likely to occur in education.							
29.	This is a school system where it is 'alright to make mistakes'.							
30.	Principals feel that they can take risks in their leadership role.							

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
31.	The CEO promotes inquiry.							
32.	The Regional CEOs have a high level of influence on decision making within the system.							
33.	Principals have a high level of influence on decision making within the system.							

CHARACTERISTIC 4: ONGOING PROFESSIONAL DEVELOPMENT

34.	Professional development is carried out systematically by the CEO.							
35.	The professional development of school staffs is a priority for the CEO.							
36.	The professional development offered by the CEO is closely tied to real school needs.							
37.	Ongoing professional development for principals has been encouraged by the CEO.							
38.	The professional development offered by the CEO encourages creativity.							
39.	Professional development offered by the CEO encourages the sharing of good practice between schools.							
40.	Professional development offered by the CEO for teachers supports better classroom practice.							
41.	The CEO has created a climate of continuous professional improvement across the school system.							
42.	The CEO makes good use of external personnel and sources in the provision of professional development.							
43.	The CEO develops professional development programs that respond to system performance in standardised tests (e.g. Basic Skills Test (BST), English Language and Literacy Assessment (ELLA)).							
44.	The CEO communicates effectively with principals about their professional development needs.							

CHARACTERISTIC 5:TRUSTING AND COLLABORATIVE CLIMATE

45.	There is mutual trust between principals and the CEO.							
46.	The CEO is responsive to good ideas from schools.							
47.	The CEO exerts too much influence on decision making at school level.							
48.	The CEO values diversity of opinion.							

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
49.	Principals have the opportunity to participate in significant system-level policy development.							
50.	Sensitive issues can be raised for discussion with the CEO.							
51.	CEO structures encourage collaboration.							
52.	Principals are valued by the CEO.							
53.	CEO intervention is carried out sensitively.							
54.	Decisions in the system are taken at the appropriate level (i.e. the principle of subsidiarity).							
55.	The individual needs of principals or senior members of the CEO are served by the organizational structure of the CEO.							
56.	Participants in CEO professional development are encouraged to share their ideas through dialogue.							
57.	Discussions among colleagues in the system are honest and candid.							

CHARACTERISTIC 6: SHARED AND MONITORED VISION/MISSION

58.	The system Vision statement (<i>Vision Statement for Catholic Schools SACS Board, 1998, 2002</i>) unites the CEO and schools.							
59.	The system Vision/Mission statement informs the Vision/Mission statement development in schools							
60.	The system Vision/Mission statement is used in policy development in schools.							
61.	The system Vision encompasses your personal vision for Catholic education.							
62.	The Vision/Mission for the system was established collaboratively.							
63.	Schools and the CEO have a shared sense of direction.							
64.	The CEO monitors the implementation of school Vision/Mission.							
65.	The CEO monitors the school curriculum to ensure that it is aligned with the school Vision/Mission.							
66.	The system Vision/Mission statement is used with the induction of teaching staff in schools.							

CHARACTERISTIC 7: EFFECTIVE COMMUNICATION CHANNELS

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
67.	The CEO encourages the sharing of good practice.							
68.	A wide variety of communication channels exist for schools to communicate with the CEO.							
69.	The CEO is unreceptive to input from schools.							
70.	The expectations of the CEO are clear.							
71.	The CEO has effective communication channels with schools.							
72.	Archdiocesan Principals' meetings encourage a free, two-way flow of information.							
73.	Regional Principals' meetings encourage a free, two-way flow of information.							
74.	Dialogue between the schools and the CEO is limited.							
75.	The CEO is an organization that actively communicates with external agencies.							
76.	The CEO clearly communicates the rationale behind the school staffing allocation.							
77.	The CEO provides quality advice to schools on new legislation.							
78.	There are adequate channels for principals to make suggestions for the improvement of CEO services.							
79.	Information Communication Technologies (ICT) have been used effectively to improve the flow of information between schools and the CEO.							

CHARACTERISTIC 8: TEAM WORK AND TEAM LEARNING

(Please refer to the definition page for clarification of the meaning of the term 'team')

80.	The CEO values the contributions teams make to quality policy development.							
81.	Teams within the CEO have insufficient representation from teachers.							
82.	Principals are used broadly in CEO established committees.							

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
83.	Freedom of thought is encouraged in teams established by the CEO.							
84.	The CEO encourages learning in teams across the system.							
85.	The CEO believes that the most important organizational decisions are made in teams.							
86.	CEO professional development enhances the skills of team work for participants.							
87.	Teams are the fundamental learning unit in the CEO.							
88.	The CEO encourages schools to use teams to enhance school management.							

PART C:

This part of the questionnaire focuses on the perceived impact of the CEO on raising standards in Religious Education (RE), literacy and numeracy.

These items have been developed after reference to the CEO Annual Archdiocesan Agenda 1998 – 2002, Priorities 2, 3 and 4 (Religious Education, Teaching and Learning, and Student Needs).

The working definition of 'raising standards' used for this study, can be found on the definitions page.

Please note every statement requires a response.

Please indicate how strongly you agree or disagree with each statement by ticking the option that best represents your opinion. If you do not wish to respond to a particular statement then please tick the 'UNANSWERED' option or if you cannot make a valid judgement on a particular statement (due to lack of knowledge or information on the matter) please tick the 'CAN'T MAKE A VALID JUDGEMENT' option.

Primary and secondary principals please respond to these items from your broad observations, knowledge and understandings of the work of the CEO with particular reference to the CEO's work and impact on your school.

Senior CEO personnel please respond to these statements from your broad observations, knowledge and understandings of the work of the system and/or principals.

RELIGIOUS EDUCATION:

Could you respond to each statement on the basis of your experience in the last three to five years.

