

**A QUESTION OF BALANCE:
SCHOOL VALUES AND EFFECTIVENESS**

by

Lawrence Gray

B.A., Simon Fraser University, 1972

M. Ed., The University of British Columbia, 1980

THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY
in the Faculty
of
EDUCATION
under Special Arrangements

© Lawrence Gray 1995

SIMON FRASER UNIVERSITY

November 1995

All rights reserved. This work may not be
reproduced in whole or in part, by photocopy
or other means, without permission of the author.

APPROVAL

NAME: Lawrence Gray
DEGREE: Doctor of Philosophy (Faculty of Education)
TITLE OF THESIS: A Question of Balance: School Values and Effectiveness
Examining Committee:
Chair: Dr. Phyllis Wrenn
—

Dr. Peter Coleman
Senior Supervisor

Dr. Adam Horvath

Dr. Linda LaRocque

Dr. Mark Wexler

Dr. Marvin Wideen
Internal External Examiner

Dr. Pamela Sammons
External Examiner
Professor of Education
University of London

Date Approved:

Nov 29 / 95

PARTIAL COPYRIGHT LICENSE

I hereby grant to Simon Fraser University the right to lend my thesis, project or extended essay (the title of which is shown below) to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users. I further agree that permission for multiple copying of this work for scholarly purposes may be granted by me or the Dean of Graduate Studies. It is understood that copying or publication of this work for financial gain shall not be allowed without my written permission.

Title of Thesis/Project/Extended Essay

A Question of Balance: School Values and Effectiveness

Author:

(signature)

Lawrence V. Gray

(name)

Dec. 1, 1995

(date)

ABSTRACT

The public education system is characterized by debates about what schools should be emphasizing in both their goals and their means of program delivery. Much of the content of these discussions concerns perceived school effectiveness and school improvement: arguments are put forward that schools could be improved by focusing more on certain key school purposes, for example, on the basics of learning or on career education. This work has argued that definition of school effectiveness and subsequent judgment is an exercise involving personal and collective value systems.

This study consisted of mixed-method research into school organizational values and the concept of school effectiveness in order that some greater clarity might be brought to these discussions about school purposes. A starting point for this research consisted of the construction of a theoretical typology of school organizational values developed from historically and logically derived conceptions of what society expects from its schools. This classificatory model was then used as a conceptual framework to guide the subsequent investigation. One of the purposes for this research was to examine the functional utility of this theoretical model in the study of school organizational values.

Ultimately, any idea of organizational effectiveness must be tied to consistent performance outcomes. School effectiveness inevitably must be related to how well the students are learning. Thus, the second major part of the study was to investigate the grade 12 examination performance of 174 secondary schools in the province of British Columbia over a 7 year term in order to assess whether or not schools could demonstrate consistent academic success. It was argued that such consistent success is prerequisite to the concept of school-wide effectiveness.

A second reason for conducting this longitudinal study of school performance was to select a small sample of schools for an in-depth study of organizational values in the context of their academic results. Two pairs of secondary schools were selected as a purposive sample, each pair being neighboring schools with one school having a better record of success on grade 12 examinations than the other. The case study was intended to determine whether schools with higher academic results could be differentiated from their lower performing counterparts by patterns of organizational values held by teachers, students, and parents. Additionally, the relationship between perceived operating values and desired school emphases was examined.

The longitudinal study of school examination performance showed that a small percentage of schools could demonstrate consistent success in a variety of school subjects over the 7 year period. Individual subject results within schools were more stable than was overall school performance, and a considerable percentage of schools had consistent records of high, middle, and low results for different subjects, bringing into question the relative impact of the overall school culture on school academic effectiveness. Mathematics and English alone were found to be unreliable predictors of school-wide academic success.

The findings of the case study indicated that the typology of school values could be used as an investigative tool to examine school organizational values, and that schools and groups within schools could be differentiated on the basis of their operating values but not on the basis of their preferred emphases for schools. Value congruency between teachers and students did not differentiate lower from higher performing schools. More academically successful schools exhibited higher expectations for student learning and tighter connections between a focus on achievement and the provision of personal and emotional support for their students than did the less successful schools.

TABLE OF CONTENTS

CHAPTER	1.	INTRODUCTION	1
	1.1	BACKGROUND TO THE STUDY	1
	1.2	RESEARCH PROJECT OVERVIEW	6
	1.3	PURPOSES FOR THE STUDY	6
	1.4	UNDERLYING ASSUMPTIONS: VALUES AND EFFECTIVENESS	7
	1.5	THE SIGNIFICANCE OF THIS RESEARCH	8
	1.6	SUMMARY	10
CHAPTER	2.	STUDY OVERVIEW: PURPOSES, DESIGN, AND IMPLEMENTATION	11
	2.1	INTRODUCTION	11
	2.2	STUDY PURPOSES LEADING TO MIXED-METHOD RESEARCH	13
	2.3	RESEARCH ASSUMPTIONS	13
	2.4	RESEARCH DESIGN	15
	2.5	STUDY PHASES	16
	2.6	SUMMARY	17
CHAPTER	3.	VALUES AND ORGANIZATIONAL CHANGE	18
	3.1	INTRODUCTION	18
	3.2	THE VALUE CONCEPT	18
	3.3	VALUES AND CHANGE	23
	3.4	FUNCTIONAL DEFINITIONS	25
	3.5	SUMMARY	27

CHAPTER 4.	A CONCEPTUAL FRAMEWORK FOR ANALYSIS OF SCHOOL ORGANIZATIONAL VALUES	29
4.1	INTRODUCTION	29
4.2	HISTORICAL EVOLUTION OF SCHOOL PURPOSES	29
4.3	A RATIONAL INTEGRATION OF VALUE THEMES	32
4.4	AN EMPIRICALLY DERIVED CONSTRUCT OF EFFECTIVENESS	40
4.5	SUMMARY	44
CHAPTER 5.	CONSISTENT EFFECTIVENESS: A LONGITUDINAL ANALYSIS	45
5.1	INTRODUCTION	45
5.2	BACKGROUND	48
5.3	STUDY PURPOSES	49
5.4	METHOD	50
	Subjects	50
	Design	51
	Procedure	53
5.5	RESULTS	57
5.6	SUMMARY	71
CHAPTER 6.	CASE STUDY OF FOUR SCHOOLS: DESIGN AND METHOD	73
6.1	INTRODUCTION	73
6.2	BACKGROUND ASSUMPTIONS	73
6.3	STUDY PURPOSES	74
6.4	SAMPLING DECISIONS	75
	School Districts	76
	Sample School Characteristics	77
	Demographics	79
	School Examination Results	79
	Time, People, Place and Context	80
6.5	SITE ACCESS	83

	6.6	INSTRUMENT DESIGN AND DEVELOPMENT	83
		Pilot Testing the Questionnaire and Interview Items	84
		Case Study Observations	87
	6.7	DATA COLLECTION	88
	6.8	DATA ANALYSIS	89
	6.9	SUMMARY	93
CHAPTER	7.	CASE STUDY: QUALITATIVE AND QUANTITATIVE INTRODUCTIONS	94
	7.1	INTRODUCTION	94
	7.2	FIRST IMPRESSIONS	94
		Arlingdale Secondary School	94
		Pauline Secondary School	97
		Northridge Secondary School	100
		Brandon Secondary School	103
	7.3	SCHOOL PERFORMANCE PROFILES	106
		Arlingdale and Pauline	109
		Northridge and Brandon	111
	7.4	SUMMARY	112
CHAPTER	8.	CASE STUDY: INTERVIEW RESULTS	114
	8.1	INTRODUCTION	114
	8.2	ESTABLISHING THE VALUE THEMES	115
		Perceived School Operating Values	115
		Desired School Values	118
	8.3	INTERVIEW ANALYSIS: MAJOR THEMES	120
		Intellectual Development/Learning Focus	120
		Social-Emotional Development	131
		Personal Support/Individual Focus	138
	8.4	INTERVIEW ANALYSIS: MINOR THEMES	144
		Career/Social Responsibility Focus	145
		Creativity/Innovation	149
		Social Order/Control	152

	Cooperation	153
	Competition	155
8.5	VALUE CONGRUITY: AN HOLISTIC VIEW	158
8.6	PARENT PERCEPTIONS	165
8.7	SUMMARY	170
CHAPTER 9.	CASE STUDY: QUESTIONNAIRE ANALYSIS	171
9.1	INTRODUCTION	171
9.2	DATA PREPARATION	173
9.3	FACTOR ANALYSIS AND SCALE CONFIRMATION	174
9.4	PRELIMINARY DATA ANALYSIS	178
9.5	MULTIVARIATE ANALYSIS OF PERCEIVED OPERATING VALUES	187
9.6	MULTIVARIATE ANALYSIS OF DESIRED SCHOOL VALUES	191
9.7	VALUE CONGRUENCY	195
	Operating Values	197
	Desired Values	198
	Perceived Operating Value and Desired Value Congruity	198
	Perceived Effectiveness	199
9.8	QUANTITATIVE AND QUALITATIVE COMPARISONS	203
	Use of Values Typology	203
	Operating Values	204
	Desired Values	209
9.9	SUMMARY	210
CHAPTER 10.	SUMMARY DISCUSSIONS AND FUTURE DIRECTIONS	215
10.1	INTRODUCTION	215
10.2	DISCUSSION OF FINDINGS	215
	A Values Framework	216
	Longitudinal Performance Trends	218
	School Values Up-Close	227

10.3	LINKAGES WITH SCHOOL EFFECTIVENESS RESEARCH	244
10.4	CAVEATS AND FUTURE DIRECTIONS	248
10.5	CONCLUDING COMMENTS	253
BIBLIOGRAPHY		255

APPENDICES

APPENDIX 1:	Permission and Information Letters	265
APPENDIX 2:	Case Study Questionnaire	275
APPENDIX 3:	Interview Questions	279
APPENDIX 4:	Questionnaire Scale Development	282
APPENDIX 5:	Longitudinal School Performance Results	290
APPENDIX 6:	School Academic Profiles	304
APPENDIX 7:	Coded Interview Responses	322
APPENDIX 8:	Questionnaire Statistics	330

TABLES

Table 5.1:	Number of B.C. public schools enrolling Grade 12 courses (1986-1992)	51
Table 5.2:	1992 Grade 12 populations of sample schools	52
Table 5.3:	Mean populations of sample schools for 7 year consistency analysis	56
Table 5.4:	Correlations between school examination scores/participation rates: 1986-1992	58
Table 5.5:	School examination scores / Grade 12 student population correlations 1986-1992	59
Table 5.6:	Participation rate / Grade 12 student population correlations 1986-1992	59
Table 5.7:	School examination score correlations: succeeding years	61

Table 5.8:	School participation rate correlations: succeeding years	61
Table 5.9:	Percentage of schools with consistent exam score percentile rankings	63
Table 5.10:	Percentage of schools with consistent participation rate percentile rankings	64
Table 5.11:	Percentage of schools with consistent results (1986-1992)	65
Table 5.12:	Relationships between Grade 12 English and Mathematics examination results	67
Table 5.13:	English/Mathematics consistency as predictors of school examination consistency	68
Table 5.14:	English consistency as predictors of school examination consistency	70
Table 5.15:	Examination score correlations between Grade 12 course subjects: 1986-1992	70
Table 6.1:	Demographic comparison of Mainline and Central school districts	78
Table 6.2:	Sample schools: comparative demographics	80
Table 6.3:	Cronbach's Alpha test results: second pilot questionnaire	88
Table 7.1:	Longitudinal comparison of Grade 12 examination score and participation rate percentile ranking bands in four case study schools	108
Table 8.1:	Operating values: Percentage of interviewee responses grouped by categories	116
Table 8.2:	"Perfect School" question: percentage of interviewee responses	119
Table 8.3:	Operating values: Percentage of interviewees responding with learning/intellectual focus	122
Table 8.4:	Descriptions of students	124
Table 8.5:	Desired values/school improvements: percentage of interviewed student and teacher responses with learning/intellectual focus	126
Table 8.6:	Operating values: percentage of student and teacher responses with social/emotional focus	132
Table 8.7:	Desired values/school improvements: percentage of interviewed student and teacher responses with social/emotional focus	134
Table 8.8:	Intellectual versus emotional focus: percentage of student and teacher responses	135

Table 8.9:	Operating values: percentage of interviewed students and teacher responses with individual learner focus	140
Table 8.10:	Desired values/school improvements: percentage of interviewed student and teacher responses with Individual Learner focus	141
Table 8.11:	Operating values: percentage of interviewed students and teacher responses with career/social responsibility focus	146
Table 8.12:	Desired values/school improvements: percentage of interviewed student and teacher responses with career/social responsibility focus	147
Table 8.13:	Operating values: percentage of interviewed student and teacher responses re: social control vs. creativity focus	150
Table 8.14:	Operating values: percentage of interviewed student and teacher responses with cooperation focus	154
Table 8.15:	Competition and cooperation: percentage of interviewed student and teacher responses	157
Table 8.16:	Percentage of interviewed parents' perceptions of school strengths and needed improvements	166
Table 8.17:	Percentage of interviewed parent responses: preferred school emphasis	167
Table 8.18:	Percentage of interviewed parent perceptions of teachers in case study schools	168
Table 9.1:	Rate of completed questionnaire responses used in study	174
Table 9.2:	Factor analysis: principal components of perceived school values	176
Table 9.3:	Scale reliability: Cronbach's Alpha	177
Table 9.4:	Descriptive statistics: teacher and student samples	179
Table 9.5:	Summary of ANOVAs for parent education levels	179
Table 9.6:	Matrix of probability for Tukey multiple comparisons: parent education levels	180
Table 9.7:	Perceived operating emphases in case study schools	181
Table 9.8:	Desired school emphases in case study schools	183
Table 9.9:	Pearson Correlation matrix: perceived operating school emphases	184
Table 9.10:	Pearson Correlation matrix: desired school emphases	185

Table 9.11:	Perceived school academic performance: comparison across schools	186
Table 9.12:	Between school comparison: student education expectation and beliefs	186
Table 9.13:	MANOVA results: significance probabilities for difference in main effect school and group on perceived operating values	188
Table 9.14:	MANOVA results: significance probabilities for differences in main effect of school on teacher perceived operating values	189
Table 9.15:	MANOVA results: significance probabilities for differences in perceived operating values between paired schools	191
Table 9.16:	MANOVA results: significance probabilities for main differences in main effect of school and group on desired school values	192
Table 9.17:	MANOVA results: significance probabilities for differences in main effect of school on teachers and student desired values	193
Table 9.18:	Teachers and student ranked desired values across schools	194
Table 9.19:	MANOVA results: significance probabilities for differences in desired values between paired schools	196
Table 9.20:	MANOVA results: within school teacher-student congruence of perceived operating values and desired values	197
Table 9.21:	Spearman correlations between perceived operating and desired values	199
Table 9.22:	Congruency patterns, perceived effectiveness, academic performance	202
Table 10.1:	Comparison of study findings with effective schools research summary	245

FIGURES

Figure 2.1:	Overview of research study	12
Figure 3.1:	Schema of value-related terms	20
Figure 3.2:	Levels of culture and their interaction	22
Figure 4.1:	School purposes as opposing values themes	33
Figure 4.2:	Spatial model of general school purposes	35
Figure 4.3:	Expanded model of school purposes	37

Figure 4.4:	Orbital, holistic model of school organizational values	39
Figure 4.5:	Spatial model of organizational effectiveness criteria	42
Figure 8.1:	Operating values: percentage of interview responses with learning/intellectual focus	130
Figure 8.2:	Desired values: percentage of interview responses with learning/intellectual focus	130
Figure 8.3:	Operating values: percentage of interview responses with social/emotional focus	139
Figure 8.4:	Desired values: percentage of interview responses with social/emotional focus	139
Figure 8.5:	Operating values: percentage of interview responses with personal support/individual focus	143
Figure 8.6:	Desired values: percentage of interview responses with personal support/individual focus	144
Figure 8.7:	Operating values: percentage of interview responses with career focus	148
Figure 8.8:	Desired values: percentage of interview responses with career focus	149
Figure 8.9:	Operating values: percentage of interview responses with creativity/innovation focus	151
Figure 8.10:	Operating values: percentage of interview responses with social order and control focus	152
Figure 8.11:	Operating values: percentage of interview responses with cooperation focus	155
Figure 8.12:	Operating values: percentage of interview responses with competition focus	159
Figure 8.13:	Profile of Arlingdale and Pauline teacher and student perceived operating values	161
Figure 8.14:	Profile of Northridge and Brandon teacher and student perceived operating values	162
Figure 8.15:	Profile of Arlingdale and Pauline teacher and student desired school values	163
Figure 8.16:	Profile of Northridge and Brandon teacher and student desired school values	163

Figure 9.1:	Profile of teacher and student desired values across four case study	194
Figure 9.2:	Profile of combined teacher and student perceived operating values	201
Figure 9.3:	Profile of qualitative findings for student perceived operating values	205
Figure 9.4:	Profile of questionnaire results for student perceived operating values	205
Figure 10.1:	Speculative profile: organizational values and the academically successful school	235
Figure 10.2:	Values and change in case study schools	243

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

Calls for educational reform currently resonate from many quarters: from government, the business community, parent groups, and from the education system itself. The voices of reform are anything but unified in their proposed solutions. Indeed, the debate is often politically charged and rancorous. The public education system in North America is attacked by some for being too liberal and experimental and yet by others for being too traditional and too unwilling to change; criticized for failing to instill entrepreneurial drive in students and at the same time for being too competition-oriented in many of its academic and sports programs; challenged to place greater emphasis on technical education while condemned for failing to stress the fundamentals of academic learning. And so the litanies of complaints continue in this polarized fashion with competing images of how schools should be reshaped to fit the current needs of the North American society (Orlich, 1989; Timar, 1989).

These pressures for change and the lack of consensus on questions about the desired nature of public schooling have coincided with considerable research into "what makes a good school" (Sedlak, Wheeler, Pullin, & Cusick, 1986). The reasons for centering this research on individual schools rather than classrooms or school districts are related to both methodological restrictions and policy implications (Witte & Walsh, 1990). First, classroom and student achievement levels cannot be considered without an understanding of the effects of the social unit in which learning takes place. Teachers and students work within the unique cultural setting of each school with its attendant value systems and behavioral norms. Second, the individual school is the most readily evaluated and manipulated level for policy-makers.

Change in resources, personnel, and even student clients can be accomplished most easily on a school by school basis. Thus, governing and administrative agencies are most likely to examine school level performance in the hopes of being able to find alterable conditions which can be improved for the benefit of student learning.

Unfortunately for those seeking definitive answers, investigations into the characteristics of effective schools have met with mixed success. Since the Coleman Report (Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, & York, 1966) argued that the great majority of variance between school achievement resides primarily in family background and socioeconomic contexts, many educational researchers have focused their attention on a combination of school outcome measures and school process variables in order to prove that some schools are significantly better than others in the provision of educational services.

In the late 1970's and early 1980's, researchers such as Brookover, Beady, Flood, Schweitzer, and Wisenbaker (1979), Rutter, Maughan, Mortimore, Ouston, and Smith (1979), and Edmonds (1981) examined the effects of the individual school on student achievement and are credited with much of the early "effective schools" movement. One of the problems pointed out by the critics of these studies is that the definitions and measures of effectiveness vary across the studies making generalizations difficult (Oakes, 1989; Witte & Walsh, 1990). A second related problem has to do with the inadequacy of the measures and the limited capacity of the researchers to track long term effects of these schools (Goldstein, 1984; Oakes, 1989): standardized test scores over a two or three year period cannot adequately capture the effects of the school's curricular programs. Few early studies required schools to be consistently effective, i.e., demonstrating stable performance outcomes over a number of years, thus ruling out chance variations in results for which the school could take little or no credit (Mackenzie, 1983; Purkey & Smith, 1982). Finally, the experimental controls for factoring out the substantial effects of socioeconomic,

family, and prior learning variables have been found to be extremely difficult to establish in most of the effective schools studies (Willms, 1992).

Despite these criticisms, effective schools research has resulted in broad consensus on key characteristics of effectiveness, for example, high expectations for student achievement, competent leadership, and clear instructional goals (Murphy, 1992; Purkey & Smith, 1982). These agreed upon characteristics of effectiveness must not, however, be confused with definitions of effectiveness. Over the past 10 years, researchers have developed more sophisticated statistical means for comparing the effects of individual schools, and a possible definition of an effective school might be "one in which students progress further than might be expected from consideration of its intake" (Sammons, Hillman, & Mortimore, 1995, p. 3). The question remains, however, about the educational outcomes desired for the students, and one is led back to a value-driven discussion of school purposes.

The effective school research has accomplished a major shift in focus away from an overwhelming concentration on the performance of the individual student and teacher and more towards an examination of the school as an organic whole with its complex organizational norms and values (Deal, 1987; Murphy, 1992). One of the reasons for this shift comes from the increasing realization that schools do not become more effective merely by attending to a checklist of characteristics broadly defined by the research (Mackenzie, 1983). Change in human organizations is not simply a rational, linear exercise in which participants make conscious decisions and then systematically go about implementing them. Change is a complex, multivariate process (Fullan & Stiegelbauer, 1991) which involves human aspirations, emotions, and patterns of behavior which have become embedded in the daily operations of the organizational unit--in this case the individual school (Johnston, 1987).

It makes little sense to cosmetically mimic the characteristics attributed to effective schools if teachers' and students' operating values remain unaltered; in such

cases the changes are likely to be superficial and ephemeral (Sarason, 1971). The deeply ritualized and often highly symbolic behavioral norms of schools are change-resistant, enduring behavioral patterns. These norms define "the way things are done around here," thus maintaining organizational continuity and preservation, but then also making change efforts extremely problematic (Corbett, Firestone, & Rossman, 1987; Deal & Kennedy, 1982). Educational research into why so many of the school reform initiatives of the 1960's to the 1980's have failed points an accusatory finger at these powerful norms in the social workplace of the school (Little, 1982; Louis & Dentler, 1988; Shaw & Reyes, 1992).

To be successfully adopted, an innovation must be perceived to be vitally connected both to the needs of the individual and to the needs of the organization. Thus, for change to occur, the personal vision of what is needed and is possible and the collective image of what should and can be done must be mutually supportive and reinforcing (Johnston, 1990; Miles & Louis, 1990). These connections between personal and organizational visions of what is needed and is possible can only come through a dialogue in which individual and collective values and beliefs are addressed (Little, 1982; Rosenholtz, 1991). Without such discussions, the networks of mutual support needed for initiating and maintaining new behavioral norms cannot be developed and, in most cases, the status quo will remain in effect.

School improvement implies that a direction for change is clear and that it is in concert with agreed-upon school purposes. In theory, an image of effectiveness should be articulated so that a comparison can be made between the current, existing and future desired state of the school in meeting student needs. Writers such as Goodlad (1984) and Murphy (1992) hypothesize that schools with more tightly aligned value systems which underpin decision-making will be perceived as more effective than those schools with ill-defined or competing organizational values. However, over the centuries in which schools have been in existence, there has been a

successive layering of ideas about desired purposes these institutions should serve. Much, if not all, of our current educational debates can be traced back to historical antecedents. Educators are left with unclear images with which to make explicit the value decisions made in the practice of schooling (Stout, 1986).

Much of the preceding discussion has been concerned with the collective norms, values and assumptions usually referred to as "organizational culture," a deceptively simple term with complex levels of interpretive meaning (Cusick, 1987). Coleman and LaRocque (1990) observe that much of organizational culture operates at an unconscious level and is therefore unrecognizable to members of the organization, for example, teachers and students within schools. For this reason, they prefer to use the term "ethos" to describe the articulated values and observable behaviors which organizational members can identify and change. "Culture is what we are" and "ethos" is "what we do" (Coleman & LaRocque, 1990, p. 188).

The interest in this research study resides in an intermediate position between hidden culture and recognizable ethos. If we are to have informed conversations (Senge, 1990), about school purposes and if we are able to develop strategies for increasing effectiveness of these organizations, then it is important to bring greater awareness and rationality to the dialogue by examining some of the basic assumptions and values which lie imperceptibly below the level of articulated value systems. While the implementation of school improvement requires a recognition that social change is more than just a straight-forward rational process, beginning discussions should be as consciously informed and rational as possible.

A study of school organizational values within the context of effectiveness constitutes the primary focus of the educational research to be described in this work. The rationale for investigating school values is centered primarily on the perceived need to enhance decision-making within the context of the debate about purposes of

public schools. The research is motivated by an interest in clarifying some of the hidden assumptions which underpin school improvement efforts.

1.2 RESEARCH PROJECT OVERVIEW

The first stage in this research was to review historical perspectives on school purposes in order to construct a conceptual framework with which to examine some of the underlying assumptions and values embedded in the way we think about public schools. The second task was to investigate secondary school examination results in British Columbia over a 7 year period to determine whether schools can demonstrate stable performance patterns across a number of academic subjects--a condition which, it will be argued, is necessary for any ascription of effectiveness.¹ This longitudinal study was also necessary for the major phase of the research in which high and low performing secondary schools were selected for a case study designed to compare student, teacher, and parent perceptions of current school operating values with their preferred images of school emphases.

1.3 PURPOSES FOR THE STUDY

In summary, the specific purposes of this research study were to investigate secondary schools enrolling grade 12 students in British Columbia to determine if:

1. individual schools demonstrate stability over time in provincial examination results;

¹ Although it would have been preferable to conduct such a study using residual scores which provide measures of school effects that factor in such variables as prior student learning or levels of parental education, this approach was beyond the means of this study. The rationale for not adopting a "value-added" designation of school performance for the longitudinal study is outlined in Chapter 5.

2. value orientations of students, teachers, and parents within individual schools can be identified and categorized in an historically derived and rationally defined conceptual framework;
3. schools can be differentiated based on the value orientations of their students, teachers, and parents;
4. schools with more consistently successful examination scores and high participation rates in academic subjects will demonstrate higher levels of congruence in value orientations of students, teachers, and parents.

Results from this study would provide evidence to support or dispute the hypothesis that schools with more tightly aligned value systems--understood and agreed to by students, teachers, and parents--would be perceived as being more effective and would also be able to demonstrate effectiveness as represented, at least in part, by outcome measures in stable, enduring school examination results in a majority of school subjects.

1.4 UNDERLYING ASSUMPTIONS: VALUES AND EFFECTIVENESS

The research questions on the subject of values and school effectiveness rest on underlying assumptions which must also be examined within the context of this study:

1. historical themes can provide clues to the underlying value systems implicit within discussions about school purposes;
2. operating values within individual schools are identifiable, i.e., can be articulated by students, teachers, and parents;
3. students, teachers, and parents place value on high examination scores and high participation rates in senior academic courses;

4. sufficient variation exists in the value systems within and between schools to allow for comparisons and contrasts.

For the purposes of this study, the concept of effectiveness is one which is related directly to the degree to which the school is successful in attaining its goals, after consideration of its contextual, intake variables. The idea that effectiveness is a mental construct dependent on the values and disposition of the person who makes judgments about the relative success of schools will be explored in later chapters. It will be argued that the determination of effectiveness often rests on unconscious personal and group images of what schools should be about. The underlying assumption about school effectiveness, then, is that it is a broad-based concept which encompasses varying ideas about schools and the ways in which they should operate.

1.5 THE SIGNIFICANCE OF THIS RESEARCH

The significance of this study is twofold: conceptual and practical. First, on the conceptual level, there is an opportunity to develop an analytical framework for the investigation of school organizational values. An analytical framework which recognizes the historical patterns which form the basis for our present conceptions of schools could contribute to ideas about school purposes and school effectiveness by clarifying issues which may be largely hidden to those involved up-close with the business of schools.

Second, if school organizational culture is stable and resists change as has been suggested and if school culture with its "bedrock of values" (Deal, 1990) is linked to school effectiveness, then school outcome measures should remain relatively stable in any longitudinal study of outcome measures. In response to the assertion by some researchers that individual schools vary in performance as much between years as between schools (Goldstein, 1984), the longitudinal 7 year study of performance in

over 200 British Columbia schools is designed to examine whether schools can maintain consistent patterns of success over time.

Another practical implication for the study relates to the connection between school effectiveness research and its application for school improvement. A greater understanding of the value systems which resist substantive and enduring change would be important in making appropriate school improvement decisions in the cultural milieu of individual schools. In particular, successful implementation of organizational innovation may be difficult for leaders who wish to create change but who lack the skills and knowledge necessary to reconcile problems of value conflict. For instance, as Sedlak et al. (1986) point out, "efforts to make schools more organizationally rational do not make the core processes of teaching and learning more rational" (p. 177). Reforms built around faulty assumptions of value congruency and commitment are especially vulnerable under top-down managerial imposition. Bates (1987) argues that the proponents of corporate culture are guilty of assuming that what is good for the organization is good for the workers. Further, he states that corporate analysis of schools is often trivial and manipulative in that it fails to recognize the essential differences between conflicting values held by subcultures within the school. Similarly, change efforts which are bottom-up also must pay careful attention to institutionalized values and the social needs of the organization (Selznick, 1957; Miles, 1965; Fullan, 1982).

The significance of this study, then, is to contribute to the knowledge about school values in a way which allows educational leaders, teachers, students and parents to consider the underlying values which affect decision-making and which will contribute to the success of any change initiatives aimed at making schools more effective. Although contemporary writers have recognized the importance of values in understanding how schools operate (Deal, 1990; Johnston, 1987; Sarason, 1971) or more generally how goals are attained in any organization (Peters & Austin, 1985),

the topic of values is often characterized as "chaotic" and "messy" (Peters & Waterman, 1982). Without a better understanding of personal and collective images of school purposes, it is difficult to sort out needed emphases for our schools as the current polarized debates threaten to overwhelm the very systems they seek to save.

1.6 SUMMARY

This research is designed to examine the organizational values articulated by students, teachers, and parents in public schools in British Columbia as a means to sort out some of the apparently divergent viewpoints being expressed in the often emotionally charged debate about current directions in public education. If schools are to make decisions about how to become more effective, it is imperative that some understanding of their cultural norms and values be developed so that a dialogue about change can take place. Without such discussion of what is deemed important for the students, teachers, and parents, it is likely that only superficial and short term change will occur.

This study attempts to assist educational decision-makers by providing a conceptual framework to guide these discussions. In addition, this research examines the relationship between school effectiveness and value congruency within and between four schools chosen for the case study stage of the investigation. Because the selection of these sample schools depended on finding schools which were stable in their levels of academic success and consistent over a number of school subjects, a 7 year longitudinal study of 205 secondary schools in British Columbia was conducted before proceeding to the specific analysis of organizational values at the individual school level.

CHAPTER TWO

STUDY OVERVIEW: PURPOSES, DESIGN, AND IMPLEMENTATION

2.1 INTRODUCTION

As explained in the opening chapter, it is in the spirit of improving the public dialogue about schools that this research study has been initiated. The scope of the project is ambitious and wide-ranging, as befits any investigation into a social phenomenon so fundamental and important to our society as public education. This chapter will involve a review of the research purposes which led to the initial selection of the study design, a description of some of the research assumptions underpinning the research decisions, an overview of the research design, and a brief introduction to the specific purposes and methods employed for each phase of the study.

A schematic overview of the research process is shown in Figure 2.1. The ideas for this diagrammatic presentation were suggested by two articles on mixed-method research design and data analysis strategies, the first by Greene, Caracelli, and Graham (1989) and the second by Caracelli and Greene (1993). Although the research project was near completion by the time this schematic in Figure 2.1 was developed, the conceptual framework offered by these writers helped to assemble the project phases, purposes, activities and specific design into an integrated picture for presentation in this introductory chapter.

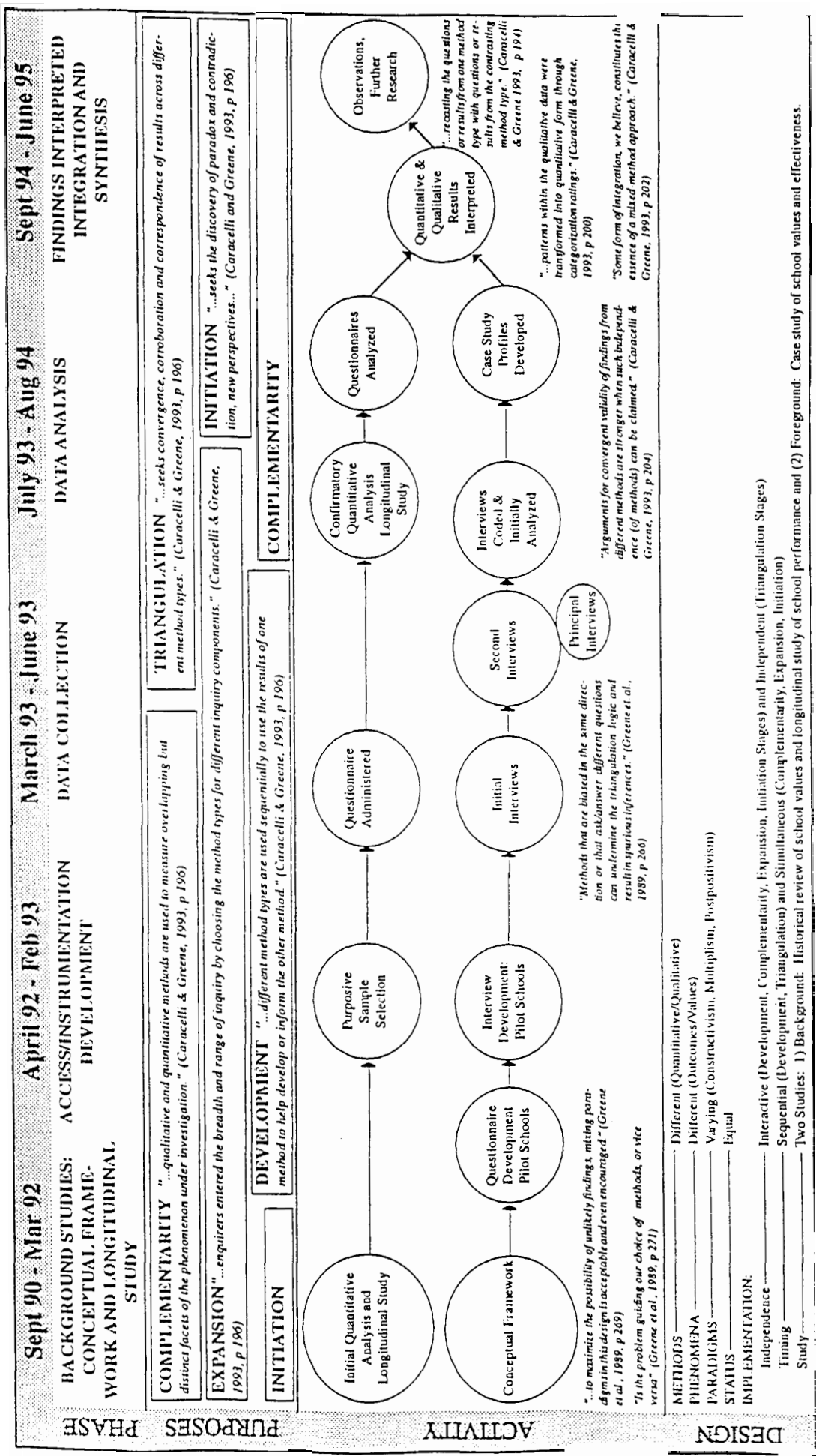


Figure 2.1. Overview of research study.

2.2 STUDY PURPOSES LEADING TO MIXED-METHOD RESEARCH

Since the domain of organizational values in the setting of public schools is complex and multi-level (Hodgkinson, 1978; Schein, 1985), it seemed appropriate that a mixed-method approach be recognized as the philosophical and practical starting point for the research design. The mixed-method research design reflects the complexity and multiple purposes growing out of the reasons for conducting the study. Such mixed-method designs are defined by Greene et al. (1989) as "those that include at least one quantitative method (designed to collect numbers) and one qualitative method (designed to collect words), where neither type of method is inherently linked to a particular inquiry paradigm or philosophy" (p. 256). In this research, different methods of collection and analysis of "numbers" and "words" were utilized, depending on the phase of the project and the primary focus of the examination.

2.3 RESEARCH ASSUMPTIONS

Just as we live in a time distinguished by value diversity in economics, politics, health, and education, so too is this a time in which the fundamental tenets of scientific inquiry are being challenged by competing methodological paradigms in social science research. Caracelli and Greene (1993) describe the current period of serious debate about research design and methods as a "pluralistic era in applied social inquiry" (p. 205). This debate has many unresolved issues: some writers like Greene, Caracelli and Graham (1989) argue the benefits of multiple methods to enhance and expand our understandings while purists such as Lincoln and Guba (1985) maintain that paradigmatic methods must remain clearly distinct and separate.

The theoretical assumptions about case study research are important determinants for the type of research and the methods employed. These assumptions of the researcher flow partly from the reasons for the study, and also from the ontological, epistemological and methodological orientation of the researcher (Guba & Lincoln, 1989). The approach favored in this case study is one of exploring the relationships between patterns of human behavior with a research orientation in which linkages between these complex human social actions are not perceived to be causal so much as logical and associative (Fielding & Fielding, 1986, p. 40); hence, this case study is seeking reasoned patterns which make sense of the world of social interaction in a way which can be communicated to others (Lincoln & Guba, 1985). In attempting to find such patterns in an holistic rather than narrow fashion (Senge, 1990), an eclectic researcher orientation was adopted for this study: varying perspectives and analytical procedures were utilized where deemed appropriate to the phenomenon under investigation.

In mixed-method research, alternating and mixing paradigms is "acceptable and even encouraged" (Greene et al., 1989, p. 269). The purposes for each phase of the study are driven by differing investigative needs, but it is important to be clear at the outset of the study what purposes and methods are to be employed. Caracelli and Greene (1993, p. 196) provide a conceptual classification of five main starting points for the collection of data and subsequent analysis:

1. **Triangulation:** "seeks convergence, corroboration, and correspondence of results from the different methods."
2. **Complementarity:** "seeks elaboration, enhancement, illustration, clarification of the results from one method with the results from another method."
3. **Development:** "seeks to use the results from one method to help develop or inform the other method, where development is broadly construed to include sampling and implementation, as well as measurement decisions."

4. Initiation: "seeks the discovery of paradox and contradiction, new perspectives of frameworks, the recasting of questions or results from one method with questions or results from the other method."
5. Expansion: "seeks to extend the breadth and range of inquiry by using different methods for different inquiry components."

As shown in Figure 2.1, each of these five research purposes were utilized at various stages of the project, with considerable overlap as each research phase embodied more than one central focus.

..

2.4 RESEARCH DESIGN

The schematic in Figure 2.1 displays a list of considerations for mixed-method studies as suggested by Greene et al. (1989) and provides a useful organizer for presenting the project design. Under the topic of design implementation, Greene et al. (1989) raise three research planning considerations for mixed-method studies: independence, timing and number of studies.

In mixed-method research, independence of study types is not always necessary but should be considered before designing the stages of the investigation. In this study, as shown in Figure 2.1, there was considerable overlap between the research phases as different method types helped inform the other, but there was one exception: in the triangulation between qualitative and quantitative analyses, the attempt to find convergent validity meant that the data sets collected from the two different methods were analyzed at distinctly separate times with the qualitative interview data analyzed first to prevent, insofar as possible, interpretive biases from the quantitative analysis of the questionnaires .

As outlined in Figure 2.1, the timing of the studies was sequential for the initiation of the study (including the development of the values typology, the

historical review of school purposes, and the initial longitudinal study of school performance), the development of the data collection instruments, and for the analysis and interpretation of the qualitative and quantitative results. Simultaneous activity characterized the collection of interview and questionnaire data and the final interpretation of the triangulated qualitative and quantitative findings.

From beginning to end of the study, there was an attempt to balance the perspectives offered by the qualitative and quantitative methods. While the mixed-method approach offered different perspectives on similar, but often overlapping topics, the ultimate goal of the research was to incorporate both visions into one informed picture.

2.5 STUDY PHASES

The research study was divided into five phases, each with its own set of timelines and activities. In-depth descriptions of the purposes and methods of each phase will be provided in the chapters dealing with these subsets of the overall research project. In each chapter introduction, references will be made to the five research purposes offered as conceptual starting points by Caracelli and Greene (1993). In brief, the five study phases consisted of:

1. background preparation: development of a conceptual model for school values and a longitudinal analysis of school performance;
2. case study site access and instrumentation development;
3. case study data collection;
4. data analysis;
5. integration and synthesis.

2.6 SUMMARY

This chapter provided an overview of the research project's methodological assumptions and orientations which affected the study design. This study was not intended as a means to find causal relationships so much as it was directed toward seeking patterns of understanding which yield informed insights into the socially constructed world of school values and the concept of school effectiveness.

The writings of Greene et al. (1989), and Caracelli and Greene (1993) were used as a conceptual and structural guide for the outline of the research given in this chapter. A mixed-method research design consisting of different methods and mixed paradigms for the various investigation stages was defended as an appropriate means for examining a complex, multi-level social enterprise such as public schooling.

Multiple perspectives which are part of the mixed-method process should expand the "breadth and range of inquiry" (Caracelli and Greene, 1993, p. 196) and might also produce convergent viewpoints to enhance the validity of research findings. In this sense, the research study utilized both quantitative and qualitative methods of data collection and analysis in the investigation of school organizational performance and values.

CHAPTER THREE

VALUES AND ORGANIZATIONAL CHANGE

3.1 INTRODUCTION

In the previous chapters it has been proposed that decisions about school effectiveness are based on values and value systems, held by individuals and by groups within organizations. Within their mandates, all schools make decisions about the means for delivering their educational programs and the particular emphases that define their school. Made consciously or unconsciously, such decisions reflect individual and group values (Hodgkinson, 1991). This chapter will explore some of the general aspects of values and decision-making, and will examine why organizational change can be considered a valuational activity.

3.2 THE VALUE CONCEPT

Permeating any discussion about effective schools or effective organizations is an overt or covert reference to values and value systems. Three samples follow:

In contemporary industrial societies, rapid technological and social change creates a persistent conflict, not only between social classes with different values, but between groups in the van and rear of these changes. As schools become the major agent of cultural transmission they are placed in the center of this controversy over values. (Shipman, 1968, p. 7)

Values are the bedrock of any corporate culture. As the essence of a company's philosophy for achieving success, values provide a sense of common direction for all employees and guidelines for their day-to-day behavior.... In fact, we think that often companies succeed because their employees can identify, embrace, and act on the values of the organization. (Deal & Kennedy, 1982, p. 21)

Organizational values are the basic beliefs that control the way an institution operates. For the most part, these values are obvious to everyone in the institution and pervade every activity the organization undertakes.... We know that clearly articulated values are essential in the most effective organizations, including successful schools. (Johnston, 1987, p. 80)

While it might sound reasonable for organizations like schools to operate in such a fashion as described by Johnston (1987), it is highly unlikely that this ideal is achieved in most schools. The organizational values and beliefs are often not readily apparent and obvious to organizational members but more likely are operating at an unconscious level. Despite the observation that such group values are often hidden from the organizational members, there is little dispute that the values and norms are critical to the ongoing functioning of the organization.

Few organizational writers, however, build a conceptual framework for dealing with values and the related concepts of attitudes, beliefs and norms. Often, these terms are used interchangeably with little clear differentiation. Because this study focused on the integral connection between values and school effectiveness, clarification of the concept of "value" is a prerequisite introduction to the investigation. The work of two writers, Hodgkinson (1978; 1991) and Schein (1985), both of whom do attempt to build a conceptual framework for organizational values, will be examined here in order to help clarify what values are and how they affect individuals and organizations.

As an educational philosopher, Hodgkinson's (1978; 1991) work centers on the application of values in the act of administrative decision-making. He presents a schema of value related terms as shown in Figure 3.1. With this model, Hodgkinson (1978) attempts to distinguish between (a) the inner self which is the source of needs and desires (motives), (b) the value systems which are derived from interaction of the self with the world of social experience, and (c) attitudes which are more visceral reactions to the world at large. Hodgkinson (1978) defines values as "concepts of the desirable with motivating force" (p. 105) and represents them as residing between

the deep-seated and often unconscious motives and the more observable and consciously accessible attitudes.

Hodgkinson (1991) states that values are "learned through social conditioning" (p. 90). Humans develop their "concepts of the desirable" in the crucible of social interaction as children learn to interpret the behavior of other humans and learn how to interact in this social arena. Values become interconnected systems of conceptual organizers which act as powerful screens and filters for the interpretation of what is desirable and expected--a mixed blessing in that we establish order and stability by means of these value systems but our perceptions, in turn, are conditioned by the same value systems to prevent us from seeing things objectively.

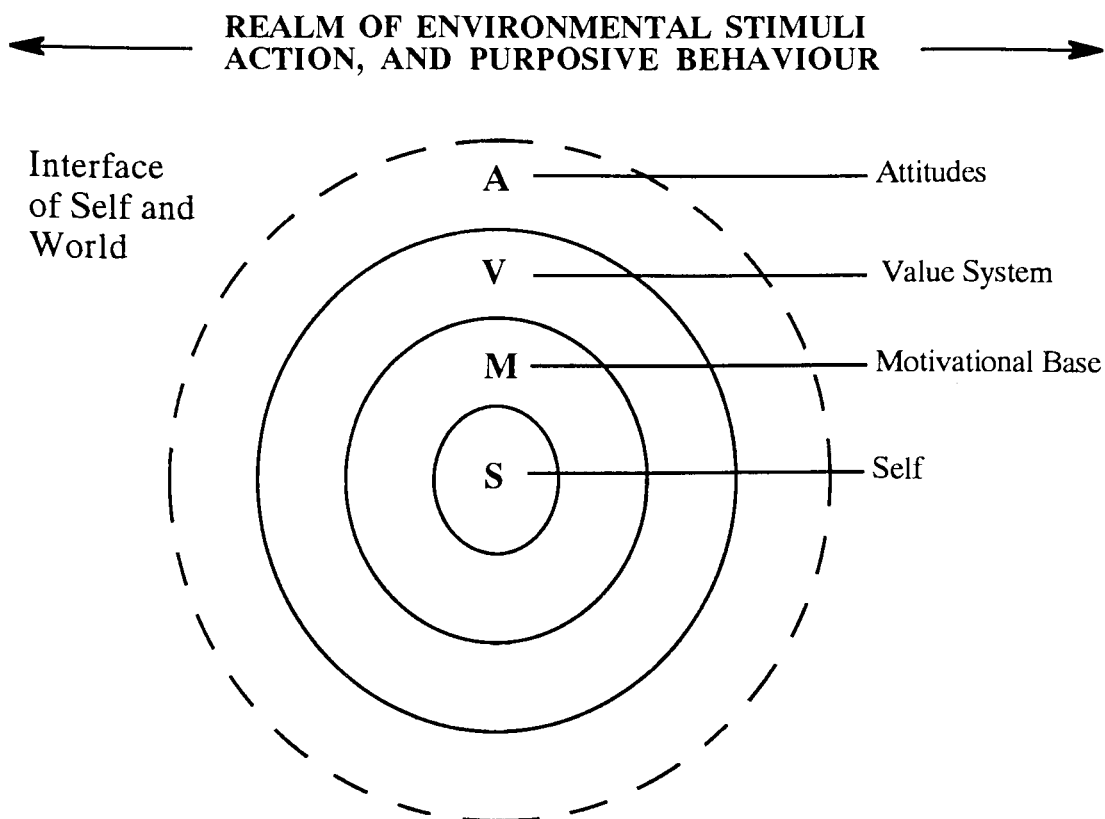


Figure 3.1. Schema of value-related terms (from Hodgkinson, 1978, p. 109).

Schein (1985), a cultural ethnographer, writes about values from the perspective of a researcher attempting to understand organizational culture. Schein defines organizational culture as:

a pattern of basic assumptions--invented, discovered or developed by a given group as it learns to cope with its problems of external adaptation and internal integration--that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (p. 9)

Schein suggests that there are three levels of culture which need to be examined. This typology is provided in Figure 2.2. The first level is that of "cultural artifacts" which are manifest in the technology, art, and observable behavior patterns of people in the organization. The second level of analysis is one of "values" which are testable in the physical environment through social consensus. At this level, participants are able to articulate the purposes of the organization, or the core values which define the organization's reason for existence. For Schein, the third level of cultural analysis concerns "basic assumptions" which are deep patterns of underlying conceptions about the nature of reality: for example, man's relationship to the environment; the nature of reality, time, and space; or the basic nature of human relationships.

According to Schein's typology (1985), values play an intermediary role between the unconscious level of the "deep assumptions" and the visible and conscious level of everyday behavior. Values may operate consciously as they serve the normative function of guiding behavior or they may function unconsciously because they have been taken for granted, have dropped out of consciousness, and have become rituals or habits. At Schein's uppermost level of cultural analysis, behavior is observable and is rationalized in a conscious manner by those in the organization, but at this level it may be difficult to discern the patterns of values and basic assumptions which tie the organizational behavior together in a way which represents its cultural identity.

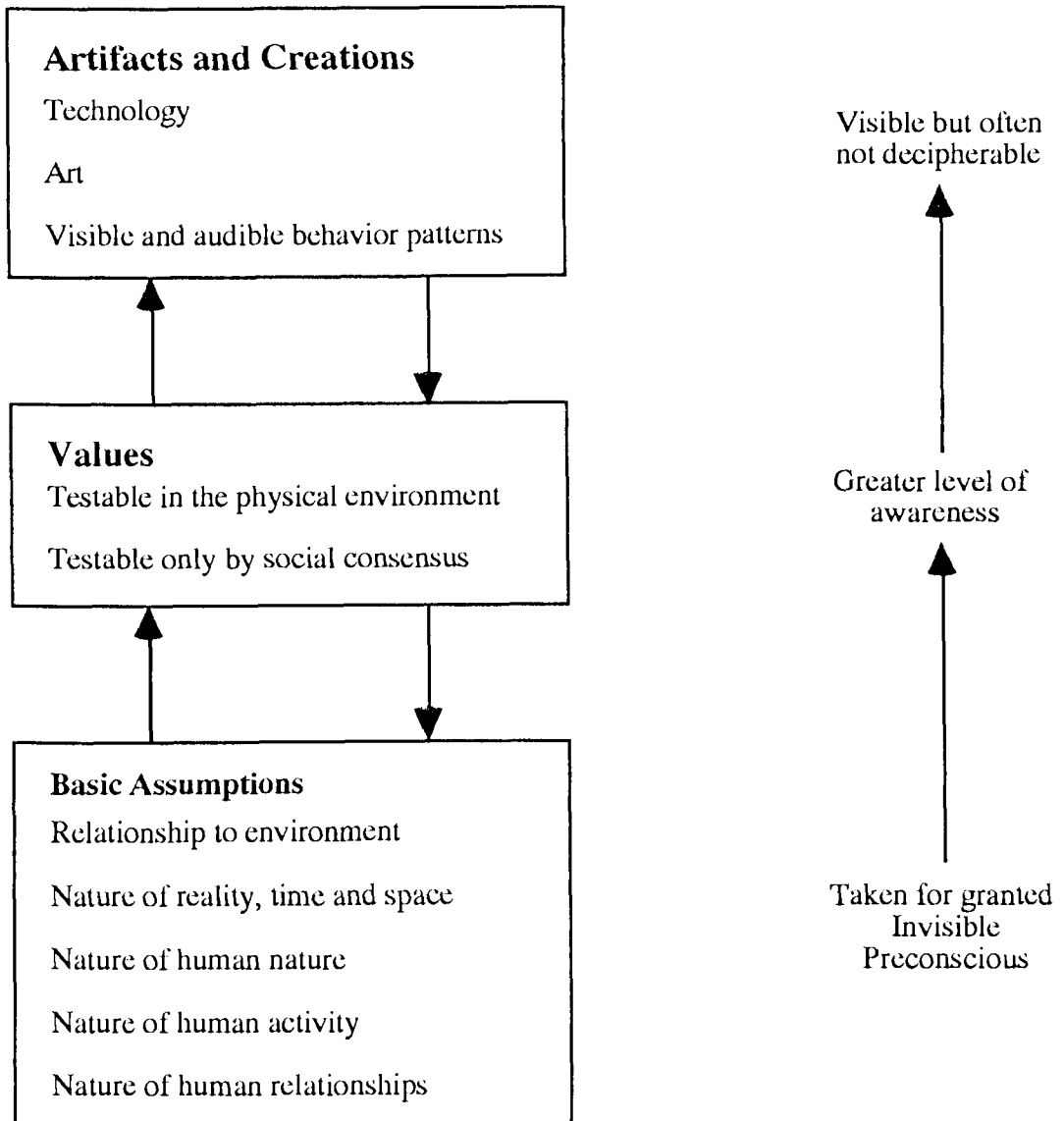


Figure 3.2. Levels of culture and their interaction (Schein, 1985, p. 11).

Values are defined by Schein (1985) as the "sense of what 'ought' to be as distinct from what is" (p. 15). He cautions that researchers must be wary of "espoused" values which may be articulated by participants in the organization but which do not represent their hidden cultural assumptions. In cases such as this, it is what people do , not what they say which reflects the patterns of basic assumptions which are the foundation for the personal or organizational values.

For Schein (1985), this development of a typology for the analysis of culture is important in providing a rational framework for describing and analyzing organizations so that participants in organizations can be helped to gain a better understanding of their basic assumptions, expressing them in the form of organizational values. In this conscious articulation of purpose, the organization is more able to ensure its capacity to survive and to adapt to changes in the external environment (Schein, 1985, p. 50).

3.3 VALUES AND CHANGE

For Schein (1985) and Hodgkinson (1978), values are the conceptual means by which humans make choices in a patterned, predictable manner in order to provide stability in their social interaction. It is in the learned responses to each other in the social arena that humans develop the powerful collective values which form the basis for organizational culture. Personal and organizational change becomes a difficult and complex process once these values and operating patterns have become established since patterns of learned responses are continuously reinforced as people interact with each other.

Both Schein (1985) and Hodgkinson (1978) acknowledge that change is particularly difficult in situations where the basic assumptions and values are tacit, below the levels of consciousness and yet guiding behavior without our realization. Similarly, Senge (1990) notes that failure to appreciate unconscious assumptions and values undermines the capacity to see the organization as a complex holistic entity. Like Schein, Senge states that only when personal values and their underlying mental models can be articulated in a conscious fashion can the organization begin to reshape its collective vision of what is desirable and possible. One of Senge's key cornerstones in this process of identification of organizational value is the act of

purposeful conversation in which the unconscious mental models are challenged in an open fashion. Only in conscious dialogue which creates a tension between "what is" and "what ought to be" can there be any consideration for organizational change. Researchers such as Little (1982) and Rosenholtz (1991) have shown that in schools where open debate and dialogue take place there are better opportunities for successful, enduring change than in those schools where professional discussions are consciously or unconsciously discouraged.

If we think of value systems at either the personal or social level as interconnected and mutually reinforcing conceptual webs, it is apparent that changing any one part of the web is difficult without affecting other interconnected parts of the system. For example, in schools, the value ascribed to developing student interests in a variety of intellectual pursuits is tied to other values such as the importance for each student to work to maximum potential or the need to provide a broad, comprehensive curriculum. Altering the way one thinks or feels about one of these tenets will affect the manner in which the other two are valued. In the process of organizational change, rearrangement of these personal values will create stress and conflict until established patterns are embedded in the daily operations of the group.

It is only when planning for organizational change can be approached in a conscious fashion that decision-making can be a rational act. To paraphrase a popular contemporary aphorism, "If you don't know where you are headed you might end up somewhere else." The process of change may not be an entirely linear, rational process but the act of planning should at least begin with a conscious and rational focus. This current study is interested in attempting to shed light on some of the unconscious, underlying principles which historically have been built into our conceptions of school purposes in order that such informed conversations can take place.

3.4 FUNCTIONAL DEFINITIONS

Throughout this discussion, it is obvious that the concept of "organizational value," like so many abstract concepts, is a mental construct designed to serve as a "tool in our human need to see order and consistency in what people say, think and do" (Henerson, Morris, & FitzGibbon, 1987, p. 11). Because of the abstract nature of this topic, there are different philosophical and psychological interpretations depending on the purpose to which the conceptual tool is being used. However, both Hodgkinson (1978) and Schein (1985) provide models which illustrate the intermediary position of values between (a) the largely unconscious deep-seated personal motives and basic assumptions and (b) the observable and conscious behavior which is testable in social interactions.

This study makes no claim to definitive answers about the nature of values and related conceptual terms but offers a number of following summary perspectives which are drawn from the preceding discussions and from other writers on these topics:

1. Values are concepts with a positive disposition for action or choice: "concepts of the desirable with motivating force" or a "sense of what ought to be" (Hodgkinson, 1978; 1991; Schein, 1985).
2. Values are socially learned, patterns of responses to the environment (Hodgkinson, 1978; 1991; Schein, 1985).
3. Values are broadly inclusive concepts which are interconnected in web-like, consistent patterns of responses or potential responses (Newcomb, Turner, & Converse, 1965; Hodgkinson, 1978; 1991).

4. Values can be intensely personal and private or can be collective orientations shared by identifiable groups of people, as in social organizations such as schools (Bennett, 1974; Hodgkinson, 1978).
5. Values can operate at both the conscious and unconscious levels of human experience (Newcomb et al., 1965; Hodgkinson, 1978; 1991; Schein, 1985; Senge, 1990).
6. Values can be rationally or emotionally based, and can range from simple preferences to widely encompassing ideological or religious systems (Newcomb et al., 1965; Bennett, 1974; Hodgkinson, 1978; 1991; Schein, 1985).
7. Values act as powerful organizers and filters to provide humans with consistency and order. They are the conceptual basis for organizational culture and serve to maintain the patterns of behavior which define the organization. Substantive and enduring organizational change is difficult in an established culture (Deal & Kennedy, 1982; Schein, 1985; Corbett et al., 1987).
8. Organizational culture can be differentiated from organizational ethos in that culture is what we are whereas ethos is what we do. Ethos is manageable and can be manipulated for effectiveness, while organizational culture involves basic assumptions which are often below the level of conscious decision-making. Those charged with organizational change may ultimately have to create dialogues where basic

assumptions are brought to the surface and value systems are challenged (Coleman & LaRocque, 1990; Senge, 1990).

Throughout this study, values will be defined as mental models of what ought to be or what is desired. Those value-oriented mental models which operate generally at an unconscious level will be referred to by Schein's (1985) term of "basic assumptions" while the use of "values" will be reserved for more consciously articulated and observable expressions of "what ought to be". This research will concentrate on perceived organizational emphases to be referred to as "operating values". In the case study stage of the research, the term "desired school values" will be used to differentiate those organizational values which the teachers, students and parents would prefer to see evidenced in their schools from those which they perceive to be currently emphasized as operating values.

Finally, the term "school" as used in this study requires some definition. For the purposes established in this research, the school refers to the human element of the organizational unit, including those teachers, administrators, support staff, students, and parents directly associated with the operating school facility designed to provide educational services for its students.

3.5 SUMMARY

This chapter has attempted to clarify the concepts of organizational values by examining the models and definitions provided by Hodgkinson (1978; 1991) with an interest in a philosophy of administrative decision-making and Schein (1985) with a focus as a cultural ethnographer. Both writers offer useful and convergent perspectives on the concept of organizational values and the discussion of their ideas

formed the basis for a summary of functional understandings and definitions to be used in this research. The importance of values in the process of organizational change was highlighted as a reason for conducting this research which will focus on basic assumptions and value systems which affect the operations of schools. Of special interest in the case study phase of the research will be the perceived operating values and the desired values which will be investigated to determine whether there are any differences which might distinguish more effective from less effective schools.

CHAPTER FOUR

A CONCEPTUAL FRAMEWORK FOR ANALYSIS OF SCHOOL ORGANIZATIONAL VALUES

4.1 INTRODUCTION

This chapter will present a conceptual framework for investigating school organizational values. First, a brief historical review will trace some of the assumptions which underpin current discussions of school purposes. Next, an integrated typology of school value themes will be developed and compared to a spatial model of organizational effectiveness derived through related organizational theory and research.

4.2 HISTORICAL EVOLUTION OF SCHOOL PURPOSES

Current discussions of what schools should be emphasizing are the result of societal forces which have cumulatively shaped our Western Eurocentric assumptions and values. As Sarason (1971) reminds us, "the culture of the school is not understandable apart from the social history of the nation" (p. 24). A number of continuing themes are revealed by an analysis of the political, spiritual, economic, and technological environments of various historical periods, all of which have contributed to a pluralistic set of basic assumptions about public school purposes.

Two of these themes are identifiable in the philosophical works of the ancient Greeks: (a) the relationship of the individual and the state and (b) the role of reason in controlling human emotions. The dynamic interplay between the rights of the individual and the individual's responsibility to society has been the subject of many educational philosophies, programs, and reforms. The first recorded example of this argument appears in the writings of Plato who stated that the purpose of schooling

was primarily to prepare the individual for the best possible contribution to a structured social order (Bantock, 1980). Young people would be schooled in a manner appropriate to their station in life as a means to enable them to be productive citizens (Hodgkinson, 1991).

This idea that the school's main purpose was to prepare students to fit into their proper role in society continued more or less unchallenged until the eighteenth century when the French philosopher-writer, Rousseau, argued for "child centered" schools where the emphasis on the individual would be a first priority (Boyd, 1956). Rousseau believed that society should be based on a social contract between free individuals, thus the pre-eminence of the single person who chooses rather than is forced into productive association with others. With this individual focus as a starting point for education, the purpose of school would be to draw out and build upon the natural inclinations of each child rather than to impose the norms of societal expectations.

The second major theme which began in the era of early Greek civilization is that of the separation of the intellect from the emotions, and the focus of schools in fostering development of reason. Plato's early influence is still clearly identifiable in our conception of schooling which emphasizes the development of the rational human being as a means of controlling our hedonistic impulses (Gutek, 1972). Historically, few have argued against the major focus for schools on the development of the intellect, but arguing for the primacy of learning as an endeavor which is divorced and separated from student emotional development may produce a false dichotomy. In development of our Western history there have been some indications that attention to emotional needs is an important value focus for schools. It could be argued, for example, that in the Middle Ages the church school which emphasized personal salvation was actually appealing to the emotional rather than the intellectual human aspiration since the development of the intellect was secondary to the

establishment of spiritual faith. Later, the idea that emotion was not necessarily something to be controlled by the intellect but was a legitimate human response has found advocates in Rousseau and in writers of the Romantic period of the early nineteenth century. In our present century, Freud contributed the idea that the nonrational side of human nature is a major contributor to human behavior (Guterk, 1972). Since the "progressive education" movement of the early part of this century, the emotional well-being of students has gained considerable momentum as an articulated educational value and has acted as a counterbalance to the intense focus on intellectual development as the primary emphasis for schools.

While these two themes, in various permutations, have dominated most of the discussions about school purposes, other issues have emerged, particularly in the nineteenth and twentieth centuries. Social Darwinism contributed the idea of continuous competition which would spur students on to personal accomplishments (Riegel, 1978). The eighteenth and nineteenth century Romantic period revealed in the values of creative individual expression and academic freedom, and the idea that teachers will foster the creative talents and ideas of children is an appealing modern image for schools. At the same time, schools have traditionally stood for an emphasis on control and discipline in maintaining a safe, stable social order. Another value theme which often drives current school initiatives is the focus on cooperation. This approach had much of its genesis in the philosophy of John Dewey (1916) who, in the early nineteenth century, ushered in the "progressive schooling movement" with its emphasis on experiential learning through cooperative, social activities.

The latter themes have been highlighted at a time when North American public education has grappled with the introduction of the comprehensive secondary school, the introduction of an information and technological revolution, increasing perceptions of conflict in society and in the schools, the focus on individual freedom and the desirability of creative options in the mid 1960's and 1970's, the emphasis on

cooperative social learning, the perceived need to better prepare students for their vocational careers, a deluge of personal counseling issues from drug abuse to preparing for career choices, and the increasingly vocal calls for a return to traditional educational values. We live in an era of heightened pluralism which is reflected in the multiple demands and confusing images of what schools are supposed to accomplish in educating students.

4.3 A RATIONAL INTEGRATION OF VALUE THEMES

An integrative theory of school effectiveness might help to sort out some of these confusing school purposes by showing the relationships between the various values and assumptions about what schools should be about. As Hodgkinson (1991) states, "Education must ultimately be defined in terms of its ends, its purposes" (p. 23) and, therefore, judgments about school effectiveness should be made according to ideas about what schools ought to be accomplishing. In order to facilitate a more holistic vantage point and to avoid focusing on one or more issues to the exclusion of others, it is necessary to see relationships between a number of these issues as they interact with each other (Senge, 1990).

From the brief overview of our historically derived conception of schools, it is possible to isolate eight themes which dominate discussions of school goals for students: to provide intellectual development, to facilitate emotional development, to foster individual growth and development, to prepare for meaningful contribution to the socially acceptable world of work, to promote a sense of social responsibility and order, to develop creativity and innovation, to promote competitiveness, and to engender cooperative skills and attitudes. This set of school purposes is shown in Figure 4.1 as pairs of competing values which might be used to judge effectiveness of schools in meeting their mandate for their students.

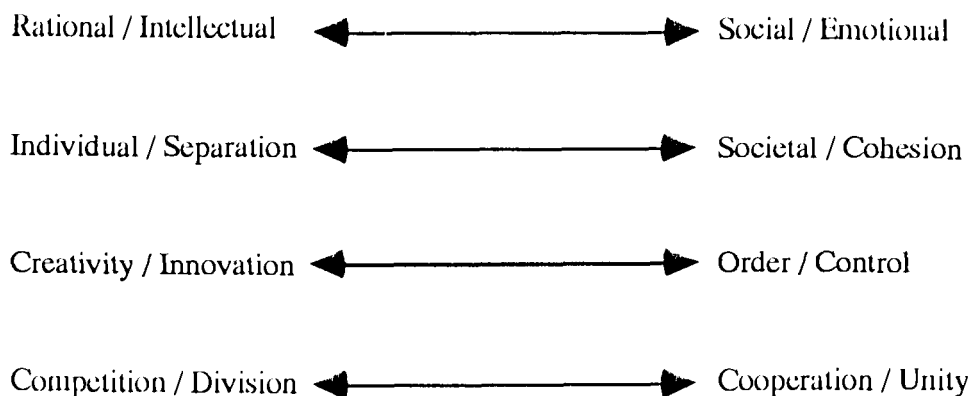


Figure 4.1. School purposes as opposing values of student development.

When presented in such a fashion, it is clear that disagreements about school purposes are often the result of tensions between some of these values which have been emphasized in various forms throughout our Western history of schooling. Displaying these themes in this manner helps to attune us to the underlying assumptions which are beneath discussions about school purposes, but this still does not link the ideas in a unified fashion. In the remainder of this chapter, an attempt will be made to offer a rationally and empirically derived model which addresses these concerns.

The conceptual framework utilized for the historical review originated in conclusions drawn from the research of John Goodlad (1984) who, in his landmark study of schools in the United States, postulates that there are four main categories of educational goals to which communities of parents, legislators, and educators consistently refer when speaking of what they want from their public schools:

- (1) academic, embracing all intellectual skills and domains of knowledge;
- (2) vocational, geared to developing readiness for productive work and economic responsibility;
- (3) social and civic, related to preparing for socialization into a complex society; and
- (4) personal, emphasizing the development of individual responsibility, talent, and free expression. (p. 37)

Goodlad draws on a historical study of three hundred years of schooling in North America and on analysis of state and school district documents to produce these broad groupings. Although Goodlad argues for discussion of comprehensive school purposes so that effectiveness can be determined, he observes that broad goals are seldom discussed in a substantive fashion which delves into the basic underlying values, but that educators and public alike seize on the particulars without appreciating nor understanding the complex values which should act as the starting point of discussions of what schools should be about.

Goodlad's (1984) analysis echoes two main themes which have been with us since the time of Plato's dialogues: (a) the dynamic interplay between the individual (personal development) and the societal expectation for contribution in a productive way to the world of work and social conformity (vocational development) and (b) the tension between the intellectual focus and the social-emotional focus (Gray, 1991). The first of these polarities is essentially a variation of a range of similar oppositions between part and whole, or particular and general, or figure and background. The discussion in North American education often centers on whether to start with the development of the individual child as the essential focus for schools or whether to begin with an emphasis on the social conditioning aspects of education wherein children are prepared for their role in society.

The second polarity is also recognizable in many of the debates on the topic of school purposes. This debate usually focuses on the essential opposition of reason and emotion. Again, this debate is not one restricted to educational circles, but is part of a much larger consideration in philosophy and psychology. The scientific-positivistic world view emphasizes the use of logic, scientific methodology and rationality, while the humanistic-romantic world view places importance on the interactions between people, and the sentiment and feelings which accompany such interrelationships. In education, the debate typically poses arguments about the pre-

eminence of either the intellectual development or the emotional development of the child. Should the first task of a school be the meeting of emotional needs in order to create well-adjusted children who will want to learn, or will the development of intellectual capabilities create a sense of accomplishment which leads to emotional well-being?

Presented as two sets of potentially polarized dualities, Goodlad's (1984) four broad organizers for school values assist in focusing the discussion but they do not explore the full potential for displaying the relationships between the value themes, as might be offered when they are juxtaposed into a matrix format with one continuum intersecting the other as shown in Figure 4.2. If these four school goals are the fundamental bases for discussions about school purposes, then a four-cornerstone representation as given in Figure 4.2 can provide the beginning of a spatially constructed typology for examining value orientations of schools.

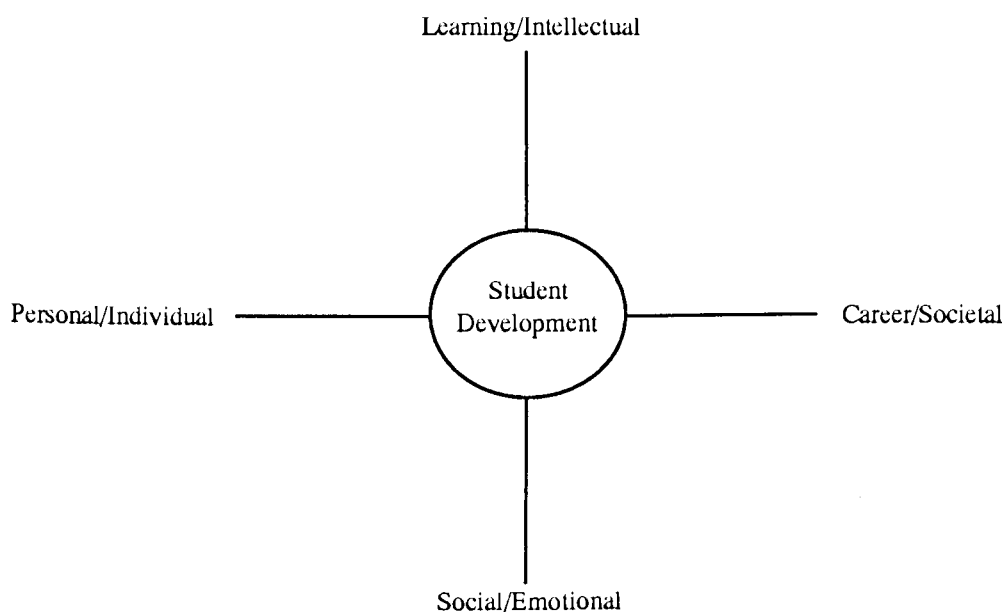


Figure 4.2. Spatial model of general school purposes.

This spatial portrait of school purposes can be expanded further as depicted in Figure 4.3. The addition of two more axes yields a richer representative model which more fully captures the essence of debate over key values of public education. Although Goodlad (1984) includes these additional themes within subsets or lists of objectives within the four broad goals for public schooling, a spatial typology teases out these subthemes as "secondary" axes which logically fit into the conceptual model.

The first of these "secondary" axes in Figure 4.3 displays the tension between competition and cooperation. Competition, both between individuals and between groups, is a dominant feature of public education. The value given to competition in today's schools is obvious in both the curricular and extracurricular programs. Competition emphasizes separation of the participants into identifiable units which are then compared against each other according to level of task accomplishment. In contemporary schools, competition exists in the process of academic sorting into various programs, as well as in the easily identifiable focus on winning awards in academics, fine arts, athletics and even citizenship. In contrast, cooperation emphasizes the power of people working together: similarities, common aims and values are given priority over differences. Schools may emphasize cooperative learning activities, peer tutoring and counseling, school spirit, and so on. This axis represents a long standing debate in education, economics and politics. Should our society become more cooperative, or should we be honing our competitive skills? Like the other two axes, this polarized discussion is represented in socioeconomic and philosophic world views which extend beyond the range of educational debate.

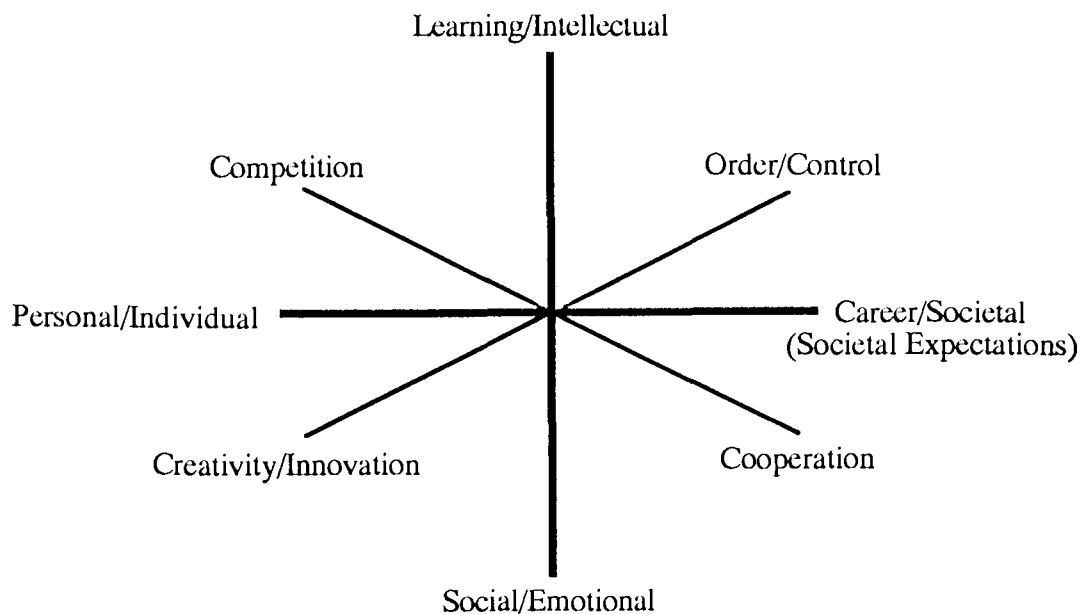


Figure 4.3. Expanded model of school purposes.

The final axis completing this model depicts the fundamental tension between the extremes of freedom and discipline. Humans, as social, rational beings have a defining need to create rules for social order and stability. At the same time, we are compelled to break the rules in a continuous act of creation or re-creation. On the lower left extreme of this axis the act of individual creativity is highlighted. Within this value perspective, innovation is prized as an essential element of human existence. At the other extreme of this axis is an opposing world view in which normative behavior is emphasized through imposed rules and discipline. Once more, this axis is easily recognizable in the realm of educational discussion as the "freedom" of progressive schools is contrasted to a "back to the basics" movement in fundamentalist schools. Beyond education, too, our human societies have reflected the full range of world view presented by this axis in the arena of philosophy and

politics, from the romantic individual freedoms of democracy to the imposed unity of totalitarianism.

This model is presented as one which can encompass multiple educational values and, in a graphic and logical fashion, can show the relationships between the basic underlying principles and assumptions which give rise to differing educational and societal points of view. While the thematic representation into polarized dualities is common in our Western philosophy, such a spatial representation rests on basic assumptions which are part of our general societal culture. Bonstingl (1992) comments that, stemming from the time of Aristotle, our Western thinking has conditioned us to see the world in terms of polarized entities:

good and bad, right and wrong, male and female, winners and losers. In this view of nature, polar opposites are perpetually at war with each other for ultimate control. Their mutual exclusivity makes life a contest in which only the stronger element of each dichotomy survive. (p. 22)

Although our basic Western assumptions often prevent us from perceiving it, the split of the value themes into apparent polarized opposites is problematic. In seeking a more holistic examination of social organizations, Senge (1990) notes that we often see straight lines when reality is more circular. Thinking in terms of logical dichotomies, even in the attempted holistic style presented in this typology, can be dangerous because of the tendency to seize upon and argue about the particulars of one theme or dimension without seeing the balance offered in a picture of the whole.

In order to avoid seeing the conceptual model of school values in terms of mutually exclusive entities, it is necessary to refine the visual representation of competing straight lines. If the lines in the model can be visualized as the edges of circles, then the typology can be presented as a more unified and balanced whole rather than a linear extension of opposing values. Figure 4.4 demonstrates an orbital model which represents the more fluid interaction between the four thematic dualities. Each axis should be seen as a continuum rather than a mutually exclusive polarity. For example, the competition in a school basketball game may be intense but the

degree of cooperative teamwork necessary for success is also critical to the outcome of the game. Both cooperation and competition are values embodied in the same activity. In this model there is a better possibility for the values to be viewed as both "mutually supporting" and "opposing" in an interactive and integrated fashion.

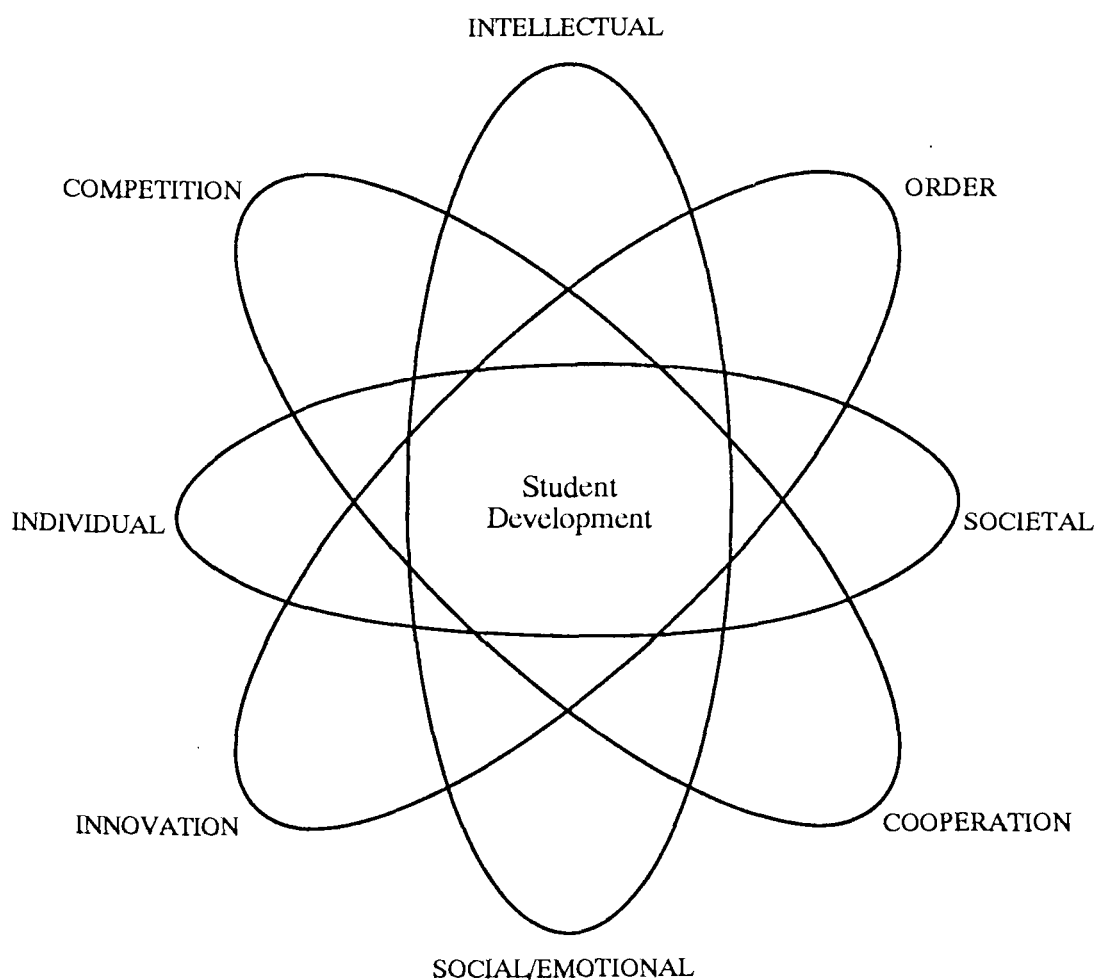


Figure 4.4. Orbital, holistic model of school organizational values.

The conceptual model offered here as an heuristic for discussions about school purposes and school effectiveness has been developed through an extension of categorizations offered by Goodlad (1984) and by a historical review which added further refinements. It remains, however, a school-specific phenomenological

construct. Since schools are organizations with similar defining features to other human organizations, i.e., social entities that are "goal directed and deliberately structured" (Daft, 1991, p. 10), it would seem probable that similar models might be found in the general field of organizational theory. Such comparisons on a broader basis would provide convergent validity for the use of the school organizational values typology as developed to this point.

4.4 AN EMPIRICALLY DERIVED CONSTRUCT OF EFFECTIVENESS

If, by definition, organizations must be concerned with desired goals, then organizational effectiveness is the degree to which the organization achieves these goals or valued purposes. In their review of literature on this topic of organizational effectiveness, Quinn and Rohrbaugh (1983) state that it is difficult to conceive of a theory of organization which does not include the idea of organizational effectiveness as a central tenet: "Effectiveness literature represents the central theme in organization theory" (p. 370). Although recognizing its importance, Quinn and Rohrbaugh (1983) find that organizational effectiveness as a theoretical construct is plagued by imprecise definitions and conceptual overlap--the same criticisms as are leveled at effective schools research. Each organizational theorist embeds personal values and interpretive biases in attempting to apply what, on the surface, seems to be a straight-forward concept.

Yet, while there are recognizable differences, there are also pervasive themes which are apparent in theories about organizational effectiveness. Quinn and Rohrbaugh (1983) state that, "there seem to be several well-identified themes running through the effectiveness literature, yet each theorist offers an integration that differs somewhat from each of the others (p. 364). These writers conclude that organizational effectiveness is a theoretical construct, i.e., an abstract idea which is

socially constructed and "carried about in the heads of organizational theorists and researchers" (p. 374). Any model of effectiveness, then, must assume that there is a common psychological orientation shared by all individuals but that different aspects of the "psychological space" are emphasized by the theorists when examining organizational phenomena.

In a radical departure from the effectiveness researchers who attempt (like those in education) to isolate effectiveness criteria by observing organizations and deriving lists and categories of effectiveness so that others can presumably emulate these characteristics, Quinn and Rohrbaugh (1983) studied the "effectiveness mental construct" by exploring the personal values of 45 organizational theorists deemed to be knowledgeable in this field. These researchers were asked to group into meaningful categories those lists of attributes and generally agreed-upon characteristics of organizational effectiveness derived from current research. The findings suggest that organizational researchers "share an implicit theoretical framework" and that criteria of organizational effectiveness can be sorted according to three axes or value dimensions (p. 369). These value dimensions are presented as three sets of competing values : (a) "from an internal, micro emphasis on the well-being and development of the people in the organization to an external, macro emphasis on the well-being and development of the organization itself," (b) "from an emphasis on stability to an emphasis on flexibility" and (c) from an emphasis on important processes (e.g., planning and goal setting) to an emphasis on final outcomes (e.g., productivity)" (p. 369). Quinn and Rohrbaugh's spatial model is shown in Figure 4.5.

In this model, the first two competing value dimensions form a cross matrix with two axes, while the third value dimension is presented as third axis to create a three-dimensional picture. This model demonstrates the relationship between the

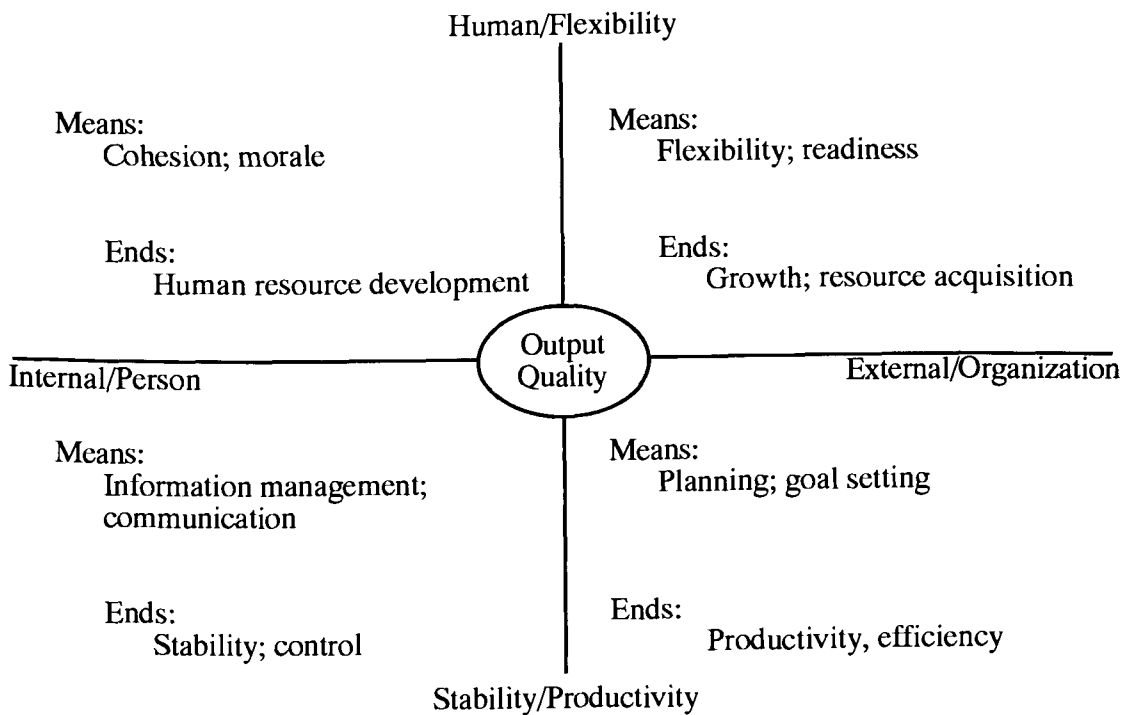
HUMAN RELATIONS MODELOPEN SYSTEM MODELINTERNAL PROCESS MODELRATIONAL GOAL MODEL

Figure 4.5. Spatial model of organizational effectiveness criteria (from Quinn and Rohrbaugh, 1983, p. 367).

value dimensions in an integrative fashion and provides a holistic interpretation of organizational effectiveness from four basic perspectives on organizational theory: (a) rational goal model, (b) human relations model, (c) open systems model, and (d) internal process model.

There are striking similarities between the themes portrayed in this spatial model derived from research in organizational theory and between those displayed in the school values typology presented earlier in this chapter: rationality is contrasted with human relations; flexibility is contrasted with stability and control; the needs of

the organization are contrasted with the needs of the individual; social cohesion is contrasted with productivity and efficiency. The conceptual model of school values (Gray, 1991) and the subsequent research findings described in later chapters of this work were completed prior to discovery of the writings of Quinn and Rohrbaugh (1983), but it is evident that the four-quadrant approach produces a fundamental way of looking at organizations which is consistent across disciplines. The basic assumptions about school purposes are consistent with beliefs about the essential nature of organizations as socially constructed units in which individuals come together for the purpose of accomplishing goals.

The similarities between the logically and empirically derived typology of school values and the findings of Quinn and Rohrbaugh (1983) cannot be dismissed as chance. Since the school values typology was developed from Goodlad's (1984) wide empirical base, and from the refinements in examining an historical development of organizational purposes of schools, it is not surprising that the patterns are so alike. Such convergence provides a compelling argument for an holistic perspective on organizational values and the mental construct of effectiveness. Like Senge (1990) who calls for a broad integrative perspective which does not seize upon particulars, Quinn and Rohrbaugh state that

Judging the effectiveness of any organization ultimately involves the question of values. One of the major problems to date is that the pertinent values have never been clear. Researchers, by selecting one or more given concepts, have tended to impose a particular value perspective on the focal organizations without realizing the implied value trade-offs with respect to the other concepts that were not selected. (p. 375)

4.5 SUMMARY

This chapter introduced the idea of organizational effectiveness as a mental construct which is ultimately connected to the defining purposes of an organization and, hence, to organizational values. In social organizations such as schools, it is often difficult to deal with questions of effectiveness due to the competing mental models of what the organization should be emphasizing. In addition, the education system's emphasis placed on the means of production, i.e., teaching methods and programs, has meant that the educational outcomes are often left ill-defined and imprecise, consequently adding to the confusion about essential school goals.

The historical review showed that the debate about the purpose of schools has deep roots which extend back to the formation of our contemporary Western civilization. A number of consistent themes can be culled from such a historical review in order to bring a greater level of understanding to the confusing and seemingly contradictory arguments about what should be emphasized in schools. The conceptual model of school organizational values was constructed initially from the empirical analysis of Goodlad (1984) and extended through logical analysis and from the historical review. Quinn and Rohrbaugh (1983) provided confirmation of the spatial typology and, also, arguments for the need for such models to provide an integrated, holistic view which is not dominated by individual perspectives and values of organizational members, researchers, or theorists.

The close similarity between the research findings of Quinn and Rohrbaugh (1983) and the school values typology developed for this study of school purposes gives credence to the argument that mental constructs of effectiveness can be represented in an integrated matrix fashion, and that, as patterned models, these portrayals help to reveal value orientations of both organizations and those who study them.

CHAPTER FIVE

CONSISTENT EFFECTIVENESS: A LONGITUDINAL ANALYSIS

5.1 INTRODUCTION

School effectiveness, as a mental construct, rests on basic assumptions and conceptual models of what schools should be accomplishing. Thus, in judging effectiveness, one could argue that there should be a tight connection between the purposes of schools and the outcomes demonstrated in student performance. This argument might be countered by those claiming that there are too many ill-defined and confusing purposes for schooling in order to get agreement on what ought to be measured, or that effectiveness cannot be judged without consideration of the means used in reaching the ends. Discussions of means and ends are hopelessly entangled in social organizations such as schools, especially since schools lack precision on their outcome variables and have operating cultures which are described as process oriented: "Outcomes are hard to measure; hence employees concentrate on how decisions are made and how work is accomplished" (Daft, 1991, p. 82).

Due to this "process" culture of education there is a reluctance and often an inability to clearly specify, measure, and compare results across different schools. Without such comparisons, it is difficult to ascertain whether individual schools, as organizational entities, have demonstrable effects on student performance. This debate about the nature and manifestation of school effectiveness is evident in criticisms of "effective schools research" already outlined in previous chapters: varying definitions of effectiveness, use of standardized tests which relate only indirectly to the curricula taught, conclusions drawn from small numbers of case studies, and lack of longitudinal studies which examine school effectiveness over a number of years.

Implicit within any concept of organizational effectiveness is the need to demonstrate consistent effectiveness over time. Temporal stability in organizational outcomes mitigates against high or low levels of performance being simply a product of chance. In schools, it is obvious that one year of good examination scores may be the result of a particularly bright and diligent cadre of students and not due to the effects of the school at all, and this would be especially apparent if this good examination showing were not replicated in successive years. For this reason, most effective school studies attempt to measure the residual effects of the school after the input variables relating to the students have been factored out, thus yielding a "value-added" determination of school learning effects (Sammons, Hillman, & Mortimore, 1995). Relatively few of these studies, however, have examined the performance of several cohorts of students over successive years in order to establish (a) stability of school effects or (b) trends which would indicate organizational improvement or decline (Gray, Jesson, Goldstein, Hedger, & Rasbash, 1995). Performance consistency over time is, however, an important determinant of organizational effectiveness.

Another underlying and critical component of organizational effectiveness is that the measures chosen for determining success of the organization be broad-based rather than restrictive and narrow. In schools, we would expect to see effectiveness demonstrated, for example, in more than one curricular area. In many studies of schools, however, research is limited to analysis of standardized tests of reading or mathematics, even though schools offer a broad range of curricula in humanities, sciences, fine arts, physical education, and applied studies leading to career entry. Even when research uses examination results which are tied directly to the curricula, the most commonly chosen subjects studied are reading and mathematics, with the results from these two subjects generalized as a proxy for overall school academic effectiveness. Such generalization is based on the assumption that results in these

areas will be reflected in other subjects such as modern languages and sciences. Research confined to using measures of just these two subjects may be misleading in judging organizational effectiveness in the wider breadth of subject disciplines at the secondary school level.

This discussion, of course, neglects the more broadly based school purposes related to preparation of students for the world of work or meeting student social-emotional needs, purposes which emerge from the basic assumptions and mental models of what schools are about. While it is clear that these are important features in our mindscape of what makes a good school, the primacy of student performance in learning is also obvious. If students are not successful in their learning, then schools would hardly be considered effective. School performance in academic subjects may not be the only indicator of effectiveness but it would be difficult to conceive of a school which does not see the importance of students doing well in subjects which open doors to both technical and academic postsecondary institutions. Since all but a very few secondary schools in British Columbia are comprehensive high schools offering a range of academic and nonacademic subjects, at least one primary indicator of effectiveness for these schools should be the performance of students in the academic grade 12 courses.

Similarly, since our society values persistence to graduation and achievement to the best of one's personal ability (Sullivan, 1988), it is expected that both achievement and participation rates in senior academic course will be at a high level. Because the senior academic courses offer the greatest opportunities for students to enroll in a variety of postsecondary institutions, participation rates in these courses is another indicator of school success. The participation rate in this study is defined as the number of students enrolled in a course divided by the population for the grade. This participation rate can be used to measure and compare the relative numbers of students in subjects within and between schools. One of the established assumptions

in many schools, however, is that academic performance can only be sustained at a high level if the students are filtered out at a lower level, thus leaving only the high achieving students in the senior course. If consistently high aggregate results can only be attained at the cost of restricted student access to senior courses then judgments of effectiveness based on student academic performance would need to be tempered with knowledge of relative numbers of students enrolling in the academic subjects. This connection between participation rates and performance level should be explored.

In this chapter, the results of an analysis of nine academic school subjects in 205 secondary schools in British Columbia over a 7 year period are provided in order to address both the concern for consistency in performance outcomes and the need to look beyond the narrow academic indicators of reading and mathematics. This stage of the research study examined length and breadth of school effectiveness by answering the question of whether secondary schools are able to demonstrate consistent, enduring performance in a wide range of academic subjects. The relationship between school performance levels and participation rates was investigated in order to determine whether there is a correlation which would affect judgments of school effectiveness.

5.2 BACKGROUND

British Columbia reintroduced province-wide examinations in senior academic subjects in 1984, however, access to the provincial examination data was restricted by Ministry of Education policy at the inception of the research project in that written permission from each school district superintendent was deemed necessary before the data could be released. In beginning this project, letters were sent to all 75 school districts in the province seeking permission to use their school results for the research.

(A sample of the letter to the superintendents is provided in Appendix 1.) Within a 6 month period, all school districts granted access to this examination data for the purposes of the research. The Ministry of Education was then able to supply these results for the 7 years from 1986 to 1992.

5.3 STUDY PURPOSES

As indicated, the concept of effectiveness ultimately must be tied to measurements of how well the organization is accomplishing its goals. Since comprehensive secondary schools should focus on academic achievement as at least one of their intended school outcomes, then it is legitimate to consider school effectiveness from this perspective for at least part of a judgment of success. In addition, comparative data on school performance is often only available for senior level academic courses, and it is for this reason that grade 12 level subjects were used in this analysis. The following questions were addressed in this phase of the investigation:

1. Do individual schools demonstrate consistency over time in examination scores and participation rates?
2. Can grade 12 English and Mathematics scores and participation rates be used as indicators of overall academic effectiveness in schools?
3. Is there a relationship between school achievement and participation rates?

5.4 METHOD

Subjects

For the purposes of this study, each British Columbia public system secondary school enrolling grade 12 students was considered as a subject. The province of British Columbia is a mountainous region on the west coast of Canada with over half of the population residing in a southern band in proximity to the United States. The metropolitan region around the city of Vancouver has a population of over 1.5 million, with approximately another million residents distributed across the province in an uneven pattern which corresponds to development along major river valleys. Within this geographical setting, there are 75 school districts, ranging in size from tiny rural districts with a single secondary school of fewer than 100 students to large urban districts with 18 secondary schools all with more than 1000 students.

Only "regular" public schools were used in this study, i.e., special education centers, adult/alternate education schools, specialized language immersion schools, and youth detainment centers were removed from the sample, leaving comprehensive public secondary schools which offered academic courses in the provincial examinable academic subjects at the grade 12 level. In 1986, the first year of data examined, there were 195 such schools and, in 1992, there were 205. In each of the individual subject analyses, the number of schools with students enrolled in the course varied from a low of 150 schools with students in English Literature 12 in 1989 to the high of 205 schools with results in English 12 in 1992. The nine academic courses with the range of schools enrolling students is given in Table 5.1.

Table 5.1

Number of B.C. Public Schools Enrolling Students in Grade 12 Courses (1986-1992)

Course	Number of schools 1986-92
Biology	171-174
Chemistry	174-189
English	195-205
French	153-175
Geography	177-180
History	174-182
Literature	152-161
Mathematics	184-194
Physics	157-167

Grade 12 population was used as a proxy for the size of school and for comparisons of examination scores and participation rates, recognizing that different enrollment patterns meant that some schools had students in grade 8 to 12 while others enrolled only grade 11 and 12 students. Table 5.2 shows the distribution of grade 12 populations for the schools used in this study.

Design

In this analysis, each of the schools was treated as an independent subject. The dependent variables for each of the 7 years of examined data were the examination scores and participation rates in nine grade 12 level academic courses: Biology, Chemistry, English, English Literature, French, Geography, History, Mathematics, and Physics. Other examinable grade 12 subjects such as Latin, Geology or Communications were not used because data for all 7 years were unavailable or because only a very small number of schools offered these courses. At the outset investigation, it was hoped that school enrollments might be examined

Table 5.2

1992 Grade 12 Populations of Sample Schools

Grade 12 population range	Number of schools
0-50	36
51-100	36
101-150	36
151-200	31
201-250	20
251-300	13
301-350	9
351-400	9
401-450	1
451-500	5
501-550	3
551-600	3
601+	3
Total	205

for measures of student "drop out" rates. The advice from the Ministry of Education, however, was that the data from the schools in this area were unreliable due to varying definitions of student withdrawals and reporting inconsistencies over the 7 year period.

One of the goals for effective schools research has been the quest for causal elements which explain the variance in mean examination scores between schools. Complex statistical analysis and concomitant difficulties in accounting for the residual scores necessary to level out the differences between students entering the school have led some writers to call for analysis which does not submerge data in mathematical complexity but rather retains as much contact as possible with the primary data (Marks & Cox, 1984).

The conscious design for this study was to examine the primary data in an uncomplicated statistical fashion in order to determine whether there are patterns which might lead to insight or understandings about consistency in school level performance and the relationships between the different academic subjects. Unavailable for analysis was any data on the achievement levels of students entering these secondary schools or socioeconomic levels and education levels of the parents--critical information needed to demonstrate school effects on student performance when comparing schools (Willms, 1992). This is not a "value-added" study of school effectiveness at this stage of the research. With a large population of schools, although there will be some schools in which intake variables change, there will be a majority in which these variables remain relatively consistent over the 7 years of the analysis. Thus, although it was recognized that student performance is the result of complex interactions which might be sorted out in multivariate analysis, the essential purpose of this study was to examine school academic results only to determine if stability over time exists at a school level and to see what interrelationships exist between the different subjects. This is a first prerequisite to considerations of school organizational effectiveness.

Procedure

One of the initial decisions to be made in dealing with the examination data was how to deal with inter-school comparisons when numbers of schools offering the courses varied from year to year. In addition, some schools which enrolled grade 12 students in 1986 and 1987 were reorganized to include only grade 8 to 10 students in succeeding years and a number of new schools were constructed in the period from 1988 to 1992. Rather than deleting schools which did not enroll students in all subjects over the seven years or deleting schools which did not exist as senior schools

for the entire time period, it was decided to retain for the study all schools with scores for any given year. This allowed a comparative ranking of all the schools with examination scores on a yearly basis. Under legislation of the province of British Columbia, schools with enrollments in courses with five or fewer students had already been removed from the data to prevent any identification of individual student scores. This meant that a few of the tiny rural schools showed up in the analysis as "missing data" for a number of the examinations. This removal, however, is justifiable on a statistical level since such small numbers of students in these schools do not provide reliable results. Thus, an analysis of each of the grade 12 courses consisted of a full range of schools shown in Table 5.1.

Each school subject was analyzed for consistency in examination mean scores over the 7 year period by examining the means and standard deviations of mean scores and participation rates 1986 to 1992. A dotplot graph of all examination score and participation rate distributions was scanned visually to ensure that anomalies did not exist. Next, a number of correlational analyses (Pearson product-moment) were conducted to determine relationships between examination scores, participation rates, pass rates, scholarship rates, and school size as approximated by the grade 12 population. For the purposes of the study, pass rates and scholarship rates were only considered at this level of analysis due to their high correlations to the examination score in each of the subjects. Statistics for each of the grade 12 subjects are provided in Appendix 5.

The final task in this analysis of school academic performance was to determine if consistency in school results existed over time and across grade 12 subjects. A number of procedures and standards were selected prior to investigation of the data. First, school results for each year were converted to percentile rankings to allow comparisons to be made between schools. Second, these percentile rankings were converted to an index of effectiveness based on whether the school percentile rank

fell into one of three bands corresponding to the upper (67th to 100th percentile), middle (34th to 66th percentile), or low (1st to 33rd percentile). Although this measure of consistency is flawed by the fact that schools may be consistent within a range of 33 percentile ranks which falls between the upper-middle or the lower-middle ranks, it should be possible to see a percentage of schools demonstrating stability in scores at both the upper and lower ranges.

Next, the percentile ranks were converted into an index which represented school performance stability over the seven years. Each school was judged to demonstrate consistency of performance if their percentile ranks fell into one of the three bands in a minimum of 5 out of 7 years, e.g., schools which achieved a mean score in the upper third of the province in Biology 12 for 5, 6 or 7 years were assigned an index score of 3, schools with consistent middle range scores were assigned a 2, schools with consistent low scores were given a 1. Schools with varying scores were not assigned a "consistency" band ranking. To be eligible for this indexing, schools must have produced at least 5 out of 7 years of examination results in the particular subject. Each subject was analyzed to assess the percentage of schools falling consistently into one of the three comparative bands.

Although the study to this point provided insight into the consistency of schools within individual subject areas, a measure of overall school effectiveness had yet to be developed. In this cross-subject analysis, the consistency index for each examination course was assembled and two standards were set to determine if schools could demonstrate consistency across subjects. In the first standard, schools would be judged to be consistent across subjects if remaining in the same performance rank band in 6 out of 9 subjects. This measure was chosen since, at 67%, it was the closest percentage to the earlier measure of consistency set at 5 out of 7 years (71%). It was estimated that this standard might be too rigorous and a second lower standard was set at 5 out of 9 subjects (56%) simply because this was a simple majority of the

Table 5.3

Mean Populations of Sample Schools for 7 Year Consistency Analysis

Grade 12 population range	Number of schools
0-50	14
51-100	36
101-150	32
151-200	28
101-250	19
251-300	15
301-350	9
351-400	6
401-450	4
451-500	4
501-550	4
551-600	2
601+	1
Total	174

academic school subjects for each school. In this comparison of schools across the 7 years of scores in the nine subjects, only schools with a minimum of consistency scores in 6 out of the 9 subjects were used for the purposes of this comparison, with the other schools deleted. This left a total of 174 schools for this holistic look at overall school effectiveness in their academic courses. Table 5.3 provides the distribution of these schools according to their grade 12 student populations.

The consistency indices in English and Mathematics then were converted into one rating, i.e., a score of 1 to 3, depending on whether the school had achieved the same rating in both of these subjects. Schools which had achieved variable placings in the three bands over the 7 years or those schools in which there were different consistency levels in English and Mathematics, e.g., a consistent upper placing in English but a consistent middle placing in Mathematics, were not assigned a combined consistency index for these two subjects. The English/Mathematics

consistency ratings were then compared to the ratings given schools on either the 5/9 or 6/9 subject level standards.

Next, correlational analyses were conducted to establish if any patterns could be observed between individual academic subject consistency indices. The English/Mathematics index was examined as a predictor of school performance consistency at both the 5/9 and 6/9 subject standards. In addition, a comparison of school size was made with the overall consistency levels to determine whether there was any basis for follow-up studies in the variable as a predictor of whole school effectiveness in academic courses.

5.5 RESULTS

An initial analysis of the means and standard deviations of examination scores and participation rates over the 7 year period reveals considerable consistency from year to year (see Appendix 5). This stability is the likely result of a centrally driven provincial curriculum in each of these subject areas with little alteration in content or manner of delivery over the 7 year period, consistent application of the examinations, and standard methods for evaluating the examinations by provincial marking teams. Such stability as reflected in these examination results and the participation rates from year to year provides the necessary consistent background for a longitudinal study which compares performance of schools over time.

The standard deviations for participation rates are larger than those for examination scores, thus indicating greater variability between schools in this indicator than in the examination performance levels. This finding leads to a consideration of the relationship between examination scores and participation rates in each of the nine courses. Table 5.4 shows the correlations between school

Table 5.4

Correlations Between School Examination Scores/Participation Rates: 1986-1992

Course Subject	1986	1987	1988	1989	1990	1991	1992
Biology	-.152	-.022	-.170	-.155	-.322*	-.377*	-.264
Chemistry	-.194*	-.108	-.125	-.193*	-.166	-.140	-.057
English	-.098	-.022	.045	-.147	.133	.082	.193*
French	.026	.001	-.061	.078	-.021	-.066	-.158
Geography	-.092	.040	.005	.072	.125	.092	.120
History	-.317*	-.226*	-.251*	-.083	-.210*	-.190	-.172
Literature	-.021	.012	.015	-.005	-.062	-.200	-.073
Mathematics	-.137	.136	-.054	.163	.159	.121	.189*
Physics	-.171	-.194	-.223*	-.084	-.212*	-.034	-.063

Note. * $p < .01$

examination scores and participation rates for the 7 year period. Overall, the examination scores and participation rates would appear to be unrelated. Where a correlation might indicate a relationship, the level is weak (between .300 and .400), and in fewer than 20% of the correlations is there a statistically significant association between the examination score and the participation rate.

There would appear to be a very weak relationship between examination scores and grade 12 student population for most school subjects as shown in Table 5.5. For Physics, Literature and History a weak correlation (above the .300 level) occurs in but 1 year out of 7 with all other correlations falling below this level. In Chemistry, the weak correlations of .311 and .322 occur in 2 out of the 7 years. Only in Mathematics is there a consistent weak-to-moderate correlation between school grade 12 population and examination success: Mathematics correlations range from .303 to .369 occur in 4 out of 7 years. Although there is a statistical relationship at the .01

Table 5.5

School Examination Scores / Grade 12 Student Population Correlations 1986-1992

Course subject	1986	1987	1988	1989	1990	1991	1992
Biology	.080	.247*	.206*	.150	.231*	.252*	.147
Chemistry	.299*	.265*	.298*	.234*	.311*	.322*	.287*
English	-.012	-.041	-.028	.087	.230*	.156	.116
French	.195	.293*	.268*	.257*	.223*	.202*	.284*
Geography	.120	.154	.088	.166	.180	.158	.143
History	.246*	.217*	.229*	.203	.230*	.282*	.347*
Literature	.232*	.161	.159	.175	.221*	.122	.320*
Mathematics	.303*	.289*	.317*	.241*	.295*	.369*	.354*
Physics	.207*	.195	.230*	.329*	.195	.280*	.282*

Note. * $p < .01$

Table 5.6

Participation Rate / Grade 12 Student Population Correlations 1986-1992

Course subject	1986	1987	1988	1989	1990	1991	1992
Biology	-.185	-.164	-.122	-.141	-.212*	-.169	-.233*
Chemistry	-.236*	-.149	-.169	-.170	-.128	-.111	-.064
English	.298*	.311*	.241*	.203*	.190	.269*	.105
French	-.191	-.108	-.088	.029	.031	-.038	-.082
Geography	-.350*	-.248*	-.324*	-.309*	-.232*	-.241*	-.310*
History	-.321*	-.159	-.186	-.124	-.219*	-.241*	-.257*
Literature	-.407*	-.361*	-.354*	-.361*	-.336*	-.303*	-.374*
Mathematics	.104	.133	.096	.170	.156	.216*	.184
Physics	-.249*	-.266*	-.245*	-.287*	-.224*	-.105	-.137

Note. * $p < .01$

probability level between school population and examination results in most subjects, the size of these correlations is weak and the amount of variance in examination results associated with school population is relatively small.

In Table 5.6, correlations between the grade 12 population and participation rates for the nine courses are presented. Only in English and Mathematics is there a positive relationship between population and participation rates. Other subjects show a consistent negative correlation between school size and participation rates although, unlike examination scores, only half are significant at the .01 probability level. The subjects of Literature and Geography demonstrate a consistent pattern which indicates the larger the school, the proportionately fewer students enrolled in these two subjects.