Where the curriculum documents, *Celebrating Our Journey/Faithful to God Faithful to People* are mentioned please answer from your primary or secondary background.

In the last three to five years.....

89.	The CEO expectation that more teachers gain formal qualifications in Religious Education has led to better quality teaching and learning in Religious Education.							
90.	The teacher accreditation policy of the CEO has supported better quality teaching and learning in Religious Education.							
91.	The quality of teaching and learning in Religious Education has been enhanced through the professional development programs offered by the CEO.							

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
92.	The CEO is appropriately addressing the challenge of Religious Education in a secular society.							
93.	The improvement of teaching and learning for students in Religious Education is a priority for the CEO.							
94.	The quality of teaching and learning in Religious Education has been improved through the implementation of the system curriculum documents (<i>Celebrating Our Journey/Faithful to God Faithful to People.</i>)							
95.	The CEO developed support materials for Religious Education, have been very helpful for teachers.							
96.	The CEO development of the Religious Education textbooks, <i>'To Know Worship and Love'</i> will contribute to an improvement in the quality of teaching and learning.							
97.	Teachers' use of the curriculum documents (<i>Celebrating Our Journey/Faithful to God Faithful to People</i>) have supported improvement in student knowledge in Religious Education.							
98.	Assessment strategies, comparable in depth to other learning areas, have been developed, by the CEO in Religious Education.							
99.	The Religious Education Advisers have supported better quality teaching and learning in Religious Education.							
100.	System processes, especially the Educational Audit, have supported the strengthening of teaching and learning in Religious Education.							
101.	The implementation of objective, external examinations in Religious Education (at primary level the Year 6 RE test, at secondary level Studies of Religion at HSC) has led to better student knowledge in RE.							

LITERACY:

In the last three to five years.....

102.	The CEO has assisted schools in developing whole-school plans for the improvement of student literacy standards.							
103.	The CEO has provided opportunities for the professional development of school leaders in the analysis of literacy test data.							
104.	Classroom instruction in literacy has been enhanced by CEO initiatives.							
105.	System level target setting in literacy has encouraged school level target setting.							

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
106.	School level target setting has been helpful in raising standards in literacy.							
107.	CEO analysis and interpretation of test data in literacy has contributed to improved teaching and learning outcomes.							
108.	The CEO places a high priority on teacher professional development for better classroom literacy practices.							
109.	The CEO has provided leadership to improve the quality of literacy education for boys.							
110.	School Review and Development processes have contributed to the development of higher quality teaching and learning programs in literacy.							
111.	CEO initiatives have assisted schools in implementing strategies for improving the literacy standards for ESL (English as a Second Language) learners.							
112.	System programs to develop effective assessment and reporting strategies for outcomes based learning have supported higher standards in literacy							
113.	CEO targeting of financial and staffing resources to those schools most in need of literacy support has led to improvement in the effectiveness of their literacy teaching and learning programs.							
114.	CEO targeting of regional advisory services to those schools most in need of literacy support has led to improvement in the effectiveness of their literacy teaching and learning programs.							

NUMERACY/MATHEMATICS:

In the last three to five years.....

115.	The CEO has assisted schools in developing whole-school plans for the improvement of student numeracy/mathematics standards.							
116.	The CEO has provided opportunities for the professional development of school leaders in the analysis of numeracy/mathematics test data. (eg Basic Skills Test (BST), Secondary Numeracy Assessment Program (SNAP)).							
117.	Classroom instruction in numeracy/mathematics has been enhanced by CEO initiatives.							
118.	System level target setting in numeracy/mathematics has encouraged school level target setting.							
119.	School level target setting has been helpful in raising standards in numeracy/mathematics.							

		Strongly Disagree	Disagree	Neutral Opinion	Agree	Strongly Agree	Unanswered	Can't make a valid judgement
120.	CEO analysis and interpretation of test data in numeracy/mathematics has contributed to improved teaching and learning outcomes.							
121.	The CEO places a high priority on teacher professional development for better classroom numeracy /mathematics practices.							
122.	School Review and Development processes have resulted in higher quality teaching and learning programs in numeracy/mathematics							
123.	CEO initiatives have assisted schools in implementing strategies for improving the numeracy/mathematics standards of ESL (English as a Second Language) learners.							
124.	System programs to develop effective assessment and reporting strategies for outcomes based learning have supported higher standards in numeracy/mathematics.							
125.	CEO targeting of financial and staffing resources to those schools most in need of numeracy/mathematics support has led to improvement in the effectiveness of their numeracy/mathematics teaching and learning programs.							
126.	CEO targeting of regional advisory services to those schools most in need of numeracy/mathematics support has led to improvement in the effectiveness of their numeracy/mathematics teaching and learning programs.							

OPEN-ENDED CONCLUDING QUESTIONS.

Please limit your responses to a maximum of 400 words per question. If you wish to use notes and a series of points please do so.

Please refer to the definitions page for the characteristics of a learning organization and the definition of 'raising standards' being used in this study.

If you were part of the pilot study and wish to resubmit your open-ended responses simply write 'USE PILOT RESPONSE' in the space below for one or both open-ended questions. Please note that the wording for question 2 has changed since the pilot study. If you wish to review your responses submitted in the pilot please contact the Administrative Assistant, Scott Hansen (9643 3653).

Open Question 1

From your experience in the Sydney Catholic School system comment on those learning organization characteristics of the CEO which have the greatest impact on schools.
(Please attach your response)

Open Question 2

In the context of the characteristics of a learning organization, as defined on the definitions page, please answer the following question.

In what ways can the CEO better support the raising of standards in schools?

(Please attach your response)

To submit your responses using a paper version of the questionnaire.

Please attach the green sheet which was part of the original letter of March 7th to your questionnaire responses and post to Scott Hansen, The Catholic Centre, Locked Bag 83, Lidcombe 1825.