The next set of results to be examined were the longitudinal relationships between the schools' examination performance and participation rates in the nine subjects over the 7 years. The first investigation considered the relationship between the school examination scores and participation rates on an annual basis. At this broad level of analysis it is important to see if there is any basis for consistency of school results from year to year. If there is little difference in the mean scores of the examinations from one year to the next and if school result consistency is a viable concept, then one should see a positive correlation between successive years for school scores and participation rates. Table 5.7 shows the results of a correlational analysis for school examination scores. It is evident that overall there is a moderately strong correlation between years for all subjects. Literature shows the weakest correlations from year to year with a range from a low of .390 in the relationship between the 1990/91 scores and a high of .575 in the 1988/89 years. Most of the other subjects show school consistency falling in the range of approximately .500 to .650 on a year to year comparison. Geography shows the greatest correlation in the

Table 5.7

School Examination Score Correlations: Succeeding Years

Course Subject	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92
Biology	.620	.592	.564	.654	.619	.674
Chemistry	.693	.532	.560	.686	.593	.622
English	.603	.555	.411	.542	.582	.675
French	.554	.573	.591	.585	.620	.615
Geography	.525	.476	.464	.780	.730	.715
History	.649	.588	.548	.555	.584	.663
Literature	.469	.394	.575	.451	.390	.434
Mathematics	.661	.654	.621	.675	.723	.697
Physics	.576	.438	.463	.499	.472	.609

Note. All correlations significant at $p < .01$ level.

Table 5.8

School Participation Rate Correlations: Succeeding Years

Course Subject	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92
Biology	.606	.680	.688	.706	.694	.632
Chemistry	.486	.654	.648	.686	.587	.677
English	.556	.552	.609	.502	.676	.560
French	.744	.780	.769	.791	.691	.618
Geography	.524	.649	.682	.621	.622	.675
History	.581	.682	.626	.582	.551	.602
Literature	.706	.641	.620	.652	.598	.640
Mathematics	.540	.524	.505	.697	.506	.595
Physics	.593	.534	.674	.687	.665	.649

Note. All correlations significant at $p < .01$ level.

range of .715 to .780 in the years from 1989 to 1992, and Mathematics shows the highest overall consistency with yearly correlations ranging from .620 to .723.

Table 5.8 shows the year to year relationships between school participation rates. Most of these correlations fall in the .500 to .700 range. French exhibits the greatest school level consistency in participation rates from year to year, while Mathematics shows the greatest variability. For both examination scores and participation rates, then, the pattern is one of moderate-to-high correlations in successive years.

Table 5.9 provides a summary of the percentages of schools with consistent percentile band rankings over the 7 years, "consistency" being defined as a minimum of 5 out of 7 years within either a high, middle or low band. Roughly half of the schools demonstrate stability in their relative band rankings for the individual courses over the 7 year period. Schools within the high percentile band for their examination results tend to be the most consistent across all subjects, ranging from a low of 14.9% of schools in Geography and Literature to a high of 25.3% in Biology demonstrating stable high band placements. The next most consistent level is the low band, ranging from 6.9% of schools in Literature to 20.7% in Biology showing a consistent placement in the low band. For all nine subjects, the mean percentage of schools in the high band is 17.4%, the middle band 11.1% and the low band 15.5%. This longitudinal analysis would indicate that for a large number of schools, there is a considerable degree of consistency in individual subject examination scores.

A similar analysis of participation rates over the 7 years, summarized in Table 5.10, reveals almost identical patterns of consistency: the high and low bands demonstrate the most stability with a mean of 18.0% of schools over all nine subjects consistently staying within each of these two ranges while the middle band shows the least stability with a mean of 10.2% of the schools for all subjects. The range of percentages for participation rate consistency parallels examination scores. Biology

Table 5.9

Percentage of Schools with Consistent Exam Score Percentile Rankings

Course Subject	Percentage of schools ($n=174$) in performance bands				
	High	Middle	Low	Variable	Incomplete
Biology	25.3	12.1	20.7	42.0	----
Chemistry	22.4	11.5	16.1	49.4	0.6
English	21.3	11.5	18.4	48.9	----
French	21.3	10.9	14.9	47.1	5.8
Geography	14.9	8.1	13.8	59.2	4.0
History	17.2	9.8	17.2	52.3	3.5
Literature	14.9	10.9	6.9	55.8	11.5
Mathematics	22.4	14.4	19.0	44.3	----
Physics	17.8	10.3	12.1	51.2	8.6
Mean	17.4	11.1	15.5	50.0	3.8

Note. "Consistency" defined as minimum of 5 out of 7 years within one percentile band ranking (Low < 33.3%; Middle 33.4% to 66.6%; High > 66.6%; Variable--no consistent band placement). "Incomplete" indicates percentage of schools with fewer than five years of results.

demonstrates the greatest level of consistency in the high band with 24.1% of the schools consistently enrolling students at this level, while Literature demonstrates the least consistency with only 13.8% of schools in this band. In the low band, as well, school participation rates are most variable in Literature (12.1% of the schools consistently in this low band), while in Mathematics, at this low participation rate level, there is the greatest degree of stability (23.6% of the schools consistently in this low band). As with the examination results, this analysis of participation rates would indicate stable performance patterns relative to other schools in the study for approximately half of the schools over the nine examinable subjects.

Table 5.10

Percentage of Schools with Consistent Participation Rate Percentile Rankings

Course Subject	Percentage of schools ($n=174$) in performance bands				
	High	Middle	Low	Variable	Incomplete
Biology	24.1	10.3	17.8	47.7	----
Chemistry	19.5	11.5	18.4	50.0	0.6
English	17.2	14.4	17.8	50.6	----
French	14.9	6.3	19.0	54.0	5.8
Geography	19.0	12.6	18.4	46.0	4.0
History	17.2	8.6	18.4	52.3	3.5
Literature	13.8	5.2	12.1	57.5	11.5
Mathematics	18.4	13.2	23.6	44.8	----
Physics	18.4	8.1	16.7	48.3	8.6
Mean	18.0	10.2	18.0	50.1	3.8

Note. "Consistency" defined as minimum of 5 out of 7 years within one percentile band ranking (Low < 33.3%; Middle 33.4% to 66.6%; High > 66.6%; Variable--no consistent band placement). "Incomplete" indicates percentage of schools with fewer than five years of results.

While this analysis has answered the question of whether consistency is demonstrated over a 7 year term, to this point it is demonstrating only consistency for individual subjects. The more important question for a study of school effectiveness is whether there is demonstrable and consistent success over a number of subject disciplines.

Table 5.11 provides an overview of the results of an analysis of school results in the nine courses in order to determine whether holistic organizational effectiveness is a viable concept. Using the standard of consistent performance in a single band in a minimum of 6 out of 9 courses, 13.3% of the schools could be deemed consistent in their examination score results, i.e., falling within a single percentile ranking band on

Table 5.11

Percentage of Schools (n=174) with Consistent Results (1986-1992)

Performance band	Examination scores		Participation rates		Eng/Math
	5/9 courses	6/9 courses	5/9 courses	6/9 courses	
Low	5.8	2.3	6.9	2.3	5.2
Middle	1.7	1.2	.57	---	2.3
High	12.6	9.8	6.9	2.3	11.5
Total	20.1	13.3	14.4	4.6	19.0

a minimum of six or more courses. For participation rates, using this same standard, only 4.6% of the schools could demonstrate overall consistency. When the standard is lowered to 5 out of 9 courses, the percentages of consistent performance in examination scores and participation rates increase to 20.1% for examination scores and to 14.4% for participation rates. For the examination scores, consistency is greatest in the high performance band (9.8% for 6/9 courses and 12.6% for 5/9 courses) and lowest in the middle band (1.2% for 6/9 courses and 1.7% for 5/9 courses). There is a marked difference between the percentage of schools in the high band and the other two bands for the examination scores. In addition, the overall consistency in the participation rates is considerably lower than in the examination scores, and one can argue convincingly that the number of schools showing consistent overall levels of participation rates from year to year across the 9 courses is negligible.

A second reason for conducting this longitudinal analysis was to determine if English and Mathematics 12 results could predict success rates in other academic subjects. If one begins from the supposition that schools with consistent examination scores in English and Mathematics are likely to demonstrate similar levels of success in other examinable subjects, then the starting point for an investigation is to see if

there are schools with consistent results in both of these two subjects. Table 5.11 shows that out of the 174 schools in this study, 5.2% of schools fell within the low percentile ranking band for both English and Mathematics, 2.3% were in the middle band and 11.5% were in the high band. Even if examining only the high band, this is a considerable reduction from the consistency shown when these subjects were looked at individually, wherein 22.3% of the schools demonstrated stable ranking in English and 22.4% in Mathematics (Table 5.10). Obviously, there is not a strong correlation between the examination results in these two courses.

If this is the case, one starts to entertain doubts about the concept of overall school effectiveness, considering that there appears to be little correlation between English and Mathematics on a longitudinal basis. Even in a year to year analysis, the correlations generally are nonexistent, or weak-to-moderate as shown in Table 5.12. Regression analysis of the English examination results using Mathematics results as the predictor in each of the 7 years reveals that although there is a significant relationship ($p < .01$) between English and Mathematics results in 5 of the 7 years, this relationship accounts for only a small amount of the variance in the English scores. At best, 16.8% of the variance in the school English results is accounted for by the Mathematics results (see Table 5.12). With such a large population of schools, small differences which are significant for some, but not all years, are of doubtful use in judging whether organizational effectiveness is a viable concept in the longitudinal study of school outcomes.

Rather than pursuing detailed statistical analysis, it is perhaps more useful here to examine how successful researchers might be in their quest for effective schools if they were only using the English and Mathematics results as their guide. In the longitudinal study of the 174 schools, 11.5% did exhibit high level stability in their relative placements in English and Mathematics results. If one then were to

Table 5.12

Relationships Between Grade 12 English and Mathematics Examination Results

Year	n	Correlation	%age of Variance in English Results Explained by Mathematics Results
1986	195	.158	2.0%
1987	196	.371*	13.3%
1988	197	.190	3.1%
1989	196	.415*	16.8%
1990	198	.413*	16.6%
1991	202	.283*	7.5%
1992	205	.318*	9.7%

Note. * $p < .01$

assume that in these schools organizational effectiveness were a major factor, then the same organizational conditions which cause English and Mathematics scores to be consistently high should be manifest in the results of the other examinable grade 12 subjects.

Table 5.13 provides an insight into what might happen if one were to make a decision about overall effectiveness based on English/Mathematics results. In the low and middle bands, if the combined (and consistent) English/ Mathematics result were used as indicators of consistent levels of performance at either the standards of 5 or 6 out of 9 courses, the researcher would find that these combined results would incorrectly predict overall school stability of examination results 75% of the time. In the high band, there is much greater chance for accurate prediction, with 75% of the high English and Mathematics band schools predicting consistent long term success using the standard of 5 out of 9 subjects, and a 60% successful prediction rate when the 6 out of 9 standard is used. Still, the researcher would make an incorrect prediction on overall, consistent high level of school success 25% of the time if the

Table 5.13

English/Mathematics Consistency as Predictors of School Examination Consistency

Percentile Band: Eng/Math		Number of "consistent" schools ($n=174$)	
		5/9 courses	6/9 courses
Low	Same*	2	2
	Different *	6	6
Middle	Same	1	1
	Different	3	3
High	Same	16	12
	Different	4	8
Total	Same	19 (59.4%)	15 (46.9%)
	Different	13 (40.6%)	17 (53.1%)

Note: "Same" = schools with overall corresponding percentile band as their English/Mathematics percentile band.

"Different" = schools where English/Mathematics percentile band rank does not predict 5/9 or 6/9 course standards.

first, less stringent standard is used and 40% if the second standard is utilized. This is hardly comforting news and is especially sobering for the proponents of school effectiveness, if one considers that the English and Mathematics results are already included in the predictions of the 5 and 6 courses out of 9. In the case of the 5 out of 9 standard, English and Mathematics are already counted in 2 of the 5 subjects, and the predictive power is really for only 3 out of 7 remaining courses, or 4 out of 7 for the higher standard.

In addition, there are schools in which success in other courses does not include English and/or Mathematics. Of the 48 schools which had consistent results in 5 out of 9 subjects, 16 did not include English and/or Mathematics as one of their consistent areas. Thus, one could miss a school with a consistent performance in a set of

subjects which does not include the two traditional indicators as a combined score: Of the 174 schools, 9.2% fall into this category when the 5/9 standard is applied (4.6% for the 6/9 standard).

It might be argued that the insistence on English and Mathematics scores being within the same performance band is too strict a measure. Combining the two subjects of English and Mathematics does, however, produce a much better predictor than when just one course subject like English is employed. Table 5.14 shows how errors would be much greater if only the English examination scores were employed as a predictor of overall school success across the nine academic subjects. In this case, even in the high performance band, speculation about the success of other courses based only on the English scores would be highly suspect since in the 5 out of 9 standard, one would be incorrect 55% of the time and with the higher standard one would be incorrect 66% of the time.

If English and Mathematics cannot be used as accurate predictors of long term school effectiveness in academic achievement, then are there other course subjects which might prove to be better predictors of overall academic success? Table 5.15 shows the school examination score correlations between each of the grade 12 subjects averaged over the 7 years of this study. Mathematics correlates fairly strongly with Physics, Chemistry and Biology and the highest correlation between any two subjects is for Mathematics and Chemistry at a .544 level. English correlates with History at a .419 level. The correspondence between school examination subjects is highest, then for the science/mathematics oriented subjects, but less so for the subjects often grouped as "humanities".

Earlier, it was shown that neither participation rates nor grade 12 populations correlated strongly enough with examination scores on a yearly basis to provide any meaningful relationship, but could these indicators be used as predictors of long term consistency? In the first case, participation rates must be rejected on the basis of its

Table 5.14

English Consistency as Predictors of School Examination Consistency

Percentile Band: English		Number of "consistent" schools ($n=174$)	
		5/9 courses	6/9 courses
Low	Same*	8	4
	Different *	25	29
Middle	Same	1	1
	Different	17	17
High	Same	17	13
	Different	21	25
Total	Same	26 (29.2%)	18 (20.2%)

Note: "Same" = schools with overall corresponding percentile band as their English/Mathematics percentile band.

"Different" = schools where English/Mathematics percentile band rank does not predict 5/9 or 6/9 course standards.

Table 5.15

Examination Score Correlations Between Grade 12 Course Subjects: 1986-1992.

Subjects	Bio	Chem	Eng	French	Geog	Hist	Liter	Math
Chem	0.442							
Eng	0.374	0.281						
French	0.338	0.360	0.246					
Geog	0.262	0.285	0.370	0.207				
Hist	0.322	0.330	0.419	0.263	0.378			
Liter	0.227	0.222	0.329	0.312	0.279	0.389		
Math	0.410	0.544	0.307	0.337	0.290	0.395	0.270	
Phys	0.343	0.494	0.238	0.284	0.256	0.296	0.205	0.491

Note. Correlations were calculated by averaging the inter-subject correlations over the 7 year period.

increasing variability over the 7 years, for example, only 2.3% of the schools in this study showed overall consistency (at the 6/9 standard) in a high performance band for participation rate whereas 9.8% demonstrated high performance band consistency in the examination scores. This variability reduces any chances of discovering meaningful patterns which exist over time, a necessary condition for studies of effectiveness. In considering the effects of school size and examination scores over the 7 years, a correlational analysis of grade 12 populations and examination scores proves to be predictive at only a very minimal level. For the 5/9 standard, there is a .336 correlation, indicating a slight correspondence between size of the grade 12 population and the tendency towards consistent high results. For the 6/9 standard, a correlation of .238 is even less encouraging as a predictor and, although there is a very slight positive correlation between school size and enduring success rates, the link is tenuous at best.

5.6 SUMMARY

This chapter has explored the concept of school effectiveness from the perspective of school outcomes in senior academic subjects. It has been argued that effectiveness must be considered as a long term rather than a short term phenomenon and that, as a starting point for any investigation of the effects of the organizational culture on organizational outcomes, there must be some way to demonstrate consistent performance. This analysis was designed as a general background study which could enable a purposive sample selection and also could inform the qualitative analysis. Findings from this quantitative study challenge some of the commonly held assumptions about the relationship between participation rates and school achievement levels, about the academic focus and success rate of smaller schools and,

most importantly, about the central concept of overall school effectiveness across a wide range of academic subjects.

As a concept tied to outcomes at a secondary school level, school effectiveness might be construed more as a subject-based, rather than a school-wide phenomenon. Consistency across subjects in a high performance band does exist for a small percentage of schools but it is in the individual subjects themselves that outcome stability is most evident from year to year. Participation rates are possible indicators of school effectiveness on a yearly, subject basis but the variability is more pronounced when one looks at the data over a long term. English/Mathematics scores, traditional indicators of overall school effectiveness, should be utilized only with extreme caution. The predictive power of these two subjects is suspect when attempting to generalize success to other curricular academic subjects. Mathematics, however, would seem to have some year to year viability as a predictor of school results in the area of science.

Finally, this analysis has provided a means for choosing schools for the qualitative case study research. Academic achievement and participation rates provide the background information for the selection of the particular schools to be introduced in the next chapter.

CHAPTER SIX

CASE STUDY OF FOUR SCHOOLS: DESIGN AND METHOD

6.1 INTRODUCTION

The case study stage of this research involved an investigation of the perceptions, value systems, and basic assumptions of teachers, students and parents in four British Columbia secondary schools. This chapter describes the research design and methods utilized in this phase of the research. The following topics are addressed: background assumptions, study purposes, sampling decisions, site access, data-gathering instrument development, data collection, and data analysis procedures. The results of the study will be considered in following chapters.

6.2 BACKGROUND ASSUMPTIONS

A number of assumptions underpin this case study stage of the research. First, the formative assumption for this stage of the research is that a close-up look at school values in schools which exhibit consistent differences in their levels of overall academic performance will show patterns which might be correlated with academic success. Such "contrasted group design" has criticized by some researchers because one cannot possibly account for the full range of multivariate causation in such a small sample (Rowan, Bossert, & Dwyer, 1983). However, the intent in this case study phase of the research is not to discover specific cause-effect relationships, but to explore patterns and associations which emerge from the investigation.

Second, the starting point for this analysis originated in the results of the longitudinal analysis of academic performance of these schools. One of the specific purposes of the longitudinal analysis was to provide a lengthier time perspectives in

order give greater confidence in the qualitative observations (Purkey & Smith, 1982; Mackenzie, 1983; Rowan et al., 1983). The assumption underlying the specific case study qualitative research, however, is that the values to be investigated over a short time frame will be in some way connected to the long-term examination score outcomes.

Third, in the process of selecting schools based on the longitudinal performance data, an attempt was made to avoid the use of outlier schools as examples of effectiveness which are difficult to generalize to more "average" schools (Purkey & Smith, 1982; Rowan et al., 1983). ("Outliers" in this research refer to the statistical definition of those schools with characteristics which would place them in the upper or lower 2% of schools in the province, more than two standard deviations from the mean on any demographic or outcome variable.) These background assumptions and observations affect the focus and design of the case study stage of the research.

6.3 STUDY PURPOSES

The specific purposes for this stage of the research are to examine the possibilities that: (a) the value orientations, i.e., the basic assumptions and mental models, of students, teachers and parents, can be categorized according to the values typology presented in the Chapter 4; (b) schools can be differentiated on the value orientations of their students, teachers, and parents; and (c) schools with more successful examination results and high participation rates will demonstrate greater congruence in the value orientations of students, teachers, and parents, both in the values they see in operation in their school and in the values they think ought to be manifest in their school.

6.4 SAMPLING DECISIONS

The selection of the sample of schools for in-depth case study analysis was grounded both in theoretical research design and in practical considerations. In this section, discussion will be directed to the specific decisions which led to the choice of the four sample schools.

The most important factor guiding the choice of schools for the case study stage of this research was the need to find pairs of sample schools which would display recognizable and consistent differences in their academic performance levels. It was also deemed important to find schools in which their demographic characteristics such as location, size, special programs, etc. would not set them outside the mainstream of senior public schools in British Columbia or North America. The pairs of high-low performing schools would ideally be in close proximity within the same school district, so as to standardize the effects of school district influence which Coleman and LaRocque (1990) have found to have an impact on school operations and performance. Finally, the time and resources constraints on a single researcher dictated that the schools be accessible within a distance of not more than 500 kilometers.

A visual scan of the longitudinal performance data revealed two pairs of similar sized neighboring schools from two comparable school districts which demonstrated considerable differences in their academic success. Each pair of schools drew on student populations in bordering or overlapping enrollment areas, thus theoretically minimizing differences in the influence of the home setting. For confidentiality reasons, the selected school districts and schools throughout the rest of this study are referred to by the following fictional names: Central School District with its paired schools, Northridge and Brandon, and Mainline School District with its paired schools, Arlingdale and Pauline. A description of districts and schools follows.

School Districts

Central School District, located in the southern interior of the province of British Columbia, encompasses a large geographical area (13, 473 square km.) with one primary city center of approximately 50,000 people and four smaller communities all situated about 70 km. from the main core. The economy in this area is mixed: retail and trade, manufacturing, tourism, social services, mining, forestry, and construction. Although prominent in the landscape, large ranches and agriculture play a lesser role in the economy, with only 2.4% of the population at the time of the 1991 census employed in these endeavors. Despite the relatively few people directly involved in the cattle industry, the terrain surrounding the city is one of rolling hills and ranch country, and the traditional roots in Central City lie in the Western frontier development pattern of ranching, forestry and mining.

Mainline School District is located about 40 km. from the city of Vancouver with its metropolitan population of just over one million. Mainline has one central town site and several satellite communities whose traditional demarcations have become blurred due to recent housing developments in the region. Traditionally, the area has been quite rural, enjoying a mixed economic base of dairy farming, trade, and light manufacturing. Over the past fifteen years, Mainline has experienced steady growth as a residential community as well as seeing considerable increases in diversified manufacturing, trade, and agriculture. Although the area is attracting an increasing amount of suburban residential housing (as reflected in the population density level in Table 6.1), it still retains a rural appearance with many small acreage and hobby farms, as well as the established working farms, tree nurseries and frequent wooded areas. Mainline's residents traditionally have held a conservative, Christian-Judeo orientation, typical of small farming communities, but its societal value system

over the past fifteen years has experienced a period of transition as the area begins to reflect the more cosmopolitan nature of its growing population.

As can be seen from the demographic data presented in Table 6.1, Central and Mainline School Districts are very similar in most demographic characteristics: population, number of schools, education level, ethnic composition, income levels per person, and major occupations. One noted difference is in the proportionately higher numbers of lone parent families and higher levels of unemployment in Central than in Mainline. These variations, however, are well within the range which might be described as "typical" since provincial unemployment stood at 12.9% in 1991 and lone parent families constituted 12.5% of the provincial total.

The education system in the two districts can be described as very stable, even though Mainline has experienced more rapid growth in recent years than has Central. Both districts had, at the time of the study, a well-respected male superintendent of schools who had been in the position over the full 7 year period of performance result analysis from 1986 to 1992. No new secondary schools in either district had been constructed since 1986, although a number of large additions and renovations had been undertaken in both districts, and Mainline was in the process of opening a large new secondary school in the fall of 1993 in order to deal with its increasing student population.

Sample School Characteristics

In the selection of schools, compromises had to be made although the two school pairs did demonstrate most of the attributes sought in the research design.

Table 6.1
Demographic Comparison of Mainline and Central School Districts

	Mainline	Central
Population (1991 Census)	82,456	86,245
Population density (persons per km ²)	6.1	264.4
Schools (1992/93)		
•elementary (<gr.)	41	33
•secondary (>gr. 7)	11	8
Student population (1992/93)	16,377	19,251
Student/educator ratio (1992/93)	18.0	17.4
Families (1991 Census)		
•total number	23,030	23,960
•lone parent	13.1%	9.8%
Education level (1986 Census)		
•university degree	6.0%	5.8%
•trades certificate	29.6%	27.1%
•did not graduate	32.6%	34.3%
Ethnic composition (1991 Census)		
•non-English home language	12.2%	12.1%
•Aboriginal people	2.9%	0.4%
•major non-English language: German	1.9%	3.3%
Income (1986 Census)		
•annual per person	18,054	18,812
•unemployment rate	12.9%	7.3%
Major Occupations (1991 Census)		
•retail/trade	15.3%	13.6%
•manufacturing	8.4%	14.0%
•health/social services	9.2%	7.3%

Note. Data obtained from British Columbia Ministry of Education Information Profile 1992/93. Census data from 1986 used when 1991 data not available.

Demographics. One of the first critical characteristics of the schools required for sample selection was that they draw from similar populations of students. In this situation, both pairs were neighbor schools sharing an overlapping enrollment boundary. The questionnaire results, reported and discussed in the next chapter, showed no significant difference in parental education levels between school pairs. Other demographic elements were very similar for all four of the schools. Table 6.2 provides an overview of these school and community characteristics. All schools were moderate-to-large grade 8 to 12 schools, with Brandon being the smallest school at 700 students and Northridge being the largest at just under 1050 students. Grade 12 populations varied from 100 students in Brandon and Arlingdale to 172 and 179 in Pauline and Northridge, respectively. These populations had been stable over the previous 7 years. Table 5.2 in the previous chapter shows that these sizes of school are well within the normal range of secondary schools enrolling grade 12 students in British Columbia. Student-to-educator ratios in the four schools were similar; presumably, economies of scale dictated proportionately fewer staff at the largest school, Northridge. Mean class size was very close in all of the schools, and was near the provincial mean of 24.6 pupils per class in 1992. Finally, each school had a male principal with lengths of service in the schools as follows: Pauline, 5 years; Arlingdale, 2 years; Northridge, 7 years; and Brandon, 6 years.

School examination results. Obviously, the most important determinant in the sample selection was in the area of grade 12 examination performance levels. A visual scan of the findings from the longitudinal trend analysis of grade 12 examination results revealed the potential for studying these two pairs of schools. There were enough recognizable differences between the performance levels of the schools to satisfy the need for paired samples in which one school consistently

Table 6.2

Sample Schools: Comparative Demographics

	Mainline School District		Central School District	
	Pauline	Arlingdale	Northridge	Brandon
Grades	8-12	8-12	8-12	8-12
Student population	1034	893	1044	701
Grade 12 population	172	100	179	100
Student/educator ratio	17.0	16.0	19.0	17.5
Mean class size	26.3	24.4	26.2	25.6
Principal's years in school	6	2	5	5

Note. All statistics are from the 1992/93 school year when the case study research was conducted.

outperformed its corresponding partner. Not all subjects conformed to the high-low designation of the school pairs, but this was consistent with the findings of the longitudinal study and perfectly paired matches were not expected. Since the next chapter will provide a detailed profile of the academic trends for each of these schools, it is not necessary to provide more information about school academic results at this time. Graphic representations of the schools' academic performance from 1986 to 1992 also are provided in Appendix 6.

Time, People, Place and Context

Four specific sampling decisions are necessary within the case itself: time, people, place, and context (Hammersley & Atkinson, 1983). The time chosen for this study considered the yearly cycle of schools and the need for sensitivity in gaining

access. As a "time sample" for this study, the months from February to June 1993 were used for all school visits, interviews and administration of questionnaires.

People selected for this research were grade 12 students, parents of these students, teachers, and administrators in all four schools. All grade 12 students and their parents, as well as teachers and administrators in each of the four schools were asked to complete a questionnaire as part of the study and a selected group of ten students, parents and teachers were interviewed in each school. Grade 12 students were selected for two reasons: (a) the grade 12 examination data formed the basis for the effectiveness selection criteria and (b) these students were at the end of their secondary school tenure and were uniquely positioned for a reflective examination of school purposes and how school had met their needs. In addition, these grade 12 students presumably would have the most knowledgeable student perspective on their school since most would have been in the facility for the past five years, longer than other students in the school. Similarly, parents of these students would have the same informed view of the school in its operations and demonstrated values.

A sample of seven grade 12 students were chosen for a first round of interviews at each school. These students were selected based on a random name draw of students present in classes visited at the school. The first seven students interviewed were asked to name other students who might represent the core values of the school. From this list, three more students were selected for interviews. Parents were selected for a telephone survey by dividing the grade 12 student population by ten and counting down the appropriate number of parents on an alphabetical list of student surnames. When telephone contact could not be made or a parent did not wish to participate in the study, the next name on the list was substituted, until the ten interviews were completed.

A sample of six teachers was selected from one of three time frames: (a) under 6 years, (b) 6 to 10 years and (c) more than 10 years. An attempt was made to

distribute the teaching subject areas across the range of subjects taught in the school and to provide gender balance. Similar to the student interviews, a question was asked of the first six teacher respondents about which teacher best represented the core values of each school. From this list, three representative teachers were selected for a final round of interviews. The principal of each school was also interviewed as part of the qualitative research, making up the last of the ten teacher interviews.

During the on-site research, every attempt was made to ensure that the immediate setting was comfortable and non-stressful for the participant. All interviews and questionnaire administration were conducted on-site at the schools during regular school hours or just before or after classes. Students filled in their questionnaires in their regular classrooms while teachers were given theirs to complete on their own time and to hand in when convenient. Interview rooms were set aside in the schools' counseling areas, and thus avoided any administrative overtones or associations. In the case of the parents, a questionnaire was sent home for completion and, to facilitate access, evening interviews were conducted by telephone.

The last of Hammersley and Atkinson's (1983) within-case sampling criteria relates to the context for the study. The question of site access (to be discussed in the next section of this chapter) and context are inter-related. The schools' participation in this research hinged on their involvement in a provincial accreditation program in which schools were asked to gather information about their performance and to build a plan for school improvement. Since the research being proposed to the schools involved gathering of information which the schools could use in their self-evaluation, there was motivation for them to become involved.

6.5 SITE ACCESS

The school district superintendents were approached first and their permission was obtained in contacting the principals of the schools in order to gain school-level approval to conduct the research. Written permission was received from each of the principals before beginning the study. Any individual participants in the study also signed a written form indicating their agreement to be involved in the project. Parents were sent a letter which outlined the general purpose of the study and allowed them to remove their son or daughter from the study if they so wished. Only six parents across the four schools chose not to have their children take part in the questionnaire or the interviews. All of the procedures for access and permission were guided and approved by the requirements of the Simon Fraser University Ethics Review Committee. Samples of letters and permission forms are provided in Appendix 1.

Notwithstanding the relative ease of gaining access, one problem arose in Arlingdale Secondary School where the principal set out conditions for access to his school. These conditions included his involvement in the design of the questionnaire and in his insistence that any results of the data collection and analysis be reviewed by him prior to any release to participants in his school. While agreed to in the spirit of negotiated evaluation (Guba & Lincoln, 1989), the first of these two conditions did have an effect on the research, as will be explained in the next section on instrument design and development.

6.6 INSTRUMENT DESIGN AND DEVELOPMENT

In this mixed-method research design, three main data gathering approaches were utilized. For the quantitative analysis, a questionnaire was developed in order to assess educator, student and parent perceptions of the operating values (what is) and

their "preferred" or "desired" values (what ought to be) in their school (Appendix 2). For the qualitative data collection, a set of interview questions were designed to probe the same topics (Appendix 3). The qualitative study also included observations documented by the researcher during the visits to the schools.

The questionnaire consisted of 40 questions about school operating values, derived from the spatial typology for school purpose developed in Chapter 4. In the first part of the survey, questions were generated to assess perceptions of school emphasis in each of the eight theoretical domains of student development: intellectual, emotional, personal, career, social control, creativity, competition and cooperation. Five items relating to each of these themes were developed for the questionnaire. Respondents rated these on a five point Likert scale from "strongly agree" to "strongly disagree". One statement in each set of five for each of the eight themes was phrased negatively, and the statements from the themes were randomly distributed throughout the questionnaire. In the second part of the questionnaire, a Q-sort was used to have respondents rank order the values which were desired in their school. A number of introductory questions were also developed to access demographic information about the respondents. For the grade 12 students, an additional six questions were asked about their general academic performance, their academic aspirations, and their perceptions of the effects of their parents, friends and teachers on their academic performance.

Pilot Testing the Questionnaire and Interview Items

Initially, the questionnaire was tested by having four grade 12 students complete the questions. Subsequently, the instrument was field tested in two schools prior to being used in the case study research stage. In order to replicate as closely as possible the conditions under which the questionnaires were to be administered, the two secondary schools chosen for this pre-study pilot test were neighboring schools in a

medium sized school district of approximately 7,000 students located approximately 35 km. from Mainline School District. The two pilot schools had grade 8 to 12 populations between 1000 and 1100 students at the time of the test questionnaire administration. All participants provided written agreement to participate in the study and the parents were given an opportunity to deny their child's involvement. A total of 311 questionnaires were returned for analysis.

Two statistical tests were employed in this pilot phase. First, a factor analysis was used to determine if individual questions would cluster around the eight themes. Although the preliminary results indicated a basic underlying structure which reflected the hypothesized themes, it was evident that questions related to emotional development and individual support were seen by respondents as representing a similar facet of the same phenomenon, that of "personal support for the individual" not just "seeing" the individual as important but both "identifying and supporting" the individual. The factor analysis also demonstrated that questions about solving problems in creative ways was strongly related to identifying individuals and to providing emotional support for these students. This close correspondence between these themes is shown in the correlations between the responses to the following three questions from the first test run of the questionnaire:

- The school usually tries to solve its problems in creative ways (.686).
- In this school, programs are designed to meet the personal needs of individual students (.655).
- The school fosters a caring atmosphere (.560).

Clearly, there was a relationship in the minds of the respondents between the themes of individual support for students, for emotional support and for creative problem solving.

Subsequent to the factor analysis, the Cronbach's Alpha test was conducted to determine the degree to which questions developed for the eight themes constituted a scale. From this analysis, it was clear that 9 of the 40 questions needed revision so as to better measure the eight themes. At this point, the questionnaire was shown to the principal of Arlingdale School. He expressed concerns that some of the questions had been phrased in a negative fashion, as is the standard procedure for development of attitude scales. Despite the explanations of the researcher, this principal insisted that the questions phrased in the negative be altered because he felt that these questions would reflect badly on his school. Because of the need to continue with the study after finding such suitable sample schools, it was decided to accede to this principals' demands and to reword the questionnaire items so that all items would be phrased positively.

From one of the pilot schools, a small sample of grade 12 students who had not taken part in the initial pilot questionnaire was used to re-test the revised instrument. The Cronbach's Alpha test was applied again with the results of each of the thematic groupings of five questions ranging from a low of .56 to a high of .81. While some of these scores were not as high as desired (for example, .56 for the questions related to intellectual development), they were deemed to be satisfactory for the administration of this questionnaire in the case study.

Questions for the interviews were developed concomitantly with the development of the questionnaires and, consequently, were informed to some extent by the factor analysis. These questions were designed to be a combination of directed and open-ended inquiries intended to elicit responses about individual and collective beliefs about the perceived operating values and desired purposes of schools. Interview questions were tested prior to their use in the case study research stage by conducting these interviews with two teachers and two students from each of

the pilot schools. All interviews were designed to be tape-recorded for later transcription and coding as part of the qualitative analysis.

It must be noted here that the rather poor response from parents in returning the questionnaire (reported in Chapter 8) led to a decision part way through the case study research stage to alter the questions asked of the parents in the telephone interviews. The parental return rate for the questionnaires meant that the data could not be considered representative. Therefore, the interviews to be conducted with the parents were shortened to a set of questions which would parallel, but would not replicate, the questions asked of the students and teachers. This decision was taken to save researcher time in gathering information from the parents which could not be used in the same comparative fashion as would the questionnaire and interview data from the other two groups.

Case Study Observations

In addition to the interviews and questionnaires, observations formed a data source. Observational data were collected in the form of notes taken on-site or immediately following the visits to the schools. Of particular interest in collecting this data were the observed teacher-student and student-student interactions, the student work displayed in the hallways and in the classrooms, the special attempts by the school to recognize significant events and accomplishments of the students, and any organizational features of the school which seemed to indicate value decisions on a school-wide basis. These data were used in developing an introductory profile for each school.

Table 6.3

Cronbach's Alpha Test Results: Second Pilot Questionnaire (n=38)

School Purpose Theme	Correlations
Intellectual	.56
Career	.67
Personal	.79
Order	.60
Emotional	.77
Teamwork	.81
Competition	.74
Creativity	.58

6.7 DATA COLLECTION

The data in the case study stage of the research were collected over a 5 month period from February to June 1993. In February and March, an information letter and questionnaire was given to grade 12 students to take home to their parents, and an information letter was provided for all teachers in the schools. Also, in February, a schedule was developed with each of the schools to allow access to the English and Communications 12 classes (taken by all grade 12 students), where the questionnaires would be administered and the names drawn for the first seven student interviews. On-site questionnaires, interviews, and observations were completed from the period March to early June, with the parent telephone interviews conducted from May to late June.

The interviews typically lasted for about 30 minutes, although the range was from 20 to 60 minutes. At the beginning of each interview, the reasons for the research were explained and an opportunity was given for the interviewee to

terminate the interview at any time should they so desire. Confidentiality was assured. The initial interviews were followed by the interviews with students and teachers selected as representative of values in the school. In each case, the principal of the school was interviewed after all other teacher interviews had been completed. At three of the schools, Pauline, Northridge and Brandon, a trained research assistant conducted approximately one-third of the interviews with teachers and students. At Brandon and Northridge, this assistant conducted all of the interviews with the parents.

6.8 DATA ANALYSIS

The data analysis in this case study phase falls into three main sub-groupings corresponding to the purposes of the inquiry, matching Caracelli and Greene's (1993) general categories of: (a) development: the sequential use of different method types to "help develop or inform the other method"; (b) expansion: different method types are chosen for "different inquiry components"; and (c) complementarity: different methods are used to investigate "overlapping but distinct facets of the phenomenon" (p. 196). Data analysis does not technically include the interpretation of data, which involves triangulation and initiation purposes, but it is often difficult to separate Caracelli & Greene's categories in such a discrete fashion, especially in the development stages of data analysis when the results of one method or facet of the study are used sequentially to inform the next stage of the study. An example of this occurred in this research study when the longitudinal quantitative investigation of school performance was used to select and build a profile of the case study schools. Although every opportunity was taken to keep the component parts of data collection and analysis separate and distinct as suited the purpose at hand, such clinical separation is really only possible if different researchers were conducting separate

parts of the study in isolation from each other. Such was not the case in this (mostly) single researcher model.

The major quantitative data analysis involved the application of statistical tests on the questionnaire results. This data analysis involved the following statistical applications using the SPSS program for Macintosh computers:

1. factor or principal component analysis of the 40 questions (#1-40) about perceived operating values in each school;
2. Cronbach's Alpha reliability test of the five questionnaire items assigned to each of the eight themes (scales);
3. descriptive statistics review to check assumptions of homogeneity of variance and normalcy of distribution for questions #1-40 dealing with perceived values and eight Q sort items (# 41-48);
4. correlation analysis to check possible multivariate collinearity in questions #1-40 and #41-48;
5. multivariate analysis (MANOVA) on questionnaire items #1-48 dealing with perceived and desired values in the schools;
6. one way analysis of variance (ANOVA) on the questions pertaining to parents' education levels and questionnaire items # 49-54 dealing with student perceptions of influence on education, expectations for continuation of education and perceived individual academic performance;
7. profile analysis for teacher and student perceived and desired values in each school.

This quantitative statistical analysis was conducted after all coding and categorization of the qualitative data had been completed.

The interview tapes were transcribed in the summer of 1993 immediately following the on-site visits. These transcripts were then analyzed for content using the HyperResearch program from ResearchWare, Inc. This qualitative research tool

enables coding into categories which can be organized and reassembled as needed and then recalled for frequency counts or hypothesis testing.

In this research, the categories for the content analysis were developed through a process of reading through the interviews and building categories in a cumulative fashion by initiating and adding codes as they emerged from the data. No coding classifications were set in advance of this data analysis although the questions themselves had been built with the background heuristic of the values typology. All meaningful comments related to the questions and the purposes of the research were assigned a code. Sometimes this amounted to a phrase and sometimes to a full sentence or, in some rare cases, to two or three sentences if a single idea was presented. Meaningful phrases or sentences were separated into single-meaning elements for the most part, so that double coding could be avoided; however, in some instances where the phrase included two separate but related aspects, the same phrase might be coded twice. At this morphemic level of analysis, a subject might repeat a similar comment several times in responding to one question. Each time the coding was applied if it was deemed to be a separate and distinct response. Since the HyperResearch program allows for case identification of each respondent, the number of responses to an individual question could be sorted out at later date, and in this way frequency tallies could be specified for the whole sample, for individual schools, subgroupings within the schools, or even individual respondents. Percentages of different categories of responses by school groupings could be calculated by examining how many people had made a certain type of response, so that in this form of analysis an individual's repeated comment would only be counted once.

The coding proceeded in three steps. First, 20 teacher and student interviews chosen at random from all four schools were analyzed and codes were developed as described above. Second, after the first interviews had been analyzed and assigned codes in this fashion, many of the initial specific categories were reassigned to

broader, more comprehensive classifications and the original 20 interviews were recoded before proceeding the remainder of the 80 teacher and student interviews. The 40 parent interviews were coded after all teacher and student interview classifications had been completed. As a result of these first two steps in the coding process, a total of 507 category codes were assigned. Subsequently, through collapsing the categories into more inclusive groupings, the number of coded categories was reduced to 268.

The next step in dealing with this qualitative data set from the interviews, now transformed into coded categories of responses, was to examine the coded information with respect to the original purposes of the case study. In response to the questions posed at the outset of the fieldwork, the school data were analyzed by examining how respondents replied with respect to what values seem to be present in their schools and what values the respondents thought ought to be emphasized. This process involved further aggregation of data as related responses were brought together in a meaningful fashion and in concert with the proposed typology of values which formed the heuristic for the mixed-method phase of the study.

Finally, the observational notes were analyzed for use in the interpretation process to provide introductory comments and descriptions of schools. The selected observational data had face validity for the researcher as an educator with more than 20 years of experience as teacher and administrator in a wide range of school settings.

6.9 SUMMARY

This chapter has provided an overview of the design and methods employed in the case study stage of the research into school values. Research assumptions were outlined along with the purposes for initiating this investigation.

Sampling decisions were given detailed consideration since the choice of schools was a critical determining feature of the research. The search for sample schools was driven by a number of factors, the critical need being to find pairs of schools which would exhibit recognizable differences in their academic performance but would not be statistical outliers in the context of other schools in the province. Although the two pairs of schools chosen for the case study phase of the research were not perfect high-low pairs as will be explained in detail in the next chapter, they did exhibit enough consistent differences in their long term academic performance to be selected for this research.

The selection of the schools and their school districts was conditioned by a number of other restrictions necessary in order that the research could be carried out in a practical and productive fashion. Within-school sampling decisions included choices about people, time, context and place. The chapter concluded with a description of the research instrument design/development and data collection/analysis techniques for both qualitative and quantitative components of this phase of the research.

CHAPTER SEVEN

CASE STUDY: QUALITATIVE AND QUANTITATIVE INTRODUCTIONS

7.1 INTRODUCTION

This chapter consists of two parts. First, an initial introduction to each school will provide a visual picture of the four different facilities, and a personalized feel for each through the interpretive eye of the researcher. Second, the academic profiles of the schools will be presented in a more detailed fashion than the brief references in the previous chapter. These introductions will provide a context for the ensuing qualitative and quantitative analyses of the interview and questionnaire results in the following chapters.

7.2 FIRST IMPRESSIONS

The style of the following school introductions is borrowed from Sarah Lightfoot (1983) whose portraiture of schools lent a human touch to the study of school effectiveness. Since this is a personalized perspective on each school, I will depart from the clinical, objective persona of the researcher adopted for purposes of academic convention throughout the rest of this study and assume, instead, the role of narrator telling about initial impressions of each of the four schools.

Arlingdale Secondary School

On one of those grey, rain-drizzle, west coast January days, I drove into the parking lot at Arlingdale Secondary School. My mood matched the weather as I viewed the surroundings and searched in vain to find a place to park. This was no easy task as the parking lot was full of construction equipment, piles of building

materials, men with hard hats, and mud everywhere. I found a "No Parking" sign beside three metal-clad, mud splattered, temporary classrooms outside the main entrance to the school, and I wedged my car between two other vehicles whose owners, too, had decided to risk the consequences of parking in a restricted area.

I trudged into this educational construction zone through school front doors covered with scratched paint and a curious bit of graffiti--a stylized letter "A" with a circle around it. Momentarily, I wondered whether this had anything to do with the name of the school but then quickly any chance for continued musing was swept away as I found myself in a hallway overfilled with bustling, noisy students making their way to their next class. Students pushed along, loud and boisterous in their denim clothing, their baseball caps and their books clutched under arms or slung across their hips. Although primarily Caucasian, there were many students of East Indian or Asian origin in this ethnic mix of young people. I proceeded with interest down a short hallway posted with results from successful rugby matches and basketball games until the Main Office sign beckoned me from this bustling hallways traffic area.

The administration office appeared as a cramped, angular area with three secretaries attentively engaged at their desks, while another at the front counter dealt with a pair of students who were trying to explain why they were arriving for school one hour late. The office atmosphere struck me as a perfect match for the day's weather. My mood darkened even more as I waited another five minutes for the principal who was engaged on the phone in his office. Finally, I was relieved from my saturnine deliberations by the emergence of the principal, George Blackburn. A handshake, a few pleasantries, and I was ushered into his office with its profusion of books, professional journals, building plans, sketches of the school as it would look in the future, and, appropriately, two construction worker hard hats, one with the principal's name stenciled on the front.

George and I chatted about the school and about the terms of the research project. He stated the obvious: the school was going through a major facility makeover and these were stressful but exciting times for the staff and the students. The building project would breathe new life into an old facility which had always thought of itself as a poor cousin in more than physical ways. George related how the school and community of Arlingdale had a poor perception of themselves, a kind of "inner-city school in the country" with a low socioeconomic clientele and low academic aspirations. As an example, George told how one teacher had questioned a school decision to offer challenging academic courses for gifted students by stating emphatically that there were no gifted students in this school. George had replied just as strongly that he was about to alter that perception, "The community is changing and so are we at the school. It will happen."

George was an experienced principal, having been successful in the same leadership position in two other schools in the Mainline School District. Assigned to this school two years earlier by the district superintendent of schools, George was confidently focused on the challenging task of changing the "hang-dog" look and feel of this school. He invited me on a tour of the facility and the new addition to be completed by next spring. I dutifully donned my guest hard hat.

Throughout the 45 minute tour, George talked nonstop about all his plans for the school. And there were many: bringing in foreign students from Asia who would pay tuition fees to enrich school programs and who would help improve the scores in Mathematics and Science, reinstatement of the French Immersion program to retain some of the top academic students who had been leaving this school in the past to take programs in other schools, the start-up of a school football program to maintain student interest and to develop pride in the school, the reorganization of teaching assignments to put the best teachers in front of senior students to get academic results, partnerships with the community for work experience placements for all students, not

just those on vocational programs The ideas flowed in an enthusiastic and unabated stream. This was clearly a school in transition, and one in which the principal would be front and center, cheering and leading the charge.

In passing, I asked about the stylized "A" graffiti which I have now noticed in several areas of the school. George replied that it was the work of a grade 12 student who called himself "The Anarchist"--hence the "A" symbol. As yet they had not been able to catch him in the act, although they were sure he was the guilty party.¹

I left the school relieved that I had been able to gain access and looking forward to working with a school which had such obvious energy and an improving future. Pausing as I got into my car, I gazed back at what was really a very impressive reconstruction of the Arlingdale School, perhaps culturally as well as physically.

Pauline Secondary School

My first visit to Pauline Secondary School had been arranged after my meeting with George Blackburn, since I had started at Arlingdale as the critical entry point into the Mainline District. Several years ago, the current principal for Pauline Secondary, Ken Thompson, had been the vice-principal for George Blackburn so these two were good friends as well as colleagues. George had paved the way for me to meet with Ken by phoning to let him know that he thought the research project was a good idea.

My visit to the school was late in the afternoon on a wonderfully warm day in early February. Unfortunately, I had not left myself enough time to make it to the school with a comfortable margin of error and as I rushed into the school from the parking lot, I was thankful that there had been several guest parking areas adjacent to the front doors to the school. Collecting my thoughts as I scrambled in through the spacious entrance foyer, I looked around to see a few senior students standing and

¹Later, I had an opportunity to interview this young "anarchist" who, ironically, held very conventional views about education. He was responsible for the graffiti, however.

chatting to each other. Since time was of the essence, I was grateful that the administration office was immediately adjacent to the entrance. I quickly introduced myself to the secretary receptionist, mumbled my apologies for being late and was promptly led into Ken Thompson's neat and orderly office.

Since the idea for the research had already been outlined to Ken, I found that gaining access and approval was simply a matter of discussing some of the details and answering a few questions about the contribution that the research could make to his school. Ken was happy to assist in the project since he felt that the staff had worked hard as a group a few years prior to establish their beliefs about education and had created certain programs and school-wide emphases in conjunction with their agreed-upon philosophy. It was now time to see if the values that the staff had espoused had been embedded in the classrooms to the extent that both teachers, students, and parents would be able to articulate these values as the working culture of the school. Although these words were encouraging, I had heard similar stories from other school principals over the years and most of the time their philosophical direction consisted of little more than some treatise written up and quickly forgotten. I must say that I had a healthy dose of skepticism at this point in talking to Ken--open minded, research skepticism, of course.

In my subsequent brief tour of the school with Ken, I noted that celebrations of school accomplishments were prominent in the front foyer and office area. Posters about a recent fine arts production were complemented by newspaper articles which had favorably reviewed the performance, along with a feature article written in a local paper about one of the fine arts teachers. An academic honor roll featured those students who were achieving success. Upcoming school sporting events were posted and a number of newspaper clippings about school prowess in athletics were taped to the windows of the main office. And beginning in the main foyer and extending throughout the school were a series of student artworks of very high quality. No

conspicuous graffiti was evident, although in the hallways upstairs there was a good deal of litter still left on the floors after the lunch period. Obviously, students ate their lunches in the hallways and did not feel compelled to keep their school clean, perhaps safe in the knowledge that someone else would clean up after them.

Ken explained that the Pauline students were friendly and pleasant, most of them coming from middle class homes with few socioeconomic problems. He would like to see them become more academically focused than had traditionally been the case at the school. However, he did feel that the school had worked hard in the area of academic performance over the past few years and that they were starting to see some results in grade 12 examinations. He described the teachers as very professional and dedicated, with some very strong and innovative programs led by Pauline teachers.

One of these initiatives was in career counseling and the placement of students into cooperative work experience programs in the community. The school had an active "career center" next to the main office and it would be hard for anyone to miss the large display of career center opportunities which occupied a feature wall in the school foyer. This career information was quite remarkable for its attractive, colorful presentation as well as the current and relevant information for the students. "Just like flowers attracting worker bees," I thought to myself.

As I went to leave, I found to my chagrin that, in my rush, I had forgotten to turn off my car headlights, consequently draining the battery. Embarrassed, I re-entered the school to explain my plight to the same secretary who had greeted me so pleasantly on my hastened entry. Without hesitation, she hailed a passing grade 12 student by name and asked him to assist me. This young man graciously helped by borrowing some battery jumper cables from the school auto shop and using his own car to get mine started. It was a pleasant way to end a first visit to the school.

Northridge Secondary School

My visit to Northridge Secondary School took place in mid-February, after the visits to the schools in the Mainline School District. Unlike most schools where the main entrance is noticeable to even the untrained eye, Northridge seemed to be placed back-to-front with its main entrance facing away from the major road access to the school. I learned later that this was because this school had some 10 years ago actually been two separate schools, one junior secondary with grades 8 to 10 and a senior school, grades 8 to 12. The two schools had been joined together, creating a single building with some rather unique physical features.

Certainly, this must explain why I mistakenly parked and entered thorough the back entrance to the school and found myself not in the administration office but in the midst of a gymnasium where an inter-school wrestling competition was taking place. The gymnasium was filled with cheering students and coaches exhorting their young athletes to perform their best. Standing and watching for a moment, I was struck by the enthusiasm of the student spectators and the coaches, the intense physical exertions of the athletes, and the enjoyable social atmosphere provided by such events. A buzzer sounded the change of classes and, perhaps responding to a stimulus remembered from my own student days, I entered into the hallways in my trek to the administration office which by now I had remembered was at the other side of this sprawling campus.

My scheduled meeting with the principal was not to begin for another 10 minutes so I had some time to observe as I walked along. Class changes are always interesting glimpses into the student culture. In Northridge, the students moved at a leisurely but purposeful pace to their next class. There appeared to be no sense of urgency in their movements, and there certainly was none of the exuberant physical interaction seen at Arlingdale. These students talked with one another and joked easily with friends in an orderly and comfortable fashion. The ethnic mix was

wonderfully diverse: Caucasian, Aboriginal Indian, East Indian, Korean, Chinese, Japanese, Vietnamese and so on. As a first impression, these students seemed to be a relaxed and friendly group of young people.

In the office, I was greeted warmly by a secretary who informed me that the principal has gone on a "walkabout" around the school but he was expecting me and that he should be returning to the office at any time. I happily excused myself to go on my own tour for a few minutes rather than wait in the office. As I looked up and down the hallways, I observed how the floors shone despite the fact that it was now afternoon and countless pairs of footwear had shuffled over them. There was no litter other than the odd gum wrapper or piece of paper fallen from a notebook. The walls were strikingly clear of any graffiti or any other signs of wear and tear. It was apparent that this school was well cared for by the staff and the students.

While I was standing in the main foyer, a rather rough looking student and his friends burst into the building and uttered a profanity unacceptable in any school. The fact that this happened was not so remarkable. This kind of behavior happens in secondary schools all the time. What I did find interesting was that this obviously unruly student reacted in an embarrassed fashion upon noticing me, not defiant but actually rather apologetic. It appeared on this first impression as though the expected behavioral code from the students was one deference to teacher/adult expectations of decorum.

Contemplating this unusual student reaction, I made my way back to the office where I was intercepted by the principal, Don Church, who greeted me in an affable manner. In our ensuing discussion as I related that part of the research project would be surveying and interviewing grade 12 students and their parents, Don appeared nervous about the prospect because the school was just completing the accreditation process and he was concerned about bothering parents again. I responded that we would be able to supplement the accreditation information and I assured him that the

superintendent of schools in Central had approved the project in principle. With that explanation, Don agreed to ask the staff to cooperate.

I asked Don what the students at Northridge were like. He replied with some enthusiasm that the students were the nicest he had ever encountered. Not high academic students but very appreciative of the things teachers did for them. This school contained a multicultural mix of students from very different home backgrounds who managed to interact in a pleasant social environment with virtually no violence or physical confrontations. As a principal coming to this school from another in the district, Don had been surprised at the friendly and sociable student culture in Northridge and had continued to support this atmosphere in the school.

Leaving the office, I followed an indirect route back to where my car was parked in order to get more of a "feel" for this large, spread-out educational facility. As I wandered, I noted that outside the main office there were some examples of student artwork, some creative writing samples, as well as a large bulletin board showing student "special days" at the school. This pictorial display was really quite remarkable because it captured a vision of students from many different ethnic backgrounds "having fun" at Northridge. This would be an enjoyable place to be a student and a place to learn about differences in world cultures.