End of questionnaire. Thank you for participating in this research.

DEFINITIONS

KEY RESEARCH QUESTION:

What characteristics of a learning organization can be identified in the Catholic Education Office (CEO) Sydney and are these perceived to raise standards in the systemic schools of the Archdiocese of Sydney?

DEFINITIONS:

A study like this needs to adopt definitions for key terms. The definitions may not necessarily embrace the broad elements of these key terms but serve as a means of focusing the study.

A learning organization - most definitions characterise a learning organization as one which acquires deeper knowledge and understandings and in doing so improves its performance and service.

The definition used in this study is as follows;

A learning organization is an organization which excels in organizational learning and outcomes. This is because this organization possesses a high degree of certain characteristics that foster the process of acquisition or generation of organizational knowledge through its members, which is intentionally used for the continuous improvement of organizational actions and outcomes.

The eight (8) characteristics of a learning organization adopted for this study are:

1. Systemic thinking and mental models

The better people understand the whole organizational situation the better they can create links and learn. This is enhanced when the mental models (a person's view of the world) are easily and willingly shared

2. Continuous Improvement of Work

The organization exerts a 'pressure' for improving its effectiveness through review, adaptation and refinement of practice and monitoring performance

3. Taking Initiatives and Risks

Learning is encouraged through experimentation, trying different approaches and flexibility of thinking

4. Ongoing Professional development of personnel

There is a strong organizational commitment to the professional development of all levels within the organization. This needs to be relevant, challenging and nurture creative, learning skills

5. Trusting and Collaborative Climate

The climate of the organization encourages dialogue, openness and trust, tolerance, shared decision-making and the empowerment of teams and individuals

6. Shared and Monitored Vision/Mission

Shared vision/mission creates commitment and unifies organizational effort. It provides a clear sense of direction

7. Effective Communication Channels

Free flow of information vertically and horizontally around the organization and with the external environment. Multiple formal and informal means of communication exist. Open and clear communication channels are essential in organizational learning

8. Team Work and Team Learning.

Teams as fundamental learning units of the learning organization. Teams as cooperating work groups which gather, process, create and disseminate knowledge. Teams made up of representatives from various levels within the organization

Catholic Education Office (CEO) – In answering the questionnaire we are seeking your ‘global’ perception of the CEO. Please consider the total services provided by the CEO Regionally and through Leichhardt.

Raising Standards :

For the purpose of this study we examine only Religious Education (RE), Literacy and Numeracy. Raising standards refers to an improvement in the quality of teaching and learning. This results in better student learning outcomes as monitored by regular school assessments and observations and broad state testing and benchmarking (e.g. the Basic Skills Tests (Years 3 and 5), ELLA (Year 7), SNAP (Year 7) and the School Certificate (Year 10)). In Religious Education the Year 6 RE test is one such assessment.



Information letter to participants

TITLE OF PROJECT:

The Catholic Education Office (CEO) Sydney as a learning organization and its perceived impact on raising standards.

STAFF SUPERVISORS:

Associate Professor Deirdre Duncan, Adjunct Professor Pat Malone,
Dr. Jeffrey Dorman.

STUDENT RESEARCHER: Mark Turkington.

PROGRAM:

Doctor of Education (Ed.D). School of Educational Leadership.

Australian Catholic University Limited
ABN 15 050 192 660
Strathfield Campus (Mount Saint Mary)
25a Barker Road Strathfield
New South Wales 2135 Australia
Locked Bag 2002 Strathfield
New South Wales 2135 Australia
Telephone **9701 4357**
Facsimile **9701 4292**
www.acu.edu

7th March 2003

Dear Colleague,

You are warmly invited to participate in a piece of research, the focus of which is to investigate which characteristics of a learning organization can be identified within the Catholic Education Office (CEO) Sydney and whether those characteristics are perceived to be associated with raising standards in the systemic schools of the Archdiocese. Data will be collected through a questionnaire. The definition of the terms 'learning organization', 'raising standards' and a clarification of what is meant by the 'CEO' will be tabled at the start of the questionnaire.

This communication provides you with some advance notice about the questionnaire which is now available on the internet on a password protected, secure web site. Details about the web site address, your user name and password (for access to and submission of the questionnaire) are on the last green page of this letter. *Please keep that page for reference.* As a backup to this letter an e-mail version has been sent to you with attachments of the questionnaire and definitions being used in the study. You are invited to complete and submit the questionnaire electronically. The final date for submission is Friday March 21st. About thirty (30) minutes of your time should be adequate to complete the questionnaire. However if you wish to complete a paper version of the questionnaire could you please print a copy from the e-mail version of this letter and mail it with the last green page of this letter attached to it. Please post to Scott Hansen, The Catholic Centre, Locked Bag 83, Lidcombe 1825.

This questionnaire has been sent to all principals of Sydney Catholic systemic primary and secondary schools (excluding Acting Principals who have not had principal experience in the Archdiocese and those in their first year as principal within the Archdiocese) and a number of senior CEO personnel (including all consultants), but excluding the Executive Director and other Directors.

Your participation in this research will allow you to reflect closely on the CEO and some of its characteristics and their perceived relationship to raising standards in schools. This research is relatively new for CEOs in Australia and will help inform the future development of the Sydney CEO and how it works with schools. A report of the findings will be provided to all systemic principals and the senior leadership of the CEO. It is likely that the findings will also be published in relevant journals. Such publication will not identify individuals.

In this study please consider the total services provided by the CEO Regionally and through Leichhardt. We are interested in your 'global' perception.

Your completion and electronic return of the questionnaire will be deemed to be your consent to participate. Non-completion of the questionnaire will have no consequences. Participation is entirely voluntary, of minimal inconvenience and you can withdraw at any time without giving a reason. As the researcher (Mark Turkington) occupies a senior role within the CEO we have taken significant steps to ensure confidentiality.