Throughout other parts of the school, there were only a few displays of student accomplishments. Some of the classroom doors and some hallway murals had been painted by the students but these were permanent and of indeterminate age given the care afforded the school facilities. The gymnasium, of course, was filled with celebrations of success: banners and pennants decorated much of the walls and spoke of an extensive heritage of athletic prowess in Northridge. This was a school which obviously prided itself on the athletic accomplishments. Even as I passed the student counselor's office, I was intrigued that the prominent article displayed in the window

was about a 17 year old hockey player in the school who was being scouted by a professional team.

I made my way back to my car past the still enthusiastic gymnasium where once again I was reminded that schools provide a wide range of opportunities for young people to learn social skills, to interact with others in a positive manner, and to enjoy themselves in activities such as the one taking place in the school that afternoon. There was that wonderful atmosphere of camaraderie and fun that competition can provide. I remembered the appeal of this sports culture from my own high school days and I left the school flooded with long ago, lingering memories of pleasant hours playing basketball and "hanging around" in the gymnasium with my friends.

Brandon Secondary School

The same afternoon found me driving into the parking lot at Brandon Secondary School, about two kilometers away from Northridge. The parking lot afforded three guest parking spots, all of which were taken. I headed for the student parking lot and decided to park there even though I didn't have the parking pass which posted signs indicated were necessary to prevent being towed away.

It was now about 2:45 p.m. and the last classes of the day would still be in session. I reasoned that this would explain the deserted look to the entrance of the school. Not a student in sight. As I proceeded into the building, the first thing which caught my attention was a large Honor Roll and Principal's List situated in a featured position just inside the entranceway.

As I turned to go into the office, I noted the neat and orderly atmosphere. As yet, I had not heard nor seen a student, and the administration office maintained a quiet, professional tone. I informed the secretary that I had an appointment with the principal, Geoff Kuharic, and was led round a corner and down a short hallway to his office. I had spoken to him about conducting research in Brandon Secondary two

months earlier while we were both attending a conference in Vancouver. At that time, he had given a preliminary indication that he would be interested but that he would have to discuss the matter with his parents and his staff. I still had not heard from him but I was not anticipating any problems of access to this school, especially since I had approval from Central's superintendent. As expected, upon meeting me in his office, Geoff indicated that he was happy to cooperate in the research after having consulted with his parents and staff.

While we were chatting about the school and the research, Geoff's vice-principal came in to announce that two students from Northridge who were experiencing difficulty at their school wished to transfer to Brandon. Geoff indicated that he had reservations about accepting these students but that in any case, they would have to have more discussions with himself and the counselors. Geoff's instruction to his vice-principal on this matter was to go very slowly and that under no conditions were decisions were to be made until several days had passed. I began to speculate on Geoff's operating style: conservative and certainly cautious.

In my tour around the building with Geoff, I observed a school that was physically organized on a subject department basis, not unusual in many schools of this type but accentuated in this building. The layout of this school reminded me of a series of boxes, arranged so that each part has its place as a separate entity but yet linked together in a geometric pattern. Straight lines and right angles seemed to dominate and even the specially constructed display cases for student work were set into the wall--recessed rectangles and squares protected by locked Plexiglas covers. Later when I was conducting the interviews, one teacher noted how the school was designed as a core for the academics and all the elective courses and departments were situated on the outside, as though they were appendages to the main programs. "The fun things are on the outside," she said, "but the core of the school is all business." Like Northridge, this school facility was in excellent condition, clean and

exceptionally well cared for by the custodial crew and by the students. I observed virtually no signs of student damage or graffiti throughout the building.

By this time it was after final classes for the day, and most of the students had left for home. The ones who were still in the halls or in classrooms standing and talking to each other or to their teachers were dressed in the usual "uniform" of jeans and t-shirts, and seemed to be polite and sociable. They responded in a courteous and relaxed manner to Geoff as we walked about the school. The ethnic mix of students would appear to be less diverse than in Northridge: there were some students of East Indian and Asian origin but not nearly to the same proportion as in the neighboring school. Geoff described the students as a pleasant group of young people, generally from middle and low income homes and many from single family dwellings, but by and large a good population of students. About half of them, Geoff estimated, would go on to post secondary education. Geoff noted that the academic programs in the school were very strong but that perhaps there was a need for more emphasis for students who were not in the academic stream.

Before leaving the school, I was invited into the staffroom to meet some of the teachers and to have a cup of coffee. Geoff introduced me to the group and then left for other business. I have been in many staffrooms under these circumstances and normally have felt very comfortable talking to teachers about education in general or about specific issues that always arise. Strangely, though, with this group I felt uneasy, as if my presence were seen as an incursion into their private domain. I left the school curious as to how I would be able to gain the confidence of these teachers in my on-site visits.

7.3 SCHOOL PERFORMANCE PROFILES

In the previous chapter, the selection of the schools for this case study was driven by assumptions about academic performance in a secondary school. One assumption was that some schools are more effective than others in their performance outcomes, notwithstanding the problem of dealing with residual scores. Simply put, some schools would be expected to outperform others on a consistent basis. Another underlying assumption was that there would be schools which would continue to outperform others if all outside variables such as student socioeconomic background, prior learning, parental education level and so on could be factored out. A third assumption was that good schools would encourage students to enroll in their academic courses so that post secondary opportunities for their students would be maximized.

Looking at these assumptions in light of the case study phase of this research, there are some obvious cautions based on the discoveries to this point. In considering the findings of longitudinal performance trend analysis, one could expect that these four schools might show overall consistent levels of performance in a majority of the nine subjects, but there would be a greater chance that they would not. It would be more likely to see stability in individual courses than overall school-wide academic consistency. As for the second major assumption given above, the problem of controlling variables so as to create residual scores was rejected at the outset as methodologically and practically beyond the capabilities of this research. There are serious questions, both philosophically and pragmatically, as to whether social science research dealing with a complex multivariate phenomenon such as student learning can carve the thin slices of cause and effect into results which can be applied in any practical way when the amount of variance accounted for by the identified predictors is so small. Because the assumption of residual effectiveness cannot be

proven nor disproven here, it is considered as common sense that some schools, like any human organization, will be better in carrying out their tasks than others. The third assumption of relationship between participation rates and success in the examinable courses also seems to be an idea not borne out in practice. Some schools with high success rates in their academic subjects have high participation rates, some do not. Also, participation rates are much more variable than the examination scores, making it difficult to use these rates as predictors of school effectiveness due to their instability over time.

Table 7.1 displays a summary of these four schools' examination results over 7 years. (See Appendix 6 for more detailed academic profiles for each course subject.) Because this micro-analysis makes it possible to see if there are trends toward improvement or decline, this table shows three types of variable results: (a) variable with no discernible pattern, (b) variable but with a noticeable trend toward improvement in the relative percentile ranking, or (c) variable but with a trend toward poorer position relative to the other 173 schools in the study.

In order to standardize the improving or declining trend, a school could only be judged to be improving or declining if there were a difference of 33 percentile positions over a 4 year term, with a minimum of 2 of the 3 years showing gains or losses. The measure of 33 percentile points was chosen because it represents approximately one standard deviation if the distribution curve is normal and because this is the percentile ranking equal to a one band increase used in the longitudinal background study of school academic performance. Such stable trends with this amount of change are unlikely to be due to chance. This prevents a school which might show a dramatic one year increase of perhaps as much as 37 percentile points being considered as demonstrating a trend toward improvement when this spike in relative performance might simply be due to a brighter than normal cohort of students or due to other factors beyond the school's control.

Table 7.1

Case Study Comparison of Grade 12 Examination Scores and Participation Rates

	Pauline	Arlingdale	Z Score Difference*	Northridge	Brandon	Z Score Difference*
Biology						
•Exam score	M	H	(-1.36)	L	H	(1.45)
•Participation rate	M	L	(1.38)	H	V	(-1.33)
Chemistry						
•Exam score	H	H	(-.09)	V	H	(1.52)
•Participation rate	L	L	(.14)	V	L+	(-.37)
English						
•Exam score	M	L	(.76)	L	V	(1.17)
•Participation rate	V	V+	(.64)	H	V	(-.38)
French						
•Exam score	V-	V+	(.24)	V	M	(-.11)
•Participation rate	V+	L	(.71)	L+	V	(.04)
Geography						
•Exam score	V	V-	(.12)	L	V-	(1.44)
•Participation rate	M	L	(1.01)	V	V	(.11)
History						
•Exam score	H	V-	(1.41)	V+	H	(1.07)
•Participation rate	L	L	(.77)	L	V	(.67)
Literature						
•Exam score	V	L	(1.78)	V	V	(1.00)
•Participation rate	M	V	(-.61)	L	V	(.67)
Mathematics						
•Exam score	V+	L	(1.22)	L	H	(.60)
•Participation rate	M-	V-	(.12)	L	M	(.42)
Physics						
•Exam score	V-	V+	(.29)	V	V	(.05)
•Participation rate	V+	V-	(-.21)	L	V	(.13)

Note. H: high percentile (67-100%ile) minimum of 5/7 years
M: middle percentile (34-66%ile) minimum of 5/7 years
L: low percentile (0-33%ile) minimum 5/7 years
V: variable, inconsistent percentile ranking over 7 years
+: improving by minimum of 33 %ile ranks over past 4 years
-: declining by minimum of 33 %ile ranks over past 4 years
*: parentheses show mean Z score differences (over 7 year period) between higher and lower performing paired schools (Pauline-Arlingdale and Brandon-Northridge)

Arlingdale and Pauline

References to Table 7.1 and the academic profiles in Appendix 6 show that Arlingdale and Pauline have a mixture of academic results but that, overall, Pauline has a stronger record of success in grade 12 examinations. Both schools have two subjects which are consistently in the high percentile band, but Pauline has two which are in the middle percentile band and none in the low band while Arlingdale has no courses in this middle band and three consistently in the low percentile band. Both schools display variable results in their other courses. Arlingdale shows improvement of more than 33 percentile rankings in both French and Physics scores and Pauline is improving at this standard in Mathematics and English. Arlingdale's History marks have dropped dramatically and the school removed this subject from its course offerings for the 1992 school year. Arlingdale's Geography results have typically been erratic from year to year, but over the past 7 years have shown a consistent trend toward lower levels, especially on alternate years. Similarly, Arlingdale has shown a steady decline in Literature examination scores. Pauline's scores in Physics and French are slipping, too, but there is a trend Pauline to increase the numbers of students enrolled in these academic subjects whereas at Arlingdale there is a consistent pattern of relatively fewer students in the academic courses.

At first glance, it is surprising to see two of Arlingdale's grade 12 science courses, Chemistry and Biology, consistently so high when all other subjects were either low or variable. One can only make a judgment about the effectiveness of these two apparent towers of academic strength by taking into consideration the participation rates. Both subjects certainly had extremely commendable examination results in these two sciences, and in fact, these were the highest consistent Biology results in the province from 1988 to 1992, but it is evident that these classes were for a select few students. At the same time as these examination rates were so high, the Arlingdale Biology participation rates were arguably the worst in the province for a

school this size. While Pauline has less impressive examination results in Biology, proportionately far more students are engaged in this academic program. In Chemistry, however, it is the same for both schools: both Arlingdale and Pauline are achieving at a similarly high level and both have poor levels of participation.

In the larger picture of these two schools, participation rates in the senior academic courses at Pauline are proportionately higher than at Arlingdale (Table 7.1). Pauline's academic participation rates are in the middle range or are showing improvement in 6 out of 9 subjects, whereas Arlingdale has 7 out of 9 subjects where the participation rate is either in the low percentile band or is declining. At this focused individual school level, the generalized conclusion in Chapter 5 that there is no relationship between school academic results and participation rates does not ring true. Obviously in extreme cases such as in Arlingdale's Biology there is a tight connection.

There are differences between the academic performance of these two schools, as shown in the profiles given in Appendix 6, but they are less distinctive than may have been anticipated if only the English 12 and Mathematics 12 scores were used as a means for predicting overall success because, in these two subjects, Pauline has convincingly outperformed its neighboring school. Pauline is clearly a higher performing academic school than Arlingdale in a majority of its subjects, especially over the period from 1990 to 1992, but when the total academic picture is assembled, these two schools might better be described as an "average" academic school paired with a "low-average" academic school in the context of provincial rankings.

Northridge and Brandon

The differences between academic performance in Northridge and Brandon are more clearly delineated. Brandon had 5 out of 9 course subjects which were in the high or middle percentile rank bands for examination results while Northridge had 4 out of 8 subjects in the low band. (Northridge did not offer Literature 3 out of the 7 years.) Both schools had three courses which were variable and, within these variable subjects, only Brandon had one (Geography) which was showing a decline. However, in this subject the school was still well above the provincial mean in examination scores. The profiles in Appendix 6 show the detailed comparative results between these two neighboring schools.

Unlike the examination scores, the participation rates between Northridge and Brandon are more similar. Table 7.1 shows that Brandon maintained consistently higher examination results than Northridge from 1986 to 1992 but they had only one course, Mathematics, where their participation rates were consistently in the middle range while, for the rest of their subjects, participation rates were variable or consistently below the provincial mean. Northridge had four courses in which the proportionate enrollment was consistently in the low percentile band and had two courses in the variable band but, in sharp contrast, had two other courses--English and Biology--which had participation rates consistently in the high percentile band.

It is noteworthy that Northridge had such a high percentage of students in the academic English stream while retaining such a poor level of success. Interestingly enough, Arlingdale had a similar pattern, with consistently low English results and a trend toward proportionately more and more students in the academic program. Once more, at this micro-analysis level, the application of the general rule may not always be valid for it would appear that the low English results in these two schools might be related to the disproportionately high enrollments in the academic English program.

When considering these two Central District schools in the context of the provincial academic results, they might be described as a "high average" school paired with a "low" school. The degree of consistent academic differences between these two schools was much greater than for the pair of Arlingdale and Pauline.

7.4 SUMMARY

This chapter introduced these four schools in two very different ways. The qualitative narrative was designed to present the initial impressions in order for the reader to have a personal sense of these educational facilities. The quantitative review of the overall academic performance provided insight into the school from another perspective. Both views are important in order to understand the other and, as the next two chapters proceed, an even more clearly focused picture of these four schools should emerge.

The description of first visits to the schools offered a perspective of schools in which the principal played an important role. Although this topic was not an essential part of the research, I did try to capture some of the essence of these key people in each of the schools. Whether these principals reflect the culture of the schools or whether they are the leaders who impart a large part of their own values to the school in defining its character is not a topic for extended discussion here, although one would suspect that the principal does exert a strong influence in the leadership role. In the introductions provided in this chapter, the encapsulated descriptions of the principals and the brief introductions to the physical layout of the schools and to the students within them is an important symbolic, descriptive entry to the analyses which follow in more detail in the ensuing chapters.

In examining the full range of academic results from the four schools, Pauline and Brandon are shown as consistently stronger academic performers than their

paired, neighboring schools, Arlingdale and Northridge; however, the differences between these two schools are less definitive than what might have been predicted by the analysis of grade 12 English and Mathematics where both of the higher performing schools clearly have better records of success.

This school level introduction poses some interesting questions with respect to school and subject department decisions about participation rates and their relationship to school results which cannot be answered strictly by statistical analysis of examination performance trends. It remains for these questions to be investigated through the mixed-method qualitative and quantitative analysis to be provided in the next two chapters.

CHAPTER EIGHT

CASE STUDY: INTERVIEW RESULTS

8.1 INTRODUCTION

Much of the methodological design for this case study stage of the research resulted from a desire for "complementarity" where "overlapping but distinct facets of the phenomena" are examined to provide "elaboration, enhancement, illustration, clarification" of the results from the different methods (Caracelli & Greene, 1993, p. 196). This design reflects the original purposes for the research: to investigate the relationship between school organizational values and school effectiveness.

The use of interviews to reveal patterns of social responses is based on Schein's (1985) model of the levels of organizational culture. The process used in this case study research was one of working backwards from the visible performance outcomes of the school (visible but not always decipherable) to the levels of values which are testable in the social environment (but are less visible), and even to the level of basic assumptions (largely at a preconscious level) which define the nature of relationships of individuals to the social environment in which they interact. Just as the generalized analysis of school academic outcomes provides a statistical, quantifiable backdrop for interpretation of individual school performance, so does the development of a logically and historically derived conceptual typology of school purposes provide a qualitative background for delving into the "messy" world of school culture.

Before proceeding to the analysis of the findings, one explanatory note is required with respect to the structure of the chapter. The major part of the discussion will center on the interviews with students and teachers. As part of a summary school profile, the perceptions of the parents will be included but only at the conclusion of

the chapter. The reason for the de-emphasis on the parental perceptions is procedural rather than philosophical, as was outlined in Chapter 6.

8.2 ESTABLISHING THE VALUE THEMES

The first step in the qualitative analysis of the interview data was to examine general questions about school purposes in order to determine if there was possibility in the use of the conceptual typology as a contextual organizer.

Perceived Operating School Values

Two interview questions were found to elicit responses about school operating values:

1. What are the teachers like here?
2. What things are given the most emphasis for students by the teaching staff of this school?

In Table 8.1, all of the responses by teachers and students are given within the assigned coded categories organized by the eight themes of the values typology. Since some interviewees responded with multiple responses in one category, often repeating the same idea in different words, only one response in a category per interviewee was utilized to calculate percentages. This allowed comparability across schools and prevented skewed responses biased in favor of an individual who might be prone to repetition.

It appears that all responses can be accommodated by the conceptual framework of the typology, although some explanation is necessary for some of the subcategories. All statements about teaching efficacy were placed under the "learning/intellectual focus". First, it was assumed that "good teachers" in this case

Table 8.1

Operating Values: Percentage of Interviewee Responses Grouped by Categories

What are the teachers like here? What things are given most emphasis by the teaching staff of this school?

	Teachers (n=40)	Students (n=40)	Parents (n=40)
Learning/Intellectual Focus			
•focus on academic learning	58%	45%	8%
•low inconsistent expectations	20%	13%	----
•need better academic focus	3%	3%	----
•teachers good overall*	20%	33%	60%
•some good teachers*	18%	23%	28%
•some not good teachers*	10%	35%	33%
Social Emotional Focus			
•caring teachers	33%	28%	15%
•some teachers not caring	8%	15%	13%
•extra curricular involvement	5%	13%	----
•some negative, uninvolved teachers	10%	8%	8%
•enthusiastic teachers	3%	3%	----
•need more enthusiasm	3%	3%	3%
Individual Focus			
•teachers give personal support	25%	33%	10%
•respect, listen to students	25%	20%	----
Career/Social Responsibility Focus			
•career education emphasized	5%	3%	----
•work ethic emphasized	10%	50%	3%
•social responsibility stressed	10%	5%	----
•teachers work hard	15%	3%	3%
Order/Control Focus			
•fair treatment of students	3%	8%	----
•some discipline problems	----	5%	----
•don't want change	18%	5%	----
Creativity Focus			
•individual problem solving	5%	8%	----
•school tries new approaches	8%	3%	----
Competition Focus			
•teachers/departments divided	5%	----	----
Cooperation Focus			
•cooperation, teamwork stressed	13%	15%	3%
•good communication	25%	10%	8%
•helpful, cooperative students	38%	43%	25%
•teachers' union valued	18%	3%	----
•teachers unified	15%	----	----

Note. Multiple responses by candidate in single category counted as only one response in order to calculate percentages.

* Might also be classified under "Social/Emotional Focus".

referred primarily to the learning focus, but these same responses could also have been placed under the social/emotional focus since the interviews would reveal that good teaching is defined in the minds of the respondents by good instructional practices as well as a caring personal support for the students. This important point will be revisited later in this qualitative analysis.

Second, "divided teachers and departments" may not directly be related to competition although descriptions of school divisions almost always were given in the context of competition for resources, or competition for control of the overall school direction: for example, more of a focus on academics and less on career development. Competition was rarely mentioned in any open ended questions and seems to be a value theme which operates at an unconscious basic assumption level (Schein, 1985). Finally, the assignment of "teacher union values" as a manifestation of a focus on cooperation may be assigned improperly since the references to union values was often made in a negative sense of teachers being more interested in their own welfare than that of the students. Nonetheless, the collective force of the union does demand cooperation and compliance to group norms and was included in this cooperation category.

The answers to questions focusing on what schools and teachers are perceived to emphasize were heavily weighted in favor of learning/intellectual development since about half of the teachers and students made reference to this theme in their responses. The next most frequent set of responses in perceived school emphases had to do with meeting student social and emotional needs. Nearly one-third of teachers and students described their school as having caring teachers. Very close behind the percentage of responses in the area of social/emotional focus were the responses dealing with the provision of personal support and respect for students, both categorized under the theme of individual focus. These responses are closely associated with the theme of social/emotional support and if added together with the

percentage of responses in this theme would be very close to the total for responses dealing with learning/intellectual development, thus repeating again the twin theme of task orientation and support which might be used to characterize the teaching process. Notable, in the low percentage of responses, are the themes dealing with order/control, competition, and creativity.

Desired School Values

In asking the question, "If you could design a perfect school for students, what would it be like?" the intent was to elicit responses about preferred or desired school values. Table 8.2 gives the percentage of responses grouped according to the classifications provided by the values typology. Almost all of the responses were able to be classified within the typology framework with the exception of responses which were grouped under "other": references to financial support, reduced class sizes or smaller school, and more technology--all clearly meant as means by which the school purposes can be met in a better fashion through provision of more support. Under the "other" category, nearly one-third of the teachers stated that a perfect school would adopt a balanced approach, meeting student needs across many of the value themes. It is worth pointing out here that the "good teachers" responses were placed into two categories, following the reasoning put forward in the previous discussion about operating values.

For desired school values, the highest number of responses occurred under the classification of social/emotional focus with the second highest percentage of responses falling under the preference for a focus on individual support. Since there is considerable overlap in these two themes, it is clear that in this sample of teachers and students, there was a desire for more personalized, emotionally supportive schools. A focus on learning and intellectual development received the third highest percentage of responses.

Table 8.2

"Perfect School" Question: Percentage of Interviewee Responses*If you could design a perfect school for students, what would it be like?*

	Teachers (n=40)	Students (n=40)
Learning/Intellectual Focus		
•focus on academics/learning	33%	20%
•good teachers*	20%	15%
Social/Emotional Focus		
•happy students	10%	5%
•social needs met	8%	18%
•good teachers*	20%	15%
•involved, enthusiastic teachers	18%	10%
•involved students	----	15%
•caring focus	13%	8%
Individual Focus		
•individual focus/support	58%	73%
Career/Social Responsibility Focus		
•career focus	5%	8%
Order/Control Focus		
•discipline emphasized	5%	3%
Creativity Focus		
•creativity emphasized	5%	5%
Competition Focus		
•sports programs	3%	3%
•more competitive	----	3%
Cooperation Focus		
•more cooperation**	25%	3%
•less cooperation	----	5%
Other Responses		
•balanced	30%	13%
•more financial support	10%	----
•more technology	10%	8%
•smaller class size/school	8%	5%
•supportive parents	10%	----
•community participation	3%	3%
•same as this school	8%	10%

Note. Multiple responses by candidate in single category counted as only one response in order to calculate percentages.

* Included under both "Intellectual/Learning " and "Social/Emotional" Focus.

** Refers to staff and student cooperation.

These three themes are the same as those which received the highest percentage of responses in questions about school operating values. It would appear, then, that for the school respondents in this case study research sample, there are three major value themes which dominate the conception of what secondary schools "should be about". The other themes do serve as categories for classifying responses but not with the same frequency as do these three themes of learning/intellectual development, social/emotional focus, and personal individual support.

For the purpose of this mixed-method case study, the eight themes will be used as a means for examining interview response patterns within the four schools and for comparing the findings with the results of the questionnaires, but the recognition of the priority given to the three predominant themes will be reflected in dealing with them first as major school value themes and the remaining five as minor themes.

8.3 INTERVIEW ANALYSIS: MAJOR THEMES

Intellectual Development/ Learning Focus

Because measurement of school effectiveness must be linked in some form to schools' primary outcome of student learning, it is appropriate to begin with an analysis of this theme. This is an especially interesting place to begin the case study qualitative analysis since the research into the background data on performance revealed quantitative differences in school examination scores and participation rates which might only be understood when conducting micro-analysis at the school level.

Teacher perceived operating values. Table 8.3 provides an overview of responses to five interview questions where teachers (and students) gave an answer which emphasized intellectual development or student learning. The summaries in Table 8.3 show that teacher references to learning as a positively perceived outcome of the school were far more prevalent in the two higher academic scoring schools, Pauline and Brandon, than in their lower ranking pairs, Arlingdale and Northridge. For example, 80% of the interviewed teachers in Pauline and 60% of the teachers in Brandon thought the school did best in providing student learning. These numbers contrast sharply with these schools' teacher counterparts in Arlingdale and Northridge, with only 10% and 20%, respectively, listing learning as that which is done best by the school.

This same trend is noticeable across all five of these questions designed to probe into the operating values at the individual school level. For example, in response to questions about teacher emphases in the school, 80% of Pauline teachers stated that learning was given most emphasis by the professional staff. In Arlingdale and Brandon, 60% of teachers gave similar reply. At Northridge, however, only 30% of the interviewed teachers saw student learning and intellectual development as a school-wide emphasis. In mean percentages for all five questions, 48% of Pauline teachers and 44% of Brandon teachers indicated a focus on learning/intellectual development as an operating value for their school but only 20% of the Arlingdale and 28% of the Northridge teachers responded in this manner.

Table 8.3

Operating Values: Percentage of Interviewees Responding with Learning/Intellectual Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
What do you think this school does best....	10	10	80	40	20	30	60	20
What things are given most emphasis....	60	40	80	40	30	40	60	60
What do students see as most important school outcomes....	10	20	30	40	40	20	50	60
What do parents see as most important school outcomes....	10	30	40	30	40	20	10	30
Can you name some representative teachers....	10	50	10	60	10	50	40	80
Mean percentage	20	30	48	42	28	32	44	50

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

It is interesting to note that teachers at both Pauline and Brandon were quite clear in their understanding that the school's academic focus was one that had been created in an active fashion by the school staff. There was a sense of professional accomplishment which had its origins in conscious decision making at each of the higher performing schools. One teacher at Brandon was very specific about the school change to an academic focus:

The administration changed the year I came in, maybe it was the year before. They tried to populate the school with teachers that had a heavy intellectual academic focus and now there were a number of teachers who were already here but there was this large influx of teachers in at that point. Now not having been here before to hear the comments that came out it seemed as though there was an almost dislocation. All of a sudden, the focus of the school changed into one that was reasonably academic--structured and reasonably academically focused and that's because of the administration. (BT.02)

A similar reference to conscious attempts to focus the school in an academic direction came from a teacher at Pauline:

We are really working our way up. When I came here a couple of years ago, there is a number of us for the last 3-4 years, and with campaigns for the school the focus had been on basketball... and the emphasis has changed a little bit toward the academics, not as much as it could be but definitely more than it was and so the last 3 or 4 years the scholarships have been gradually increasing. So, yes, just because we have put a little more emphasis on that sort of thing. (PT.08)

In these two higher performing schools there was a sense of common purpose which captured an image of possible and expected success in areas of student intellectual development. And the change to a focus on student learning did not result from an alteration in the student intake variables as confirmed by a teacher from Pauline:

I think that when I first came here teachers said that they weren't--that this was a rural community--that the students aren't academically inclined so we can't have those expectations of them but I think over the last 5 years or so we have made an effort to improve the academics and expectations and the students have responded... and I don't think it is a change in the clientele I think it is a change in the expectations in the clientele that they can--academic students can succeed and do well. I wouldn't say that is the case for all of them but certainly for many of our students I think we have improved that. (PT.01)

Pauline and Brandon teachers did not think of the students as highly motivated, academic achievers. When asked to describe their students, only 20% of the interviewed teachers responded that the students had an academic focus, the same percentage in both schools. The road to success had been one engineered by the educators on their own. The teachers in these two schools perceived that the

Table 8.4

Descriptions of Students

Interview Questions/Responses	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Tell me about students in this school...								
•academic focus	10	10	20	20	0	10	20	20
•not academic focus	80	30	30	10	40	20	20	---
•friendly, nice	50	50	50	60	60	70	60	40
•tolerant	---	---	10	---	30	10	10	10
•intolerant, cliques	10	30	10	60	---	30	10	30
•honest, well behaved	10	---	60	---	40	10	30	---
•good self image	10	---	60	30	---	30	10	30
•low socio-economic	50	10	10	---	40	10	20	---
•middle class	---	---	30	---	---	---	40	---
•multi ethnic	---	---	---	---	50	50	---	---
Representative Grade 12's....								
•academic focus	20	20	50	60	---	20	50	50
•not academic focus	10	---	10	---	---	---	---	---
•friendly, nice	10	10	40	10	---	30	20	20
•sports figure	20	30	10	20	---	20	---	10
•socially involved	30	30	20	90	10	100	---	30
•individualistic	10	10	---	---	---	---	10	---
•talented	---	---	30	---	---	---	10	---
•quiet, compliant	---	10	---	---	---	---	---	---
•hard working	30	---	40	10	---	---	30	10
•balanced	10	30	40	10	30	10	10	50

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

operating focus on expected academic success had been created by themselves, and that this was not due to any change in the attitudes nor capabilities of the students.

In contrast, at Northridge the school norms were not ones which emphasized student intellectual achievement and teachers who wanted to change to greater emphasis on student academic achievement felt isolated and powerless:

I found it a bit of a downer coming to Northridge. I find a great number of students are not turned on to education. Many adolescents don't have the love of learning but I think that a lot of kids here bring a lot of problems with them and it is hard to break through that. (NT.05)

In the two high achieving schools, the teachers perceived that student performance was an educator's responsibility even with students who do not come to school with a highly motivated drive for academic success, but in Arlingdale and Northridge, the teachers described the students as non academic--80% of the interviewed teachers in Arlingdale and 40% in Northridge--and therefore low academic success was rationalized and tolerated. (See Table 8.4.)

Teacher desired values. Table 8.5 summarizes responses to three questions designed to reveal more about desired school attributes than those perceived as operating at the school. When asked about what a perfect school might look like, 40% of the Arlingdale teachers made a reference to student learning, the same percentage as those from Pauline and 10% more than the teachers at Brandon. Only 20% of the interviewed Northridge teachers mentioned student learning as a desired characteristic of their imagined perfect school. Similarly, Arlingdale shows an inclination for improvement as 40% of the interviewed teachers chose academic success as the most important hypothetical achievement they would like to see in their school and 50% suggested academic success as the most important needed improvement for their school. Only 30% of interviewed Pauline and Brandon teachers chose academic success as a hypothetical school achievement. Consistent with other findings, no

Table 8.5

Desired Values / School Improvements: Percentage of Interviewed Student and Teacher Responses with Learning / Intellectual Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Perfect school for students....	40	20	40	0	20	10	30	50
Most important hypothetical accomplishment....	40	30	30	20	0	50	30	70
Suggested school improvement....	50	20	20	20	30	30	10	0
Mean percentage	43	23	30	13	17	30	23	40

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

teachers sampled in Northridge picked academic achievement as the most important school achievement if they could only have "one wish" for their school.

Student perceived operating values. Students' observations of school emphases were similar to the perceptions of their teachers. At the aggregate level for all five of the questions shown in Table 8.3 Pauline and Brandon students made more references to intellectual development and learning than did their counterparts in Arlingdale and Northridge. Although these results at the aggregate level support the proposition that

lower performing schools will perceive intellectual development as less important, this hypothesis is not borne out at the level of specific questions. Fewer students (20%) referred to learning results as "what the school does best" at Brandon than at Northridge (30%) although Pauline students (40%) had a response more in keeping with their school performance than did Arlingdale students (10%) where they appeared to know that their school had not experienced consistent overall academic success.

When asked to name teachers who represented the values of the school, students across all four schools were apt to select a teacher because that person was perceived to provide good educational service in the classroom. This was especially so in Brandon where 80% of the teachers selected as representative were chosen because of their instructional capability or their academic program. Similarly in Arlingdale, Northridge and Pauline, 50% of the students named good teachers as representative.

Students in the low performing schools did recognize that the teaching expectations in their schools were not always as high as they might be. Following is an observation by an Arlingdale student:

Student: Like, all my teachers are lax about classroom socializing. They are not too worried about talking. Like, you can discuss with your friends if you need help on a question which I think is good. Not anything that was preplanned by the teacher but just talking with other students.

Interviewer: Do you think the teachers here are trying to get an academic performance out of the students?

Student: As a whole, maybe not, but some teachers like our Math teacher does but I would say 40-50% do. (AS.07)

The perception of the students that only 40-50% of teachers try to get the best out of their students, matches the academic profile for this school with its dramatic differences between departments. As in Arlingdale, the Northridge students recognized the good teachers but were subjected to others who were known for their poor instruction:

Student: There's some really excellent teachers and this school like my History teacher. She is probably one of the best teachers in the province and I know some other teachers and I had a really strong Math teacher and I have had the same French teacher since grade 8 and she is really excellent. But, on the other hand, there's some teachers and you wonder why they are teaching because they have no ability whatsoever and they don't do anything. And I have had teachers that have given us a text book and said learn it by yourself and I really don't think they should be here because of that. (NS.02)

Arlingdale students provided the answer to the puzzle of why so few are enrolled in Biology and Chemistry when the students in these classes experience such success on the governmental examinations. One student described how he had been a "B" student in grade 11 Biology and really liked the subject but was told that he could not enroll in the Biology 12 class if he wanted to play on extra-curricular sports teams in the school. As an outstanding athlete and good citizen, this young man chose sports and student council involvement over the chance to take Biology but was hoping to follow up his interest in the subject in "a night course or something". Here is another revealing dialogue from an Arlingdale student:

Student: People get scared of Biology.

Interviewer: Because of the heavy demand on the students especially if they want to do sports.

Student: And that is mostly just Biology. Most people who are like in basketball and rugby are still in the Chemistry and Math classes but not in Biology. They get told that if they have one thing outside that they want to do don't even bother taking Biology.

Interviewer: Who tells them that?

Student: The teacher. My sister wants to take Biology 11 and so they had a big meeting for all the people and she told them if you aren't willing to put in 6 hours of study every week, don't bother which isn't really true. I took it last year and I didn't put in that much time. I did fine. You can get B or C without putting that much work in. (AS.08)

Powerful teacher messages can be generated to restrict student access into classes, presumably for the purpose of maintaining academic standards.

Students' desired school values. Many of the students in Arlingdale and Northridge did recognize the low level of academic achievement in the school and expressed a desire for improvement. When asked about what would be the best accomplishment for the school if you could pick but one hypothetical achievement, 50% of the Northridge students and 30% of Arlingdale students selected an improvement in the overall grade 12 examination standings. Here was one student's rationale for her choice of desired achievements which would be best for the school:

The exams, because I know from my classes our exams were really low and I guess the Math was really bad. It scares even people going into the next semester. (NS.01)

At Pauline only 20% of students answered this way, while at Brandon, 70% of the students chose the examination scores as the most important hypothetical achievement for their school. The student responses to this question, then, did not differentiate between the high and low school pairs. In examining all of the student responses to questions about school improvement or an ideal school shown in Table 8.4, there is no pattern which would distinguish the lower from the higher performing schools.

Value congruity. The charts in Figures 8.1 and 8.2 permit comparisons between teacher and student perceptions across the four schools. The numerical bases for these figures were drawn from the mean percentages of the responses to the five questions used as indicators of operating values in Table 8.3 and the three questions used as indicators of desired values in Table 8.4. These two charts indicate considerable teacher-student congruity in the perceived operating values in each of

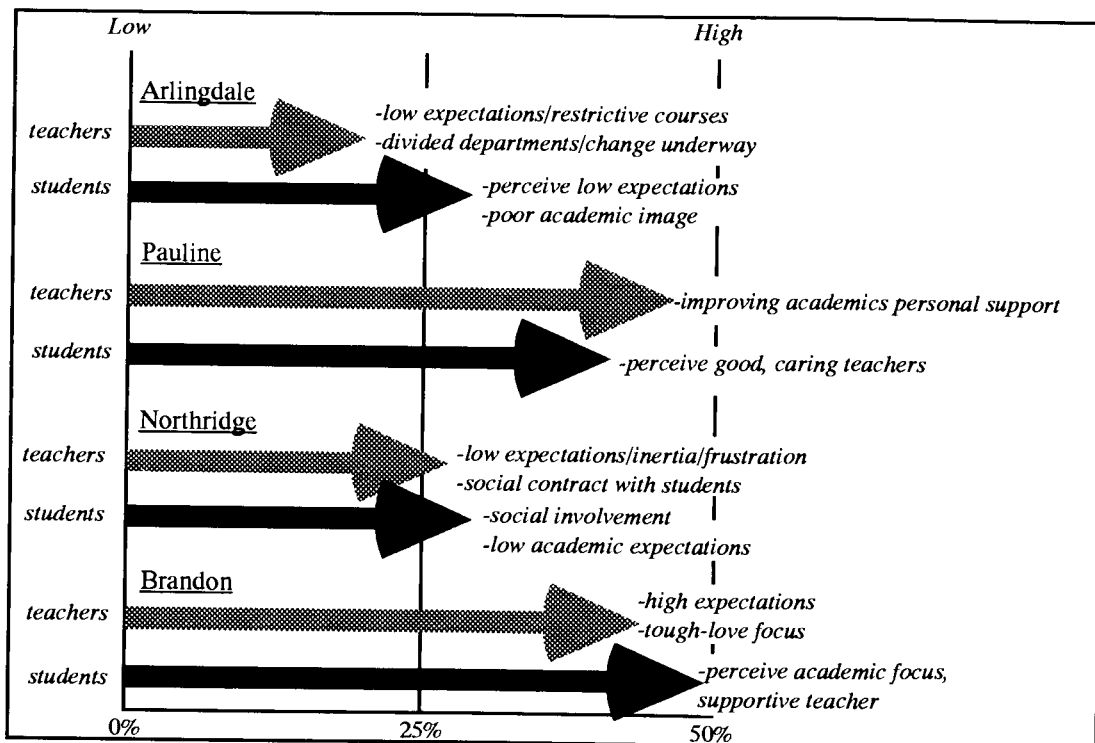


Figure 8.1. Operating values: percentage of interview responses with learning/intellectual focus (drawn from mean percents shown in Table 8.3).

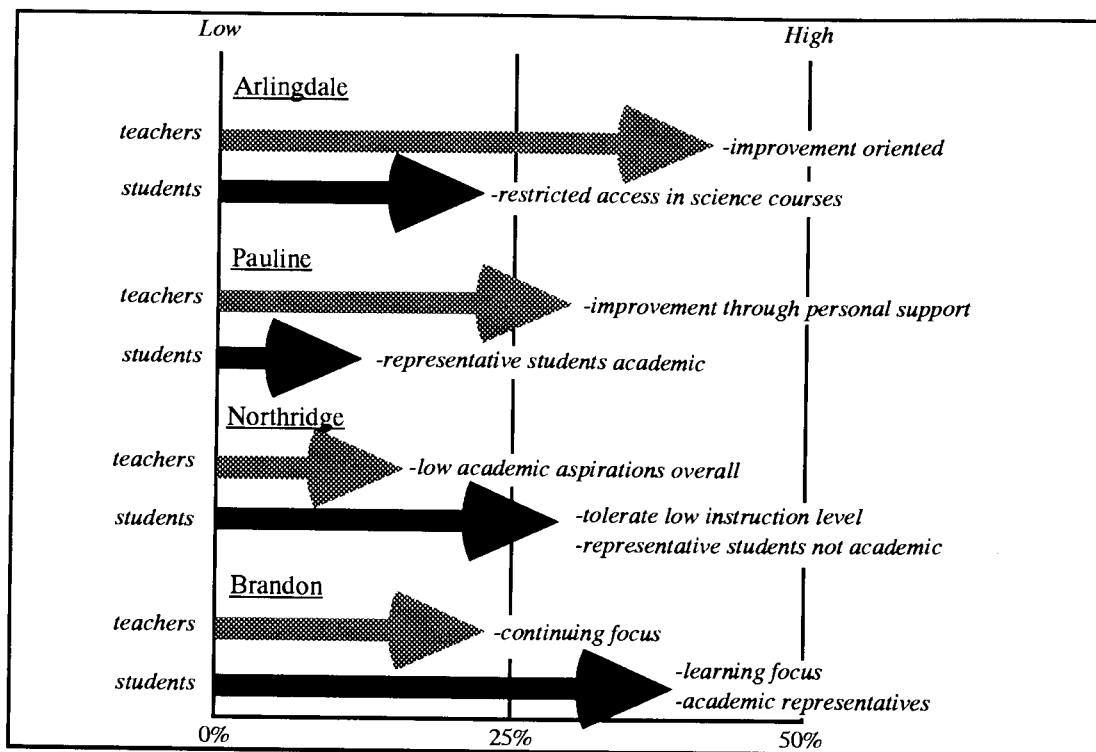


Figure 8.2. Desired values: percentage of interview responses with learning/intellectual focus (drawn from mean percents shown in Table 8.5).

the four schools. In the two higher performing schools, teachers and students appear to agree about the value placed on learning and academic success. In the other two schools there is perceived to be a much lower emphasis. For desired values, however, there are no patterns to differentiate the schools, nor are there any patterns which would show differences between the teachers or students as separate groups overall.

Social-Emotional Development

Two distinct facets of the social/emotional focus were revealed in the interview results: (a) interaction with others (i.e., social involvement) and, (b) establishment of emotional attachment with others (i.e., feelings). These two components of the social/emotional emphasis for the schools were represented in descriptions of social involvement between teachers and students, and in descriptions of the caring and affection for the students demonstrated by the teachers.

In the interviews, teachers and students described the care expressed for their students or for their colleagues and they related the connections between caring, helping and being socially involved with their students:

Arlingdale teacher: They care. It is a very caring staff and I found that no matter what staff has been here, it is the personal relationships and everybody helps. And there is a lot of caring and helping and concern about each other and that kind of thing. (AT.05)

Pauline teacher: A lot of teachers care deeply about the students. they care when they have problems and are willing to help them. (PT.02)

Northridge student: She doesn't just teach and she is an excellent teacher and she also does other stuff, like she coaches the tennis team and she sponsors, like you know, some of the basketball programs. (NS.02)

Brandon student: Mr. Jackson because he is there for us if we ever need him. If we have a problem, basically he gives us all of his time. He lets us use him. (BS.09)

These quotes underscore the feelings and personal relationships which were perceived to be an important part of teacher-student interactions.

Table 8.6

Operating Values: Percentage of Student and Teacher Responses with
Social/Emotional Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
What do you think the school does best...	---	---	40	10	10	---	10	10
What things are given the most emphasis....								
•caring teachers	40	10	70	50	20	40	---	10
•involved teachers	70	30	---	10	10	---	---	10
What do students see as most important school outcomes....								
•caring school	---	---	30	---	20	---	---	---
•social involvement	40	20	20	40	20	30	30	20
What do parents see as most important school outcomes....	20	---	10	10	10	---	---	10
Can you name some representative teachers....	30	40	20	50	---	40	10	60
Mean Percentage	28	14	27	24	13	16	7	17

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

Teacher perceived operating values. Table 8.6 summarizes the social/emotional responses to the five questions used to determine perceived operating values in the four schools. At the aggregated level of responses, both Arlingdale and Pauline would appear to be schools where there was a greater social/emotional emphasis than in Northridge and Brandon. Of all four schools, Pauline teachers stood out for their belief in providing a caring environment for the students: 70% of these teachers

described their colleagues as caring and 40% believed that this was the area in which their school performed at its best. Arlingdale teachers perceived themselves to be highly involved with social activities primarily in the area of extracurricular sports programs. Northridge and Brandon teachers displayed much lower levels of perceived emphasis in this social/emotional area, with the latter school, in particular, having apparently more task-oriented teachers who did not see a social/emotional focus as characteristic of their school. Nothing could be seen in the perceived operating values of the teachers to discriminate between the high-low pairs of schools.

Teacher desired values. In Table 8.7, the responses to the three questions about teacher desired values shows that there are no patterns with which to distinguish between the school pairs although Pauline teachers did indicate that they were more interested in meeting student emotional needs as a first step to student learning than were their colleagues in the other three schools. Table 8.8 shows the results when teachers were asked to choose between giving an academic or a social/emotional emphasis in their schools. Pauline teachers were evenly split between those who believed in giving priority to social/emotional needs and those who desired a balanced approach. None of these Pauline teachers chose a priority on intellectual development, whereas in the other three schools a majority of teachers chose to place an emphasis on academics rather than on student social/emotional development.

Brandon teachers could be seen as having adopted a "tough-love" approach in which learning was of paramount importance in the minds of teachers as they dealt with their students. One Brandon teacher, Terry King, chosen by the majority of both students and teachers as the school's most representative teacher, summed up the

Table 8.7

Desired Values / School Improvements: Percentage of Interviewed Student and Teacher Responses with Social / Emotional Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Perfect school for students...								
•social involvement	---	---	20	30	10	60	---	40
•more caring	10	10	10	20	20	---	10	---
Most important hypothetical accomplishment....	20	20	60	10	50	30	40	30
Suggested school improvements....	10	30	10	---	10	30	10	---
Mean percentage	10	15	25	15	23	30	15	18

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

school's typical response to a student who might be expressing personal problems perceived to be interfering with learning:

We tend to say, "Suck it up and do it". And what we miss is to say that is that it is really important and I empathize with you but the work still has to be done and I am sure you are going through hell but Monday is coming and the world is not going to sit and wait for us and the more we can do so that they kids get the feeling that they (teachers) really do care about me. (BT.05)

There is a tight link here between caring and expectations for learning, demonstrated in the articulated values of teachers in this school.

Table 8.8

Intellectual versus Emotional Focus: Percentage of Student and Teacher Responses

Do you think that schools should place emphasis on getting academic results or on development of student emotional well-being?

	<u>Arlingdale</u>		<u>Pauline</u>		<u>Northridge</u>		<u>Brandon</u>	
	T	S	T	S	T	S	T	S
Intellectual Focus •academic priority	40	60	---	60	50	20	40	30
Social Emotional •emotional priority	10	---	50	50	30	40	10	40
Balance	20	40	50	40	30	40	40	50

- Note. Questions abbreviated for this table. See Appendix 3 for full questions.
- 10 teachers and 10 students interviewed in each school.
 - Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
 - T = Teachers S = Students
 - Totals do not equal 100% because some respondents provided two answers, or could not make a choice.

Student perceived operating values. Student perceptions of the operating values in their schools were even less definitive in discriminating between school pairs than were the teachers' observations. However, individual schools did stand out in certain ways. For example, the Pauline students confirmed the perceptions of their teachers in the positive social-emotional environment established at the school as 50% of the students interviewed at Pauline described their teachers as "caring" (Table 8.6). In fact, one student felt that her teachers cared too much, almost to the point of interfering with her personal autonomy:

The teachers here are pretty good. Some of them are a little bit--like they care about you and some of them care a little too much and they--it is like you are my teacher if I have a problem I'll come to you but you don't have to be on my back every minute of the day asking me if there is anything wrong. But they are really caring and they care about the students. (PS.06)

Northridge students also perceived their teachers to be emotionally supportive, as 40% of sampled students described their teachers as caring (Table 8.6). One Northridge pupil told of his "understanding" teachers:

If you're really down and you have a real emotional problem, teachers don't mind if you go home because they know you can't function if you have a bad attitude and your mind is on other things. So usually they just say go home and get some rest and come back tomorrow and take a fresh start on things and stuff. (NS.08)

Supporting students personally and emotionally may not be in the best long term interests of the student or the school in terms of academic performance, however, if the connection to learning is not made as explicit as it is in the tough-love expressed by the teachers at Brandon.

Northridge students were also aware of the friendly, tolerant attitude which was characteristic of the school's multicultural harmony:

The range of multicultural which makes it really neat for, like, special days like Canada Day and stuff like Christmas and stuff... everyone goes up and says Merry Christmas in their own language. (NS. 07)

They are quite friendly friendlier than most other schools. And they say Northridge has polite students and they basically talk to everyone and we don't really have groups around here. (NS.10)

This school had succeeded in providing an environment of social acceptance and ethnic tolerance and students were conscious of the emphasis placed on this school value.

Despite the apparent task-oriented approach expressed by many of the Brandon teachers, their students did perceive that their teachers cared for them. Table 8.6 shows that 60% of the students in Brandon described their representative teachers as interacting with them in a personal and supportive manner, for example:

because we can talk to him about anything and he is really open with us like he just like a friend. Like we can go to him after school and like I have, and talk to him other than Social Studies or whatever. He treats us like people. (BS.05)

Student desired values. Nothing in Table 8.7 would indicate a significant pattern of student responses differentiating higher performing schools from their lower performing pair with respect to desired values. When asked to choose between academic or social/emotional school focus (Table 8.8), students across all four schools were consistent in favoring a balanced approach, although if forced to make a choice, the final nod would be given to an academic emphasis:

Arlingdale student: I think both are important again but I think academics are more important than the student's well-being. Not in the sense that it is good to let a student get all stressed out and have them not be able to cope with school. That is not good either but to have the student wanting to learn is very important. (AS.10)

Pauline student: Academic results are most important. Emotional well-being in students--if you have it you get good results but the schools are not really like a counseling center they are more of an education center. (PS.06)

Value congruity. This analysis of social/emotional focus for the schools has less clear and observable patterns than for the learning/intellectual focus. Pauline stands out with its teacher emphasis on meeting emotional needs as a first step to learning. Brandon maintains its "suck it up" attitude but does demonstrate that teachers care for the students by ensuring that they are successful. Arlingdale students and teachers show their commitment to social involvement, especially through the extra-

curricular programs. Northridge has established a climate of teacher-student accord and multicultural harmony. Each school has its own manner of providing emotional support and meeting social needs.

In examining Figures 8.3 and 8.4, which display the mean teacher and student responses to the selected questions for operating and desired results, it is apparent that there was greater agreement between teachers and students in the perceptions of the operating values in their schools than for the desired values. There does not appear to be any pattern which would allow differentiation between the high low school pairs, nor do teachers or students groups show any collective patterns of responses at this aggregated response level.

Personal Support/Individual Focus

Ultimately, learning must be an individual activity and responsibility. Given this obvious truism, it would seem that a focus in schools on the individual learner would be of paramount importance. The question for this research is whether there are any discernible differences between schools and within schools in their focus on the individual student.

Teacher perceived operating values. The analysis of interview responses with respect to a focus on the individual are summarized in Table 8.9. Emphasis on an individual learner from teachers' perspective was highest at Pauline Secondary School where 60% of Pauline teachers mentioned this as a strength of their school. In Northridge, 20% of the teachers felt a focus on individuals to be a school strength whereas in Arlingdale and in Brandon no teachers believed this to be a school priority. Table 8.9 shows that the same pattern is reflected in the aggregated mean scores for all questions.

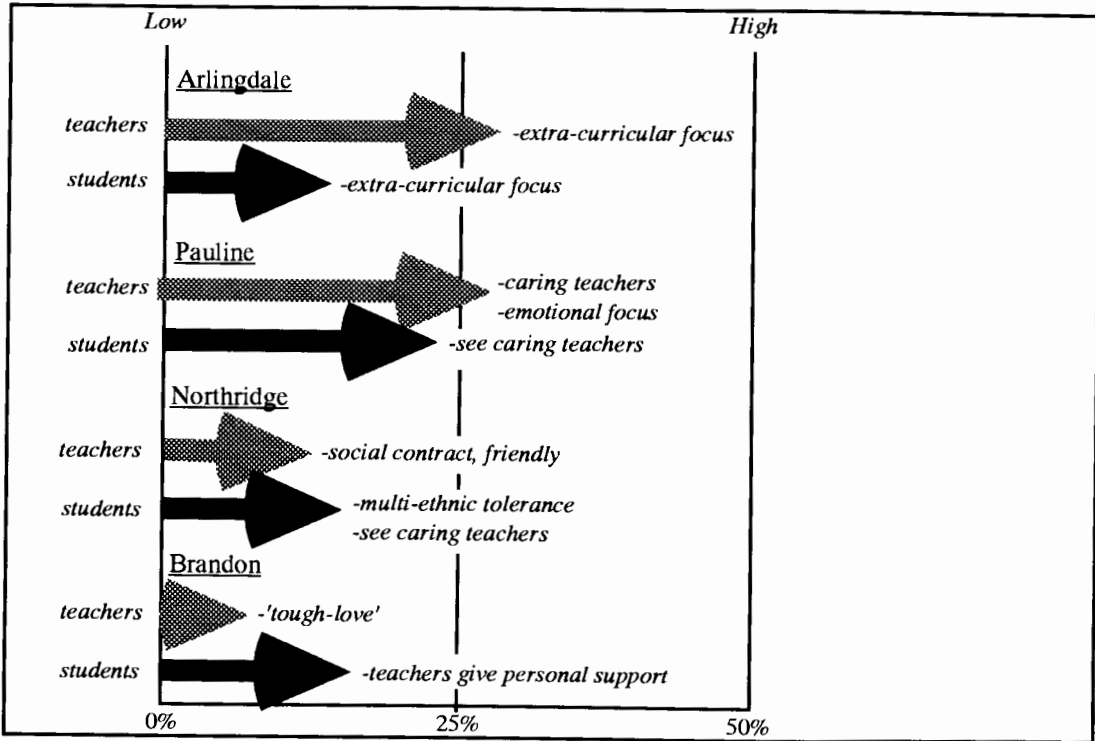


Figure 8.3. Operating values: percentage of interview responses with social/emotional focus (drawn from mean percents shown in Table 8.6).

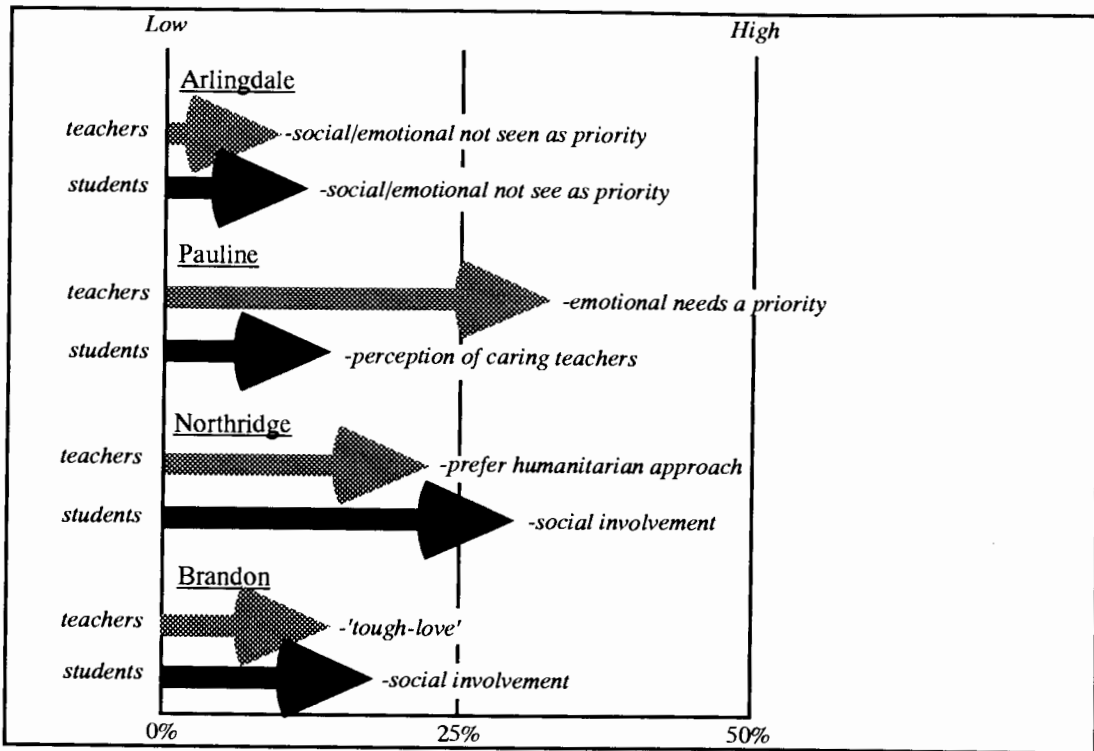


Figure 8.4. Desired values: percentage of interview responses with social/emotional focus (drawn from mean percents shown in Table 8.7).