All participants shall remain anonymous to the researcher and confidentiality will be respected. It will not be possible for the researcher to identify any individuals or schools. To ensure that this happens the following steps have been taken:

1. No participant will be asked to sign the questionnaire or disclose their name or the name of their school.
2. The data will be returned to a password protected, secure web site, designed by an external consultant, and which the researcher cannot access.
3. The questionnaire data, including background information, user names and passwords will be initially coded by an Administrative Assistant. The researcher will not be privy to any of this and will only be provided with coded information for the data analysis.
4. There is no signed consent form as an additional precaution.
5. If you wish you can return a paper version of the questionnaire.

Any questions regarding the project should be directed to the Supervisor, Associate Professor Deirdre Duncan, on (02) 9701 4357 in the School of Educational Leadership at the Mt. St. Mary Campus of the Australian Catholic University at 25A Barker Road, Strathfield 2135.

This study has been approved by the Human Research Ethics Committee (HREC) at ACU. The Executive Director of Schools, Br. Kelvin Canavan fms, has granted permission for the questionnaire to be distributed to the participants outlined earlier in this letter.

In the event that you have any complaint or concern about the way you have been treated during the study, or if you have any query that the Supervisor (A/Prof Deirdre Duncan) or researcher (Mark Turkington) have not been able to satisfy, you may write to the Chair of the Human Research Ethics Committee as follows;


Chair, HREC
C/- Research Services
Australian Catholic University
Sydney Campus
Locked Bag 2002
STRATHFIELD NSW 2135
Phone: (02) 9701 4159 Fax: (02) 9701 4350

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

This research relies very much on your honest and open responses to the questionnaire. We are interested in what you genuinely think about these issues.

Once again our sincere thanks for taking the time to read this information and for completing the questionnaire.

Yours sincerely,



Associate Professor Deirdre Duncan
Project Supervisor



Mark Turkington
Researcher

**PLEASE KEEP THIS PAGE HANDY SO THAT YOU CAN ACCESS THE WEB SITE
FROM NOW UP TO AND INCLUDING *FRIDAY MARCH 21st***

ACCESS AND SUBMISSION OF THE QUESTIONNAIRE

STEP 1: Please go to the internet and log onto this site: (from now up to and including Friday March 21st). You can access this site from work, home or any location – all you need is access to the internet.

<http://elearning.catholic.edu.au/survey/login.asp>

STEP 2: Then enter the following to access the questionnaire.

(Please use lower case and no spaces)

Your User Name:.....

Your Password:.....

PLEASE NOTE:

This web site is password protected and administered independently of the researcher (Mark Turkington) who is unable to access passwords, user names or the web site itself. Background data will be passed onto the researcher in coded form.

If you have any difficulty accessing the site or submitting your return please contact Scott Hansen on 9643 3653 or by e-mail on scott.hansen@ceo.syd.catholic.edu.au. If Scott is not available by phone please leave a message for him with the support staff who respond to your call.

If you are returning a paper version of the questionnaire can you please attach this green sheet to it and post it to; Scott Hansen, The Catholic Centre, Locked Bag 83, Lidcombe 1825.

site URL, user names and passwords, back up email

APPENDIX G Letter to all principals and senior personnel involved in study form Executive Director of schools
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ED/617
28 February, 2003

CIRCULAR LETTER TO SYSTEMIC SCHOOL PRINCIPALS

**Re: The Catholic Education Office (CEO) Sydney as a Learning Organization and its
perceived impact on standards – Research Project**

Dear Colleague,

At the end of next week you will receive a communication via e-mail and in the post from Associate Professor Deirdre Duncan(Australian Catholic University) and Mark Turkington. In that letter advance notice will be provided of a questionnaire that principals and some senior CEO personnel (excluding the Directors) will be invited to complete in the period from **Monday March 10th** to **Friday March 21st**. Completion of the questionnaire is entirely voluntary and confidentiality is carefully preserved and respected .

I am writing to encourage you to take the time to complete this questionnaire. I believe that it has the potential to assist the CEO in our future planning and in preparing for the major review of the *Towards 2005 Strategic Management Plan* that is to occur in 2004.

We have reached an important time in our history where the characteristics of the CEO as a learning organization are worthy of analysis. We are also in a good position to gather some data on the perceived impact of the CEO on raising standards in the schools of the system. This study will focus on Religious Education, literacy and numeracy.

Principals of the systemic schools of the Archdiocese of Sydney are a key group to provide the data for this study as are those senior CEO personnel whose role brings them into close contact with the teaching and learning dimensions of schools. As very significant leaders in our school system your views, opinions and insights are being sought and are most significant. I trust that you can devote some 30 minutes to this task between **March 10th** and **March 21st**. The questionnaire will be housed on a password protected, secure web site. You will be invited to access and submit your responses via the web site but can respond by returning a paper copy of the questionnaire if you prefer.

As leaders called to serve the Church at this time we are obliged to meet the needs of the current generation of young people and to prepare for the future as best we can. I believe this study will assist in that process.

With my continued best wishes for a personally and professionally satisfying first term.

Yours sincerely



**Brother Kelvin Canavan, fms
EXECUTIVE DIRECTOR OF SCHOOLS**

SOME DATES:

Friday March 7th	Advance Notice letter / e-mail sent to all principals.
Monday March 10th	Questionnaire available on internet.
Friday March 21st	Final day for submission of questionnaire.



REMINDER

LEARNING ORGANISATION QUESTIONNAIRE

TITLE OF PROJECT:

The Catholic Education Office (CEO) Sydney as a learning organization and its perceived impact on raising standards.

STAFF SUPERVISORS:

Associate Professor Deirdre Duncan, Adjunct Professor Pat Malon
Dr. Jeffrey Dorman.