Table 8.9

Operating Values: Percentage of Interviewed Students and Teacher Responses with Individual Learner Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
What do you think the school does best....	30	30	50	20	40	20	20	20
What things are given most emphasis....	---	20	60	30	20	50	---	50
What do students see as the most important school outcomes....	---	---	---	---	---	---	---	---
What do parents see as the most important school outcomes....	10	---	10	---	20	10	20	10
Can you name some representative teachers....	10	20	20	20	10	70	10	50
Mean percentage	10	14	28	14	18	30	10	26

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

Teacher desired values. Across all four schools, teachers expressed a desire for more attention to the individual in an ideal school, but particularly so in Pauline and Brandon (Table 8.10). In these two schools, in contrast with their lower performing neighboring school, there was a conscious belief that there needed to be more focus on the individual. At Brandon, the teachers wished to provide more academic

Table 8.10

Desired Values/School Improvements: Percentage of Interviewed Student and Teacher Responses with Individual Learner Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Perfect school for students....	40	90	80	60	40	70	70	70
Most important hypothetical accomplishment...	---	---	10	10	10	---	10	10
Suggested school improvements....	30	50	20	30	---	---	30	10
Mean percentage	23	47	37	33	17	23	37	30

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

support, while at Pauline one has the sense of a school where teachers want to touch their students in a more affective way, caring for the individual and helping them to be more academically successful into the bargain.

Student perceived operating values. Student perceptions across all four schools were consistent with respect to perceived focus on the individual, showing no differentiating pattern between high-low school pairs. Only in the question asking for representative teachers did two schools emerge as different from the other two. In this case, however, it was Northridge and Brandon, where 70% and 50% of the respective students identified representative teaches as those who dealt with students on an individual-support basis. These two schools also were perceived by 50% of

their interviewed students as giving emphasis to the value as articulated by one of the teachers at Brandon:

There isn't a teacher on staff that won't step out of his or her spare time, free time to answer questions, help kids out, go with the kid that needs help so what the kid perceives, hopefully, they perceive us as being there to help them. And, hopefully, they can see that we are human, but again we are still teachers. (BT.04)

The hesitancy of this teacher to interact with the students on more than a professional level is notable, but this division between teachers and students seems not to affect the student perception of caring teachers who are there to help.

The Pauline teachers made a point of meeting individual student needs in areas other than academics. Two different students made reference to meeting their personal needs outside what might be thought of as the traditional academic curriculum of the secondary school:

Before I started coming to the school I was a bit of a nerd. Actually, I was a real nerd and I don't like people very much, but I talk to people now and this school did that for me. (PS.02)

They think of different activities that you can do and a lot of them help you to get over your shyness and overcome things and speak in class and work in groups better and do presentations and speak your opinion. (PS.05)

Student desired values. There was a high degree of student agreement across schools that a greater focus on the individual would be preferred as shown in responses to the question about the perfect school (Table 8.10). This individual focus category represented the largest percentage of student responses to the question about what an ideal school might be like, and because there was relative agreement for all four schools, there is no pattern which differentiates the higher from the lower performing schools.

Value congruity. In the case of school emphasis on the individual, there appears to have been more congruity between teachers and students in their respective schools in desired values than in perceived operating values. It is perhaps notable that students in 3 out of the 4 schools perceived a greater level of individual support than did their teachers. Only Pauline teachers seemed to be cognizant of this value as a school focus. Both academically higher performing schools showed considerable student-teacher agreement in desiring more emphasis on individual support than did the two lower school pairs.

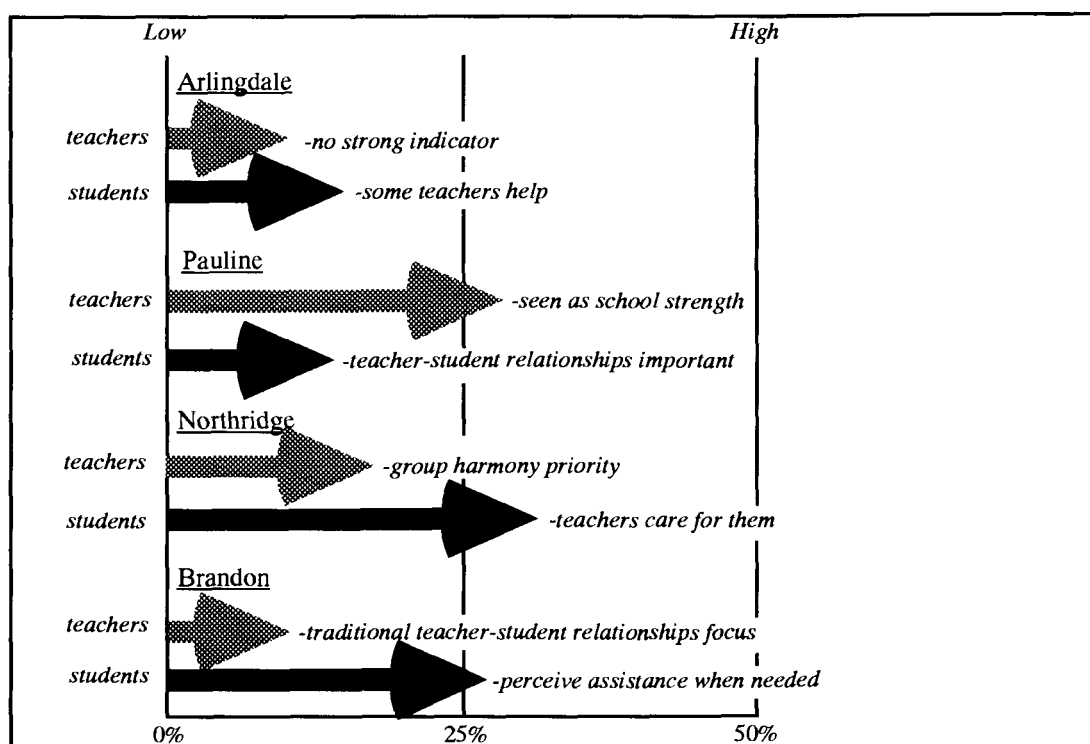


Figure 8.5. Operating values: percentage of interview responses with personal support/individual focus (drawn from mean percentage in Table 8.9).

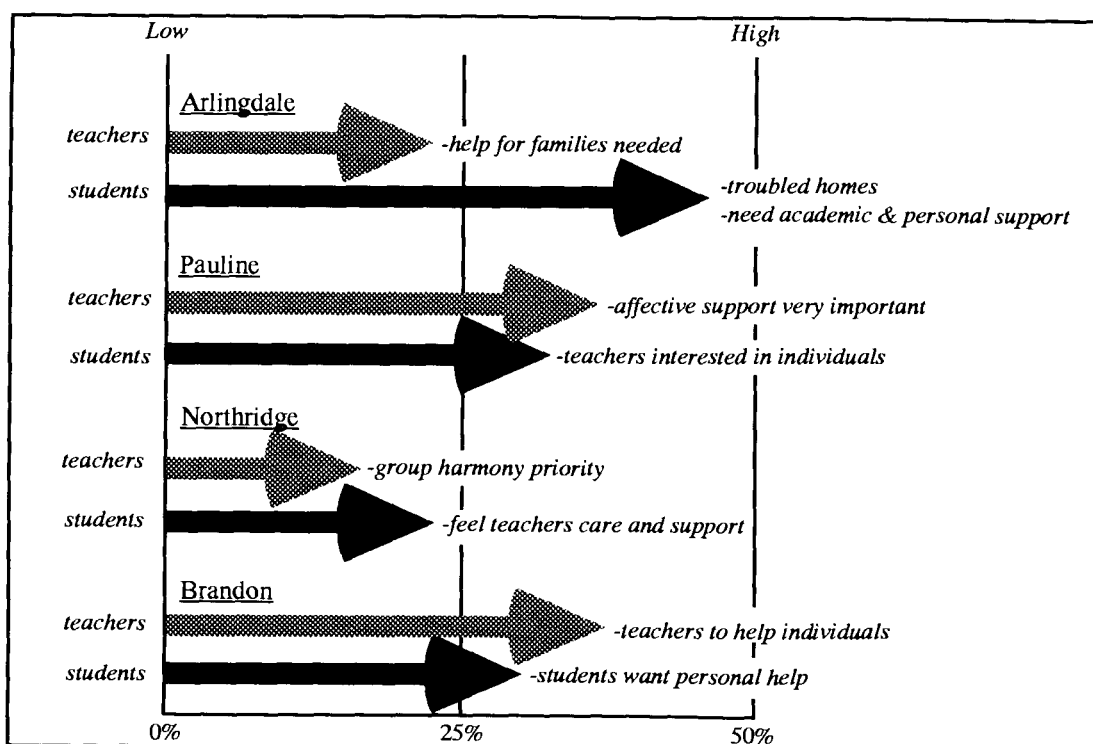


Figure 8.6. Desired values: percentage of interview responses with personal support/individual focus (drawn from mean percentage in Table 8.10).

8.4 INTERVIEW ANALYSIS: MINOR THEMES

Since there were a lower number of responses to these five minor value themes, the presentation of results in the following sections will not be as comprehensive as for the previous analysis of the three major themes. The focus of this analysis will be on the operating values since the "desired value" responses were too low to make consistent comparisons between the high-low school pairs. The analysis of the career/social responsibility theme occupies a middle ground between major and minor themes since it is the complementary balance to the theoretical typology emphasis.

Career/Social Responsibility Focus

The emphasis given to career education is one variable in which the effect of the school district is observable. Both Arlingdale and Pauline, in the Mainline School District, had made a conscious effort to develop programs to familiarize students with the world of work. Students were encouraged to participate in cooperative work experience opportunities throughout their secondary school years and were given chances to be involved in a variety of programs which linked community and school. These programs were rated highly by the students in both Mainline schools:

Interviewer: What do you think the school does best in preparing its graduates for the future?

Pauline student: I think with the Career Prep program. That is really good. I have done work experience a little bit but it is an interesting learning opportunity. From what I gather, it is a really good program. My friends and I are taking it. It is hard for students in school to really know what it is like in the real world and through this they can see what it is really like and what to expect. (PS.01)

Arlingdale student: The best thing is the Career Prep program. Put them out in the workforce and see what it is like out there. See what the demands are. Right now I am at a sign painting place and I have learned so much there. I have only been there for 3 days and already I have learned more than anything I have learned here about the business end, so it has been very valuable. (AS.03)

Perceived operating values. The difference between the Mainline and Central school districts is shown in the student responses to this question about what the school does best where 50% of the Arlingdale and 60% of the Pauline students made reference to these career related programs. In Northridge and Brandon, where the programs exist in a much less comprehensive form, 20% and 30% respectively of the students commented on school career programs. Overall, when the aggregate operating school values toward career education are presented in Table 8.11, it is clear that Brandon fell behind the other three schools in emphasis on this school purpose.

Table 8.11

Operating Values: Percentage of Interviewed Students and Teacher Responses with Career/Social Responsibility Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
What do you think the school does best....	70	50	30	60	30	20	10	30
What things are given most emphasis....								
• career education	10	0	10	10	---	---	---	---
• work ethic	10	30	---	50	20	60	10	60
What do students see as the most important school outcomes....	30	30	40	40	20	60	20	30
What do parents see as the most important school outcomes....	40	40	20	60	20	50	20	30
Can you name some representative teachers....	---	---	---	---	---	---	---	---
Mean percentage	27	25	17	30	15	32	10	20

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

Table 8.11 also shows students at Pauline, Northridge, and at Brandon perceive a greater stress on work ethic than at Arlingdale, although there appears to be little difference between teacher perceptions among the four schools. The teachers interviewed at Arlingdale were most apt to refer to the career education programs as school strengths.

Table 8.12

Desired Values/School Improvements: Percentage of Interviewed Student and Teacher Responses with Career/Social Responsibility Focus

Interview Questions	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Perfect school for students....	---	---	10	10	10	---	---	20
Most important hypothetical accomplishment....	30	40	20	60	30	20	30	---
Suggested school improvements....	40	20	30	50	---	20	20	10
Mean percentage	23	20	20	40	13	13	17	10

Note. Questions abbreviated for this table. See Appendix 3 for full questions.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

Desired values. Despite the obvious success of these career programs at the schools, the "perfect school" question elicited "career education" responses from only 5% of teachers and 8% of students. Table 8.12 shows that responses which referred to career programs were low across all schools except for Pauline, where 60% of the students picked a partnership with a computer company as a preferred school achievement. Additionally, 50% of Pauline students would improve their school by increasing the emphasis on career education. The number of students wanting to see even more of these programs was as a testimony to their worth.

Value congruity. The chart provided in Figure 8.7 as a summary of the findings presented in Table 8.11 shows that there was considerable agreement between the students and teachers at Arlingdale Secondary but less student-teacher value congruity at the other three schools. Nothing would present itself as a pattern which could be attributable to the high-low school designation. It is obvious, however, that there was a difference between teachers and students as to their perception of the value of these programs at the school level: students were more apt to see these programs as school-wide strengths than were their teachers. The low responses relating to career focus for desired values was uniform across groups and schools except for the Pauline students.

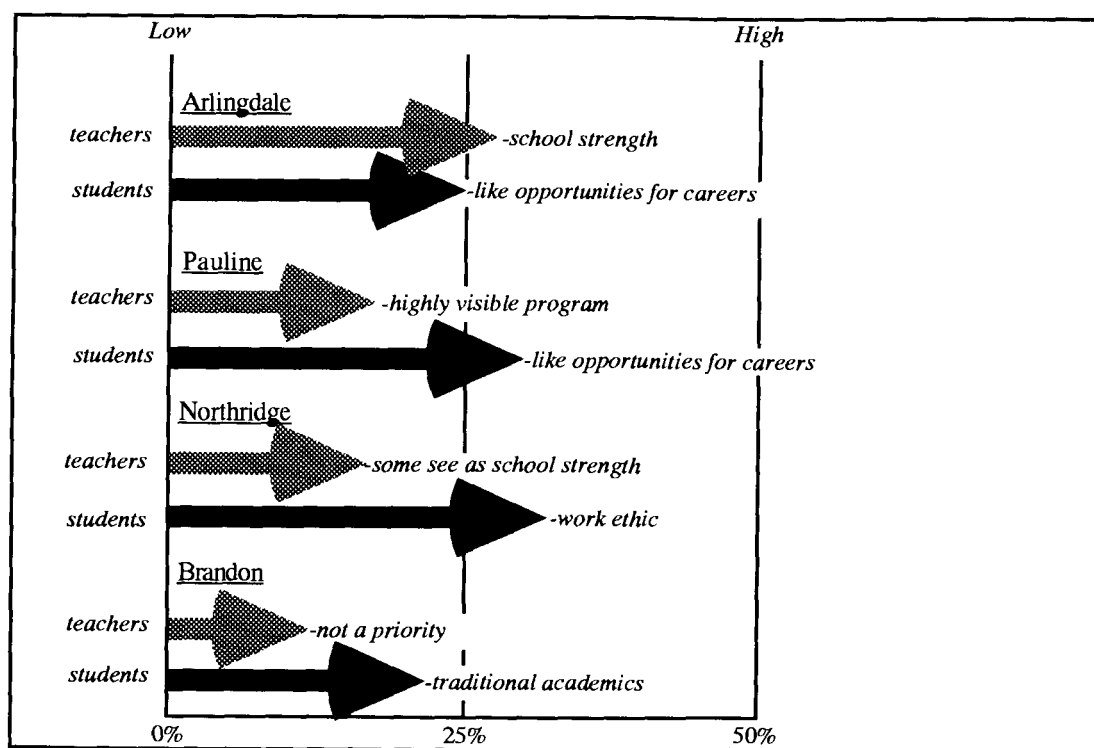


Figure 8.7. Operating values: percentage of interview responses with career focus (drawn from mean percentage in Table 8.11).

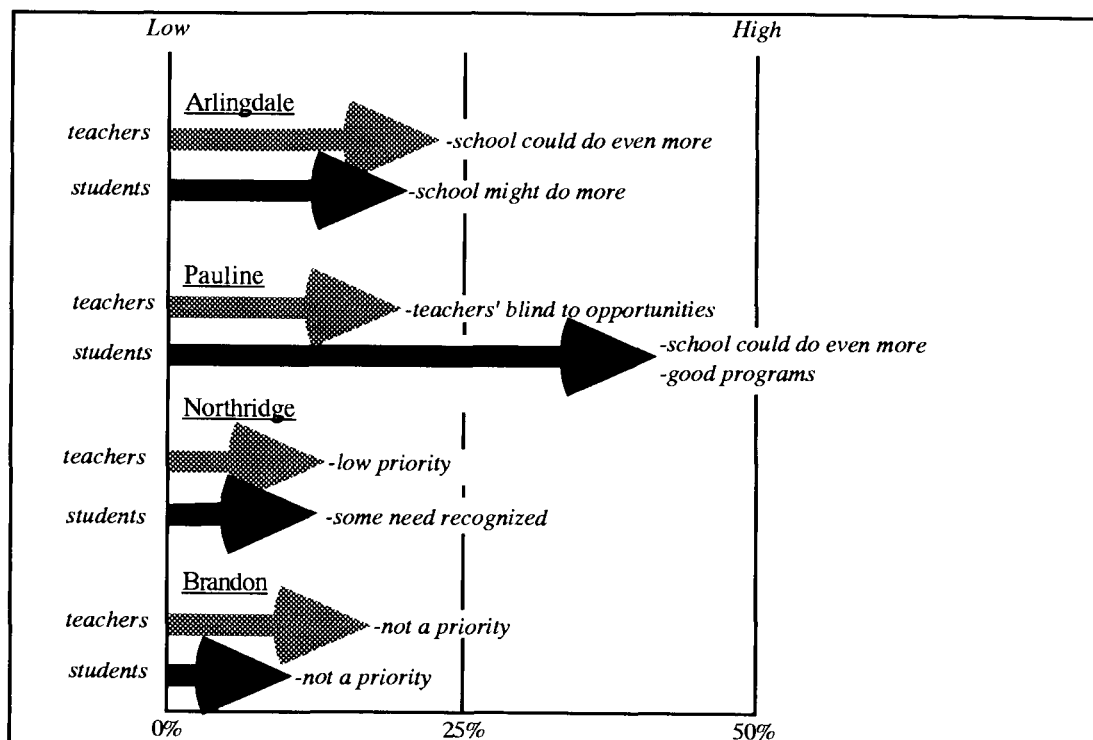


Figure 8.8. Desired values: percentage of interview responses with career focus (drawn from mean percentage in Table 8.12)..

Creativity/ Innovation

In Table 8.1, responses to the question of the perfect school show that few of the teachers or students mentioned the creativity theme. Similarly, in Table 8.2, it can be seen that almost none of the respondents perceived these as an operating value in the schools. In describing the teachers in the schools, there were few references to teachers known for their innovative ways, but there were statements from 40% of the teachers interviewed in Northridge about staff being opposed to change. Perhaps it is significant, too, that 20% of the interviewed teachers at Brandon, with its traditional academic approach, noted that colleagues were unwilling to experiment with innovative teaching methods.

Table 8.13

Operating Values: Percentage of Interviewed Students and Teacher Responses re:
Social Control vs. Creativity Focus

A very creative and talented Fine Arts student is constantly late for class and seems to disregard many school rules--but is a very good Fine Arts student and produces good work. How should the school deal with this student?

Responses	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Social control focus								
•must follow rules	50	80	50	50	80	80	70	80
Creativity focus								
•creativity more important	10	20	40	40	10	20	30	20
•creative solution needed	40	50	40	20	20	20	20	70
Individual focus								
•personal support needed	30	---	---	---	10	10	20	30
Contact parents	---	---	---	10	10	---	---	10
Mean percentages of responses dealing with creativity focus	25	35	40	30	15	20	25	35

Note.

- 10 teachers and 10 students interviewed in each school.
- Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
- T = Teachers S = Students

One interview question was designed to judge how schools would deal with a very creative and successful Fine Arts student who seemed unwilling to comply with school procedures. Table 8.13 displays the summary responses to this question.

Interview results and researcher observations in the schools would indicate that schools do not place much emphasis in the area of creativity and innovation, although Pauline stood out to some extent, at least, in both student and teacher willingness to find creative solutions to problems. Brandon teachers and students were also more inclined to seek creative solutions than their counterparts at Northridge, thus there would appear to be a pattern here in which the higher performing schools were more prepared to deal with problems in a flexible, creative manner than their lower performing paired school. Teacher and student perception of the creativity/innovation emphases in their schools was reasonably congruent, as shown in Figure 8.9.

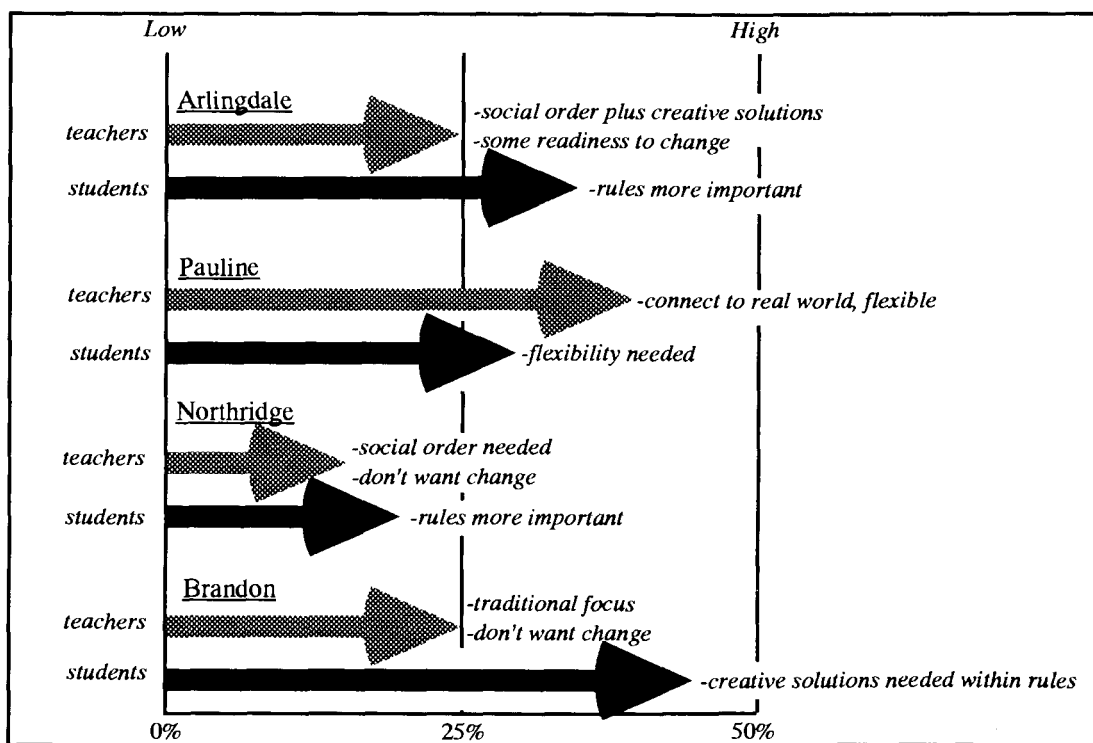


Figure 8.9. Operating values: percentage of interview responses with creativity/innovation focus (aggregated scores dealing with creativity from Table 8.13).

Social Order/Control

As indicated in the previous findings related to the creativity focus, teachers in Brandon and Northridge seemed more disposed to a "follow the rules" orientation than did the teachers in the Mainline District school pair. Table 8.13 demonstrates the high percentage of respondents across all schools who replied that the student must comply with the rules of the school. The perceived importance of school rules was most apparent at Northridge and Brandon. Although Figure 8.10 shows that there was strong overall agreement between teachers and students within the schools with respect to the espoused value of social order/control, there is no pattern of responses which would differentiate the high-low school pairs.

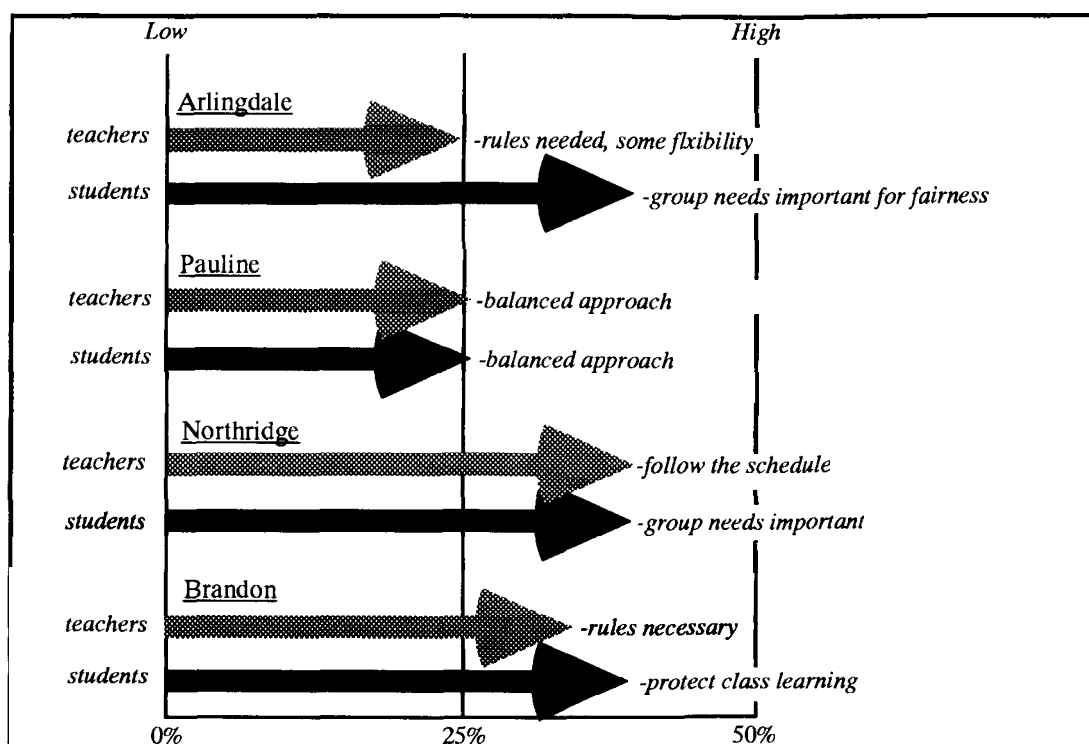


Figure 8.10. Operating values: percentage of interview responses with social order and control focus (aggregated scores dealing with order/control from Table 8.13).

Note. These percentages were reduced by 50% to allow comparison to other operating value charts.

Cooperation

Across all schools, cooperation and teamwork was mentioned as a school-wide emphasis by only 13% of the teachers and 15% of the students (Table 8.2); however, 38% of the teachers and 43% of the students described the teachers as being cooperative and helpful. Outside of the focus on academics, these percentages were the largest grouping of responses describing the teachers in the schools. Teachers model cooperative behavior for each other and for their students. In Table 8.14, the degree of teacher cooperation would correlate with personal support and availability to give assistance to the students. Pauline and Brandon would appear to be perceived by both staff and students as providing this help to the students, and based on this response and on the mean percentages of all responses shown in Table 8.14, it would appear that the cooperation emphasis is a perceived operating value which discriminates between the high-low pairs.

The other distinguishing feature shown in Table 8.14 is the degree to which the Pauline students perceived that cooperation was emphasized: 60% of interviewed students made reference to this value stressed in their school. Here are sample comments about this cooperation emphasis from three different Pauline students:

Interviewer: What do you think that students think is the most important thing that they are getting out of their education?

Pauline student: Learning how to handle responsibility and working cooperatively, learning from your peers socially and academically. (PS.01)

Pauline student: I feel the cooperation is in a lot of my classes--is really emphasized, working in group work and doing projects together as well as getting up in front of that class with that group, and learning to all get your ideas across and compromise and that. (PS.05)

Pauline student: Cooperative learning. Because, like, you work in groups a lot and getting along with your fellow students and learning to accept each other for who you are. And for the academics, it is teaching you as much as you can before you go to the finals. (PS.09)

Table 8.14

Operating Values: Percentage of Interviewed Student and Teacher Responses with Cooperation Focus

What are teachers like here? What things are given the most emphasis for students by the teaching staff of this school?

Response Categories	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Cooperation focus								
•cooperation, teamwork stressed	20	---	20	60	---	10	10	---
•helpful, cooperative teachers	30	20	50	50	10	30	60	70
•good communication	10	20	30	10	---	---	60	10
•teachers unified	10	---	---	---	10	---	40	---
Mean percentage	18	5	25	28	5	10	43	20

- Note.
- 10 teachers and 10 students interviewed in each school.
 - Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
 - T = Teachers S = Students

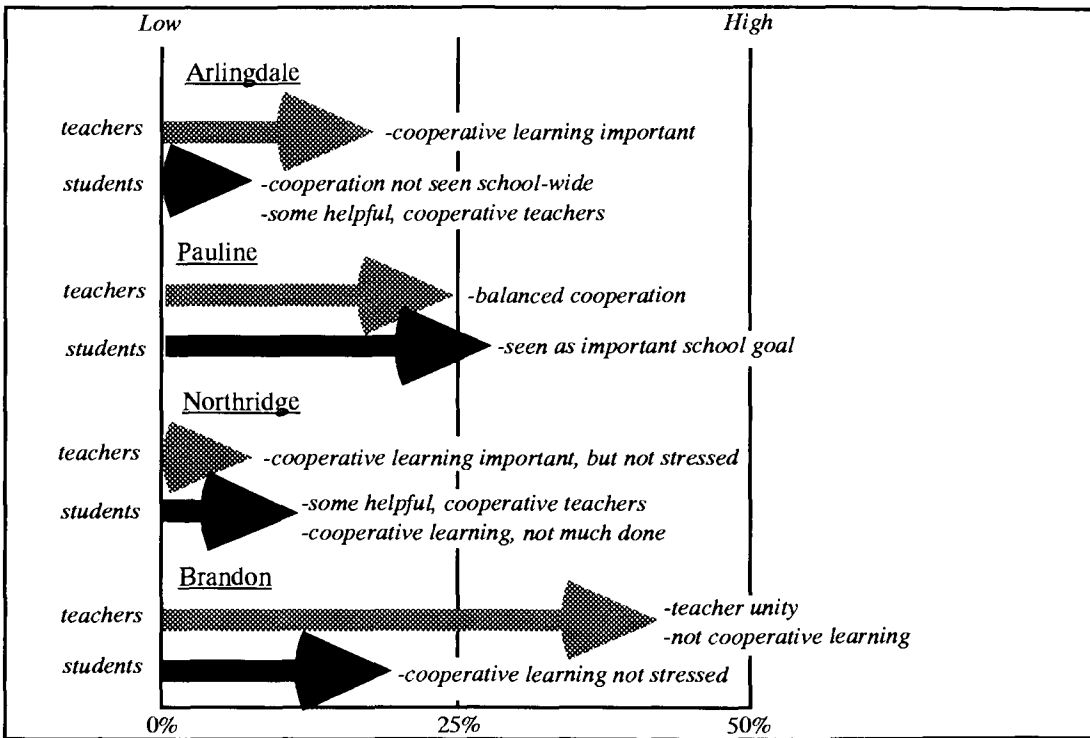


Figure 8.11. Operating values: percentage of interview responses with cooperation focus (drawn from mean percentage in Table 8.14).

Competition

Competition, too, permeates school operations but is less likely to be consciously recognized by the participants whose active social culture is heavily weighted towards values of compliance and cooperation. In questions about "what is given emphasis in the school" or "what would you like to see in a perfect school," very few teachers or students referred to competition. In fact, in response to the perfect school question, no teachers and only one student from across all four schools made a comment about competition. The degree to which competition is a basic assumption which influences unconscious decisions, but is not brought into conscious awareness is evidenced in the following quotation from one of the Pauline teachers who stated that "it took a while for me to accept cooperative learning, but I guess I support it, but in the *back of my mind* I think there is competition (PT.05)."

However, in the situational question which forced respondents to state what they would do if faced with an angry parent who demands more competition, people were forced to deal with competition values: 53% of the teachers and 23% of the students said that there must be a school balance between competition and cooperation. In Table 8.15, the results from this situational question are shown. Half of the interviewed teachers in Arlingdale and Pauline and 30% of teachers in Brandon stated that competition was important for individual accountability. Teachers in Northridge, with their lower expectations for academic performance, tended to be less inclined toward competition in academics, although the school was noted for its competitive athletic accomplishments.

A large percentage of students and teachers across all four schools stated that competition was needed in some situations or that cooperative learning did not always work. Here is one student's opinion from Brandon Secondary in which the individual accountability and motivational aspects of competition are extolled:

Personally, I like competition. The competition keeps me going. The cooperative stuff just doesn't work. We have tried it in my Japanese class and I just slack right off and I don't do any homework or anything and then when we changed out of it I was fine again, but I just couldn't drive myself enough to do it all if there was nothing to push me. I need the competition to make me go. (BS.01)

Competition also can be a problem for students as expressed by these two students from Northridge:

Northridge student: I don't think competition should be emphasized that much more because, like, competition is good when it is healthy but when it is taken to the extreme it can be really damaging. (NS.02)

Northridge student: I don't really like competition. I don't have self confidence so I always feel like I don't like competing with people 'cause then I feel down on myself. I don't do as well. I like working with people and like getting more input and stuff. (NS.09)

Table 8.15

Competition and Cooperation: Percentage of Interviewed Teacher and Student Responses

A parent complains that this "cooperative learning stuff is for the birds" and wants to see more competition emphasized in school. How do you personally feel about this?

Response categories	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Cooperation focus								
•cooperation emphasized here	20	10	20	50	10	---	10	---
•cooperative learning is important	80	50	60	60	80	50	10	70
•cooperative learning not done much	0	30	---	---	---	30	30	20
•cooperative learning doesn't always work	20	10	20	30	30	50	---	50
Competition focus								
•competition sports for students*	10	30	---	20	10	10	20	20
•competition important for individual accountability*	50	10	50	---	10	10	30	30
•competition important for academics*	30	10	10	40	10	30	10	10
•competition overvalued here	---	10	---	---	---	20	---	10
•competition can be problematic	10	---	---	10	10	20	---	20
Balance needed	60	30	80	40	40	10	30	10
* Mean for positive competition responses	30	16	20	20	10	16	20	20

Note. • 10 teachers and 10 students interviewed in each school.
 • Multiple responses by candidate in single category counted as only one response in order to calculate the percentages.
 • T = Teachers S = Students

The balanced approach was advocated by many interviewed students and staff, especially at Pauline Secondary:

Pauline student: The competition is fine but you have got to be able to work with other people to have the competition so you have to have them both. (PS.06)

Pauline teacher: I do a lot of cooperative learning in my classroom and it doesn't negate competition in my classroom. Kids are competitive. It is in their nature and we can teach them to be cooperative from grade 1 and yet they will continue to be competitive and so I don't see that as a problem. (PT.01)

The responses for the competition theme in the five questions dealing with operating values were too low for comparisons between schools. For this reason, the school comparisons of the competition operating values was based on responses to the situational question summarized in Table 8.15. When the mean percentage of teacher and student responses indicating the importance of competition are represented in the chart in Figure 8.12, it is clear that across all four schools there was little difference between schools or between teachers and students, with not enough differences to distinguish high-low school pairs.

8.5 VALUE CONGRUITY: AN HOLISTIC VIEW

Although similarities and differences between teachers' and students' perceptions of school operating values and schools have been demonstrated throughout this analysis, the degree to which there is overall agreement has not yet been considered. It has been hypothesized (a) that greater levels of agreement in operating values and desired values, then greater the perception of organizational effectiveness and (b) that alignment in desired and operating values should be associated with actual effectiveness. Students and teachers in more successful

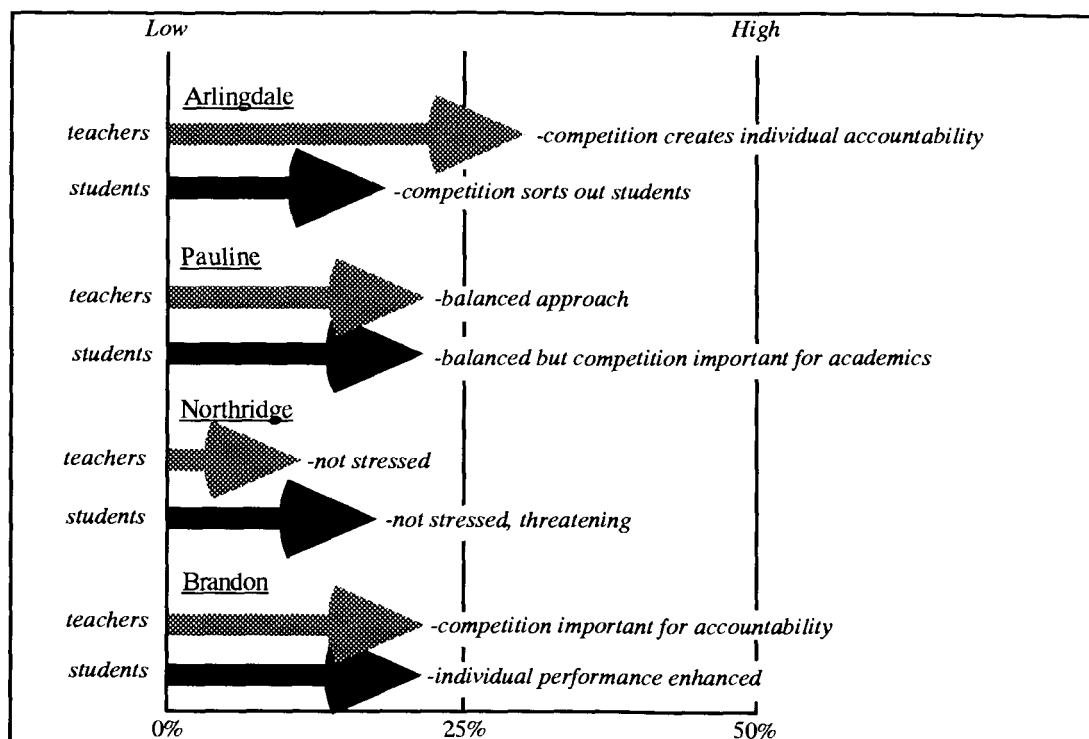


Figure 8.12. Operating values: percentage of interview responses with competition focus (drawn from mean scores with positive reactions to competition as shown in Table 8.15).

schools, both perceived and actual, should show levels of agreement in their operating and desired organizational values which distinguish them from less effective schools.

In addressing these propositions it is first necessary to pick apart this concept of value congruity. There are many points at which agreement or disagreement can occur between:

1. individual students' perceptions of operating and desired values;
2. individual teachers' perceptions of operating and desired values;
3. student-teacher perceptions of operating values;
4. student-teacher perceptions of desired values;
5. student perceptions of operating values compared to desired values;
6. teacher perceptions of operating values compared to desired values;
7. student-teacher agreement levels in numbers 5 and 6 above.

When writers such as Glickman (1993), Sergiovanni (1992), or Senge (1990) argue for organizations and schools which are driven by shared values, they are assuming that some degree of agreement can be attained at most of these levels. All three of these writers presume that building group consensus starts with personal values and builds cumulatively to the organizational vision.

The problem for this research, and for schools attempting to align "what is" with "what ought to be," is that there appears to be some qualitative evidence for agreement between teachers and students about the operating values in the school but far less agreement between both individuals and between the groups of teachers and students on the desired school outcomes. Of course, this was the entry discussion to this research. The confusing array of different school purposes and desired emphases makes agreement on what schools should be about a difficult task, as is common in process culture organizations (Daft, 1991).

Measurement of the fit between operating and desired values is best be left to the quantitative analysis of the questionnaire data where the correlations between "what is" and "what ought to be" can be investigated with more statistical confidence. This qualitative examination of the schools provides informed impressions and speculations which may lead to more revealing conclusions when the data from the two methods are triangulated.

Operating values. In the qualitative analysis, the pattern which emerged from the interviews is that (a) there was some level of agreement between teachers and students within the schools about what was being emphasized in their educational facility, (b) this perceived emphasis varied from school to school, and (c) in some of the value themes the higher performing schools had a different pattern of responses which distinguished them from their lower performing counterparts. Figures 8.13 to 8.16 graph the teacher and student perceptions of school operating values in the four

schools based on frequency counts of responses to the five interview questions shown in Table 8.3. As already noted, there was considerable student-teacher agreement in both higher performing schools as to the emphasis on learning/intellectual development, and to varying degrees there was also teacher-student congruity in the following perceived operating values: social/emotional focus, social order/control, creativity and cooperation. It is noteworthy that teachers and students in all four schools show congruity in their perception of these operating values. In seeking patterns which would distinguish higher from the lower performing schools, there is little evidence to suggest that congruity levels will differentiate the pairs.

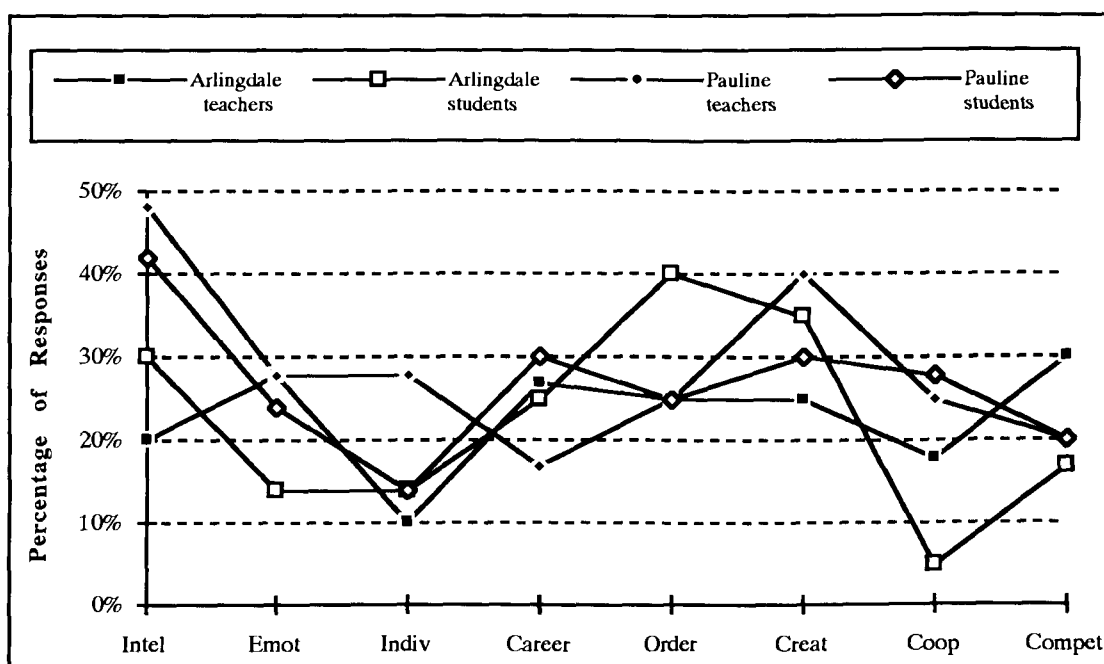


Figure 8.13. Profile of Arlingdale and Pauline teacher and student perceived operating values (based on frequency of interview responses).

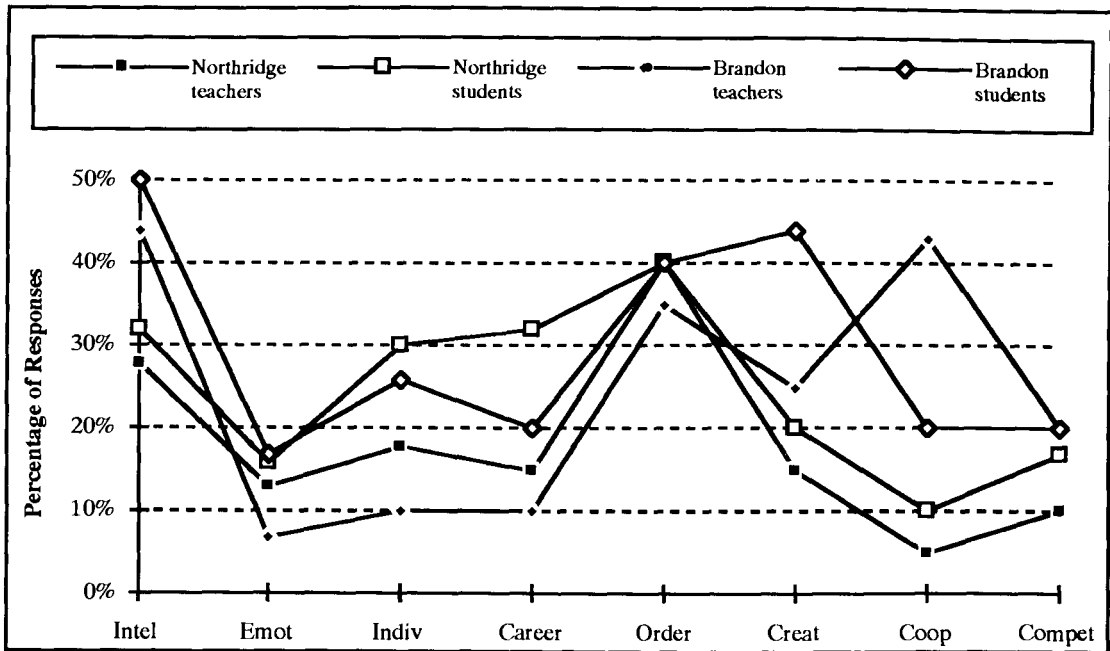


Figure 8.14. Profile of Northridge and Brandon teacher and student perceived operating values (based on frequency of interview responses).

Desired values. Because responses to desired values were limited primarily to the 3 of the 4 main categories provided by Goodlad (1984), the profile given in Figures 8.15 and 8.16 is restricted to these three value themes, plus the career education theme since, according to this analysis, it occupied a middle ground between major and minor themes. At first glance, it is obvious that there was less agreement between teachers and students than was the case for perceived operating school values. Second, there does not seem to be any differentiating pattern which would separate higher performing schools from their academically weaker counterparts.

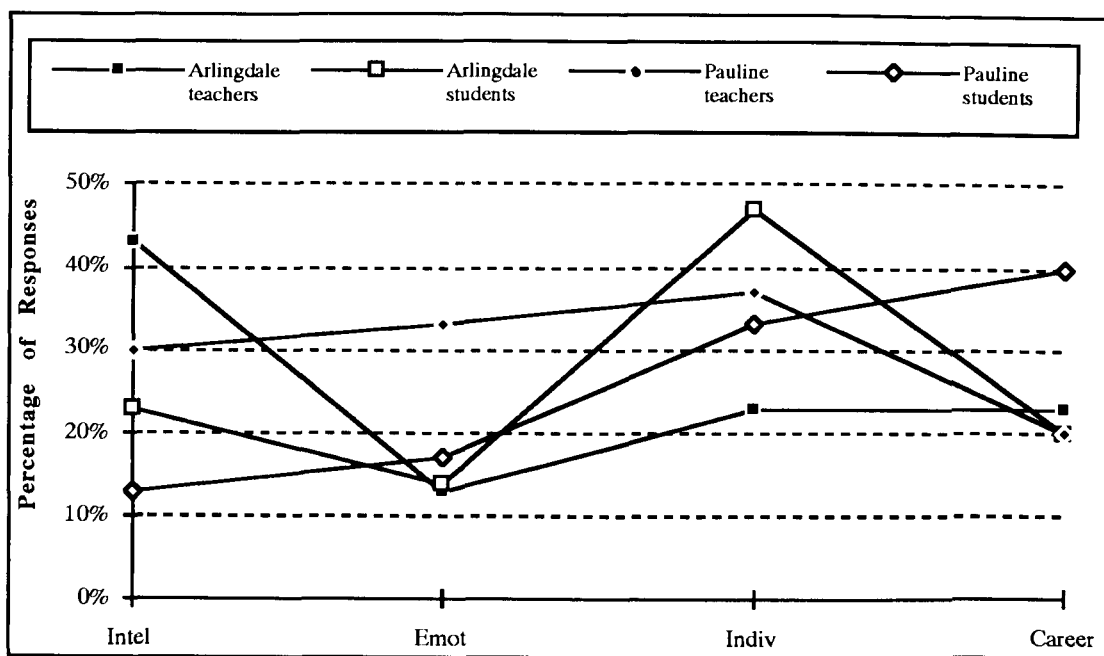


Figure 8.15. Profile of Arlingdale and Pauline teacher and student desired school values (based on frequency of interview responses).

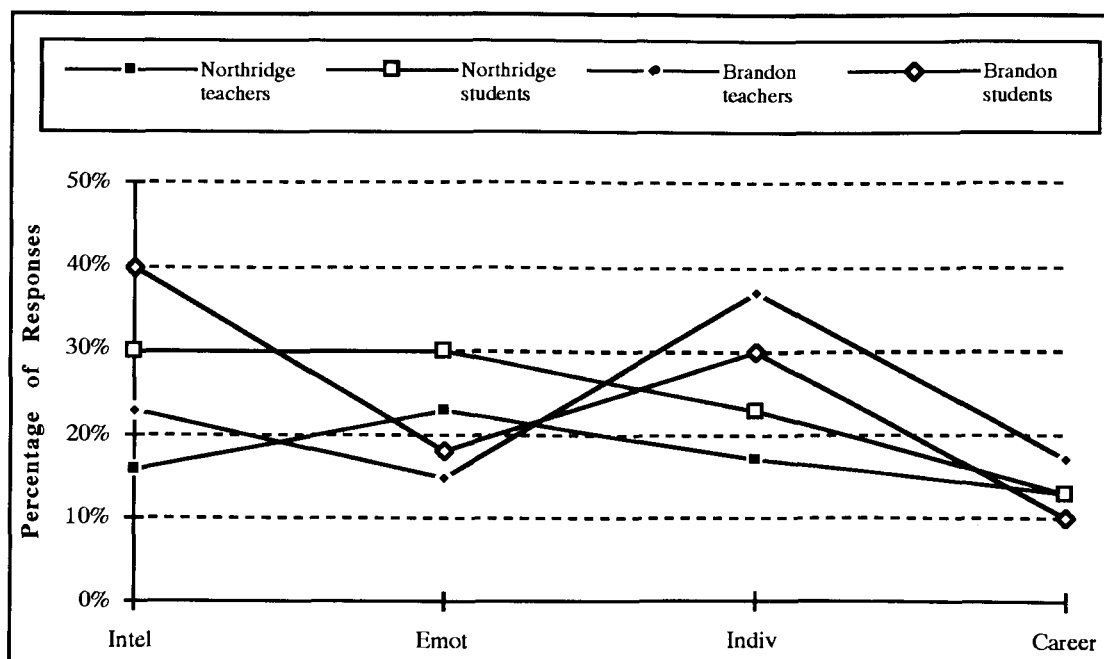


Figure 8.16. Profile of Northridge and Brandon teacher and student desired school values (based on frequency of interview responses).

This representation of desired values is open to criticism in that questions about "needed school improvements" and the "most important hypothetical accomplishment for a school" were aggregated with questions about a "perfect school for students". What Figures 8.15 and 8.16 do reveal, however, is that there was a general pattern across the four schools for desired increased attention to personal needs in these schools, less perceived need for increased emphasis on career education (except for the Pauline students), and varying responses which relate to desired emphases in meeting student learning/intellectual and social/emotional needs.

8.6 PARENT PERCEPTIONS

Tables 8.16 through 8.17 summarize the parental responses to four questions used for the purposes of this analysis:

1. From your perspective as a parent, what are the teachers like at the school?
2. What do you think this school does best in preparing its graduates for the future?
3. Is there anything as a parent that you would like to see improved at the school?
4. From your viewpoint as a parent, what do you think schools should give most emphasis to in serving the needs of students?

Table 8.16 provides insight into what these interviewed parents felt were strengths and areas in need of improvement in their schools. Although there were no discernible differences between schools with regard to parental perception of academic success, the parents in Arlingdale, Northridge and Brandon all expected

better academic results in the schools. Only Pauline appeared immune from this criticism.

Few parents commented on the strengths of schools in the area of social/emotional development except for those in Arlingdale where the emphasis on meeting emotional needs and the sports programs were recognized:

Arlingdale parent: We have to think our kids have come a long way. They were pretty shy people when they first went there but I think these teachers have done a good job of bringing them out socially and emotionally and I know there was time when they needed extra help and support and the teachers seemed to be there. (AP.03)

Arlingdale parent: I think the school does a good job in the sports programs where you are always hearing how they won this and that but I don't know about the other areas. (AP.08)

Parents across all four schools felt that personal support for individual students was an area in need of improvement. Here is one parent's comment relative to this issue:

Brandon parent: The emphasis on competition and the lack of attention to the individual is, unfortunately, not the fault of the administration. It is a problem in the high school system that must be "fixed" province wide. (BP.03)

It should also be noted that 20% of the parents in Arlingdale and Northridge and 30% of those in Pauline thought that personal support for students was a strength of their school, indicating that not all parents are dissatisfied with the attention to individual needs.