Australian Catholic University Limited
ABN 15 050 192 660
Strathfield Campus (Mount Saint Mary)
25a Barker Road Strathfield
New South Wales 2135 Australia
Locked Bag 2002 Strathfield
New South Wales 2135 Australia
Telephone 9701 4357
Facsimile 9701 4292
www.acu.edu.au

STUDENT RESEARCHER: Mark Turkington.

PROGRAM:

Doctor of Education (Ed.D). School of Educational Leadership.

13th March 2003

My Dear Colleague,

Last week you should have received a letter in the mail and as an e-mail inviting you to participate in a research project examining the Catholic Education Office (CEO) Sydney as a learning organization and its perceived impact on standards. That letter also provided you with the details needed to access the web site on which the questionnaire is housed. You were provided with a web site address, user name and password. You were also provided with the questionnaire as an attachment to the e-mail for your reference.

The questionnaire has been on the web site since Friday March 7th and will remain there up to and including Friday March 21st.

If you have not yet accessed, responded and returned the questionnaire electronically could you please do so by Friday March 21st. The web site can be accessed from any location at any time. All you need is access to the internet. Your participation in this research is highly valued and will help contribute to the development of the CEO and its work with schools. Please note if you feel more comfortable returning a paper version of the questionnaire please do so. Details of this option were also included in last week's letter.

As mentioned in last week's letter, the researcher (Mark Turkington) has no access to the web site, user names, passwords or the background information you will provide. Any data passed onto him for analysis will be in coded form. All participants shall remain anonymous to the researcher. At no stage of the research are participants to identify themselves or their schools. Your confidentiality is very carefully preserved and respected in this research.

If you have any difficulties please phone or e-mail the Administrative Assistant for the project, Scott Hansen on 96433653 or scott.hansen@ceo.syd.catholic.edu.au

If you have already submitted your responses please accept my thanks.

Yours sincerely,

A handwritten signature in black ink that reads "Deirdre J. Duncan".

Associate Professor Deirdre Duncan
Project Supervisor

APPENDIX I - Human Research Ethics Committee-Approval Form



Human Research Ethics Committee

Committee Approval Form

Principal Investigator/Supervisor: A/Prof Deirdre Duncan Sydney Campus

Co-Investigators: Adj Prof Pat Malone, Dr Jeffrey Dorman Sydney Campus

Student Researcher: Mr Mark Turkington Sydney Campus

Ethics approval has been granted for the following project:

The Catholic Education Office (CEO) Sydney as a learning organisation and its perceived impact on raising standards.

for the period: 15.02.03 to 30.06.03

Human Research Ethics Committee (HREC) Register Number: N2002.03-29

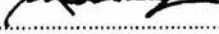
The following standard conditions as stipulated in the *National Statement on Ethical Conduct in Research Involving Humans* (1999) apply:

- (i) that Principal Investigators / Supervisors provide, on the form supplied by the Human Research Ethics Committee, annual reports on matters such as:
 - security of records
 - compliance with approved consent procedures and documentation
 - compliance with special conditions, and
- (ii) that researchers report to the HREC immediately any matter that might affect the ethical acceptability of the protocol, such as:
 - proposed changes to the protocol
 - unforeseen circumstances or events
 - adverse effects on participants

The HREC will conduct an audit each year of all projects deemed to be of more than minimum risk. There will also be random audits of a sample of projects considered to be of minimum risk on all campuses each year.

Within one month of the conclusion of the project, researchers are required to complete a *Final Report Form* and submit it to the local Research Services Officer.

If the project continues for more than one year, researchers are required to complete an *Annual Progress Report Form* and submit it to the local Research Services Officer within one month of the anniversary date of the ethics approval.

Signed:  Date: 4/02/2004
(Research Services Officer, Strathfield Campus)

(Committee Approval.dot © 28.06.2002)

APPENDIX J: Approval Letter - Executive Director of Schools



Catholic Education Office, Sydney

38 RENWICK STREET, LEICHHARDT NSW • PO BOX 217, LEICHHARDT 2040 • PH (02) 9569 6111 • FAX (02) 9550 0052

13 June, 2002

Mr Mark Turkington
Regional Director
Inner Western Region
Catholic Centre
3 Keating Street
LIDCOMBE NSW 2141

Dear Mark,

It gives me considerable satisfaction to approve your application to conduct research in Catholic systemic schools and in the CEO, Sydney along the lines contained in your letter dated 7 June 2002.

This is a significant topic for educational research and I am very happy to support it.

Best wishes,

A handwritten signature in black ink that reads 'Kelvin Canavan'.

Br Kelvin Canavan, fms
EXECUTIVE DIRECTOR OF SCHOOLS

APPENDIX K: Summary of major findings and responses to the Pilot

PILOT DEBRIEF: CEO AS A LEARNING ORGANIZATION.

Some matters to cover with random sample of pilot participants (through phone and personal contact)
Please consider these matters by reference to the questionnaire (attached). Can you make recommendations for improvement of the questionnaire, including, where relevant, clearer wording of items.

THE QUESTIONNAIRE:

- Were any of the items confusing? If so which ones?
- Were any items inappropriate? If so which ones?
- Were any items ambiguous? If so which ones?
- Was the language used clearly understandable?
- Was the layout of the questionnaire clear?
- Were instructions clear? Were they too long?
- Were the open ended questions clear?
- Did the questionnaire take you about 30 minutes?
- Was the order of characteristics of any significance in the way you answered the items?
- Was the order of items within the scales of any significance in the way you answered items?

THE WEB SITE:

- Was access to the web site easy?
- Was the format clear?
- Was the introductory letter on the web site clear?
- Were the section introductions clear?
- Did you experience any difficulties submitting the questionnaire?
- Was the site easy to navigate?
- Was the Help Link of use?
- Were there any irregularities you experienced using the web site ?
- Did you print a hard copy of the questionnaire?
- Were there any issues you have with confidentiality ?
- Did you at all feel uncomfortable with completing the questionnaire?
- Any general comments concerning the web site?

GENERAL RECOMMENDATIONS:

- Do you have any general recommendations for improvement of the questionnaire?
- Do you have any general recommendations for improvement of the administration of the questionnaire?

THE ADVANCE LETTER:

- Did it explain the purpose of the research clearly enough? Was it too wordy? Were the details of the web site and the access and submission of questionnaire clear?
- Were the e-mail and fax reminders of some assistance?
- Are there any general comments you wish to add?

SUMMARY OF PILOT DEBRIEF:

Overview:

Seventeen pilot participants were contacted (17/32 =53% of pilot participants).
6 primary principals (out of 17 respondents –35%) 2 east, 2 south, 2 Inner West)
4 secondary principals (out of 5 respondents- 80%) 2 east, 1 south, 1 Inner West)
4 consultants (3 primary; 1 East, 1 South , 1 Inner West) and 1 secondary (south).
3 Other senior CEO Leichhardt (1 HR and 2 RE&C)

Process:

Phone interview by researcher (Mark Turkington) using Pilot Debrief proforma and checklist. Over March 3,4,5.

General Feedback:

Urge participants to be open and honest and to say what you genuinely think about the issues. **Action-statement in letter to participants and in web site introductory letter.**

Some clarification as to which perspective to respond from. Action – additional paragraph to encourage principals to respond from their vantage point and to assess the CEO impact/influence on their school community.

CEO personnel found it sometimes difficult to respond on matters that seemed to be principal matters and in some cases they have no experience knowledge in that area .e.g. some lack of working knowledge in some areas. Used unanswered option. Who am I answering for?

Similarly CEO personnel to respond from their understandings and knowledge of the system and the work of principals. Also introduction of ‘CAN’T MAKE A VALID JUDGEMENT’ may help discriminate here.

The Questionnaire:

The majority found the items were not confusing, or inappropriate or ambiguous. The language used was clear and understandable. The layout was clear and the instructions were clear and not too long. The open ended questions were also clear. Time taken varied from 25 – 35 minutes with most agreeing that 30 minutes was about the time they took.

Some Suggestions:

Some CEO personnel found it difficult to discriminate between the characteristics/culture of the Regions and that of Leichhardt. The encouragement to evaluate a global perspective **Action- to emphasise the need to respond from a global perspective by including this in letter to participants and covering letter on web site. There is also a stronger encouragement to access HELP link and definitions in web site covering letter.**

Section on numeracy very primary oriented. Action: Introduction of numeracy/mathematics to assist secondary principals/CEO personnel to respond .

:Lack of clarity of the use of the word team. Action: Team definition explicitly referenced in Characteristic 8 introduction and HELP link more strongly emphasised in letter to participants and introductory web site letter.

The Web Site:

Access was easy, format clear, introductory letter clear and introduction to sections was clear. Few difficulties submitting questionnaire, site was easy to navigate. The Help link was **not** used by a number (the majority) of respondents. They didn’t experience any irregularities using the site, apart from local school based network, access issues in a couple of cases .Many printed a hard copy to think through issues first and to have as a reference. None submitted hard copy however .

Confidentiality was tested carefully with pilot respondents and they were strongly reassured by the reassurances outlined in the information letter. None said they felt compromised in what they could say .

Most were happy with the web site , said it was easy and that it was an exciting medium for such an exercise. Some confusion in the use of User...

Action: In opening letter on web site to emphasise further the value and use of the HELP link.

User nomenclature not used in main study.

To provide stronger option for paper submission of questionnaire for those who don't feel so comfortable submitting by the net.

General Recommendations:

In the Background recommendations what do we do if people have two 'highest' qualifications e.g. 2 masters degrees. **Action ask for most recent, highest qualification area – software limitation here.**

One secondary principal felt depressed after she concluded the final open-ended question.

The Advance Letter:

Explained the purpose of the research clearly. It was not too wordy. It was helpful and did explain the web site processes clearly. There was strong support for the e-mail and fax reminders. People appreciated the gentle reminders. They also appreciated the option to phone or e-mail a person (the Administrative Assistant) for help and support if they needed it.

Action: Once the first general reminder has gone to people to then focus reminder processes – e-mail, fax and phone to those who have not responded.

To e-mail those who have submitted and let them know that their submission has been received.

Summary of major findings and responses to the pilot

1. Background: Item VIII in Part A (Background) was clarified by asking for the highest, most recent, qualification. This was to cater for those respondents with multiple, equivalent qualifications in different areas.
2. The introduction of an additional selection category 'Can't make a valid judgement'. In the pilot this was amalgamated with the unanswered category. In the main questionnaire, 'can't make a valid judgement' was meant for those respondents who lacked knowledge or information on a particular matter. The 'unanswered' selection was for those respondents who did not wish to answer a particular item.
3. Respondents were encouraged to respond from their broad, observations, knowledge and understandings of the work of the CEO from their unique school or system leadership role.
4. Questions 8 and 92 from the pilot were deleted for statistical reasons (their correlations were below 0.3) and replaced with alternative questions to keep their respective scales at a reasonable size.
5. Questions 24, 54, 73, 93, 96, 98, 106, 107, 122 were omitted because their correlation coefficients were low.
6. Question 27 was omitted because it was very similar to question 72 and was better located in the Communication and Information flow scale.
7. These changes reduced the number of items from a total of 136 in the pilot to 126 in the main questionnaire. The entire questionnaire was able to be completed in approximately 30 minutes.
8. The second open-ended question was linked more closely to the key research question.
9. The open-ended questions were word limited to 400 words each.
10. The web site introductory statement was simplified and respondents were strongly encouraged to use the help link for definitions of key terms like 'teams'.
11. Respondents were more explicitly encouraged to be open and honest in their responses.
12. The definition of 'CEO' was broadened to be a 'global' perception of the organization and its services both regionally and centrally.
13. The definition of 'raising standards' included benchmarking.
14. The wording of the key question was refined.
15. The word mathematics was added to numeracy in the final scale items to be more inclusive of the secondary schools.
16. A strengthening of the option to submit a paper version of the questionnaire, for those who wished, was built into the main study.
17. There was no feedback that suggested a need to change the order of scales within the questionnaire or the order of items within any scale (the funnel effect). Order effects are strongest in those respondents who lack opinions or who are less well educated (Neuman, 2000, 265).