A substantial number of parents (between 40% and 80%) in all schools except Northridge reported a desire to see an increased emphasis on career education:

Pauline parent: I don't think most kids have a clue as to what they are going to do after they get out into the workforce. I suppose they are doing some things over there (Pauline School) like the work experience programs but I'd like better emphasis on career counseling and just giving the kids a better chance to figure out what they can do with themselves. (PP.01)

Table 8.16

Percentage of Interviewed Parents' Perceptions of School Strengths and Needed Improvements

Theme	Arlingdale		Pauline		Northridge		Brandon	
	S	W	S	W	S	W	S	W
Learning/Intellectual	10	50	20	10	20	50	20	40
Social/Emotional								
•emotional needs	30	---	---	---	---	10	---	---
•sports/social involvement	30	---	---	10	---	10	---	---
Personal/Individual								
•personal support	20	20	30	40	20	50	---	40
•self confidence	30	---	10	---	10	---	20	---
Career								
•career programs	40	80	40	40	---	10	10	60
•work ethic	10	---	20	---	10	---	10	---
Order/Control								
•self-discipline	---	10	---	10	---	---	---	---
Cooperation	---	20	10	---	---	---	---	---
Others								
•parent communication	---	---	---	20	---	20	---	10
•leadership	---	---	---	20	---	10	---	---
•better balance	---	10	---	10	---	---	---	---

Note. 10 parents interviewed in each school. S = Strength. W = Weakness.

Brandon parent: I know that academics is really important but I find that by the time the kids hit grade 12 they lose interest in studying and sometimes I think they don't relate to what the kids going to be doing in the future and maybe not preparing them enough for the work force. (BP.03)

Notwithstanding this perceived need, 40% of the interviewed Mainline parents did view the focus on career education as a positive element of their schools. This school emphasis on career education in Arlingdale and Pauline was seen as a greater strength than school academic performance.

Table 8.17

Percentage of Interviewed Parent Responses: Preferred School Emphasis

	<u>Arlingdale</u>	<u>Pauline</u>	<u>Northridge</u>	<u>Brandon</u>
Learning/Intellectual	30	20	20	60
Social/Emotional	10	10	---	---
Personal/Individual	---	20	20	10
Career				
•career programs	40	60	40	40
•work ethic	10	10	---	10
Order/control	---	---	---	10
Balance	10	50	20	10

Note. 10 parents interviewed in each school.

Although a few parents made references to social order or cooperation, none perceived competition or creativity as a desired school focus or an area in need of improvement. There were references to a perceived need for better communication, leadership, or balance between programs or emphases but these did not allow for any reasonable comparisons between schools.

Table 8.17 gives an overview of parents' choices of what they felt should be most emphasized in schools. There does not appear to be any pattern which distinguishes between academically high and low performing schools. Career programs were the most frequently mentioned area for desired school emphasis, followed by need for learning and intellectual focus and then by a desire for balanced programs.

Table 8.18

Percentage of Interviewed Parent Perceptions of Teachers in Case Study Schools

	<u>Arlingdale</u>	<u>Pauline</u>	<u>Northridge</u>	<u>Brandon</u>
Overall good	50	90	50	50
Some good	40	20	30	20
Some poor	50	40	40	---

Note. 10 parents interviewed in each school.

Requested descriptions of the teachers were usually interpreted by the parents as a request for a comment on teacher performance. Table 8.18 gives the percentage of parents with comments about perceived levels of teacher effectiveness in all four schools.

Generally, parent responses matched the perceptions of the students, especially in the need for improvements in academic performance at Arlingdale and at Northridge. Pauline and Brandon parents had positive perceptions of the school and the teachers in general but lacked specific awareness of academic results, as demonstrated in the low level of learning/intellectual category responses to the question about what the school does best. The interest in an increased emphasis on career education matched the desire of the Pauline students for an even greater focus on this school purpose.

8.7 SUMMARY

This chapter has applied the values typology as a conceptual organizer for the qualitative analysis of interviews of teachers, students, and parents in the four case study schools. The analysis was conducted within the context of school academic performance and one of the major purposes was to see if any patterns would emerge to distinguish between schools with different histories of academic achievement.

The use of the values typology was confirmed as a legitimate conceptual framework for the classification and study of school purposes, but, unlike Goodlad's (1984) classification, it would appear from this qualitative analysis that responses to questions about what schools are emphasizing or should be emphasizing fall into three major themes and five minor themes. Responses to open-ended questions about perceived school operating values were more consistent with this conceptual structure than were the responses to desired values.

Analysis within each of the eight value themes revealed differences between schools in their operating values as perceived by the students and the teachers. For example, Arlingdale associated emphasis on extracurricular involvement as a means for meeting student social/emotional needs. Pauline teachers favored a personalized, affective, and cooperative-based school culture to ensure that students were academically successful. Brandon teachers preferred a tough-love, yet supportive approach to creating conditions for student learning and high academic standards. The tough-love approach at Brandon was strikingly different from the soft emotional support provided at Northridge where there was not the tight connection between helping students with personal problems and ensuring academic success. Northridge had succeeded, however, in an area where many schools have not, by creating a climate of multicultural harmony and interpersonal accord.

This analysis would indicate that there were significant qualitative differences in certain operating values which did differentiate the high-low school pairs. Patterns of teacher-student responses in a perceived focus on learning/intellectual development, creativity and cooperation seemed to distinguish the higher performing from the lower performing schools. These between-school differences were most apparent in the area of perceived focus on learning. The interviews revealed that the teachers in the two higher performing schools made a conscious effort to improve their academic results and had established a pattern of success which had become the norm in the school. In contrast, the desired values did not provide clear images which might differentiate the schools and there was less within-school teacher-student agreement than shown in the perceived operating values.

CHAPTER NINE

CASE STUDY: QUESTIONNAIRE ANALYSIS

9.1 INTRODUCTION

In keeping with the methodological desire to use the questionnaire findings to triangulate with the qualitative data analysis, i.e., "seek convergence, corroboration, and correspondence of results across different method types" (Caracelli & Greene, 1993, p. 196), the ensuing analysis was conducted after all interviews had been coded, summary tables had been prepared and sample quotations selected. This approach was taken to strengthen any findings from the qualitative study by attempting to eliminate potential quantitative data biases which could occur in the coding and interpretation of the interview data (Caracelli & Greene, 1993, p. 204). Investigation of the questionnaire data involved six distinct phases: (a) data preparation, (b) factor analysis and confirmation of thematic scales, (c) preliminary descriptive analyses and analysis of variance (ANOVA) of student background data, (d) multivariate analyses (MANOVA) of perceived operating and desired school values, (e) analysis of congruency between teacher-student perceptions of school values, and (f) triangulation between quantitative and qualitative results.

The specific purposes of the quantitative analysis of questionnaire results were to :

1. determine if the thematic typology as embedded within the content of the questionnaire could used as a valid and reliable investigative instrument;
2. investigate the effect of group and school on the perceptions of operating and desired values;
3. determine the degree of value congruency within and between school groups;

4. analyze the perceptions of school effectiveness in the eight value themes in the context of academic performance;
5. triangulate the qualitative results with those from the quantitative analysis.

A number of working hypotheses acted as a guide to the investigations and the subsequent analysis:

1. the eight themes presented in the values typology represent an underlying conceptual framework which categorizes the way people think about school purposes;
2. schools differ from one another in their perceived operating values;
3. groups within schools, i.e., teachers and students, perceive differences in school operating values;
4. desired school values differ by school and by group;
5. greater congruence of operating values between groups in schools will result in perceptions of more effective schools;
6. greater congruence of desired values between groups within schools will result in perceptions of more effective schools;
7. greater congruence of desired and operating values between groups within a school will result in the school being perceived as more effective;
8. greater congruence of desired and operating values between groups within a school will result in these school being more effective, as measured by academic performance.

Some of these working hypotheses already have been challenged by the qualitative findings. This quantitative analysis is intended bring the emerging picture of these four schools into a sharper focus and provide greater understanding of operating and desired organizational values in public education.

9.2 DATA PREPARATION

The questionnaires were given to all teachers, grade 12 students in attendance on the day of the questionnaire administration, and to all parents of grade 12 students by means of the students taking home the explanation/permission letters and the questionnaire itself. The rate of return of completed questionnaires which were used in the analysis is shown in Table 9.1. Since the parental response was so low, it was decided that any statistical analysis for this group would be impossible. Response rates were deemed high enough for the student and teacher questionnaires, however, to continue with confidence in the reliability of the results from representative samples for each of the case study schools.

All data were converted into a numerical form and entered into spreadsheet text file. Any questionnaires which had more than 10 missing questions were rejected at the point of data entry. The overall percentage of incomplete questions on the entered questionnaires was very low with only 0.64% of the possible responses left incomplete in the total number of student and teacher questionnaires. Because this was deemed to be an insignificant number and because the missing data were distributed evenly across questionnaire items, teacher-student groups, and schools, the group mean score for the individual school was substituted for missing data. For the purposes of this analysis, then, a total of 619 questionnaire responses were utilized: 168 teacher and 451 student responses.

Subsequent to the initial exploratory analysis of the data, the Likert scale was converted so that a positive response received the highest score, i.e., "strongly agree" scores were converted to 5 and "strongly disagree" to a score of 1. This conversion allowed all parts of the questionnaire to be scored with the same five point scale with higher scores representing items with a higher emphasis or a greater level of response satisfaction.

Table 9.1

Rate of Completed Questionnaire Responses Used in Study

Group	Population	Completed responses	%age of total population
Teachers			
•Arlingdale	56	44	79%
•Pauline	61	46	75%
•Northridge	55	44	80%
•Brandon	40	34	85%
Students			
•Arlingdale	100	88	88%
•Pauline	172	139	81%
•Northridge	179	144	80%
•Brandon	100	80	80%
Parents*			
•Arlingdale	100	18	18%
•Pauline	172	38	22%
•Northridge	179	13	7%
•Brandon	100	22	22%

* Note. Parent questionnaire responses were deemed too low to be used for the analysis.

9.3 FACTOR ANALYSIS AND SCALE CONFIRMATION

A factor analysis was conducted on the 40 questionnaire items dealing with perceived operating values at each school. This analysis sought to identify any underlying dimensions around which the questionnaire responses would be clustered (Borg & Gall, 1989, p. 622). Since the pilot study in the development of the questionnaire had used a smaller population than the total 619 used in this study, this factor analysis provided a more comprehensive validity check on the associative links

between questions designed to measure a particular theme. In this case, the loading of one questionnaire item into its respective thematic grouping was considered significant if its correlation with the factor was greater than 0.30 (Spencer & Bowers, 1976, p. 10).

Table 9.2 displays the eight themes which were used to construct the questionnaire and the resultant loading from the factor analysis. The eight themes of the values typology did emerge as an underlying conceptual structure but, as indicated in the pilot study, there was considerable correlation between the two themes of social/emotional development and personal support /individual development. One question proved to be problematic in that it did not correlate strongly with any one factor. This item, "Tradition is valued in the day to day operations of the school," had been included as a question to be reversed in scoring for the theme of creativity and innovation. Since it was the only "negative" item in the questionnaire which survived the forceful editing of the Arlingdale principal, this question remained an anomaly, although it is not difficult to see how this item would be seen as a positive school attribute associated with social order/control. In fact, when this item did not have its score reversed, it loaded at a .344 level with this theme. Because retaining this question would have reduced the reliability of the creativity/innovation cluster, it was removed from the thematic analysis and question number 33, "This school usually tries to solve its problems in unique ways," was used for themes of both personal support/individual development and creativity/innovation focus. Using this question for the creativity/innovation grouping provided a five item set of questions for each of the eight themes and added to the amount of variance attributable to this creativity factor.

Table 9.2

Factor Analysis: Principal Components of Perceived School Values

Factor	Correlation
Intellectual Development/Learning Focus	
•Question #2	.669
•Question #12	.659
•Question #19	.493
•Question #27	.721
•Question #35	.581
Social/Emotional Focus	
•Question #9	.711
•Question #17	.815
•Question #20	.672
•Question #26	.518
•Question #38	.753
Personal Support/Individual Focus	
•Question #1	.458
•Question #6	.355
•Question #14	.770
•Question #22	.666
•Question #33	.570
Career/Social Responsibility Focus	
•Question #4	.709
•Question #8	.707
•Question #13	.703
•Question #21	.614
•Question #30	.602
Social Order/Control Focus	
•Question #10	.555
•Question #18	.597
•Question #29	.585
•Question #34	.635
•Question #40	.658
Creativity/Innovation Focus	
•Question #7	.706
•Question #25	.327
•Question #28	.618
•Question #33	.295
•Question #36	.347
Cooperation Focus	
•Question #3	.407
•Question #15	.685
•Question #24	.744
•Question #32	.751
•Question #37	.217
Competition Focus	
•Question #5	.544
•Question #16	.623
•Question #23	.703
•Question #31	.584
•Question #39	.646

Table 9.3

Scale Reliability: Cronbach's Alpha (n = 619)

Scale	M	SD	Variance	Item-to-Scale Correlations	Alpha
Learning/Intellectual	17.70	3.10	9.61	.41 to .51	.70
Social/Emotional	17.60	4.01	16.08	.45 to .70	.82
Personal/Individual	16.70	3.65	13.33	.52 to .65	.80
Career	17.46	3.75	14.06	.71 to .76	.79
Social Order/Control	17.65	3.50	12.23	.65 to .73	.74
Creativity/Innovation	16.44	3.41	11.64	.69 to .75	.76
Cooperation	18.10	3.13	9.80	.69 to .75	.75
Competition	17.62	3.11	9.67	.60 to .66	.68

Question number 37, "The school encourages students to help each other," was also more directly associated with themes of social/emotional and personal support focus (.468) than it was with its intended loading with the cooperation theme. For similar reasons to those given above for the inclusion of five items for the creativity/innovation theme, this question was left in its intended grouping for the cooperation scale.

The second phase of the scale confirmation involved the use of Cronbach's Alpha test for scale item reliability. Table 9.3 provides the descriptive statistics, item-to-scale correlation ranges, and Cronbach's Alpha Coefficient for each of the eight thematic scales. Since all but the creativity scales (.68) were above the 0.70 Alpha level, and since the range of item-to-scale correlations were consistent, the thematic scales as tested through the use of the questionnaire were judged to be reliable for the purposes of the study.

9.4 PRELIMINARY DATA ANALYSIS

This phase of the analysis involved initial data processing and subsequent scanning for irregularities or items which might need to be investigated through more detailed statistical analysis. The first set of data related to the characteristics of the sample group as displayed in Table 9.4. Teacher characteristics were similar across the four schools.

Student characteristics were also judged to be comparable with two exceptions. First, Northridge students tended to be more transient as reflected in the average length of time enrolled in their school (3.58 years) as opposed to students in the other three schools (4.5 year average). Second, Northridge parents had lower education levels than did parents in the other three schools. Table 9.5 summarizes findings of a one way analysis of variance designed as an omnibus test to determine if the differences in education level were statistically significant. Since there was a significant difference¹ ($p < .01$) in both mother and fathers' education levels between schools, a multivariate analysis was used to locate the specific variations. Table 9.6 shows that there were no significant differences in parental education levels between each of the school pairs but there was a difference between the parental educational levels in Pauline and Northridge. Because this case study research was focused on the differences between the pairs of schools, there was reassurance that the school pairs did draw from similar populations.

¹ Note that the level of $p < .01$ was set as an arbitrary standard prior to any statistical analysis. This level was maintained for the entire study and whenever statistical significance is mentioned in text and tables, it will be this level of probability which is used.

Table 9.4

Descriptive Statistics: Teacher and Student Samples

	Arlingdale	Pauline	Northridge	Brandon
	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
Teachers				
•years in school	5.57	8.01	8.11	7.90
•percentage male	47.73	53.33	63.64	57.58
•percentage female	52.27	46.67	36.36	42.42
•age	38.14	39.12	47.42	43.24
•post secondary years	5.52	5.87	5.44	5.06
Students				
•years in school	4.53	4.78	3.58	4.42
•percentage male	51.08	47.72	57.64	55.00
•percentage female	48.00	48.92	42.36	45.00
•age	17.45	17.47	17.70	17.79
•mothers' post secondary years	0.95	1.37	0.38	.83
•fathers' post secondary years	1.00	1.62	0.57	1.13

Table 9.5

Summary of ANOVAs for Parent Education Levels

Source	Sum of Squares	DF	Mean Square	F	Probability
Mother ed.					
•between groups	70.463	3	23.488	5.940	0.001
•within groups	1747.630	442	3.954		
Father ed.					
•between groups	76.273	3	25.424	4.885	0.002
•within groups	2232.734	429	5.205		

Table 9.6

Matrix of Probability for Tukey Multiple Comparisons : Parent Education Levels

School	Pauline	Arlingdale	Northridge	Brandon
Mother ed.				
•Pauline	1.000			
•Arlingdale	0.424	1.000		
•Northridge	0.000*	0.142	1.000	
•Brandon	0.217	0.977	0.369	1.000
Father ed.				
•Pauline	1.000			
•Arlingdale	0.210	1.000		
•Northridge	0.001*	0.521	1.000	
•Brandon	0.466	0.984	0.308	1.000

Note. * $p < .01$

Table 9.7 gives an overview of basic descriptive statistics for the eight scales representing the perceived operating emphases in the four schools. Before determining whether these differences between groups and between schools have any statistical significance, there are patterns which are evident in this display of the questionnaire data results. First, teachers were generally more positive about what was perceived to be happening in their schools than were the students. Second, the standard deviations are relatively small, and consistent across the scales, indicating that normal distribution is likely with most of the responses clustering around a central mean. This preliminary observation was confirmed by a visual review of stem and leaf and box plot graphs which reveal normal distributions by groups for the majority of these questionnaire responses. It would appear that within the groups there was a reasonably high level of agreement with the perceived values in the school.

Table 9.7

Perceived Operating Emphases in Case Study Schools

Thematic scale	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Intellectual								
•M	15.40	16.96	19.36	18.32	16.03	17.60	18.97	18.26
•SD	2.94	3.34	2.13	2.88	3.68	3.10	2.92	2.11
•M Difference	(1.56)		(1.04)		(1.57)		(0.71)	
Social - Emotional								
•M	19.16	15.25	22.41	17.85	19.91	15.72	20.38	17.08
•SD	3.03	3.53	1.89	3.66	2.74	3.90	2.63	3.64
•M Difference	(3.91)		(4.56)		(4.19)		(3.30)	
Personal support								
•M	18.36	15.09	20.13	16.39	19.96	15.31	19.48	15.69
•SD	3.10	3.61	1.77	3.26	2.18	3.36	2.80	3.58
•M Difference	(3.27)		(3.74)		(4.65)		(3.79)	
Career								
•M	18.95	17.07	19.74	17.00	19.07	16.51	17.75	17.27
•SD	3.35	3.91	2.87	4.07	2.58	3.86	3.18	3.29
•M Difference	(1.88)		(2.74)		(2.56)		(0.48)	
Order								
•M	14.86	15.48	19.36	17.94	18.73	18.59	18.78	17.29
•SD	4.36	3.78	3.31	2.85	3.13	2.85	3.31	3.17
•M Difference	(0.62)		(1.42)		(0.14)		(1.49)	
Creativity								
•M	17.78	15.24	20.63	16.47	16.91	15.10	18.18	15.95
•SD	3.14	3.54	2.17	3.12	2.87	3.01	2.93	3.15
•M Difference	(2.54)		(4.16)		(1.81)		(2.23)	
Cooperation								
•M	17.51	17.35	21.73	19.34	18.25	16.91	17.84	17.18
•SD	2.82	2.97	2.15	2.40	2.38	3.07	3.36	3.22
•M Difference	(0.16)		(2.39)		(1.34)		(0.66)	
Competition								
•M	17.44	18.86	18.50	17.37	15.85	17.83	17.65	16.88
•SD	3.34	3.23	3.33	2.83	3.63	2.79	2.87	2.88
•M Difference	(1.42)		(1.13)		(1.98)		(0.77)	
<hr/>								
Cumulative difference	(15.36)		(21.18)		(18.24)		(13.43)	

Note. All differences converted to positive integers.

• T = Teachers, S = Students

Third, it would appear that there were differences between the groups as to their perceptions about what is stressed in their schools. The cumulative totals for differences show that the teachers and students at Pauline display the greatest disparity while the students and teachers at Brandon show the least. Across all four schools, the greatest level of agreement between students and teachers occurs in the perception of emphasis given to intellectual development, social order/control, cooperation, and competition, with least agreement in the perceived emphasis on social/emotional development, personal support/individual development, career development, and creativity.

Table 9.8 provides the results of the Q-sort exercise where respondents were required to rank the eight themes in order of believed importance for schools. Here the standard deviations tended to be larger than those for the perceptions of operating emphases, thus indicating greater variability within the groups as to their beliefs about what should be stressed in the schools. The greatest level of agreement between students and teachers across all four schools appeared to be in the areas of social-emotional development, personal support for the individual, social order/control, creativity /innovation, and cooperation. Brandon, Northridge and Pauline all seem to have been reasonably similar with respect to the difference between groups in their desired school emphases while Arlingdale stood out as having considerably greater teacher-student disagreement. Both low academic performing schools showed greatest teacher-student difference in desired emphasis on a learning focus.

Table 9.8

Desired School Emphases in Case Study Schools

Theme	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Learning/Intellectual								
•M	21.82	17.15	20.44	19.60	21.88	17.63	22.79	19.94
•SD	3.59	5.59	5.46	4.74	4.66	5.10	3.30	4.60
•M Difference	(4.67)		(0.84)		(4.25)		(2.85)	
Social/Emotional								
•M	13.30	11.76	13.89	12.48	12.44	12.86	12.12	13.42
•SD	5.28	6.10	4.93	6.02	3.75	5.48	5.37	4.51
•M Difference	(1.54)		(1.41)		(0.42)		(1.30)	
Personal Support/Individual								
•M	13.41	12.53	15.00	13.54	15.49	14.17	13.09	13.16
•SD	3.37	4.26	5.27	4.71	5.37	5.81	5.37	4.51
•M Difference	(0.88)		(1.46)		(1.32)		(0.07)	
Career								
•M	14.66	20.93	14.46	19.02	15.85	19.39	14.56	19.68
•SD	4.63	3.90	4.11	5.83	5.16	5.14	5.69	5.53
•M Difference	(6.27)		(4.56)		(3.54)		(5.12)	
Social Order/Control								
•M	16.02	13.35	13.04	11.97	11.88	11.16	13.64	11.52
•SD	6.25	5.84	6.28	5.46	4.79	4.96	5.40	5.30
•M Difference	(2.67)		(1.07)		(0.72)		(2.12)	
Creativity/Innovation								
•M	15.80	16.80	16.74	15.87	18.25	17.19	17.21	16.58
•SD	5.17	5.30	5.60	5.45	5.12	5.16	4.30	5.19
•M Difference	(1.00)		(0.87)		(1.06)		(0.63)	
Cooperation								
•M	18.41	15.23	18.37	16.70	17.07	16.91	17.94	15.70
•SD	4.55	4.74	4.72	4.52	4.31	4.93	3.92	4.34
•M Difference	(3.18)		(1.67)		(0.16)		(2.24)	
Competition								
•M	6.59	11.58	8.15	10.76	9.13	10.69	8.49	9.81
•SD	2.81	6.17	4.26	5.34	4.81	5.33	4.52	4.93
•M Difference	(5.39)		(2.61)		(1.56)		(1.32)	
Cumulative difference								
	(25.60)		(14.49)		(13.03)		(15.65)	

Note. All differences converted to positive integers.

•T = Teachers, S = Students

Table 9.9

Pearson Correlation Matrix: Perceived Operating School Emphases

Factor	Intell.	Emot.	Indiv.	Career	Order	Creat.	Coop.	Compet.
Intellectual	2.954							
Emotional	0.228	3.462						
Individual	0.248	0.762	3.324					
Career	0.290	0.346	0.475	3.612				
Order	0.381	0.481	0.478	0.371	3.267			
Creativity	0.350	0.473	0.546	0.488	0.479	2.599		
Cooper.	0.273	0.455	0.473	0.411	0.395	0.502	2.825	
Compet.	0.434	0.220	0.283	0.369	0.377	0.365	0.368	3.019

Note. Standard deviation on diagonal.

For both question sets dealing with the operating values and the desired values in the schools, the review of descriptive statistics would indicate that the data sets meet criteria for the assumptions of normal distribution and homogeneity of variance. A correlation analysis (Pearson Product-Moment) was conducted on both data sets to determine the possibility of multivariate collinearity operating within the eight factors. Table 9.9 shows the high level of interaction between the social/emotional and personal support/individual themes (correlation of .762). In Table 9.10, the correlations between the desired school emphases are considerably lower, likely due to the forced ranking aspect of the Q-sort exercise, and also due to the greater variability of responses as represented by the higher standard deviations than those for the perceived operating emphases in the schools.

Table 9.10

Pearson Correlation Matrix: Desired School Emphases

Factor	Intell.	Emot.	Indiv.	Career	Order	Creat.	Coop.	Compet.
Intellect.	5.460							
Emotional	-.146	4.932						
Individual	-.237	0.215	5.270					
Career	-.159	-.156	-.186	4.113				
Order	-.104	-.170	-.171	-.044	6.279			
Creativity	-.078	-.126	-.185	-.034	-.224	5.599		
Coop.	-.105	-.115	-.173	-.215	-.068	-.067	4.720	
Compet.	-.053	-.285	-.248	-.032	-.062	-.131	0.033	4.263

Note. Standard deviation on diagonal.

The final five items of the questionnaire dealt with student-perceived levels of academic performance, influences on their feelings and beliefs about education, and expectations for continuing on to post secondary levels. Table 9.11 shows that there was no significant difference between student grades as reported on this questionnaire. Similarly, no significant difference occurred between schools for student expectations for higher education, nor for perceived influence of friends, parents or teachers on their outlook on education (Table 9.12).

Table 9.11

Perceived School Academic Performance: Comparison Across Schools

School	Academic Performance		
	M	SD	N
Arlingdale	3.506	0.948	88
Pauline	3.442	1.002	139
Northridge	3.396	0.934	140
Brandon	3.362	0.897	76

Note. ANOVA result indicates that there is no significant difference ($p < .01$) for student academic performance across the four schools.

Table 9.12

Between School Comparison: Student Education Expectation and Beliefs

School	N	Question									
		M	SD	M	SD	M	SD	M	SD	M	SD
Arlingdale	88	4.25	0.81	4.25	1.06	4.15	0.93	3.67	1.03	3.75	1.01
Pauline	139	4.20	0.99	4.45	1.00	3.86	1.75	3.68	1.09	3.82	1.00
Northridge	140	4.32	0.87	4.41	0.83	4.10	1.13	3.71	1.06	3.58	1.09
Brandon	76	4.11	0.89	4.49	0.76	4.09	1.16	3.39	1.14	3.69	1.01

Note. ANOVA result indicates that there is no significant difference ($p < .01$) for student education expectation across the four schools.

9.5 MULTIVARIATE ANALYSIS OF PERCEIVED OPERATING VALUES

The visual scan of the mean scores indicated that there may have been significant differences between teachers and students within and between the schools with respect to the operating and desired school emphases. A multivariate analysis of variance (MANOVA) was conducted on these data to ascertain the combined effects of school and group. With the entire set of eight factors used as the dependent variable, there was a significant difference shown in the interaction between school and group. Table 9.13 shows the degree of differences between the eight scales when the combined effects of the school and the group were considered. Only the competition and intellectual development themes showed a significant difference, although creativity and cooperation were also extremely close to being significantly different at the $p < .01$ level.

Further analysis of the effects of group within the schools shows that the teachers and students perceived the operating values in their schools in different ways. Examining the results of the MANOVA summarized in Table 9.13, it can be seen that students and teachers expressed significant differences in 5 out of the 8 scales, but not in the areas of intellectual development, social order/control, or competition. Students and teachers would appear to be in greater agreement on how these three values were emphasized in their schools, recognizing, however, that in the area of intellectual development, the two higher performing schools had much higher levels of teacher-student agreement than did the two low performing schools.

Table 9.13

MANOVA Results: Significance Probabilities for Differences in Main Effect School and Group on Perceived Operating Values

Theme	Combined school and group	School	Group
Intellectual	.000*	.000*	.157
Emotional	.574	.000*	.000*
Individual	.381	.007*	.000*
Career	.094	.387	.000*
Order	.032	.000*	.046
Creativity	.012	.000*	.000*
Cooperation	.013	.000*	.000*
Competition	.000*	.005*	.127

Note. * $p < .01$.

Table 9.13 shows that the effect of school was considerable. There were significant differences between the perceived operating values in 7 out of 8 scales--all but career development. When responses for both groups were aggregated, teachers and students perceived value themes being emphasized to different degrees in their schools.

Another analysis was still required to determine if there were significant differences in perception of school emphases for teachers and students as separate groups between the four schools and between the school pairs. An analysis of the teachers' perceived operating values showed significant differences between teachers' perception of the operating values in all of the eight themes except for a focus on career development. Similarly, student perceived differences in operating values between the four schools were significant in all categories except for personal support/individual development and career education. Table 9.14 shows the results of this MANOVA for the effect of school on teacher and student perceptions of

Table 9.14

MANOVA Results: Significance Probabilities for Differences in Main Effect of School on Teacher and Student Perceived Operating Values

Theme	Teachers ($n=168$)	Students ($n=451$)
Intellectual	.000*	.003*
Emotional	.000*	.000*
Individual	.004*	.017
Career	.037	.473
Order	.000*	.000*
Creativity	.000*	.001*
Cooperation	.000*	.000*
Competition	.003*	.000*

Note. * $p < .01$.

perceived operating values. These statistical tests indicate that there were considerable differences in the way that teachers and students perceived the emphases given in their schools in most of the value categories, except for career education and, to some extent, in the way students perceived the school focus on personal support/individual development.

In an analysis of differences between the paired schools compared only to each other rather than all four in the case study, the sample sizes are much smaller and consequently the statistical measures have less power--less ability to find even slight differences. In such cases, then, any significant differences would reflect considerable discrepancy in the way the school was perceived by the teachers or students. When contrasting Arlingdale and Pauline, as shown in Table 9.15, there were significant differences in teacher perceptions of school emphasis in 6 out of the

8 value themes and in student perceptions in 7 out of 8. Northridge and Brandon teachers and students tended to have more agreement in their perceptions of the operating values in their schools: significant differences occurred only in the way Brandon and Northridge teachers perceived the emphasis on intellectual development, and in the way Brandon and Northridge students perceived the school focus on meeting student social/emotional needs and on providing an environment of order and control. Despite the fact that Brandon and Northridge displayed the most differences in academic performance, this pair exhibited fewer differences in their operating values than did the Pauline- Arlingdale pair.

There were areas where differences between Brandon and Northridge did occur although not quite to the same degree as they did between the other pair of schools: teachers in Brandon believed that the emphasis on academics was much greater at their school, and the students, too, rated this as a greater emphasis than at Northridge. In the themes of creativity (dealing with problems in a unique way), Brandon teachers and students perceived a greater emphasis at their school, and in terms of competition, Northridge teachers and students perceived their school as giving more focus to this value theme. In both of these cases, the differences were close to being statistically significant and because both teachers and students have the same perceptions, there is a good argument for a pattern which differentiates the higher from the lower performing schools especially when this same pattern was so strongly demonstrated in the Pauline-Arlingdale pair.

Table 9.15

MANOVA Results: Significance Probabilities for Differences in Perceived Operating Values Between Paired Schools

Theme	<u>Arlingdale-Pauline</u>		<u>Northridge-Brandon</u>	
	Teachers	Students	Teachers	Students
Intellectual	.000*	.001*	.000*	.110
Emotional	.000*	.000*	.425	.009*
Individual	.001*	.005*	.402	.429
Career	.213	.896	.056	.155
Order	.000*	.000*	.949	.003*
Creativity	.000*	.004*	.048	.055
Cooperation	.000*	.000*	.499	.509
Competition	.132	.000*	.019	.020

Note. * $p < .01$.

9.6 MULTIVARIATE ANALYSIS OF DESIRED SCHOOL VALUES

The second part of this analysis of school values dealt with the types of emphases which respondents felt should be given to student development in their schools. Multivariate omnibus tests indicated that the combined effects of school and group did not result in overall significant differences in the Q-sort results. However, when a MANOVA was used to distinguish which of the themes were differentiated, only a desire for a focus on intellectual development and competition were significantly different (Table 9.16). In examining the main effect of the teacher or student group on the results, significant differences were present in 5 of the 8 value themes: learning/intellectual development, career education, cooperation, social order/control and competition emphases. In the test for the effect of school on the responses, only in the themes of personal support/individual development and social order/control as a desired school emphasis were there any significant differences

Table 9.16

MANOVA Results: Significance Probabilities for Main Differences in Main Effect of School and Group on Desired School Values

Theme	Combined school and group	School	Group
Intellectual	.000*	.029	.000*
Emotional	.152	.707	.557
Individual	.665	.008*	.040
Career	.201	.334	.000*
Order	.477	.000*	.001*
Creativity	.389	.088	.415
Cooperation	.110	.620	.000*
Competitive	.010*	.691	.000*

Note. * $p < .01$.

between the schools. Thus, there were significant teacher-student differences between the desired ranking of many of the school value themes but few differences between the desired values of these groups from school to school.

When the groups were broken down into their teacher-student components as was done for perceived operating values, there were few significant differences between desired values within groups between schools. Teachers showed significant variation between schools only in a preference for giving priority to school order/control and, similarly, students showed significant differences between schools only in the preferred priority to learning/intellectual development (Table 9.17). This would indicate that there was a common pattern of what was deemed important to teachers and to students across schools.

Table 9.18 provides the rankings for the desired values when the group scores were aggregated across the four schools. Although the two groups differed in the preferred value theme emphases, there were similarities. The four most desired

Table 9.17

MANOVA Results: Significance Probabilities for Differences in Main Effect of School on Teacher and Student Desired Values

Theme	Teachers (n=168)	Students (n=451)
Intellectual	.117	.000*
Emotional	.296	.301
Individual	.036	.099
Career	.500	.055
Order	.008*	.022
Creativity	.153	.208
Cooperation	.452	.067
Competition	.036	.079

Note. * $p < .01$.

Table 9.18

Teacher and Student Ranked Desired Values Across Schools

Teachers (n=168)		Students (n=451)	
Intellectual	21.65	Career	19.65
Cooperation	17.95	Intellectual	18.55
Creativity	17.00	Creativity	16.60
Career	14.90	Cooperation	16.35
Individual	14.85	Individual	13.50
Order	13.65	Emotional	12.65
Emotional	13.00	Order	11.90
Competition	8.05	Competition	10.80

emphases for teachers and students were the same, even though the rank ordering was different. The desire to focus on career education was of greater interest for the students than it was for the teachers and, in terms of relative positioning, this was the largest difference in the rankings. The bottom four rankings for both teachers and students are nearly identical in their ordering. Figure 9.1 shows a profile analysis comparing the teacher-student Q-sort results across the four schools for all eight value theme rankings.

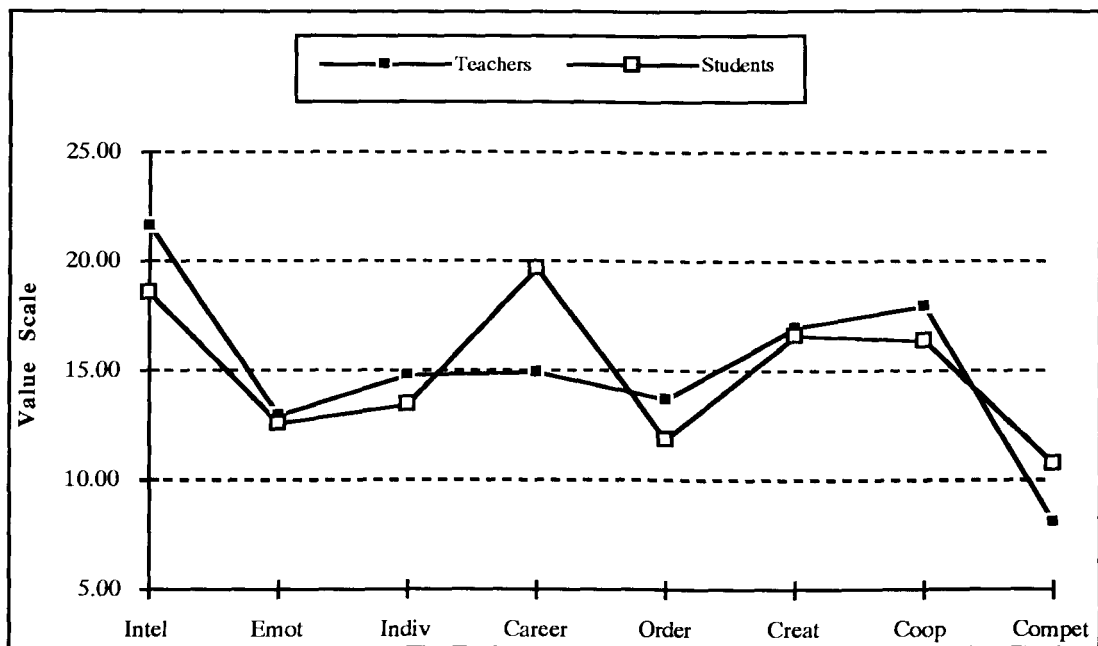


Figure 9.1. Profile of teacher and student desired values across four case study schools.

The value theme of creativity was ranked third in desired emphasis by both teacher and student groups. The wording of this item was possibly flawed in that respondents were asked to rank "creativity and learning new ideas." The emphasis for many respondents was likely on "learning" rather than on "creativity". Wording which reflected "creativity and innovation" as distinct from "learning and new ideas"

might have resulted in different responses, since in the interviews with both teachers and students the need for social order and control was a much stronger value than the desire for creativity .

A multivariate analysis of variance contrasting the teacher desired values between the two school pairs revealed no significant differences between any of the eight themes in either pair (Table 9.19). For the students, there were significant differences between Arlingdale and Pauline only in the desired values given to the learning/intellectual and the career themes , and between Northridge and Brandon for the learning/intellectual theme (See Table 9.19). It is clear from this analysis that while there were some differences between teachers and students in what they believed should be emphasized in their schools, there were few differences between these preferred emphases from school to school. The circumstances of the individual school appear to have a greater effect on perceptions of operating values than on desired school emphases, except for the learning/intellectual theme in which there were consistent student differences between the two pairs of schools.

9.7 VALUE CONGRUENCY

To this point, the analysis of school values has established that there were differences between teacher and student perceptions of operating values within the four schools. With respect to desired school value emphases, there were differences between the teachers and the students as groups but only minor differences between schools. The effect of the individual school appears to be negligible in contributing to a vision of what schools should be stressing in these eight value categories. In

Table 9.19

MANOVA Results: Significance Probabilities for Differences in Desired Values
Between Paired Schools

Theme	<u>Arlingdale-Pauline</u>		<u>Northridge-Brandon</u>	
	Teachers	Students	Teachers	Students
Intellectual	.139	.000*	.369	.001*
Emotional	.549	.374	.758	.500
Individual	.125	.064	.033	.149
Career	.844	.008*	.243	.692
Order	.015	.058	.185	.624
Creativity	.383	.194	.363	.411
Cooperation	.966	.137	.388	.062
Competitive	.076	.102	.508	.253

Note. * $p < .01$.

both of the high performing schools, teachers perceived the operating school values with respect to learning/intellectual development significantly differently than their partner school, and in these higher performing schools both sets of students wanted a higher priority on learning/intellectual development than in the paired, lower performing schools; however, the question of whether in-school agreement on organizational values (as measured by the questionnaire responses) has any effect on overall perceptions of effectiveness or on actual academic effectiveness has yet to be investigated. As observed in the last chapter, teacher-student value congruity can occur between: (a) perceived operating values, (b) desired values, and (c) in the correlation between operating and desired values.

Table 9.20

MANOVA Results: Within School Teacher-Student Congruence of Perceived
Operating Values and Desired Values

Themes	Arlingdale	Pauline	Northridge	Brandon
Perceived operating values				
•Intellectual	.009*	.026	.005*	.145
•Emotional	.000*	.000*	.000*	.000*
•Individual	.000*	.000*	.000*	.000*
•Career	.007*	.000*	.000*	.472
•Order	.406	.005*	.789	.025
•Creativity	.000*	.000*	.001*	.001*
•Cooperation	.765	.000*	.009*	.323
•Competition	.020	.027	.000*	.193
Desired Values				
•Intellectual	.000*	.321	.000*	.001*
•Emotional	.160	.156	.631	.250
•Individual	.234	.078	.181	.940
•Career	.000*	.000*	.000*	.000*
•Order	.017	.268	.386	.055
•Creativity	.200	.353	.223	.538
•Cooperation	.001*	.033	.848	.011
•Competition	.000*	.003*	.083	.181

Note. * $p < .01$.

Operating Values

Table 9.20 shows the results of a MANOVA which tested for significant differences between teacher-student perceived operating values in each of the schools. Of the four case study schools, only Brandon displayed teacher-student agreement in a majority of the eight value themes. It is notable, however, that teachers and students in Pauline and Brandon showed agreement in the perceived school focus on learning/intellectual development whereas the Arlingdale and Northridge teachers and students disagreed in their views about the degree to which their schools were demonstrating this value.

Desired Values

Table 9.20 shows that the number of significant differences between teacher-student desired values was much lower within the schools than it was for the operating values. Brandon, Pauline, and Northridge showed no significant differences between teachers and students in 6 out of 8 categories. Arlingdale would appear to have had the lowest level of congruity on what should be emphasized in their school with significant teacher-student disagreement in the following value categories: intellectual, career, cooperation and competition. In all four schools, students wanted more emphasis on career education than did their teachers.

Since there were no significant difference for the effect of school in the global analysis of desired school values, then one might conclude that there must be an underlying degree of similarity between schools in the priority desired for these value themes. There were few differences between schools with respect to the pattern of responses but these responses had a wider range than for operating values, showing that there was considerable disagreement on what was deemed to be important, even though this pattern of disagreement was similar from school to school. There really appears to be little way to distinguish high from low performing schools with respect to overall congruity levels in desired values since Northridge, as the lowest performing school, showed as much (or even slightly more) teacher-student agreement as did Pauline or Brandon.

Perceived Operating Value and Desired Value Congruity

Table 9.21 shows the correlations between desired and operating values for teachers and students in each school. Significant correlations occur in only 2 out of 64 possibilities. Obviously there is minimal congruity between perceived operating

Table 9.21

Spearman Correlations Between Perceived Operating and Desired Values

Factor	Arlingdale		Pauline		Northridge		Brandon	
	T	S	T	S	T	S	T	S
Intellectual	.177	-.046	.143	.017	.060	-.020	.246	-.071
Emotional	-.248	.013	.038	.159	-.045	-.160	.130	-.126
Individual	.066	-.014	-.215	.071	.261	-.148	.159	.271
Career	.244	-.121	.246	.083	.041	.117	.202	-.156
Order	.065	-.067	-.121	.004	-.129	-.018	-.219	.095
Creativity	.014	-.161	.154	-.082	-.155	-.050	.101	.031
Cooperation	.018	.125	.086	.091	-.179	.077	-.180	.304*
Competition	.051	.211	.525*	.214	-.137	.146	.057	.074

Note. T = Teachers, S = Students

* $p < .01$.

and desired values. Given the opportunity, both teachers and students appear to desire much different school emphases. In looking at the results shown in Table 9.21, one would be hard-pressed to argue for any pattern which would separate the higher academic performing schools from their lower academic achieving partners.

Perceived Effectiveness

So far in this quantitative analysis, actual academic performance has been the only comparison used in differentiating school effectiveness. The question of perceived school effectiveness has not yet been addressed. The questionnaire, though, did provide a means for assessing the overall level of teacher and student perceptions of school emphasis in each of the value themes. A profile analysis (level and parallelism tests) conducted on the responses shows that in 6 out of the 8 value categories (intellectual, emotional, personal support, social order, creativity, and cooperation), Pauline Secondary School was perceived to be providing more

emphasis, and having more success than its paired school, Arlingdale (Figure 9.2). Arlingdale was perceived as having greater emphasis than Pauline only in the areas of competition and career development. Similarly, Brandon Secondary School was seen by the teachers and students to be more successful than Northridge in its emphasis on 6 out of 8 value themes: learning/intellectual, social/emotional, personal support/individual, career, creativity/innovation, and cooperation. Northridge was perceived as providing a more orderly and controlled environment than was Brandon.

When looking at perceptions across all four schools, Pauline was notable for its levels of cooperation between students and teachers, its provision of emotional and personal support, and its perceived level of academic success. Arlingdale, with its successful sports programs, was seen as more competitive than the other three schools. Brandon, like Pauline, established itself in its perceived emphasis on intellectual development, while its paired school, Northridge, was perceived as providing a higher level of social order than any of the other schools. The similarity in overall pattern between Pauline and Brandon is notable in this profile analysis. These two successfully performing academic schools were perceived in much the same way. Both had an obvious emphasis on learning/intellectual development, on providing more opportunities for creative solutions to problems, on providing for student social/emotional needs, providing an orderly environment (although not to the same extent as Northridge), and on meeting student personal and individual needs. Both Pauline and Brandon were perceived as having more overall success than their lower performing academic neighbor.

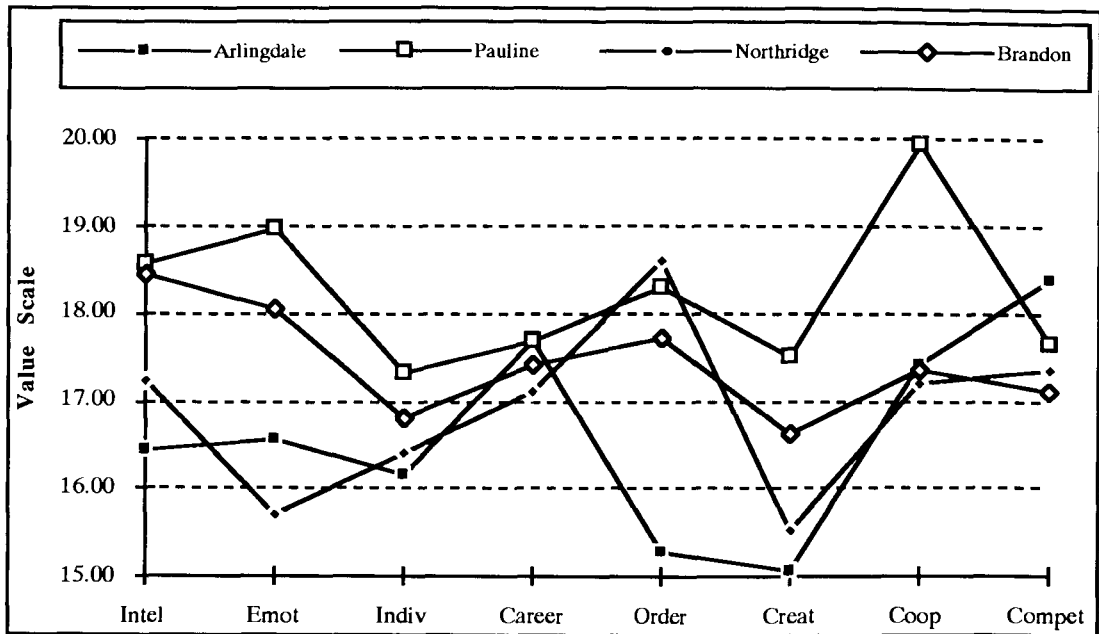


Figure 9.2. Profile of combined teacher/student perceived operating values.

Table 9.22 summarizes the congruency levels, perceived effectiveness and academic performance levels for all four schools. There would appear to be a clear link between agreement on the emphasized value of learning/intellectual development viewed as operating in the schools and an overall perception that the school was perceived favorably in a majority of the eight value categories. It is also the case that Pauline, which was perceived as the most successful school in meeting student needs across a wide spectrum, was just as likely to have student-teacher disagreement on operating values, except the focus on learning, as were the two low performing schools. In terms of desired values, the teacher-student agreement was similar across all schools except for Arlingdale which showed less student-teacher congruence. There was little significant congruity between desired and operating emphases for any of these four schools, and, consequently, there was no possibility for contrasting the two more positively perceived schools with their lower perceived neighbors.

Table 9.22

Congruency Patterns, Perceived Effectiveness, Academic Performance

School	Perceived operating values: teacher-student congruence	Perceived focus on learning/intellectual: teacher-student congruence	Desired values: teacher-student congruence	Desired learning/ intellectual focus: teacher-student congruence	Congruence of operating/desired values	Perceived effectiveness	Academic Performance
Arlingdale	moderately low	low	moderate	low	low	low (except competition)	low-average
Pauline	low	moderate	high	moderately high	low	high	average
Northridge	low	low	high	low	low	moderately low (except order/control)	low
Brandon	high	moderate	high	moderate	low	moderately high	high-average

Note. High-low levels are interpreted from school profiles reported in Chapter 8 and from quantitative and qualitative analysis in Chapters 9 and 10.

9.8 QUANTITATIVE AND QUALITATIVE COMPARISONS

While the qualitative results help to answer site-specific questions and to temper responses within the context of the immediate school, the quantitative results provide statistical assurances and insights about differences and similarities between schools and groups. In this section, an attempt will be made to seek convergent validity by comparing qualitative and quantitative findings. The primary purpose will be to demonstrate triangularity as the findings result from different methodological paradigms and procedures. In addition, as the findings from one method help to inform the other, complementarity will be actively employed as a design purpose (Greene et al., 1989).

Use of Values Typology

An investigation of the values typology as a working classificatory tool was a first step in both qualitative and quantitative analysis. The qualitative approach involved asking open-ended and situational questions about perceived values to see if the coded responses would fit the eight themes. The factor analysis and Cronbach's Alpha test provided the statistical analysis of the questionnaire items to determine if there was a valid and reliable underlying thematic structure in the way people respond to the questionnaire. In both the qualitative and the quantitative methods, the conclusion was that the values typology could be used as a means for examining operating and desired school values.

Both analyses did show, too, that in schools there is little distinction between providing personal support for learning and dealing with students' unique needs on an individual basis. The findings from both methods indicate that providing assistance on a personal level associates strongly with meeting social/emotional needs. In the interpersonal interaction between teachers and students, a social/emotional bond is

forged: teachers were perceived as "caring" when they provided either personal, emotional assistance or task support in learning activities.

Operating Values

Overall, the findings of the qualitative and quantitative analyses were remarkably convergent with only minor variations depending on the method. For example, a comparison of the student perceived operating values from the qualitative analysis is provided in Figure 10.3 and from a quantitative profile analysis in Figure 10.4. In both figures, the perception of the students about their school's academic expectations and emphases clearly differentiated the higher performing school from its lower performing partner. A greater degree of academic press was demonstrated in the operating values of teachers and students in both higher performing schools.

The quantitative findings showed social/emotional focus was the most significant variable across both school pairs in distinguishing higher from lower performing schools. Pauline teachers showed their strong conviction that attending to student emotional needs is a first step in meeting intellectual needs of their students; Brandon's tough-love methods demonstrated to their students that teachers cared about student welfare. The same degree of differentiation between Brandon and Northridge did not occur in the qualitative analysis as it did in the quantitative, but Brandon teachers were seen as giving at least as much emotional support as at Northridge, and Pauline students perceived considerably more social/emotional emphasis in their school than did their counterparts in Arlingdale. The pattern of academic press combined with a caring environment is a consistent finding of the two methods in differentiating the high-low schools.

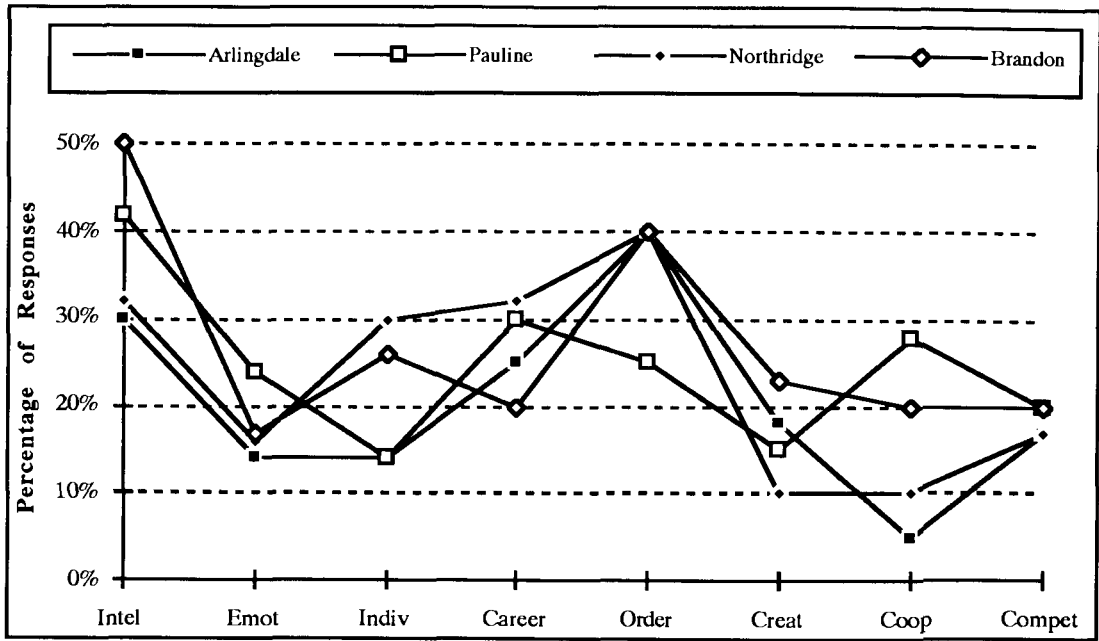


Figure 9.3. Profile of qualitative findings for student perceived operating values.

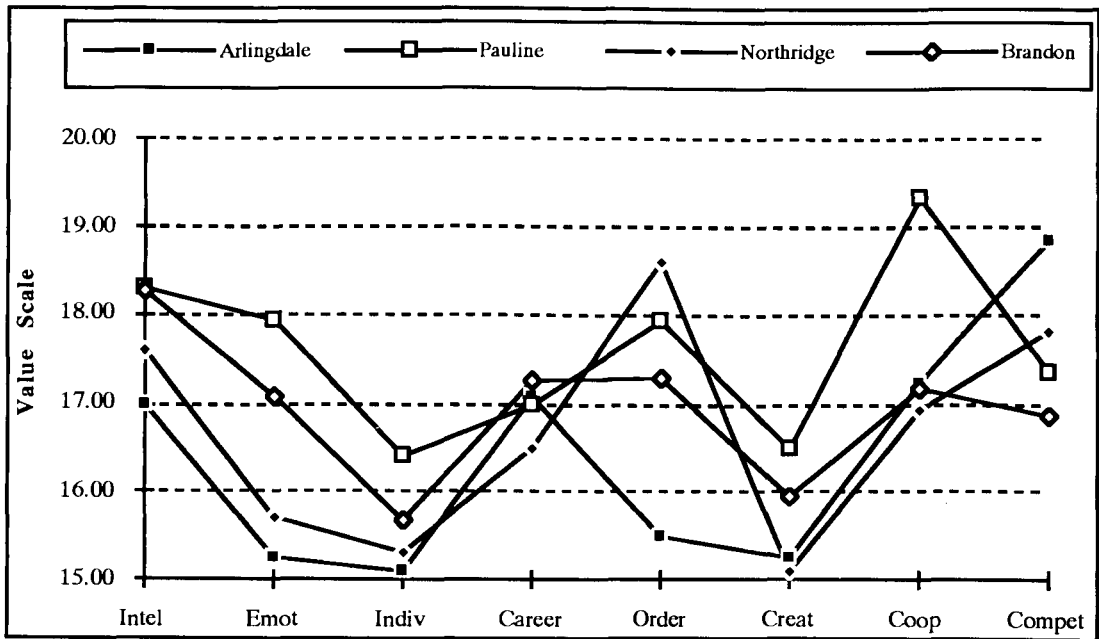


Figure 9.4. Profile of questionnaire results for student perceived operating values.

In a similar fashion, the two methods produced findings which showed cooperation to be an important emphasis of the higher performing school pair, although this time it was the qualitative findings which provided recognizable differentiation between Brandon and Northridge, with less definitive differences shown in the questionnaire results. For this school pair, the interviews brought out the degree of teacher cooperation rather than the application of cooperative learning methods in the classroom which was an integral part of the questionnaire items. Brandon teachers placed a high value on their professional cooperation and although this value was not translated into formal instructional strategies in the classroom as it was at Pauline, the students in the interviews perceived a very cooperative working relationship in the school. Pauline students spoke of the pervasive, underlying emphasis given to cooperation in the school and to such a degree that this value stands out as a basic tenet of the school. This was a conscious staff decision as a focal point for their school, and the students reflected back this school approach.

Finally, in the theme of creativity and finding unique ways to solve problems, both qualitative and quantitative findings differentiated between the higher and lower performing schools, although the quantitative differences between Brandon and Northridge were just below the .01 probability significance level. In finding solutions to solve individual problems in unique ways, Pauline and Brandon were recognized by their students as focusing on the individual student in a creative manner more than the teachers were perceived to do so in Arlingdale and Northridge. The attention to finding individual solutions is associated with the perception of providing personal support for the individual students. This, too, is a school value that one might expect to differentiate between high and low performing schools, and although the quantitative results show that both academically successful schools students did rate the level of individual support as higher than their peers in the neighboring school, this difference was not significant.

There also were differences between the findings of the two methods. Most of these variations are explainable as a result of the understandings gleaned from the qualitative analysis. For example, the quantitative findings showed that there was almost no student perceived difference between schools with respect to perceived career education focus. This conclusion was not borne out by the observations and the interviews at the school level where the two Mainline District schools had far more comprehensive programs. It appears that when students and teachers have no comparative benchmarks to evaluate their own circumstances, it is difficult for them to give a valid estimate of program emphasis in an area like career education. Since the questionnaire also was measuring, to a large extent, the respondent's satisfaction with the school programs, the student responses may have been unduly biased in their desire for even more of these programs, as indicated in the interviews.

A second notable difference between the two profiles relates to the perception of social order where the questionnaire results showed that Arlingdale students perceived a far lower degree of social order and control in their school than seemed to be indicated by the interviews. In this case, observations at the school would corroborate the questionnaire results over the interview findings. Arlingdale's students appeared far more boisterous and less inhibited by social order than the students in the other three schools. It is notable, that both methods showed the high degree of importance placed on social order and control at Northridge. There was little question that this value was emphasized in the social interactions in this school. It is probably of some importance, too, that the quantitative findings showed that both of the higher performing schools were perceived by the students and the teachers to be placing a reasonably high degree of emphasis on social order, not so little as perceived at Arlingdale, but not so much as seen in operation at Northridge.

A third difference in qualitative and quantitative findings relates to the emphasis on competition. In the interviews, the perception of competition did not

distinguish between schools, whereas in the questionnaires, students and teachers in Arlingdale and Northridge felt that competition was emphasized more than did their counterparts in the paired neighboring school. These were significant differences between the perceptions of the students at Arlingdale and Pauline, and near significant differences between the Northridge-Brandon pair. Much of the emphasis on competition in these lower performing academic schools was related to the sports programs which were given considerable emphasis in both facilities.

Despite these differences between the quantitative and qualitative findings, there was major convergence in the overall patterns across schools revealed through both methods, as shown so clearly in comparisons of the profiles in Figures 9.3 and 9.4. It is this overall pattern which demonstrates the validity of the typology, not the details of individual comparisons between the interview and the questionnaire results. For example, despite the fact that representative students and teachers were selected for one-third of the interviews, the findings on their own would be suspect due to the small sample size. Similarly, the sheer number of ANOVA's and MANOVA'S conducted in the quantitative analysis produced findings which might be questioned on the basis that significant differences occurred by chance. However, the qualitative findings help to confirm the overall patterns demonstrated in the quantitative results shown in Figures 9.3 and 9.4. Where there is convergence between the two methods in both the general and detailed patterns of understanding, there is greater confidence in the findings and the resulting interpretations which are informed by each of these paradigmatic orientations.

There is a plausible reason why the operating values of high academic expectations, social/emotional support, creative problem solving, and, to some degree, cooperation are shown by both qualitative and quantitative methods to be emphasized in the two higher performing schools. Pauline teachers had made a conscious effort to use cooperative learning in their classrooms, to demonstrate

genuine care for their students, and to work through these two means to build academic success. Brandon teachers prided themselves on working cooperatively to push their students to academic achievement. While the approaches in both schools may have been quite different, there was a commonality as demonstrated in the students' perceptions of what was emphasized at their schools. And there could be no misunderstanding between students and teachers in these two schools that the prime focus was on learning and intellectual development. The differences in perceived operating values between the higher and lower performing schools with respect to an emphasis on learning was abundantly clear from all perspectives.

Desired Values

The lack of clear, qualitatively-derived patterns to distinguish the paired schools in terms of desired values is paralleled in the quantitative results, with one exception. When the two sets of schools are compared, teacher responses showed no significant differences between high and low performing schools (Table 9.19); however, as previously noted, students in Pauline and Brandon did show a significant difference in their desire for a greater emphasis on learning/intellectual development than did the students in the lower performing paired school. It is likely that the desired values, in this case, had been generated by the perceived operating values of the school. The image for these students of what constitutes a school had been influenced directly by what the school does. This line of reasoning will be revisited in the next chapter.

9.9 SUMMARY

At the start of this chapter a number of hypotheses were posed as a means for guiding the investigations into teacher and student perceptions of operating and perceived values in the four sample schools. In this summary, each of these hypotheses will be reviewed in light of the evidence provided in the quantitative analysis. Where appropriate, comparisons will also be made with the findings from the qualitative study.

1. The eight themes presented in the values typology represent an underlying conceptual framework which categorizes the way people think about school purposes.

The eight themes presented in the values typology do appear to represent an underlying conceptual framework which categorizes the way teachers and students think about school purposes. The questionnaire's eight scales are valid and reliable within the standards established for the purposes of this research. The statistical tests for validity and reliability of the eight value themes are confirmed, too, by the convergent findings of the qualitative analysis of the interview questions.

2. Schools differ from one another in their perceived operating values .

In examining the perceived operating values between the four schools, the effect of school is significant in all of the eight themes except for career education. The hypothesis that schools will differ from each other in their perceived emphases is confirmed for this case study sample. The qualitative findings support this hypothesis in that interviewed teachers and students articulated consistent differences between the schools in terms of perceived operating values.

3. Groups within schools, i.e., teachers and students, perceive differences in school operating values.

Students and teachers across the four schools did demonstrate significant differences in their responses in 5 out of 8 of the value themes. This would indicate that within the schools themselves there were differences in the way operating values were perceived by these two groups. The qualitative results would add further evidence in defense of this conclusion. Teachers and students within the same schools responded differently to interview questions about what things were given emphasis in their school, and these school emphases were evident in observations of the way in which the schools conducted themselves on a day to day basis.

4. Desired school values differ by school and by group.

The hypothesis that desired values differ significantly by school and by group can be supported only in part. The main effect of school is minimal in this case study, since schools could only be differentiated in their responses relating to personal support/individual development and social order/control. The main effect of the group is much greater than that for the effect of the school and significant differences occurred in half of the eight themes based on teacher or student responses. This finding might lead to the conclusion that there is considerable similarity of desired values from school to school according to the group, but that teachers and students maintain different views of what should be emphasized. However, when the profile of teacher and student desired values are displayed in graphic and table form it can be seen that the overall pattern of desired values is very similar (Figure 10.1 and Table 10.18). The range and variability of images of what schools should be emphasizing is consistent across all four schools, thus negating the effect of school. The desired value placed on career education stands out as the greatest discrepancy between

students and teachers across all four schools. Students and parents want more emphasis in this area while teachers see this as a moderate level school purpose.

When the paired schools were compared for differences in desired values, the students in the two higher performing schools ranked learning/intellectual development significantly higher than their counterparts in the two lower performing schools. There were no significant differences between teachers' desired values when contrasting the two higher performing schools with their lower performing neighbors.

5. Greater congruence of operating values between groups in schools will result in perceptions of more effective schools.

The hypothesis that greater levels of teacher-student congruity in perceived operating values will occur in schools with higher levels of perceived effectiveness cannot be supported in this case study sample. Only Brandon had significant levels of teacher-student agreement in a majority of the value themes. All other schools had lower levels of teacher-student agreement about the perceived school operating values. However, the two higher academic performing schools did demonstrate higher overall perceptions of effectiveness in 7 out of 8 of the value themes and both these schools displayed teacher-student agreement on the perceived emphasis on learning/intellectual development in their schools whereas the two lower performing schools did not. The qualitative results were very similar, and there appeared to be no definitive pattern to support higher levels of congruity in operating values in schools perceived as more effective. This was the case even in the area of academic achievement since Northridge showed teacher-student congruity in this theme albeit at a lower level of expectation for "academic press". Overall, then, it even might be the case that a school such as Northridge which is less academically successful and which is generally perceived as less effective might have a higher level of value congruency due to well understood, but low expectations.

6. Greater congruence of desired values between groups within schools will result in perceptions of more effective schools.

The proposition that greater congruence of desired values between teachers and students will occur in those schools perceived as more effective cannot be demonstrated. Since there was no significant difference between schools in most of the desired values, then there was no relationship based on either perceptions of effectiveness or on high-low performance pairs. Like the quantitative results, the interview responses to questions of desired values provided no emergent patterns which could be used to differentiate schools, only response patterns which differentiated the groups within the schools.

7. Greater congruence of desired and operating values between groups within a school will result in the school being perceived as more effective.

The congruence of desired and operating values cannot be substantiated from this quantitative research. The four schools showed an extremely low level of correlation between the perceptions of operating values and desired values. Despite incongruity between "what is" and "what ought to be", the two higher performing schools did show a higher level of perceived overall effectiveness as measured by the responses in the eight categories of the values typology. In addition, students and teachers in the higher performing academic schools rated perceived operating values in learning/intellectual development significantly higher than both students and teachers in the lower performing schools. Although there were no significant differences in teachers' desired values between the paired schools, the only category of desired values which did differentiate both higher performing schools from their paired counterpart was student ranking of academic focus, predictably given a much higher ranking in the two higher achieving schools. Thus, student (but not teacher) operating values and desired values were more congruent in the two higher

performing schools which were perceived as being more academically effective. The interviews with parents also showed that there was a greater perception of good teaching in the two more successful schools than in their paired neighbors.

8. Greater congruence of desired and operating values between groups within a school will result in these school being more effective, as measured by academic performance.

Congruence of desired and operating values cannot be demonstrated between the teacher and students within the schools and, consequently, the above hypothesis cannot be supported. However, the same arguments apply as in the previous analysis for a degree of congruity in the area of intellectual development. Students in the higher performing schools, designated by actual performance in the nine examination subjects over a 7 year term, demonstrated a higher degree of congruence in perceived and desired value in the category of learning/intellectual development than students in the paired lower performing school. Since teachers in all four schools ranked a focus on meeting student intellectual needs as the most desired school value, and since in the two high performing schools this was seen as an important priority in the operating values for their school, then it is reasonable to assume that there is a degree of value congruency in the focus on academic performance which would differentiate the higher from the lower achieving schools. This congruency is only for the theme of intellectual development, however.

CHAPTER TEN

SUMMARY DISCUSSIONS AND FUTURE DIRECTIONS

10.1 INTRODUCTION

This study has been a wide-ranging investigation of organizational values and effectiveness within the context of the public school system in British Columbia. The difficulty for public schools is that there are often unclear images of what schools should be about. As Goodlad (1984) stated so succinctly, "We want it all." The desired "all" is a cumulative set of historically derived educational values which can be viewed as mutually reinforcing reflections of societal needs but more often these values are perceived in the Western Eurocentric tradition as competing, polarized visions of schools purposes and school effectiveness.

The connection between this problem of confused and seemingly contradictory school purposes and the subsequent difficulty of judging school performance is the central theme threading its way through this research study. In this summary chapter, the findings of this study will be discussed in the context of previous research, and with a view to implications for other schools as they attempt to become more effective in fulfilling their mandate.

10.2 DISCUSSION OF FINDINGS

This research has focused on four individual school portraits selected in a purposive sample. As a result, some of the findings are of a general nature, pertaining to schools in a variety of settings, while other observations are more particular to the case study, and perhaps will lead to future investigations in this topic of organizational effectiveness.

A Values Framework

The review of school purposes at the outset of this study was designed to show that Goodlad's (1984) conceptual framework of school goals can be used as a kind of organizational compass. This instrument can be refined to include other school purposes arranged in a logical fashion to support a more detailed look at schools as organizations established for the benefit of student development. The spatial model of effectiveness is derived not only from studies of school purposes but also is demonstrated by the research of Quinn and Rorhbaugh (1983) and provides an underlying conceptual structure for viewing human organizations. Building the spatial typology of school purposes in the beginning of this work provided a rationalization and an extension to Goodlad's fourfold categories.

The design of the qualitative research drew on the theoretical description of organizational culture developed by Schein (1985) to corroborate the mental model of school effectiveness as offered by the values typology. In asking teachers and students to describe the emphases in their schools, the model served to classify the responses in a way which had validity for the researcher. Schein's (1985) three level model predicts that the unconscious basic assumptions and some of the values operating in an organization are not readily accessible to participants who may espouse certain values and beliefs but who may operate quite differently. For this reason, Goodlad's (1984) research might not have uncovered some of the underlying assumptions which drive school-based organizational decisions. For example, schools teach students how to cooperate with others and how to act in accordance with school rules of conduct. These learnings might be considered as the hidden, informal curricula (Sarason, 1971) which are largely invisible to the teachers and students but which have an important impact on the daily lives of people within these schools. In order to tease out these more subtle school purposes in the qualitative research, open-ended questions about observed values were supplemented with

situational questions which demanded choices and forced respondents to confront their basic underlying assumptions. In the questionnaire, a Q-sort was used to have participants rank preferred school emphases to ensure that respondents would be jarred into thinking about some of their priorities for schools, rather than simply replying that all themes are equally important.

The results of the qualitative and quantitative research indicate that the conceptual framework has functional utility as a research tool in the investigation of school organizational cultures. Schools can be differentiated on the basis of their operating values categorized by the typology. Both the qualitative and quantitative findings provided a convergent validity in the assembly of an individual profile for each of these schools with their similar, yet different approaches to their students. The qualitative and quantitative approaches confirmed Goodlad's (1984) fourfold goals as value categories for parents, teachers and students as they think about school purposes, but on another more unconscious, basic assumption level, schools also foster student development in the areas of cooperation, competition, compliance and creativity. The mixed-method research which used this mental construct of school purposes shows that there are differences between schools in their operating emphases which might be associated with their perception of effectiveness and with their actual academic performance.

The research reported in this study is one which needs further refinement and validation. The small sample size used to corroborate and extend Goodlad's (1984) conceptual framework is problematic in making generalizations beyond the case study itself, and, although Goodlad's work used thousands of respondents, he did not seek to verify his framework but rather employed it as a *fait accompli*, as have a number of other researchers like Willms (1990) and Dickson (1990). Although this study provided a good selection of responses from teachers and students, the problems of accessing parents must be addressed in future research in order to link clearly into the

societal expectations for schools. The indication from this study is that there is agreement between students and their parents around the need for an increased emphasis on career education, but this is not a perceived need by teachers.

The questions in the interviews did not uncover the basic assumptions about desired school emphases in a way which paralleled the integrated questions about perceived operating school values. It was obvious in the analysis of these interviews that situational questions designed to create conflict and force respondents to make value decisions succeeded in revealing assumptions about such accepted but often "invisible" school emphases like competition and compliance. In public dialogue there needs to be more emphasis on probing these basic assumptions so that informed and rational conversations can occur (Senge, 1990). More research in this field could help to challenge school decision-makers to consider the effects of some underlying principles which are taken for granted in the daily operation of schools and which may have important effects on perceptions of school effectiveness and on academic performance.

Longitudinal Performance Trends

Effectiveness is dependent on place and time: schools must define themselves in the context of others and must be able to demonstrate their performance not just on a year-to-year basis but over a time period which gives confidence that the outcomes are due to the efforts of the school, not to chance nor to changes in student intake or other pertinent variables. The need for a longitudinal study was recognized as necessary to provide greater validity and reliability to research on school effectiveness (Mackenzie, 1983; Willms & Cuttance, 1985) and, although there has been a recent interest in longitudinal trend analysis, even recent studies such as ones conducted by Gray et al. (1995) or Sammons, Thomas, Mortimore, Cairns, Bausor, and Walker (1995) have been constrained by data which is of relatively short term;

for example, 3 years in the case of both these studies. Three years is an absolute minimum in establishing a trend, and the findings from the 7 year analysis conducted in this research would strike a strong cautionary note about the validity of any research which does not examine at least 5 years of data. Such strict standards for longitudinal studies are difficult to maintain, however, in the face of changing curricula and revised examination formats, and in the problems of finding: (a) jurisdictions where centralized testing is tied directly to the curriculum and (b) enough schools to provide adequate comparative data. These research demands make British Columbia secondary schools a potentially fertile and yet relatively untilled ground for the study of school performance trends.

In this research project, the reason for undertaking a longitudinal study was motivated by a need to pick pairs of high-low performing schools for a purposive sample in order to examine school organizational values in the context of perceived and actual results. From this analysis of 174 British Columbia schools over a 7 year period, a number of conclusions were reached which had a direct bearing on the subsequent case study phase of the research, as well as implications for better overall understanding of these secondary schools .

First, this study found that there was a moderate-to-high correlation from one year to the next for individual school scores in provincially examinable grade 12 subjects. The range for most subjects was between .500 to .700 and this would be similar to other studies reported by Gray et al. (1995) in Great Britain and in The Netherlands. This consistency is notable since the number of schools in the study is so large, and the school's mean score was used as the comparison rather than a mean based on a numerical transformation of letter grades as used in the British studies. It would be expected that the mean score would be more susceptible to variations than the less differentiating letter grades. With this relatively strong level of annual correlation for the individual course subjects within schools, then, it is not surprising

that there was considerable stability over the 7 years: approximately 50% of the grade 12 examinable academic subject results within schools remained in a high, middle or low performance band in at least 5 out of 7 years.

However, when looking at overall levels of school performance to determine if there are schools which demonstrate consistency in their academic outcome measures, then it is a different story. Only about 13% of schools could show consistent outcomes for 6 out of 9 subjects over the 7 years, with most of this stability in the top band. Approximately 10% of the 174 schools were able to show consistent patterns of high level success across a range of academic subjects. This finding would parallel the research of Gray et al. (1995) where 15% of their schools remained in the top quarter over a 3 year time period, or earlier studies by Rowan et al. (1983) where 10% of the schools in their sample were effective for 2 consecutive years and only 5% for 3 consecutive years. Like the Gray et al. studies, this research into British Columbia schools found that the middle and low performance bands showed negligible levels of long term consistency.

This rather low percentage of consistent schools, but high level of school subject consistency, leads one to question whether the effects of the individual school might be far less important in the search for effective schooling than the effects of individual departments and subjects. As further evidence of this observation, 12.6% of the schools were found to have a mixture of all three bands (consistently low, middle or high range results) for various courses over the 7 year period. And these consistent variable-band results were not split into logical categories of subjects such as high performance in English and History but low in Mathematics and Chemistry. When a school is consistently high performing in Literature but low in English or low in Mathematics but high in Physics, one has to recognize the powerful effect of individual teachers and the weaker effect of the school, rated by many researchers as

explaining as little as 5% (Gray, Jesson, & Sime, 1990) or only as much as 13% (Stringfield & Teddlie, 1988) of the variance between school results.

One might argue that such schools with consistently mixed results are really ineffective, that the organizational "pull" is simply not powerful enough to counter the effects of individual teachers at the low end of the success scale. The case study stage findings of this research corroborate this last observation. Some of the individual teachers in Arlingdale and Northridge set their own high expectations and standards for performance which prevailed against the general trends for their schools but these were high level expectations set against a pattern of low academic achievement in other subjects. It is more difficult in the higher performing schools to determine the organizational effect of the school on teachers or departments which might have been even less effective if it were not for the organizational impact.

A second finding from the longitudinal study concerns the use of English and Mathematics scores as predictors of overall school success in academic subjects. This study found that English and Mathematics are not particularly good predictors of school academic success. For example, in the 7 year study of academic results from 174 schools, 25% of schools consistent in a minimum of 5 out of 9 subjects did not include either of these two subjects as one of their "consistent" courses. Any use of these two subjects as accurate predictors of overall academic success is making two risky assumptions: first, that school-wide academic success is present and, second, that English or Mathematics correlate with the performance in other academic subjects. This study has provided considerable evidence that English 12 and Mathematics 12 do not correlate any better nor any worse than any other of the nine grade 12 subjects for the whole range of academic subjects, although there are slightly higher correlations between Mathematics 12 and the science courses.

These findings do not match the work of other researchers such as Witte and Walsh (1990) who found high correlation (.96) between standardized reading and

mathematics achievement scores in secondary schools in Milwaukee, Wisconsin. In this current study, however, the use of the provincial examination scores which match the curricula should be a better test of school effectiveness than the standardized achievement tests used by Witte and Walsh. The findings from the research presented here offers further testimony to the caution about using such generalized tests which gauge classroom learning in an indirect manner.

Another warning should be sounded here as an extension of this discussion. In many of the effective school studies, the academic results for the subjects are aggregated across all subjects to produce a combined score for the school. In this longitudinal study, however, the inconsistency between course subjects within schools shows that the impact of the school-wide culture of the secondary school might be the wrong place to put the emphasis if research is aimed at finding conditions which will improve the delivery of education for students. (And this should be the primary focus for such research.) Aggregated scores such as the ones used by Rutter et al. (1979) and Gray et al. (1995) may present a picture of generalized school success but the influence of a few successful subjects may mask completely those courses with a history of poor levels of enrollment and poor academic results (Sammons et al., 1995).

Once more, in secondary schools like the ones studied here it may be that a better focus for the investigations would be on attempting to understand what individual teachers and departments do to engender enduring success in their particular subjects within the context of the school organizational culture. While studies of effective schools have focused on the school as the appropriate unit of analysis due to methodological restrictions and policy implications (Witte & Walsh, 1990), perhaps it is time to redirect research energies and resources into a multi-level analysis of school effectiveness, starting with the individual teacher and working through individual courses and departments until reaching the level of the school.

This multi-level approach is only possible if longitudinal data can be used to confirm the individual course subject trends at individual school sites. Without this wide landscape of comparison, individual variation obscures the generalized patterns which are far more convincing in the long term. However, when one looks at the broad landscape of academic outcomes over time, the powerful effect of the individual teachers within individual subjects is irrefutable.

A third finding from the longitudinal trend analysis which merits further discussion is the relationship between relative levels of course enrollments, expressed as participation rates, and the success rates on the examinations. On a global level of analysis, there would appear to be little or no relationship between these two variables. Successful programs and good teachers tend to attract more students as in the case of the Northridge School's French 12 course or Brandon Secondary's Chemistry 12 (Appendix 6). At the other extreme, some courses have such poor results that low levels of student enrollment simply result in the school dropping the course from its syllabus as in the case of History 12 at Arlingdale. But in other cases, a very successful academic program such as Arlingdale's Biology program restricts access to the senior classes to only those talented and industrious students who are willing to dedicate "heart and soul" to the course, and the results are understandably excellent for this select group of students. There is no clear pattern which links participation rates and examination results--as indicated by the inconclusive correlations for all nine course subjects studied.

This is good news for those who want to increase academic results as well as increase the numbers of students enrolling in these courses: schools need not restrict access to these courses to a select few top students in order to raise their overall level of student achievement or to maintain high academic standards and results. However, both the trend analysis data and the case study showed that there is not always a positive correlation between school scores and participation rates. In the extreme

situations, such as the Biology class at Arlingdale, there is an obvious connection between the types of students allowed into the course and the overall level of achievement. While the science teachers at Arlingdale Secondary School were very successful in getting high levels of performance from their pupils, one cannot help but wonder if more students could have benefited from their efforts and whether in opening their doors to these students, they might still have good levels of academic achievement.

In Brandon Secondary, the Biology 12 course had an increasing participation rate over the last 3 years of the 7 year study, moving from the 17th percentile to the 48th percentile out of 174 schools, but during this period still managed to remain in the top 25% of schools in the province in grade 12 student examination scores. In Northridge, the French 12 class maintained a solid level of academic success while the participation rate moved from the 3rd percentile to the 66th. However, there were other extremes, as well, as shown in the unusually high rate of student enrollment in academic English at both Arlingdale and at Northridge. In these two schools, and especially in the latter with the nature of its student population, there would appear to be an inappropriately high number of students funneled into the academic program with a resultant high failure rate and an overall consistent low level of school performance. Obviously, this is a question of balance and should be a matter for parents, teachers and students to discuss and to resolve in the best interests of the students.

It is also evident, however, that teachers and principals were not aware of the "big picture" with respect to issues such as relationships between participation rates and examination results. For example, the Northridge principal spoke with pride of his school's success rate in English because so many students were enrolled in the academic program rather than in the less demanding non-academic program. This school accomplishment is tempered, surely, by the fact that over the period from 1986

to 1992, this school ranked in the bottom 6% of schools in the province as judged by their consistent low level of performance. Even when the comparative data are provided for the schools, there is a reluctance or an inability to deal with the data in an objective and meaningful fashion, as evidenced in discussions in all four of the case study schools. This result parallels the findings of Coleman and LaRocque (1990) who found that the cybernetic paradigm of feedback information about school or district level performance was not well established, even in the more successful districts studied. Earlier findings by Sproull and Zubrow (1981) confirmed that the administrators who were power brokers of information about the system "preferred other forms of information--personal observation, teacher reports, and conversation with other personnel--for monitoring and decision making vis-a-vis organizational performance" (p. 74). These findings are consistent with the process cultures of these schools. The principals both reflect and represent the symbolic and operational aspects of such school norms which dictate less expressed interest in the organizational outcomes than in the means of production.

A fourth interesting finding of the longitudinal study was that the size of school grade 12 population did not correlate strongly with academic performance, except for the one subject of Mathematics 12 where the correlations were weak to moderate. This finding is consistent with Coleman's (1986) studies which reported no significant correlation between school size and achievement on province-wide assessments after factoring out the contextual and family background variables pertaining to the students.

There did appear to be a relationship between grade 12 population and participation rates. In subjects other than Mathematics and English (where there was no correlation), there was an inverse relationship between the senior student population and enrollment in academic courses: the smaller the school, the proportionately higher the enrollment in academic elective subjects. At first, this

may seem to be an unexpected finding. For example, why should smaller schools have more students choosing a specialty subject such as English Literature or Geography 12? Smaller and usually more rural schools would seem to be emphasizing academic subjects more than their urban counterparts by having proportionately higher levels of enrollment in the traditional academic programs than in vocational and technical courses.

The reason for this phenomenon probably has much to do with the restricted numbers of such courses which are able to be offered in these schools. Without sufficient numbers of students enrolling in the courses, the program could not be offered. Hence, in these smaller communities, schools do their best to ensure that the enrollments in these academic courses are kept high enough to justify their continuation in the school timetables. This would indicate that the courses which suffer are the non-academic trades and technical programs. If this is the case, then students in these smaller centers and rural areas are not having the same access to in-school career training as in the larger urban schools where they have a much wider array of programs from which to choose. The irony is that the students in the rural areas of British Columbia have less access to post secondary education in colleges and universities and may require a greater trades and vocational focus in their schools in order to prepare them for the workplace into which they may desire to enter directly upon graduation from grade 12.

The questionnaire and interview results would indicate that teachers in the secondary schools do not perceive the same degree of need for career education as the students and their parents. Since most secondary school teachers are trained in the traditional academic studies, the focus is on the preparation for academic post secondary pursuits, and the academic courses in these smaller schools are often maintained at all costs as a means for protecting the subjects the teachers are prepared to teach and to ensure that the academic courses are available for those

students who want to continue in this stream. Traditional academic programs are sacrosanct. This longitudinal study of school performance and participation rates would point to the need for more in-depth studies to investigate the validity of these speculations, and for possible policy and procedure implications in these smaller centers.

School Values Up-Close

The case study phase of this research offered a way to see if the values typology could be applied to help sort out the value emphases at individual school levels and to see if there are any patterns which might indicate differences between high and low performing schools. With its conscious disrespect for mixing paradigms and design strategies, the mixed-method approach was selected as means for conducting this research since new perspectives and insights were being sought in a complex social environment (Greene et al., 1989). The mixed-method case study was intended to investigate the consistently different academic results in two pairs of schools, not in a cause-effect linear study, but rather in an holistic manner in order to seek patterns of mutually reinforcing behavior and values.

One of the problems of such research is finding matched pairs of schools with the necessary characteristics. The longitudinal study of school performance in 174 schools over a 7 year period showed that finding schools with a consistent high or low level of performance over the majority of school subjects would be a difficult task, and it would be unlikely to find extreme case schools in proximity with one another. Rather than seeking outlier schools which exhibit extreme variations in their results, this study chose, instead, to focus on four secondary schools in stable and recognizably "average" school districts. Notwithstanding some perceptible differences in the makeup of the school populations, there really did not appear to be enough variation in the students between the four schools to account for the

differences in academic success between the higher scoring school and its lower achieving neighbor. Thus, it was anticipated as one of the major purposes for the study to be able to differentiate schools based on observations of what teachers, students, and parents perceived to be emphasized in their school, and on what they might like to see emphasized.

A number of observations and speculations were supported from both the qualitative and quantitative research findings of the case study phase of the research. While the qualitative results might be questioned based on the sampling decisions to interview a selected number of individuals in each school and the quantitative findings might be challenged based on the possibility that significant differences were in some instances a product of chance, the strong convergence from both methods does ensure a degree of confidence in the validity and reliability of the results. In some cases, the findings matched those from earlier research, for example, the modified use of Goodlad's (1984) conceptual organizer as a general framework for classifying the main goals of school. Other patterns emerged from the findings, however, which challenge and extend knowledge about school organizational values and school academic performance.

School operating values. The first observation, supported by findings from both methods, is that students and teachers perceived different operating values at work in their schools. The most consistent difference between the more academically successful schools and matched partners was the perception that emphasis on learning was a high priority in the school. This is hardly a surprise since this is a common finding from effective school research (Edmonds, 1979; Mackenzie, 1983; Murphy, 1992; Purkey & Smith, 1982; Rosenholtz, 1991; Rutter et al., 1979; Sammons et al., 1995). This case study, however, avoids the criticism that the standards used for identifying academic success are too short-term or too narrowly based on

standardized testing not related to the curriculum in the schools. There is considerable assurance with the longitudinal study that these schools have demonstrated consistent results over time. Thus, students and teachers were in agreement on the degree of academic focus in their schools and this perception of emphasis was matched in the general longitudinal performance outcomes in their school and in their overall judgment of school effectiveness. These two higher performing schools tended to be rated much more favorably overall by teacher, students and parents than were the lower performing schools.

Other findings about school operating values support the convergent conclusions drawn from other research on effective schools. Aside from a focus on learning and high expectations for student achievement, effective schools like Pauline tend to student emotional needs, and although the qualitative data from this research would suggest that all schools have teachers who care about students, in the two more academically successful schools there is a tight connection to learning. In the higher performing schools, students perceive that teachers provide support to them as individuals and they feel that teachers like them, even when tough decisions must sometimes be made. These positive interactions between teachers and students both in and out of the classroom have been documented as characteristics of effective schools by a number of researchers over the past 15 years, including Brophy and Good (1986) who found that successful teachers pay attention to student interests, problems and accomplishments and Mortimore et al. (1988) who found that it was not necessary to sacrifice the social-emotional aspects of teacher-student interaction in order to improve academic expectations and results.

Findings from this research reinforce the continuum of the intellectual-emotional themes in the values typology. These are value themes which should not be considered as opposing polarities but rather as mutually supportive and mutually reinforcing. The tight connection between nurturing and academic press is a very

powerful linkage in the practice and perception of good teaching. This message came through again and again in the student interviews.

Three school value themes (learning/intellectual focus, attention to meeting social/ emotional needs, solving individual problems in creative ways) emerged from the quantitative and qualitative findings as important school emphases which differentiated the school pairs in this study. The value theme which correlates strongly with emotional support for individuals is the degree of creative problem solving which is necessary when finding what is personally best for each student. Both of the high performing schools were judged by the students as attempting more creative approaches than in the paired lower achieving school. This was especially the case in Pauline where the emphasis on finding individual ways to meet student emotional needs as well as creating a successful learning environment was such a consistent school-wide teacher image of appropriate professional responsibility. It is notable, too, that Brandon with its standard traditional academic approach was perceived by the students (according to the questionnaire responses) as demonstrating more creativity than students perceived to be the norm in Northridge.

Few studies recognize this theme of creativity and innovation as an attribute of effective schools, nor as a purpose for education. Little (1982) found in her ethnographic study of six urban, desegregated schools that in only one school was there active encouragement for advocating new ideas. In another example, Willms (1992) used Goodlad's (1984) four goal model for education and developed a range of indicators for measurement of student outcomes in academic achievement, personal and social development, and vocational preparation but "creativity" as a desired subgoal is notably absent from his list. On the other hand, Willms does recognize the need for social control and suggests questionnaires to determine teacher and student levels of satisfaction with school discipline, but he makes no reference to the complementary theme of creativity and innovation.

Goodlad, Klein and Associates (1974) point out that public schools become less and less free as students move through the grade levels, noting that kindergarten displays the greatest freedom and provision for creativity within the system. The need for seeking new solutions and pressing for unique ways of seeing things is an essential aspect of our society but does not appear to be valued as a high priority by secondary schools even though as Goodlad (1984) observes:

The ability to create new and meaningful things and the ability to appreciate the creations of other human beings help one toward personal self-realization and benefit human society. Schools have a role to play in cultivating such appreciation and creativity. (p. 55)

The lack of references to creativity, innovation and personal freedom as aspects of effective schools may be directly related to the underlying assumptions of the researchers themselves or to the settings which they investigate. In searching for an academic press in the schools, the associations with a controlled learning environment are strong, especially as a reaction to some of the misguided efforts of school reform in the 1960's and 1970's where permissive education programs de-emphasized academic rigor and ultimately produced a societal backlash in the call for a "return to the basics". Research into effective secondary schools in Great Britain (Mortimore et al., 1988; Rutter et al., 1979), or in North America (Corcoran & Wilson, 1986) have highlighted the need for structure and orderly student behavior. As Sedlak et al. (1986) state, there can be no misunderstanding that compliance is an integral school purpose: "while schools may fail to teach all students the content and curriculum, few escape the lessons of obedience to administrative structure, the importance of rules, regulations and bureaucratic process, deference to superiors" (p. 156).

In the case study phase of this research, the school with the highest level of student-perceived value given to such social order and control was Northridge with its emphasis on a well functioning harmonic school unit. However, consistent with the findings of other researchers (Mackenzie, 1983), the need for an organized controlled

environment for learning also was recognized as an important operating value in Pauline and Brandon. There is a question of balance here which was shown in the results of the interviews and the student questionnaires. Northridge seemed overly concerned with matters of social order with students rating this focus as the most notable attribute of the school, while at Arlingdale, students recognized that the school was not characterized by an emphasis on an organized, controlled environment. Balanced between these two extremes were the two higher performing school pairs, with a recognition for social order, but not to the extreme.

Similar to the perceived need for balance in social order and control, the perceived emphasis on competition was high in both the lower performing schools, corroborating Goodlad's (1984) observations about the degree to which school curricular and extracurricular programs function in accordance with this central theme. As shown by this case study, when forced to challenge their basic assumptions, teachers and students recognized that competition was an underlying tenet of many school activities and programs. Some students and teachers felt very strongly that it was essential to academic performance; others felt there was too much emphasis on competition. Ultimately, the conclusion was that there must be a balance between group cooperation and competition in schools. Interestingly, both lower performing schools perceived competition to be a greater focus in their schools than did the students in their academically higher pairs. Just as the competition focus is a basic assumption, taken for granted and often not articulated or even recognized in the schools, effective schools research rarely addresses this value directly but couches this competition focus in the need for rewards and incentives for students and teachers (Brookover et al., 1979; Corcoran & Wilson, 1986; Mortimore et al., 1988; Purkey & Smith, 1982; Rutter et al., 1979). Such rewards are used to recognize individual or individual group achievement in an attempt to motivate students and staff.

Cooperation was a highly distinguishing factor at one of the successful academic schools as demonstrated by the questionnaire results: Pauline students and teachers perceived this value as an important attribute of the way the school conducts business. In the qualitative study, this emphasis was evident for both Pauline and also for Brandon, even though the focus at the latter school was on teacher cooperation rather than on cooperative learning strategies in the classroom as it was in Pauline. Such staff cooperation has been shown to have a positive effect on the organizational culture and school performance (Brookover et al., 1979; Mortimore et al., 1988; Rosenholtz, 1991; Rutter et al., 1979). As a prerequisite to identifying common purposes and discussing appropriate strategies for achieving them at the school level, it makes sense that schools where staff cooperate with students and parents should experience more success than those schools where individual teachers are left to fend for themselves as isolated units with different expectations and operating values (Little, 1982). This is a theme which will be revisited in the next section dealing with value congruency and change.

The final value theme explored in this research was that of career education as a manifestation of the need for schools to produce socially acceptable, responsible and productive citizens. This theme did not prove to separate high from low performing schools but is one clear instance of the influence of school district on the schools (Coleman & LaRocque, 1990), since two of the schools in the Mainline School District had noticeably greater emphasis on career education than did the schools in the Central District. Teachers in the two lower performing schools perceived the emphasis on career education to be significantly higher in their schools than the emphasis on learning/intellectual development, seeing their students as more vocationally than academically oriented.

The values typology has been used as a guide to the research in an attempt to determine whether there are any patterns which distinguish higher from lower

academically performing schools. Where the findings resonate with previous research findings there is some confidence in their validity, but this sample of four school is really too small to provide generalizations beyond those observational patterns which readers may perceive as having applicability by reason of similarity to their own setting. With this cautionary message in mind, a model of school operating values in academically successful schools is provided in Figure 10.1.

This model is intended as a graphic representation of the findings from this case study research. It is also an incorporation of the values typology into a holistic vision of the operating school values. Central to the core of an effective school must be a focus on student development. In the next most central ring, the tight connection between academic press and nurturing is essential. On the next orbital ring of this model are the two value themes of personal support and creative problem solving which correlated so strongly and which, to some extent, did differentiate the school pairs. Next, in order for schools to be able to provide this support, there must be a level of social order which is neither too oppressive nor too permissive, striking just the right balance for young people to be able to develop their potential as both individuals and as cooperating members of society.

Finally, in the outer orbit are the values associated with competition and career development. Competition was not seen as an overt value in the more academically successful schools, but when questions probed beneath the surface of espoused values, there was a recognition that there must be a certain amount of competition in schools. Although career education did not act as a discriminator between schools, the interest shown by students and parents and the need to ensure that learning is relevant to student futures would signal to schools that this important aspect of education which should not be forgotten. The academic paradigm which holds teachers fast in their vision of school effectiveness may be subject to change as this school purpose gains even greater attention in the public forum.

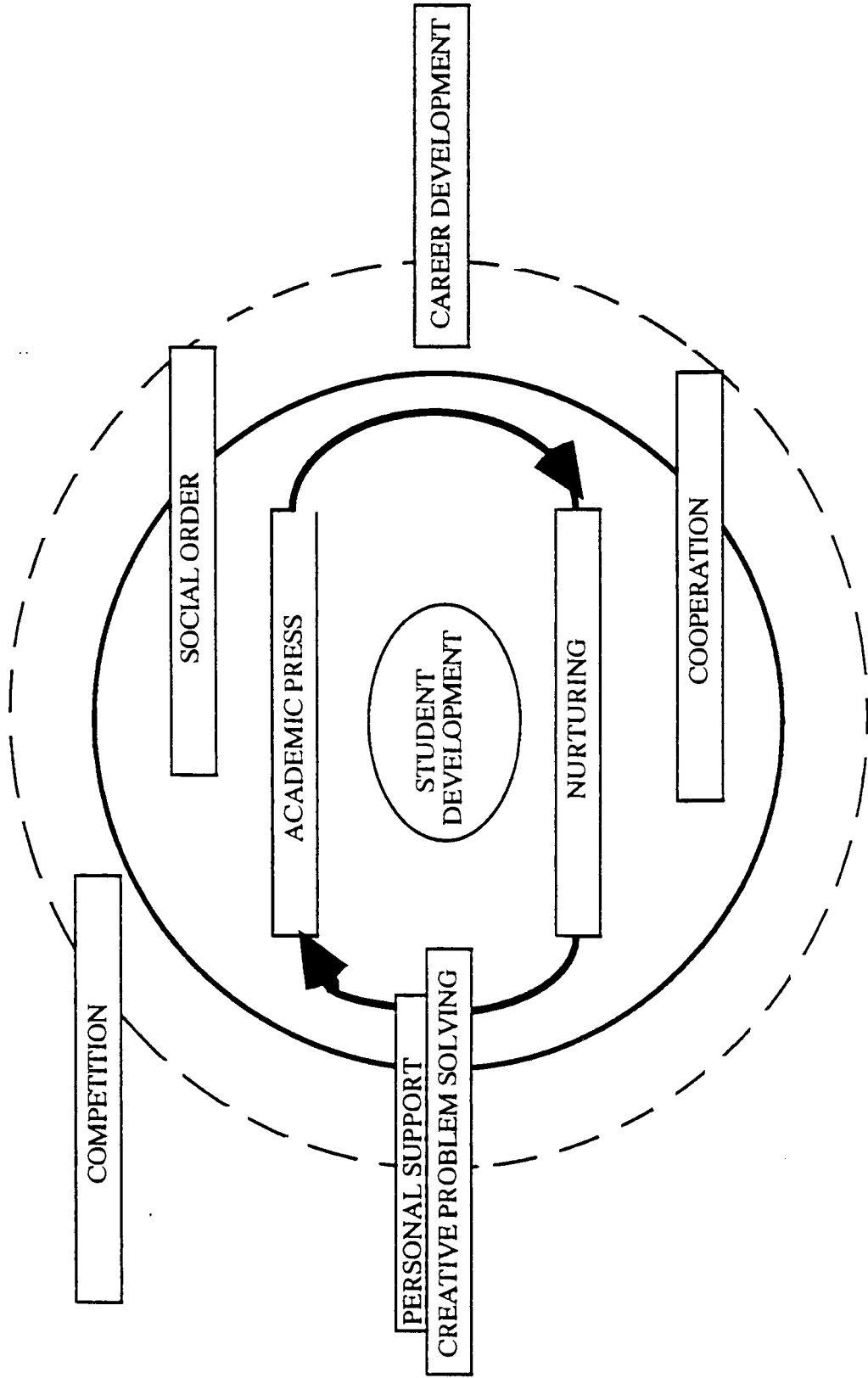


Figure 10.1. Speculative profile: organizational values and the academically successful school.

Desired values. The findings from this case study research with respect to desired values was somewhat surprising since there is a fundamental assumption built into all discussions of organizational effectiveness that schools have different needs and that the school shareholders, in effective schools, will be able to work together to compare "what is" with "what ought to be" and then to develop strategies to move to the desired state. But these research findings indicate there may be some problems with this image of the rational planning model which follows from a needs analysis and then anticipates consensual planning to close the gap between operating and desired values.

First, there was considerable range between groups as to what school purposes should be given priority in the schools. Reaching consensus in this arena of values and basic assumptions about "what ought to be" may turn into a very difficult exercise indeed. An informed conversation about the issues may reveal that personal "world views" condition the way people believe schools should be operating and the goals which they think should be directing these operations.

Second, this research showed that in these four schools there were insignificant differences between the schools' mean scores as to what teachers thought schools should be emphasizing. And for students, differences between the paired schools occurred only in the perceived need for academic emphasis. This would seem to indicate that teachers and students already have some "majority" sense of what is important for their schools, and this is a common agenda from school to school. This research indicates that, even though teachers might perceive that their students are not particularly academically talented or motivated (as in the case of Northridge) when asked to set priorities, these teachers still choose learning and intellectual development over career needs since this is their traditional academic paradigm of what ideal schools should look like. Career education does not fit their mental construct of what schools should be emphasizing or of what they want to be teaching.

Perceptions of desired school values are conditioned by basic assumptions which freeze teachers and students into historically rigid views of what the school should be about. Those who attempt informed conversations between parents, teachers, and students about desired school emphases should be aware that across most schools, teachers will not hold the same value for career education as do the other two parties. Discussions about desired values could have more to do with the basic assumptions of the three groups than the actual needs of the students in any particular school.

Third, one has to consider how much the desired image of what the school should be emphasizing is influenced by the current operating values in the schools. Students in both of the higher performing schools expressed a significantly greater desire for academic focus in their schools than did those students in their neighbor school, yet the teachers described their students in these two higher performing schools as not particularly motivated to do well in academics. The push for academic success seems to have been initiated solely by the teachers, and they were able to change school norms in such a way so as to convince the students that academics must be an important school emphasis. If it were true that the student values changed as a result of higher expectations and resultant change in behavior, then this process would support research by Guskey (1986) who argues that alterations in attitude evolve concurrently with introduction and experimentation with new behaviors and not as a logically prior activity leading into the adoption of innovation. Guskey's conclusions might be applicable in the two case study schools where student behavior was influenced by the changing expectations of the teachers and by feedback to the students and teachers which resulted in further alterations in what they saw as important.

Thus, school organizational values may be dependent on the operating values established in the school by the group with the most power to create change. Students in the two more academically successful schools may have ranked the importance of

intellectual development higher than their lower performing counterparts because they were conscious that they were already experiencing more success. One would suspect that students in the lower performing schools ranked a focus on learning lower than students in the higher performing school pair because the emphasis in their schools has traditionally been one of low expectations. And low expectations have resulted, almost certainly, from the consistent low results. The causal chains are extremely difficult to sort out in these situations where belief and practice are so intertwined (Senge 1990).

Value congruency and change. The general conclusion from organizational research is that more effective organizations are more tightly linked in their structural, functional, and cultural aspect than are less effective ones (Deal & Kennedy, 1982; Murphy, 1992; Peters & Austin, 1985; Sergiovanni, 1992). In this case study, however, the correlation between operating values and desired values appeared to be extremely weak. This may have been due to the two different tasks in the questionnaire: respondents were asked to assess the degree to which value themes were emphasized in their school in the first part of the questionnaire and then were asked to rank preferred values in the second part. Goodlad's (1984) research used a much simpler approach, asking respondents to pick the most important goal from four options. In this case study of the four schools, teachers and students were asked open-ended questions about perfect schools in the qualitative research and were asked to rank eight variables for the quantitative analysis. This is a much more difficult task which lends itself to a greater degree of variability.

Notwithstanding this methodological factor, one would still have expected a greater degree of correspondence between perceived operating and desired values in the two higher performing schools. In fact, however, Northridge demonstrated as much value congruency as any of the other schools. This was the lowest achieving

academic school and, according to the questionnaire results, was perceived by students and teachers as least effective across all but one value theme (provision of an orderly environment). Value congruency cannot account for either perceived or actual levels of performance if the expectations or desired values are set at a low level. The immobilizing inability to change described by Sizer (1984) or Rosenholtz (1991) is characteristic of these low performing, low expectation schools, with frustrated teachers accepting the status quo and students and parents lacking the knowledge and power to create better learning conditions.

In the case study phase of the research, the two more academically successful schools actively sought to create a change in the intellectual performance of their students. In choosing to create the conditions for change, these schools did not seek consensus with their students nor with their parents, but their teachers did share a professional image of what could be done and mutually supported each other in changing the expectations for their students. Value congruency within the professional school staff would seem to be a critical element in the initiation and implementation of changed value systems, both for the teachers and for the students.

The struggle to create change at both case study schools caused temporary dislocation of established values and, at the time of the research, there still was less teacher-student desired value congruency at these schools than in a lower performing school like Northridge. Value congruency in the teacher visions of effectiveness might be a much more powerful attribute of an effective school "in transition" than more broad-based value congruency between teachers, students, and parents, especially when there has been a school history of low academic expectations. The image of a school which is "struggling" as suggested by Lightfoot (1983) and repeated by Coleman and LaRocque (1990) might be a better image for those schools seeking to become more effective than the image of consensual agreement as posed by Goodlad (1984). High aspirations may lead to disagreements between constituents

but they will hopefully translate into better conditions for students and teachers. There may be situations in which educators have a professional image of change which is initially neither shared nor valued by the parents or students, whose values and beliefs may not recognize possible academic success until incremental improvements are demonstrated and the school culture is changed not just through "talking" but through "doing and talking".

The desire to move from "what is" to "what ought to be" is a complex, multivariate process (Fullan & Stiegelbauer, 1991) in which there must be a clear understanding of possibilities for the future. In a study of school improvement in five American secondary schools, Miles and Louis (1990) reported that there appear to be at least five issues involved in getting from knowledge about what could be done to actual implementation of an innovation: (a) clarity of knowledge, (b) relevance of information, (c) action images which can be visualized, (d) will: the motivation to do something, and (e) skill: actual behavioral ability to do the action envisioned. The will is developed in the social arena of discussion, interaction and cooperation (Hall, 1988; Louis & Dentler, 1988) and the skill is developed through doing, not through intellectualizing (Fullan & Newton, 1988; Guskey, 1986). Other researchers have shown that the ability to move from the current state to a desired future condition is not a simple rational exercise but results from the interplay of personality and values of individuals as they grapple with competing images of how they personally fit into the organizational vision (Fullan & Newton, 1988; Johnston, 1990; Senge, 1990; Walberg & Genova, 1982; Zahorik, 1984).

While many writers extol the virtues of developing a covenant of shared values (Murphy, 1992; Sergiovanni, 1992; Senge, 1990), this research shows that, like the change process itself, there are many complex levels of value congruency beginning with the individuals' own basic assumptions and values, to agreement within and between groups, and to the differences between operating and desired states of being.

With the pluralism of our societal values and the wish to "have it all" there are bound to be tensions in attempting to reach consensus on desired school purposes, as shown in the four schools in this research. Sizer (1984) observes that the road to change and better learning opportunities for students may not be accommodated through initial value congruency:

Inevitably, some communities will be too split to accommodate their values in one school, to reconcile their differing specific definitions of decent conduct. However, there can be as much refreshing strength in the tension over values as there are seeds for discord. (p. 130)

Similarly, Rosenholtz (1991) found that it was the dialogue about issues and the active professional discussions which characterized improving schools more than cosmetic agreement on school goals. Schools which encourage open dialogue have the opportunity to challenge basic assumptions by creating dissonance just as the situational interview questions caused people to confront their own personal values and deal with internal value conflicts. This is not to say that schools should not be seeking to set collective high aspirations and to work together with all shareholders to accomplish their dreams. The findings of this research simply caution that the world of schools is a messy but interesting place where rational, straight-line actions and reactions are not the norm but the exception.

Figure 10.2 provides a model for consideration of school values and change. In this model, the collective vision of the teachers has most power to create circumstances for new operating values. Behind the teachers, with less potential to initiate change and with similar, but different images of desired school purposes, are the students and parents. This may certainly not be the case in all situations. For example, parents may be able exert a greater political pressure than teachers and may succeed in having innovations mandated through legislation. What we know about the change process, however, would show that such top-down change is only successful when the teachers have the will, the skill and the support to implement the

innovations (Fullan & Stiegelbauer, 1991; Louis & Dentler, 1988; Miles & Louis, 1990). Figure 10.2 also indicates that there is greater clarity and group agreement on the operating values in the schools even though the images are somewhat different depending on the group. The vision of desired values is indistinct, as has been shown in this research. Finally, schools exhibit different operating values based on their context, inputs, programs, and the reciprocal effects of both perceived and actual performance levels.

In closing this discussion of value congruency and organizational change, I am reminded of a nightmare I had as a first year teacher with the responsibility of conducting my 13 year old students from the classroom to the library. The school expectation was for quiet, mannerly students lined up and led to their destination. As a young person keen to do my best I always felt that this was an impossible task, especially in my nightmare, as my students had the disconcerting habit of transforming themselves into mosquitoes when my back was turned. You can imagine how difficult it was to gain control over the a class of buzzing, winged, noxious insects who, unlike their real-life student counterparts could get out of line in three dimensional rather than just two dimensional space. In some ways, I think that gaining consensus on the wide array of school purposes, even when organized into the eight categories of the values typology used for this research, might be as daunting a task as lining up my class of mosquitoes. The first step, however, must be a dialogue which leads to some understanding of the inter-relationships and the tensions between the historically developed expectations for schools and the possible images of schools for the future.