Open-ended questions response statistics

	<u>Question No. 1</u>					<u>Question No. 2</u>				
	Primary Principal s	Secondar y Principals	Senior CEO Personnel	Tota l	Rank	Primary Principals	Secondary Principals	Senior CEO Personnel	Tota l	Rank
<i>Learning Organization Characteristics</i>										
Systemic Thinking and Mental Models	34	8	11	53	2	3	2	2	7	7
Continuous Improvement of Work	34	4	12	50	3	5	5	2	12	5
Taking Initiatives and Risks	5	0	1	6	8	13	4	10	27	3
Ongoing Professional Development	44	4	9	57	1	36	3	3	42	1
Trusting and Collaborative Climate	7	5	2	14	6	20	4	8	32	2
Shared and Monitored Vision/Mission	29	6	9	44	4	0	2	0	2	8
Effective Communication Channels	16	6	2	24	5	12	2	5	19	4
Team Work and Team Learning.	6	1	5	12	7	6	0	3	9	6

Student Achievement Targets

ARCHDIOCESE OF SYDNEY - SYSTEMIC SCHOOLS



23 January 2004

TABLE 1 LITERACY TARGETS – YEAR 3
% OF STUDENTS

Band 5	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	33	32	27	32	33
Inner Western	27	26	24	27	28
Southern	25	25	21	25	26
Archdiocese	28	27	24	29	30

Band 3, 4 & 5	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	88	90	87	88	88
Inner Western	85	88	84	84	85
Southern	84	85	82	84	85
Archdiocese	85	87	84	86	87

2003 n = 5089

TABLE 2 LITERACY TARGETS – YEAR 5
% OF STUDENTS

Band 6	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	37	40	28	38	40
Inner Western	32	35	26	29	33
Southern	32	34	27	31	33
Archdiocese	33	36	27	34	35

Band 4, 5 & 6	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	94	95	90	92	95
Inner Western	88	90	85	89	90
Southern	92	93	90	91	93
Archdiocese	91	93	89	92	93

2003 n = 4510

TABLE 3 NUMERACY TARGETS – YEAR 3
% OF STUDENTS

Band 5	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	26	25	25	28	29
Inner Western	24	22	22	24	25
Southern	20	20	21	24	24
Archdiocese	23	22	23	25	26

Band 3, 4 & 5	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	87	87	82	86	88
Inner Western	83	82	77	85	86
Southern	83	82	79	83	85
Archdiocese	84	84	80	85	86

2003 n = 5089

TABLE 4 NUMERACY TARGETS – YEAR 5
% OF STUDENTS

Band 6	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	35	35	27	35	40
Inner Western	30	34	25	30	31
Southern	30	31	28	29	31
Archdiocese	32	33	27	33	35

Band 4, 5 & 6	2001- 2003 average	2003 actual	2003 t a r g e t s	2004	2005
Eastern	90	90	90	91	92
Inner Western	84	86	82	86	87
Southern	87	88	88	89	89
Archdiocese	87	88	84	88	89

2003 n = 4510



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TABLE 5 RELIGIOUS EDUCATION TARGETS – YEAR 6
MEAN: ALL STUDENTS (AS %)

	2001	2002	2003	2003	2004	2005
	<i>actual</i>			<i>targets</i>		
Eastern	69.9	70.3	69.2	71	72	73
Inner Western	67.0	67.5	66.7	68	69	70
Southern	67.9	67.6	70.0	68	69	70
Archdiocese	68.1	67.9	68.4	69	70	71

2003: Average "all students" includes Armidale Diocese.
2003 n = 4824

TABLE 6 SCHOOL CERTIFICATE TARGETS – ENGLISH
% OF STUDENTS

Band 6	2000	2001	2002	2003	2003	2004	2005
	<i>actual</i>				<i>targets</i>		
Eastern	4	7	7	4	7	8	9
Inner Western	4	4	6	3	6	5	5
Southern	5	5	6	4	6	7	7
Archdiocese	6	5	6	4	6	6	7
State	6	7	6	5			

Band 4, 5 & 6	2000	2001	2002	2003	2003	2004	2005
	<i>actual</i>				<i>targets</i>		
Eastern	72	70	80	77	80	81	82
Inner Western	62	55	71	62	71	65	66
Southern	71	65	79	72	79	79	79
Archdiocese	64	63	75	70	75	73	74
State	65	60	70	64			

2003 n = 4637

TABLE 7 SCHOOL CERTIFICATE TARGETS – MATHEMATICS
% OF STUDENTS

Band 6	2000	2001	2002	2003	2003	2004	2005
	<i>actual</i>				<i>targets</i>		
Eastern	8	4	6	4	6	7	8
Inner Western	5	4	4	3	5	5	5
Southern	6	4	4	4	5	6	6
Archdiocese	8	4	4	4	5	6	7
State	8	6	6	6			

Band 4, 5 & 6	2000	2001	2002	2003	2003	2004	2005
	<i>actual</i>				<i>targets</i>		
Eastern	56	67	67	68	67	68	69
Inner Western	48	57	54	58	58	58	59
Southern	56	66	62	64	63	64	65
Archdiocese	50	66	60	63	61	63	65
State	51	62	58	59			

2003 n = 4399

TABLE 8 SCHOOL CERTIFICATE TARGETS – SCIENCE
% OF STUDENTS

Band 6	2000	2001	2002	2003	2003	2004	2005
	<i>actual</i>				<i>targets</i>		
Eastern	4	3	2	3	4	5	5
Inner Western	2	2	2	2	2	2	3
Southern	2	2	2	3	3	4	4
Archdiocese	4	2	2	3	3	3	4
State	4	3	3	3			

Band 4, 5 & 6	2000	2001	2002	2003	2003	2004	2005
	<i>actual</i>				<i>targets</i>		
Eastern	61	64	72	79	72	73	74
Inner Western	50	49	60	71	57	59	61
Southern	57	58	68	77	63	66	69
Archdiocese	55	57	65	75	64	66	68
State	55	56	61	70			

2003 n = 4364

TABLE 9 HSC TARGETS – STUDIES OF RELIGION 1
% OF STUDENTS

Band 6	2001	2002	2003	2003	2004	2005
	<i>actual</i>			<i>targets</i>		
Eastern	1	14	11	14	14	14
Inner Western	0.4	6	5	6	6	6
Southern	0.1	6	7	7	8	8
Archdiocese	1	8	8	9	9	9
State	0.5	8	7			

Band 4, 5 & 6	2001	2002	2003	2003	2004	2005
	<i>actual</i>			<i>targets</i>		
Eastern	35	89	81	89	84	85
Inner Western	29	78	60	78	69	70
Southern	24	80	68	80	80	81
Archdiocese	29	82	69	82	78	79
State	29	80	68			

2002 n = 1572

TABLE 10 HSC TARGETS – ENGLISH (STANDARD)
% OF STUDENTS

Band 4, 5 & 6	2001	2002	2003	2003	2004	2005
	<i>actual</i>			<i>targets</i>		
Eastern	17	40	49	40	41	42
Inner Western	15	36	36	36	36	36
Southern	27	44	44	43	44	45
Archdiocese	21	40	44	40	41	42
State	15	31	34			

2003 n = 2121

TABLE 11 HSC TARGETS – ENGLISH (ADVANCED)

% OF STUDENTS						
Band 6	2001	2002	2003	2003	2004	2005
	<i>a c t u a l</i>			<i>t a r g e t s</i>		
Eastern	2	6	8	7	8	9
Inner Western	4	5	2	6	5	5
Southern	3	4	5	5	6	7
Archdiocese	2	5	5	6	6	7
State	4	7	7			

Band 4, 5 & 6	2001	2002	2003	2003	2004	2005
	<i>a c t u a l</i>			<i>t a r g e t s</i>		
Eastern	90	95	92	95	96	96
Inner Western	63	93	91	93	92	92
Southern	87	96	95	95	96	96
Archdiocese	90	95	93	95	95	95
State	89	93	88			

2003 n = 1088

TABLE 12 HSC TARGETS – GENERAL MATHEMATICS

% OF STUDENTS						
Band 6	2001	2002	2003	2003	2004	2005
	<i>a c t u a l</i>			<i>t a r g e t s</i>		
Eastern	1	3	2	3	4	4
Inner Western	2	2	2	3	3	3
Southern	1	1	3	2	3	4
Archdiocese	1	2	2	3	3	4
State	2	3	3			

Band 4, 5 & 6	2001	2002	2003	2003	2004	2005
	<i>a c t u a l</i>			<i>t a r g e t s</i>		
Eastern	41	42	45	42	43	44
Inner Western	44	36	42	36	37	38
Southern	43	45	49	44	45	46
Archdiocese	41	41	46	41	42	43
State	44	41	43			

2003 n = 1716

NOTES

1. Tables 1–4: Literacy and Numeracy targets to 2003 established in 2000. Targets for 2004–5 confirmed late 2003.
2. Table 5: Religious Education (Year 6) targets for 2003–5 confirmed late 2003. New student textbooks and revised curriculum will need to be taken into account in 2004 and 2005.
3. Table 6–8: School Certificate tentative targets for 2003–5 established early 2003 and modified early 2004.
4. Table 9–14: Higher School Certificate tentative targets for 2003–5 established early 2003 and modified early 2004.

TABLE 13 HSC TARGETS – MATHEMATICS

% OF STUDENTS						
Band 6	2001	2002	2003	2003	2004	2005
	<i>a c t u a l</i>			<i>t a r g e t s</i>		
Eastern	10	17	14	19	15	16
Inner Western	12	21	15	19	15	16
Southern	10	18	12	18	16	16
Archdiocese	10	18	14	19	15	16
State	12	19	15			

Band 4, 5 & 6	2001	2002	2003	2003	2004	2005
	<i>a c t u a l</i>			<i>t a r g e t s</i>		
Eastern	72	69	73	69	70	71
Inner Western	64	68	73	69	70	71
Southern	69	74	73	74	75	76
Archdiocese	67	71	73	71	72	73
State	64	66	68			

2003 n = 1042

TABLE 14 HSC TARGETS

% COURSES ABOVE STATE AVERAGE						
	2000	2001	2002	2003	2003	2004 2005
	<i>a c t u a l</i>				<i>t a r g e t s</i>	
Eastern	59	60	59	65	60	61 62
Inner Western	41	45	49	48	49	50 51
Southern	54	51	60	58	60	60 61
Archdiocese	52	52	56	57	56	57 58
State	50	50	50	50		



Br Kelvin Canavan, fms
EXECUTIVE DIRECTOR OF SCHOOLS

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