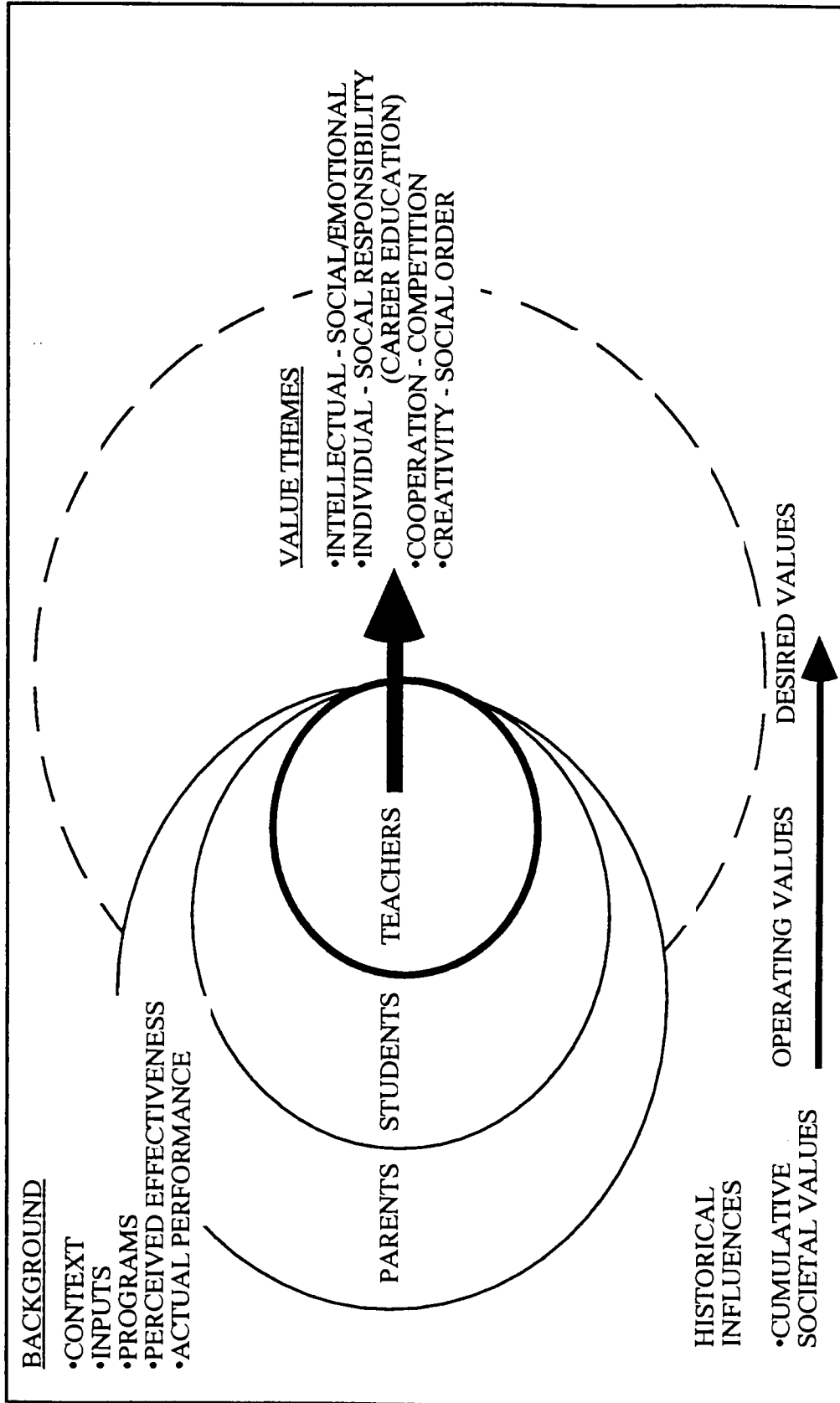


Figure 10.2. Values and change in case study schools.

10.3 LINKAGES WITH SCHOOL EFFECTIVENESS RESEARCH

Reasons for conducting this research originated, to a large extent, in an interest in the studies of school effectiveness which have been conducted for the past two decades in North America and Europe. Throughout this chapter a number of observations and conclusions relate directly to the body of research findings which are compiled in a comprehensive review by Sammons et al. (1995). Table 10.1 provides summary linkages between the findings of this current investigation into school effectiveness and values and the general conclusions set out by Sammons et al. For the most part, the findings are congruent but there are areas where this research raises questions which deserve consideration.

This study of school values would reinforce the general conclusions by Sammons et al. (1995) that there are a number of inter-related factors associated with academically successful schools: high teacher expectations for student achievement, accompanying teacher emotional and personal support for the pupils, and a school environment characterized by cooperation and creative problem-solving. The findings from the case study phase of this research, however, call into question the assumption that schools which demonstrate a tighter alignment between vision (desired values) and behavioral norms (operating values) will be perceived as more effective or, indeed, will demonstrate higher levels of academic achievement--unless this agreement between "what is" and "what ought to be" is focused specifically on the importance of learning and a shared understanding of high expectations for student performance. In addition, it would appear that it is the school operating values which are more important in discriminating between high and low performing schools than the desired values which appear to be more dependent on group and role perspectives (i.e., teacher or student) than on the perceived needs of the individual school.

Table 10.1

Comparison of Study Findings with Effective Schools Research Summary (Sammons et al., 1995)

Effective Schools Research Findings	Agreement Level	Comment Based on Current Study
1. Professional leadership. 1.1 Firm and purposeful. 1.2 A participative approach. 1.3 The leading professional.	Not examined in depth.	<ul style="list-style-type: none"> •Leadership styles differed across all four case study schools.
2. Shared vision and goals. 2.1 Unity of purpose. 2.2 Consistency of practice. 2.3 Collegiality and collaboration.	Little agreement. Agreement. Not examined in depth.	<ul style="list-style-type: none"> •Correlation between operating and desired values weak in all four schools. •Operating values (consistency of practice) discriminate high-low schools better than desired values. •Effect of departmental values and practices accounts in part for variation in achievement outcomes within schools. •Cooperation perceived to be emphasized more in higher performing schools, both in between staff and between staff and students.
3. A learning environment. 3.1 An orderly atmosphere. 3.2 An attractive working environment	Partial agreement. Not examined in depth.	<ul style="list-style-type: none"> •Over-emphasis on student compliance may be counter productive, as is under-emphasis.
4. Concentration on teaching and learning 4.1 Maximization of learning time. 4.2 Academic emphasis. 4.3 Focus on achievement.	Not examined. Strong agreement. Strong agreement.	<ul style="list-style-type: none"> •Teachers and students in higher performing schools perceived success in academics as important and attainable school value, emphasized in their schools.
5. Purposeful teaching. 5.1 Efficient organization. 5.2 Clarity of purpose. 5.3 Structured lessons. 5.4 Adaptive practice.	Not examined. Partial agreement. Not examined. Agreement.	<ul style="list-style-type: none"> •Teachers in higher performing schools focused on academic performance (high expectations) -- a school value recognized by the students in these schools--but teacher-student congruency in other perceived operating or desired values did not discriminate high-low school pairs. •Emphasis on creative problem solving more evident in higher performing schools.

Table 10.1 (continued)

<p>6. High expectations.</p> <p>6.1 High expectations all around.</p> <p>6.2 Communicating expectations.</p> <p>6.3 Providing intellectual challenge.</p>	<p>Strong agreement.</p> <p>Partial agreement.</p> <p>Strong agreement.</p>	<ul style="list-style-type: none"> •Higher performing schools had higher expectations for student academic achievement. •Except for focus on academic achievement, no discrimination between high-low schools on teacher-student agreement in other operating/desired value themes. •Teachers in higher performing schools believed in challenging students to achieve. <p>Lower achieving schools had lower expectations for student achievement.</p>
<p>7. Positive reinforcement.</p> <p>7.1 Clear and fair discipline.</p> <p>7.2 Feedback.</p>	<p>Partial agreement.</p> <p>Not examined in depth.</p>	<ul style="list-style-type: none"> •More effective schools found a balance between too little and too much social order and control. Lowest performing school had highest levels of perceived social order. •Students and teachers in more successful schools were more aware of their school's academic success, but displayed little knowledge of specific details. •More successful academic schools were perceived more successful in a wide range of school purposes than were lower performing academic schools.
<p>8. Monitoring progress</p> <p>8.1 Monitoring pupil performance.</p> <p>8.2 Evaluating school performance.</p>	<p>Not examined in depth.</p> <p>Partial agreement.</p>	<ul style="list-style-type: none"> •None of the schools appeared to monitor school-wide outcomes systematically, although teachers and students in the two higher performing schools perceived their school to have higher overall results than perceived by lower schools. •Teachers in more successful schools were aware of improved academic results in a general sense.
<p>9. Pupil rights and responsibilities.</p> <p>9.1 Raising pupil self-esteem.</p> <p>9.2 Positions of responsibility.</p> <p>9.3 Control of work.</p>	<p>Agreement.</p> <p>Not examined.</p> <p>Not examined.</p>	<ul style="list-style-type: none"> •Attending to personal needs of individuals was characteristic of higher performing schools, particularly when linked with academic achievement.
<p>10. Home-school partnership.</p> <p>10.1 Parental involvement in their children's learning.</p>	<p>Not examined in depth.</p>	<ul style="list-style-type: none"> •Teachers in lower performing schools perceived more home problems but none of the teachers in the high or low performing schools expressed high levels of parental support for academic achievement.
<p>11. A learning organization.</p> <p>11.1 School-based staff development.</p>	<p>Not examined in depth.</p>	<ul style="list-style-type: none"> •Teachers in two higher performing schools believed they had actively changed the operating values and norms re: student academic achievement, one school through meeting emotional needs and cooperative learning, the other through a cooperative staff focus on academics.

This current study also supports the effective schools research conclusion that more successful schools ensure well controlled student behavior to promote a productive learning environment. It is important, however, that such emphasis on social control is viewed as an instrumental means to student achievement and does not become an end in itself, potentially becoming overvalued and perhaps counterproductive to creative problem-solving where group rules must sometimes be bent in order to meet individual needs. The two higher performing schools in this study seemed to have struck a balance between too much and too little emphasis on social order and compliance.

This study has attempted to extend the range of school purposes beyond the cognitive, affective and behavioral outcomes traditionally employed in school effectiveness studies. In doing so, even though focusing only on articulated values and perceptions of effectiveness rather than actual outcomes in areas other than academic achievement, this research does expand the conceptions of school effectiveness and provides an opportunity for reasoned considerations of a broader array of school-wide characteristics to be investigated in future research.

Finally, the longitudinal study of school academic performance highlighted some of the potential problems which can occur if schools are judged to be effective using narrow indicators of performance over a short time period. Consistent and enduring performance across a number of academic subjects is relatively rare in the secondary schools examined in this study, and the impact of the individual subject department would appear to be worthy of greater investigation as a critical variable in determining secondary school academic outcomes. Use of aggregated scores or outcomes in specific subjects like English and Mathematics may mask the effects of these individual subject departments. Studies of effective secondary schools should be mindful of these findings.

10.4 CAVEATS AND FUTURE DIRECTIONS

This research has attempted a holistic view of a complex topic. This holistic approach assumes that the research will be less likely to focus on singular cause-effect relationships and, instead, will attempt to assemble a more complete picture of the organizational phenomenon being examined (Senge, 1990). Theoretically, this assembled picture would yield broad patterns of understanding rather than narrow, linear interpretations of reality (Guba & Lincoln, 1989). By integrating various perspectives, a composite portrait of four schools was sketched against a landscape of academic performance stretched over time. A concept of organizational effectiveness was historically derived and spatially presented in order to use as an heuristic guide to these investigations. While such an approach has some personal appeal in building a cumulative understanding of the phenomena under examination, there are many caveats which temper the insights presented through discussion of these findings. Some of these cautionary notes indicate a need for further research, while others point out the errors which might lead to better research designs in similar studies.

The holistic approach is a difficult task for a single researcher with limited amounts of time and financial resources. This study did not involve extended visits to the schools, but as the investigation proceeded there was frustration at not being able to delve into some issues as completely as desired due to the restrictions of time and expense. For example, although the influence of the leadership in the school has an obvious effect on the formulation and maintenance of school organizational values, exploration of this important aspect of the school was limited to the introductions to each school. Much has been written about the importance of leadership in an effective school, especially in the sense of symbolic leadership which fuses the basic assumptions and values into a code of action and operating norms (Begley, 1990; Blase, 1987; Blendinger, 1989; Sergiovanni, 1992; Sergiovanni &

Corbally, 1986). Although this was an interesting avenue to pursue, it was beyond the scope of this study. Other interesting vistas were revealed through the longitudinal study of school performance or through the qualitative and quantitative analysis but these too were not pursued in depth due to the need to gain holistic perspectives.

There are also temporal problems in this type of research. Although a longitudinal study of academic performance in British Columbia schools provided assurance of a lasting phenomena, the case study phase of the research was but a thin slice of time, only a few months in duration, and the observations drawn from perceptions of the teachers, students, and parents deserve the same criticism one might make of a single year study of examination results in determining a school's academic performance level. The opinions of the grade 12 class of 1993 may not reflect those of the year earlier, and the same can be said of teacher views. Casting the partial shadow of current values against the backdrop of past performance levels may cause some to question the findings as longitudinally representative of the school cultures.

Similarly, the stories of the changes which had occurred at both high performing schools were reconstructions, validated from different sources, but reconstructions of school history nonetheless and fraught with the inescapable subjective interpretations of the storytellers. Ideally, studies of school effectiveness which are concerned with long term performance should gather perceptions of "value change" over time. In some defense of this self-wrought criticism, however, it has been found that organizational culture is remarkably stable (Corbett, 1987; Deal, 1990; Johnston, 1990) and, with the exception of Arlingdale, none of these schools had undergone significant change in their populations of students or teachers over the five years previous to the study. This research recognized the considerable disruptions which were underway at Arlingdale--disruptions in both the physical and symbolic senses.

The consistency in the other three schools, however, would lead one to believe that their school cultures had not changed appreciably in the period preceding the research.

The longitudinal study suffers as well from a number of procedural assumptions and methodological shortcomings. First, with the lack of data on student intake variables, the ability to create residual student scores in a value-added determination of school achievement was beyond the capability of this research. Second, the use of the three percentile bands limits judgments of consistency since there may be schools which have stable academic outcomes but their scores consistently straddle the 66th or 33rd percentile cut-offs. Third, little attempt was made to consider those schools which showed a trend for improvement or decline. These schools, in the midst of change, might offer much more insight into the types of behavioral and, presumably, value changes which would provide information and motivation to other schools interested in improvement.

The longitudinal analysis was a necessary first step in the selection of schools for the study, and while it did provide schools with a large number of the prerequisite characteristics, the schools selected for this study did not exhibit the degree of differences in academic performance which might have been preferred. However, this was a partial blessing perhaps, since inconsistencies in school performance across all nine academic subjects are more common than not, and the initial selection provided credible schools for the close-up look at organizational values. In this sense, there is more applicability of the findings to other similar situations than if maximum variation schools had been used.

The disappointing return of the parent questionnaires resulted from a procedural error. In the pilot schools, questionnaire returns were much higher because the questionnaire was sent home in the school report cards. In the case studies, however, the questionnaires with a stamped, addressed envelope were sent home with the

students. This proved to be an unfortunate waste of time, effort and money. It is likely that many of the questionnaires did not leave the school premises. The apparent convergence of parental and student opinions about perceived and operating values will have to be left to future researchers in this topic.

Notwithstanding some of the improvements which could be made in the questionnaire and interview items, the problems associated with both qualitative and quantitative assessment of desired values could be addressed in subsequent studies using this conceptual framework. Goodlad's (1984) approach of asking for the most important perceived or preferred goal is too simplistic, given the complex nature of the debate over what schools should be about, but on the other hand, the ranking of desired school values judged against a scaled questionnaire assessing perceived operating values is a mixed-method in itself and should be modified. There was, for example, no cross validation for the general descriptors used in the Q-sort exercise against the eight value themes. This, too, is a methodological concern.

Finally, the use of the values typology has its mixed benefits as a research tool. On the one hand, it provides a directional instrument for the investigative journey and can be rationally presented based on past investigations into the topic of organizational values. As shown, it did provide a useful means for categorizing the interview responses and for building a theoretical base for discussions about school purposes. If properly understood and manipulated, it has potential as a compass to orient explorations in the sometimes murky and uneven terrain of school organizational values. The abuses of such a conceptual tool are obvious, however, in trapping one into paradigmatic visions of reality.

There are a number of intriguing questions and issues which have arisen from this research which deserve further investigation. The similarity between the researcher predispositions as found by Quinn and Rohrbaugh (1983) and the typology of school values would not seem to be coincidental, but the linkages between these

two models should be explored in more detail. For example, if the same approach as Quinn and Rohrbaugh's were taken in determining the mindscapes of researchers investigating effective schools, would the results be convergent? Would other types of organizational cultures with more clearly defined goals be as difficult to differentiate using this spatial typology as the school "process" culture? Is there any relationship between the learning style orientation of a researcher and the predisposition to judge organizations according to personal images of effectiveness? These speculative questions arose as the research progressed and new insights were developed.

The British Columbia school examination data hold great promise for researchers who are interested in delving deeper into the relationship between participation rates and academic achievement. One might find patterns which assist schools in their formal and informal decisions about access to senior programs, and, hopefully in their discussions with parents and students around this topic. There would appear to be little relationship between these variables at the macro-analysis level but there were clear patterns observable in the micro-analysis of the case study research phase.

As already noted, the longitudinal study focused on consistency of performance in an attempt to pick the pairs of schools for the matched study. More important for the study of school improvement would be investigations into those schools where there is a variable trend in student performance to determine if there are any common factors for such improvements or declines. In addition, the opportunity exists for de-aggregated studies which examine certain types of schools, for example, comparisons of rural and urban schools or schools in different socio-economic contexts. The number of schools in the total pool is large enough to find enough samples for these specific research purposes.

It is apparent from this study that the utility of studying school organizational cultures should be carefully considered. If individual departments and teachers can have such a profound effect on the long term academic results and school culture has at best a moderate-to-weak effect, then it would make sense to investigate in more detail those factors which make a difference over time at the subject and department level. The best focus for school improvement may be in helping individual teachers or departments build change-oriented cultures in which the will and skill to improve are supported technically, collectively, and emotionally. On the other hand, those exceptional situations where student achievement significantly exceeds school patterns and norms should be the subject of research concentrating on what works for these students.

10.5 CONCLUDING COMMENTS

This research provided an introduction to a more detailed multi-level investigation of value congruency and the links with perceived and actual effectiveness. Hopefully, this study has shown that there are many considerations involved when seeking agreement on school directions, not the least of which being that the mental construct of effectiveness has some basic assumptions built into it which seriously affect the manner in which people come to the conversation: confusing personal images of schools inherited from a historical societal perspective, individual mindscapes of what is possible and practical, considerations of the effect of current operating values on visions for the future, predispositions toward certain value orientations merely by dint of being a teacher, student, or parent. It is within our social capability to deal with these issues in an informed and open fashion, recognizing the inherent difficulties but not being overcome by them. Understanding different viewpoints and continued listening are essential for reaching agreement.

Findings from this study also would confirm the emerging realization in organizational theory that systemic change does not necessarily occur in a linear sequence of vision setting and problem solving wherein organizational members seek to close the gap between "what is" and "what might be." In schools the desired futures are conditioned by the strong influence of the background and role of the individual, the underlying basic assumptions which drive decisions on a day to day basis, and the norms of the organization. Change initiatives might be better served by focusing on operating values and by making incremental adjustments to the vision of what is possible--a vision which can be altered at least as much by action as by discussion. The rational planning model which emphasizes the establishment of organizational vision prior to implementation of change should be reconceptualized into a mutually interactive cycle which involves dialogue, action, and vision setting occurring in a circular, reinforcing manner rather than a sequential, straight-forward fashion.

This research was driven by a need to provide better information and insight into educational discussions of school effectiveness and school improvement. As arguments sometimes are driven to hard positions which elevate one school purpose over another, the question of balance is forgotten, a balance which good schools and good teachers realize must be maintained to provide optimum conditions for learning. Hopefully, the research findings reported in this study will help inform our conversations about public education in a constructive and meaningful fashion for the benefit of the young people in our schools.

BIBLIOGRAPHY

- Bantock, G.H. (1980). Dilemmas of the curriculum. Oxford: Martin Robertson.
- Bates, R.J. (1987). Corporate culture, schooling, and educational administration. Educational Administration Quarterly, 23 (4), 79-115.
- Begley, P.T. (1990). How administrators' values influence their decisions. The Canadian School Executive, 10 (4), 3-8.
- Bennett, S. (1974). The School: An organizational analysis. London: Blackie Publishing.
- Blase, J.J. (1987). Dimensions of effective school leadership: The teachers' perspective. American Educational Research Journal, 24 (4), 589-610.
- Blendinger, J., & Jones, L.T. (1989). Start with culture to improve your schools. The School Administrator, 46 (5), 22-25.
- Bonstingl, J. (1992). Schools of quality: An introduction to total quality management in education. Alexandria, Virginia: Association for Supervision and Curricular Development.
- Borg, W.R., & Gall, M.D. (1989). Educational research: An introduction. New York: McGraw-Hill Book Company.
- Boyd, W. (Ed.) (1956). The Emile of Jean Jacques Rousseau. New York: Teachers College Press.
- Boyd, W. (Ed.) (1962). Plato's republic for today. London: Heinemann Educational Books Ltd.
- Brookover, W.B., Beady, C., Flood, P., Schweitzer, J., & Wisenbaker, J. (1979). School social systems and student achievement: Schools can make a difference. New York: Praeger.
- Brophy, J. & Good, T.L. (1986). Teacher behavior and student achievement. In Wittrock, M. C. (Ed.). Handbook on research and teaching, (3rd edition). New York: Macmillan.

Cantor, N.F., & Klein, P.L. (1969). Medieval thought: Augustine and Thomas Aquinas. Waltham, Massachusetts: Blaisdell Publishing Company.

Caracelli, V., & Greene, J. (1993). Data analysis strategies for mixed-method evaluation designs. Educational Evaluation and Policy Analysis, 15 (2), 195-207.

Coleman, J.S., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfield, F., & York, R. (1966). Equality of educational opportunity. Washington, D.C.: Government Printing Office.

Coleman, P. (1986). School districts and student achievement in British Columbia: A preliminary analysis. Canadian Journal of Education, 11 (4), 509 - 521.

Coleman, P. & LaRocque, L. (1990), Struggling to be "good enough": Administrative practices and school district ethos. London: Falmer Press.

Corbett, H.D., Firestone, W.A., & Rossman, G.B. (1987). Resistance to planned change and the sacred in school cultures. Educational Administration Quarterly, 23 (4), 36-59.

Corcoran, T. & Wilson, B. (1986). The search for successful secondary schools: The first three years of the secondary school recognition program. Philadelphia, Pennsylvania: Office of the Educational Research and Improvement, U.S. Department of Education.

Cornford, F.M., (Trans.) (1941). The republic of Plato. London: Oxford University Press.

Cusick, P.A. (1987). Introduction. Educational Administration Quarterly, 23 (4), 5-10.

Daft, R. (1991). Management (2nd ed.). Orlando: Dryden Press.

Deal, T., & Kennedy, A. (1982). Corporate cultures: The rituals of corporate life. New York: Addison-Wesley.

Deal, T. (1987), The culture of schools. In I. Sheive and M. Schoenheit (Eds.), 1987 A.S.C.D. Yearbook. Alexandria, Virginia: Association for Supervision and Curricular Development.

Deal, T. (1990). Reframing reform. Educational Leadership, 47 (8), 6-12.

- Dewey, J. (1916). Democracy and education. New York: Macmillan Publishing Co.
- Dickson, G. (1989). A 'values' framework for the British Columbia Education System. Research Forum, 4, 34-37.
- Dickson, G. (1990). The leadership implications of a Ministry of Education evaluation in three school districts: A naturalistic inquiry. Unpublished doctoral dissertation, University of Victoria, Victoria.
- Edmonds, R.R. (1979). Effective schools for the urban poor. Educational Leadership, 37, 15-27.
- Edmonds, R.R. (1981). Making public schools effective. Social Policy, 12, 28 - 32.
- Elmore, R.F. (1987). Reform and the culture of authority in schools. Educational Administration Quarterly, 23 4, 60-78.
- Fielding, N., & Fielding, J. (1986) Linking data. Beverly Hills: Sage Publications.
- Fogelman, K. (1984). Problems in comparing examination attainment in selective and comprehensive secondary schools. Oxford Review of Education, 10 (1), 33 - 43.
- Fullan, M. (1982). The meaning of educational change. New York: Teachers College Press.
- Fullan, M. G., & Newton, E.E. (1988). School principals and change processes in the secondary school. Canadian Journal of Education, 13 (3), 404-421.
- Fullan, M. G. & Stiegelbauer, S. (1991). The new meaning of educational change. New York: Teachers College Press.
- Getzels, J.W., & Guba, E. (1957). Social behavior and the administrative process. School Review, 65 (2), 423-441.
- Glickman, C. (1993). Renewing America's schools: A guide for school-based action. San Francisco, California: Jossey-Bass Inc.
- Goldstein, H. (1984). The methodology of school comparisons. Oxford Review of Education, 10 (1), 69 - 74.

- Goodlad, J.I. (1984). A place called school: Prospects for the future. New York: McGraw-Hill Book Company.
- Goodlad, J., Klein, F. & Associates. (1974). Looking behind the classroom door. Worthington, Ohio: Charles A. Jones Publishing Company.
- Gray, J., Jesson, D., Goldstein, H., Hedger, K., & Rasbash, J. (1995). A multi-level analysis of school improvement. A multi-level analysis of school improvement. School Effectiveness and School Improvement, 6 (2), 1-21.
- Gray, J., Jesson, D., & Sime, N. (1990). Estimating differences in the examination performances of secondary schools in six L.E.A.'s: A multi-level approach to school effectiveness. Oxford Review of Education, 16 (2), 137 - 157.
- Gray, L. (1991). Leadership: Navigating in school culture. The Canadian School Executive, 11 (4), 3-6.
- Greene, J.C., Caracelli, V.J., & Graham, W.F. (1989). Toward a conceptual Framework for Mixed-Method Evaluation Designs. Educational Evaluation and Policy Analysis, 11 (3), 255-274.
- Guba. E., & Lincoln, Y. (1989). Fourth generation evaluation. Newbury Park, California: Sage Publications, Inc.
- Guskey, T. R. (1986). Staff development and the process of teacher change. Educational Researcher, 15 (5), 5-11.
- Gutek, G.L. (1972). A history of the Western educational experience. Prospect Heights, Illinois: Waveland Press, Inc.
- Hall. G. E. (1988). The principal as leader of the change facilitating team. Journal of Research and Development in Education, 22 (1), 49-59.
- Hammersley, M., & Atkinson, P. (1983). Ethnography: Principles in practice. London: Tavistock.
- Henerson, E., Morris, L., & Fitz-Gibbon, C. (1987). How to measure attitudes. Los Angeles: Sage Publications.
- Hodgkinson, C. (1978). Towards a philosophy of administration. Great Britain: Billing and Sons, Ltd.

Hodgkinson, C. (1991). Educational leadership: The moral art. New York: State University of New York Press.

Houghton, W.E. (1957). The Victorian frame of mind: 1830-1870. New Haven: Yale University Press.

Johnston, H.J. (1987). Values, culture and the effective school. NASSP Bulletin, 71 (497), 79-88.

Johnston, S. (1990) Understanding curriculum decision-making through teacher images. Journal of Curriculum Studies, 22 (5), 463-471.

Joyce, B., Murphy, C., Showers, B., & Murphy, J. (1989). School renewal as cultural change. Educational Leadership, 47 (3), 70-517.

Lambert, L. (1988). Building school culture: An open letter to principals. NASSP Bulletin, 72 (506), 55-58.

Lightfoot, S. (1983). The good high school. New York: Basic Books.

Lilge F. (1966). The vain quest for unity. In R. Archambault (Ed.), Dewey on education. New York: Random House.

Lincoln, Y., & Guba, E. (1985). Naturalistic inquiry. Newbury Park, California: Sage Publications, Inc.

Little, J. W. (1982). Norms of collegiality and experimentation: Workplace conditions of school success. American Educational Research Journal, 19 (3), 325-340.

Louis, K.S., & Dentler, R. A.(1988). Knowledge use and school improvement. Curriculum Inquiry, 18 (1), 33-62.

Louis, M.R. (1983). Organizations as culture-bearing milieux. In L. Pondy, P. Frost, G. Morgan, & T. Dandrige (Eds.), Organization Symbolism. Greenwich, Connecticut: Jai Press Inc.

Mackenzie, D. (1983). Research for school improvement: An appraisal of some recent trends. Educational Researcher, 12 (4), 5-16.

Marks, J., & Cox, C. (1984). Educational attainment in secondary schools. Oxford Review of Education, 10 (1), 7 - 30.

Maslow, A. (1962). Toward a psychology of being. New York: D. Van Nostrand Company, Inc.

Merriam, S. B. (1988). Case study research in education. San Francisco: Jossey-Bass.

Metraux, R. (1963). Values in education and teaching in education and culture. In S. Spindler (Ed.) Education and culture: Anthropological approaches. New York: Wiley.

Miles, M.B. (1965). Change processes in the public schools. Oregon University: Centre for the Advanced Study of Educational Administration.

Miles, M.B., Saxl, E.R., & Lieberman, A. (1988). What skills do education "change agents" need? An empirical view. Curriculum Inquiry, 18 (2), 157-193.

Miles, M.B., & Louis, K. (1990). Mustering the will and skill to change. Educational Leadership, 47 (8), 57-60.

Ministry of Education. (1985). Let's talk about schools. Victoria, British Columbia: Queen's Printer.

Mortimore, P., Sammons, P., Stoll, L., Lewis, D., & Ecob, R. (1988). School matters: The junior years. Berkley, California: University of California.

Murnane, R. M. (1981). Interpreting the evidence on school effectiveness. Teachers' College Record, 83 (1), 19-35.

Murphy, J. (1992, November). School effectiveness and school restructuring: Contributions to educational improvement. Plenary address for the annual meeting of the International Congress for School Effectiveness and School Development. Victoria, British Columbia.

National Commission on Excellence in Education. (1983). A nation at risk. Washington, D.C.: Government Printing Office.

Newcomb, T.M., Turner, R.H., & Converse, P.E. (1965). Social psychology: The study of human interaction. New York: Holt, Rhinehart and Winston, Inc.

Oakes, J. (1989). What educational indicators? The case for assessing the school context. Educational Evaluation and Policy Analysis, 11 (2), 181 - 199.

Orlich, D.C. (1989). Educational reforms: Mistakes, misconceptions, miscues. Phi Delta Kappan, 70 (7), 512-517.

Perkins, D. (Ed.) (1967). English Romantic writers. New York: Harcourt, Brace and World, Inc.

Peters, R.S. (1966). Ethics and education. London: George Allen and Unwin Ltd.

Peters, T.J., & Waterman, R.H. Jr. (1982). In search of excellence. New York: Warner Books, Inc.

Peters, T., & Austin, N. (1985). A passion for excellence: The leadership difference. New York: Warner Communications Company.

Phenix, P.H. (1966). John Dewey's war on dualism. In R. Archambault (Ed.), Dewey on Education. New York: Random House.

Porter, A. (1988). Indicators: Objective data or political tool? Phi Delta Kappan, 69 (7), 495-498.

Purkey, S., & Smith, M. (1982). Too soon to cheer? Synthesis of research on effective schools. Educational Leadership, 40, 64-69.

Quinn, R. & Rohrbaugh, J. (1983). A spatial model of effectiveness criteria: Towards a competing values approach to organizational analysis. Management Science, 29 (3), 363-377.

Riegel, K.F. (1978). Psychology mon amour. Boston: Houghton Mifflin Company.

Rosenholtz, S. J. (1991), Teachers' workplace: The social organization of schools. New York: Teachers College Press.

Rowan, B., Bossert, S.T. & Dwyer, D. C. (1983) Research on effective schools: A cautionary note. Educational Researcher, 12 (4), 24-31.

Rutter, M., Maughan, B., Mortimore, P., Ouston, J., & Smith, A. (1979). Fifteen thousand hours: Secondary schools and their effects on children. Cambridge, MA: Harvard University Press.

Rutter, M. (1983). School effects on pupil progress: Research findings and policy implications. Child Development, 54 (1), 1-29.

Sammons, P., Hillman, J., & Mortimore, P. (1995). Key characteristics of effective schools: A review of school effectiveness research. (Report commissioned by the Office for Standards in Education). London: University of London, Institute of Education.

Sammons, P., Thomas, S., Mortimore, P., Cairns, R., Bausor, J., & Walker, A. (1995). Understanding school and departmental differences in academic effectiveness: Findings from case studies of selected outlier secondary schools in inner London. Paper presented at the Annual Conference of the International Congress of School Effectiveness and Improvement. Leeuwarden, The Netherlands.

Sarason, S.B. (1971). The culture of the school and the problem of change. Boston: Allyn and Bacon, Inc.

Schein, E. H. (1985). Organizational culture and leadership. San Francisco: Jossey-Bass Inc.

Sedlak, M., Wheeler, C., Pullin, D., & Cusick P. (1986). Selling students short: Classroom bargains and academic reform in the American high school. New York: Teachers' College Press.

Selznick, P. (1957). Leadership in administration. New York: Harper and Row.

Senge, P. (1990). The fifth discipline: The art and practice of the learning organization. New York: Doubleday Dell Publishing Group, Inc.

Sergiovanni, T.J. (1984). Leadership and excellence in schooling. Educational Leadership, 41 (6), 4-13.

Sergiovanni, T.J., & Corbally, J.E. (1986). Leadership and organizational culture: New perspectives on administrative theory and practice. Chicago, Illinois: University of Illinois Press.

Sergiovanni, T. (1992). Moral leadership: Getting to the heart of school improvement. San Francisco: Jossey-Bass.

Shaw, J., & Reyes, P. (1992). School cultures: Organizational values. Journal of Educational Research, 85 (5), 295-302.

Shipman, M. (1968). The sociology of the school. London: Longman Group Ltd.

Sizer, T. (1984). The dilemma of the American high school. Boston, Massachusetts: Houghton Mifflin.

Spencer, B., & Bowers, D. (1976). Introduction to multivariate techniques for social and behavioral sciences. New York: Wiley.

Spindler, S. (1963). Education and culture: Anthropological approaches. New York: Holt, Rhinehart and Winston.

Sproull, L., & Zubrow, D. (1981). Performance information in school systems: Perspectives from organizational theory. Educational Administration Quarterly, 17 (3), 61-79.

Stout, R. (1986) Executive action and values. Issues in Education, 4 (3), 198-215.

Stringfield, S. & Teddlie, C. (1988). A time to summarize: The Louisiana school effectiveness study. Educational Leadership, 46 (2), 43 - 49.

Sullivan, B. (1988). The report of the Royal Commission on Education: A legacy for learners. Victoria, British Columbia: Queen's Printer.

Thomas, H. (1990). Education costs and performance: A cost-effectiveness analysis. London: Cassel Educational Ltd.

Timar, T. (1989). The politics of school restructuring. Phi Delta Kappan, 71 (4), 264-275.

Walberg, H. J. & Genova, D.M. (1984). Creating incentives for cooperating teachers. Journal of Educational Research, 76 (2), 46-48.

Weick, K. E. (1976). Educational organizations as loosely coupled systems. Administrative Science Quarterly, 21 (1), 1-19.

Westbury, I. (1988). How should we be judging the American high school? Journal of Curriculum Studies, 20 (4), 291 - 315.

Willms, J. D. (1992). Monitoring school performance: A guide for educators. London: The Falmer Press.

Witte, J., & Walsh D. (1990). A systematic test of the effective schools model. Educational Evaluation and Policy Analysis, 12 (2), 188 - 212.

Zahorik, J. A. (1984). Can teachers adopt research findings? Journal of Teacher Education, 35 (1), 34-36.

APPENDIX ONE
PERMISSION AND INFORMATION LETTERS

1.1 LETTER TO MINISTRY OF EDUCATION

Dr. Graham Dickson
Director, Policy and Planning
Ministry of Education
620 Superior Street
Victoria, B.C.
V8V 2M4

Dear Dr. Dickson:

I am writing to you with this formal request for a research project to be conducted by myself as part of my Ph.D. thesis currently underway at Simon Fraser University. This research would involve an investigation into values articulated by different constituent groups within the organizational setting of schools within our province.

The initial phase of the study would consist of the identification of schools which exhibit consistent patterns of performance in student outcomes measured over time. Following an analysis of contextual variables such as the size of school and socioeconomic factors as provided by the Ministry of Education's typology in the School Profiles, schools would be grouped into three broad bands of high, middle and low achieving patterns over a five year period. Sample schools from each of these three bands would be chosen for analysis of values as articulated by the constituent groups of administrators, teachers, students, and parents. This study would examine whether there are significant differences in values articulated by these groups within schools and whether these values can be assembled into a coherent values framework. Finally, the study would address the question of whether there are identifiable differences in values between the broad categories of schools grouped according to historical patterns of student performance.

This research proposal would adhere to strict levels of confidentiality, in both phases of the study. In the initial selection of schools for the establishment of the three bands, all data would be kept private. In the second phase, school participation would be completely voluntary, both at the individual school level and at the school district level. Written authorization would be necessary from the administration at both school district and individual school. Assurances would be provided that no school results would be made public. Schools would not be identified except by pseudonyms in any reported aspect of the study. In addition, schools would not be apprised of the performance band in which they would be initially selected. The entire study would also fall under the monitoring responsibility of the S.F.U. Ethics Review Committee which ensures confidentiality proprieties.

I believe that there are some interesting benefits to be derived from this proposal. The concept of values as representative of consequent outcome performance is becoming a major area of interest to social scientists who examine organizations. Since the Ministry of Education has articulated clear goals in the form of a values framework

for the provincial education system, it would be of considerable interest to the Ministry to determine whether these same values are replicated in the various school constituent groups in this study.

If this proposal is accepted, I would like to meet with you or another representative of the Ministry of Education in order to determine the types of data and analysis which would be available for this research project.

I am attaching to this letter my research proposal which has been accepted by the Graduate Studies Department at Simon Fraser University. If there are any questions or concerns I would be happy to respond.

Thank you for your consideration of this request.

Yours truly,

Larry Gray

1.2 LETTER TO SUPERINTENDENT OF SCHOOLS

Longitudinal Study of Examination Results

Mr. Tom Black
Superintendent of Schools
School District No. 91 (Central)
1209 Tenth Ave.
Central City, B.C., V3X 7R4

Dear Mr. Black:

This letter is a formal request to undertake an analysis of British Columbia secondary school data as a part of my Ph.D. research at Simon Fraser University. To gain access to this information at a provincial level, I require official permission from individual districts.

This research involves a two stage study: (1) a quantitative analysis of school outcome data from a number of school districts in order to determine whether there is a consistent pattern of performance on a number of correlated variables over a five year period, and (2) a follow-up qualitative study with a small sample of schools to investigate the values of the constituent stakeholders in these schools.

At this stage, I am asking only for permission to examine individual school data from your district to use in the quantitative analysis. If you give your permission, I would be able to access this data through the Ministry of Education and there would be no other commitment or obligations on the part of your school district. If any schools are selected for the random sample for the second stage of the study, both permission of the district and the individual school would be obtained in order to proceed.

All data will be kept completely confidential with no identification of the district or school at any time in the analysis or publication of findings in my dissertation. I will be governed by the strict confidentiality policies of the Ministry of Education and the Ethics Review Committee at Simon Fraser University.

Please sign the release statement below as required by the Ministry of Education and return to me by fax (826-0333), if possible. Thank you once again.

Sincerely,

Larry Gray

I grant permission for Larry Gray to access the Ministry of Education's Information Profile data for schools in our school district.

Superintendent of Schools or Designate

Case Study Request

Mr. Tom Black
Superintendent of Schools

Dear Mr. Black:

Last spring, you were kind enough to allow access to the data contained in the Information Profiles issued by the Ministry of Education for schools in your school district. This access was necessary for my research into performance variables of secondary schools in the province. At the time of my initial request, I indicated that the second phase of my Ph.D. research would involve follow-up research into school values as articulated by grade twelve students, parents, teachers, and school administrators.

As discussed with you, I am now about to undertake the second stage of the study and this letter is a formal request to contact Northridge Secondary School to discuss with them the possibility of participating. I am asking the school to allow me to visit for a minimum of five days and a maximum of seven days in January through March at a time deemed to be convenient for the school. This school level visit will serve two purposes: (1) to allow me to observe the pilot accreditation program currently underway in Northridge Secondary and (2) to provide me an opportunity to gather data relating to the articulated and demonstrated educational values of the four constituent groupings listed earlier.

The gathering of information related to the pilot accreditation program will be accommodated through discussions with staff, parents and students. This investigation is part of the normal operations of schools under the School Act and will require only district and school permission for my initiation of discussions which, in any case, will be completely voluntary with all participants so advised prior to any meetings or interviews. (This on-site assessment of the pilot accreditation has been authorized by the Ministry of Education under the provincial accreditation program.)

The second reason for my visit to the school is to collect data on the operant educational values which form the basis for the culture of the school. This research will involve conducting individual and group interviews with grade twelve students, parents, teachers and administrators. I will also be administering questionnaires to all of these constituent groups. As in the case of the gathering of information on the accreditation process, all participation will be completely voluntary and any discussions with students will involve a consent form signed by students and the possibility for any parents to disallow their son or daughter's participation by returning to the school a form which will be sent to all parents of grade twelve students. In addition, all participants will be apprised of their right to withdraw from the process at any time during group or individual interviews. The questionnaire and information letter/consent form for parents are included with this letter for your information.

Another part of the gathering of data will be my observations of the day to day operations of the school, reporting procedures to parents, communications systems, services to students, and other details of school life which are commonly examined as part of the accreditation process.

My research into school values is governed by the Simon Fraser University Ethics Review Committee, and all data gathered during visits to the school will be kept strictly confidential. At no time will any publication using this research bear the names of the school district, the school or any individuals who agree to participate in the study.

Please sign the release statement below and return to me at your convenience.

Thank you once again.

Larry Gray

.....

I grant permission for Larry Gray to contact Northridge Secondary for the purposes outlined above .

Superintendent of Schools or Designate

1.3 LETTER TO SCHOOL PRINCIPAL

Mr. D. Church
Principal
Northridge Secondary
702 14th St.
Central City , B.C., V2B 3Y6

Dear Mr. Church:

This letter is a follow-up to our telephone conversation in which I outlined my request for five to seven days to visit your school at a time agreeable to you in January or February 1993. As discussed, this school level visit will serve two purposes: (1) to allow me to observe the pilot accreditation program currently underway in Northridge Secondary and (2) to provide me an opportunity to gather data relating to the articulated and demonstrated educational values of grade twelve students, parents, teachers, and administrators as part of my research for my Ph.D. dissertation for Simon Fraser University. Thank you for your initial positive response. I hope that your exploratory discussions with the school self-assessment committee and other staff members has elicited a similar favorable response to my proposal.

The first reason for visiting Northridge relates to the need to gain insight into the pilot accreditation program in order to make suggestions for possible revisions to the provincial Accreditation Long Term Working Committee in the spring of 1993. The process of gathering such information will be accommodated through discussions with staff, parents and students. All participation will be completely voluntary.

The second reason for my visit to the school is to collect data on the operant educational values which form the basis for the culture of the school. This research

into school values will involve conducting individual and group interviews with grade twelve students, parents, teachers and administrators. In addition, I will be administering a short survey to all of these constituent groups. As in the case of the gathering of information on the accreditation process, all participation will be completely voluntary and any discussions with students will involve a consent form signed by students. In addition, since the students are still minors, any parents can disallow their son or daughter's participation by returning to the school a form which will be sent to all parents of grade twelve students. All participants will be apprised of their right to withdraw from the process at any time during group or individual interviews. The survey and information letter/consent form for parents are included with this letter for your perusal.

Another part of the gathering of data will be my observations of the day to day operations of the school, reporting procedures to parents, communications systems, services to students, and other details of school life which are commonly examined as part of the accreditation process.

My research into school values is governed by the Simon Fraser University Ethics Review Committee, and all data gathered during visits to the school will be kept strictly confidential under the auspices of the accreditation program. However, since this information will be of assistance to you in the accreditation process, I will commit to providing you with any summary information which you believe will be helpful to you in completing the "School Culture" section of the Internal Accreditation Report. Of course, all such information would be cleared through the school self-assessment committee to ensure that ethical considerations are maintained. Because the research into school values will be combined with data from other schools, any findings contained in my Ph.D. dissertation will be completely anonymous. At no time will any publication using this research bear the names of the school district, the school or any individuals who participate in the study.

To certify that the school is willing to take part in this research, would you please sign the consent form below and return it to me at your convenience.

Thank you once again.

Larry Gray

.....

I grant permission for Larry Gray to conduct the research as outlined above.

Principal of Northridge Secondary School

1.4 LETTER TO STAFF

Staff Members
Northridge Secondary
702 14th St.
Central City , B.C., V2B 3Y6

This letter is to inform you of a research project which is being undertaken in cooperation with your school and to request your assistance in carrying out this project.

Educational research has shown that the educational values held by students, parents, and teachers can have an effect on the perception of the overall ratings which parents and students give to the school as an educational facility. This study to examine these educational values is being conducted through Simon Fraser University in conjunction with your school. The research will assist the school in examining its emphases for the students in this educational facility.

The project involves a survey of parents, students and school staff as well as individual interviews with selected individuals, including educational staff, parents and grade twelve students. At the bottom of this letter is a form to be filled in and returned in the attached envelope to indicate your agreement to participate in this school research. This is in compliance with the requirements of the Simon Fraser University Ethics Review Committee.

I am also attaching the survey which I would like you to complete and return in the sealed envelope to the school office by Friday, April 30. Participation in this school project is entirely voluntary but I would encourage your participation in filling in this questionnaire which takes approximately 15 minutes to complete.

Any information provide by anyone contributing to the study will be kept in complete confidence. I will be sharing the summary results of this survey with the school--but your anonymity is assured during all phases of the study.

Should you at any time have any concerns about this project, you may call me at 826-0333 or you can contact me through the school by leaving a message at the office. You may also communicate any concerns to the principal of the school, or you can contact the university on the feedback form which is available at the school and is provided at each of the interview sessions. In addition, it is important to note that anyone who agrees to participate in the study is free to withdraw at any time.

Thank you for your support.

Larry Gray

.....

I have read this information sheet and agree to participate in this research.

Name

Signature

Date _____

1.5 LETTER TO STUDENTS

Dear Grade Twelve Students at Northridge Secondary:

This letter is to inform you of a research project which is being undertaken at Northridge Secondary School and to request your assistance in carrying out this project.

Previous educational research has shown that the educational values held by students, parents, and teachers can have an effect on the perception of the overall ratings which parents and students give to the school as an educational facility. As you are no doubt aware, Northridge Secondary School is undergoing a school accreditation through the auspices of the Ministry of Education this year. Part of this accreditation will be to examine the way in which the students perceive the school.

This project is a research study being conducted through Simon Fraser University to assist the school in its accreditation and to examine educational values in general. As a researcher at the university and in my role as Director of Accreditation Services for the Ministry of Education, I am very interested in your perceptions of both the accreditation process and what you feel are the most important things to be emphasized in your education.

The project involves giving a survey to parents, students and school staff as well as individual and group interviews with selected individuals, including grade twelve students. An information letter has already been sent home to your parents, asking them to complete and return a form if they did not want you to take part in the study. At this point, and after not hearing from your parents, I am also asking that you sign the consent form at the bottom of this letter, if you agree to complete the survey and participate in any interviews.

Any information provide by anyone contributing to the study will be kept in complete confidence. I will be sharing the summary results of this survey with the school as an additional perception check for them in their accreditation process--but, in any case, your anonymity is assured during all phases of the study.

Should you at any time have any concerns about this project, you may call me at 826-0333 or you can contact me through the school by leaving a message at the office. You may also communicate any concerns to the principal of the school, or you can contact the university on the feedback form which is available at the school and is provided at each of the interview sessions. In addition, it is important to note that anyone who agrees to participate in the study is free to withdraw at any time.

Thank you very much for considering this request.

Larry Gray

.....
I have considered the details of the project and I agree to participate in this research.

Student name

Student signature

Date

1.6 LETTER TO PARENTS

Dear Parents of Grade Twelve Students at Northridge Secondary:

This letter is to inform you of a research project which is being undertaken at Northridge Secondary School and to request your assistance in carrying out this project.

Previous educational research has shown that the educational values held by students, parents, and teachers can have an effect on the perception of the overall ratings which parents and students give to the school as an educational facility. As you are no doubt aware, Northridge Secondary School is undergoing a school accreditation through the auspices of the Ministry of Education this year. Part of this accreditation will be to examine the way in which the community perceives the school.

This project is a research study being conducted through Simon Fraser University to assist the school in its accreditation and to examine educational values in general. As a researcher at the university and in my role as Director of Accreditation Services for the Ministry of Education, I am very interested in your perceptions of both the accreditation process and what you feel are the most important things to be emphasized in the education of your children.

The project involves giving a survey to parents, students and school staff as well as individual and group interviews with selected individuals, including parents and grade twelve students. At the bottom of this letter is a form to be filled in and returned to the school if you do not wish your son or daughter to be involved in any interviews or survey. If the form is not returned, I will assume that you are giving your permission for me to contact your grade twelve student.

Also, I am attaching the survey being sent to all parents of grade twelve students and to the students who participate in the research project. I am interested in your sharing your perceptions with me. I hope that you can take the fifteen minutes it will take to complete the survey and that you will send it back to me in the enclosed envelope. Thank you in advance for your assistance.

Any information provide by anyone contributing to the study will be kept in complete confidence. I will be sharing the summary results of this survey with the school as an additional perception check for them in their accreditation process--but your anonymity is assured during all phases of the study.

Should you at any time have any concerns about this project, you may call me at 826-0333 or you can contact me through the school by leaving a message at the office. You may also communicate any concerns to the principal of the school, or you can contact the university on the feedback form which is available at the school and is provided at each of the interview sessions. In addition, it is important to note that anyone who agrees to participate in the study is free to withdraw at any time.

APPENDIX TWO

CASE STUDY QUESTIONNAIRE

SURVEY: EDUCATIONAL VALUES

Thank you for taking a few minutes to complete this short survey about your perceptions of educational values which operate in _____ **Secondary School.**

Please answer all of the questions to the best of your knowledge about the school, recognizing that this is your own perception of the school and that there are no right nor wrong answers.

Demographic Data Please complete the following:

Parent _____ Student _____ Teacher _____ Administrator _____
 Number of years in this capacity at this school _____ (count this year as one year)

Male _____ Female _____ Age _____

Your education level (please check one): Have not graduated _____ High school graduate _____
 Number of years of education past secondary school _____

Your mother's education: Did not graduate _____ High school graduate _____
 Mother's number of years of education past secondary school _____ (estimate if necessary)

Your father's education: Did not graduate _____ High school graduate _____
 Father's number of years of education past secondary school _____ (estimate if necessary)

Part A. From your perspective, please rate the following statements about the school:

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1. This school emphasizes the self-worth of each student.	1	2	3	4	5
2. Students in this school are expected to attain high standards of performance.	1	2	3	4	5
3. In this school, students are encouraged to demonstrate teamwork.	1	2	3	4	5
4. Programs in this school reflect students' future jobs and interests in the community.	1	2	3	4	5
5. The students in this school thrive on competition.	1	2	3	4	5
6. In this school, the programs try to meet the unique needs of individual students.	1	2	3	4	5
7. This school is interested in trying new approaches to student learning.	1	2	3	4	5

Please turn to Page 2...

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
8. This school really tries to prepare its students for the world of work.	1	2	3	4	5
9. Most teachers in this school show that they like the students.	1	2	3	4	5
10. The school has very consistent expectations for student behaviour.	1	2	3	4	5
11. Tradition is valued in the day to day operations of the school.	1	2	3	4	5
12. Learning and achievement are a central focus for this school.	1	2	3	4	5
13. This school helps students learn lifeskills so they can look after themselves when they leave school.	1	2	3	4	5
14. In this school, teachers support the personal needs of individual students.	1	2	3	4	5
15. Students are given many opportunities to work cooperatively.	1	2	3	4	5
16. Students in this school are encouraged to compete for school awards and honours.	1	2	3	4	5
17. Student feelings are important to teachers.	1	2	3	4	5
18. The school really tries to make sure that students feel they are in a safe and orderly place.	1	2	3	4	5
19. This school values academic attainment above all other goals.	1	2	3	4	5
20. The school fosters a caring atmosphere.	1	2	3	4	5
21. School counselling focuses on helping students make choices for future jobs.	1	2	3	4	5
22. Teachers in this school try to find different ways to help each individual student.	1	2	3	4	5
23. There are lots of opportunities for students to participate in competitions.	1	2	3	4	5
24. Teachers in this school often use cooperative grouping in their classrooms.	1	2	3	4	5

Please turn to Page 3...

	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
25. Students in this school are helped to think in creative ways.	1	2	3	4	5
26. Students in this school can always find someone to listen to their personal problems.	1	2	3	4	5
27. Teachers set high standards for student work.	1	2	3	4	5
28. This school is known for trying new ways of doing things.	1	2	3	4	5
29. Individual rights are clearly spelled out in this school.	1	2	3	4	5
30. Students in this school are given good opportunities to learn about different careers.	1	2	3	4	5
31. This school provides many competitive incentive programs for its students.	1	2	3	4	5
32. Student group projects are common in this school.	1	2	3	4	5
33. This school usually tries to solve individual problems in creative ways.	1	2	3	4	5
34. The school always seems to be a well-organized place.	1	2	3	4	5
35. Teachers set clear standards for homework on a regular basis.	1	2	3	4	5
36. This school welcomes new ideas and suggestions from teachers, students, and parents.	1	2	3	4	5
37. The school encourages students to help each other.	1	2	3	4	5
38. In this school, there are lots of teachers who care about students' personal emotional needs.	1	2	3	4	5
39. The school encourages healthy competition.	1	2	3	4	5
40. Students and parents are very aware of the school policies for student conduct.	1	2	3	4	5

Please turn to Page 4...

Part B. Please review the following list of school values:

- | | |
|---|--|
| 1. Developing career skills. | 5. Personal support for individuals. |
| 2. Creativity and exploring new ideas. | 6. Competition skills and attitudes. |
| 3. Learning and intellectual development. | 7. Maintaining an organized, orderly school. |
| 4. Cooperation skills and attitudes. | 8. Attention to student emotional needs. |

Fill in answers to questions below using appropriate numbers from the above list.

*For this school, which do you think **SHOULD** be emphasized:*

<i>Most Important</i>	<i>Second Most Important</i>	<i>Middle Importance</i>	<i>Second Least Important</i>	<i>Least Important</i>
	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	
<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>	<input style="width: 50px; height: 20px;" type="text"/>

Part C. This section is for students only:	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree
1. Most of my friends expect to continue their education past high school.	1	2	3	4	5
2. My parents expect me to continue my education past high school.	1	2	3	4	5
3. My parents have been a positive influence on my feelings and beliefs about education.	1	2	3	4	5
4. My friends have been a positive influence on my feelings and beliefs about education.	1	2	3	4	5
5. My teachers have been a positive influence on my feelings and beliefs about education.	1	2	3	4	5
6. As a student, my grades generally are	A	B	C+	C	Pass

Part D. Other comments you would like to make about educational values in this school?

APPENDIX THREE

INTERVIEW QUESTIONS

A.3.1 STUDENT/TEACHER QUESTIONS

Overview/Introduction

Good morning(afternoon). Thank you for agreeing to meet with me. As you recall from the information sheet which you received, I am interested in your perceptions of prevailing school values as demonstrated in this school. Please be assured that whatever you relate to me will be kept in strict confidence and that, although your responses will be used in this research, there will be no possibility of identifying individuals in any published results. Your anonymity is assured.

Should you feel uncomfortable about the process at any time, you are entirely free to withdraw at that point. Also, if you have any concerns or you would like to comment on the process, you may contact my faculty supervisor, Dr. Peter Coleman, or the Chairman of the Simon Fraser University Ethics Review Committee by way of the Feedback Form which is available to you.

General Questions

1. Tell me a little about your background (in education, as a parent, as a student).
2. What is your current status (assignment) at this school? (if student ask about courses taken, future aspirations, involvement in school activities, etc.)
3. How long have you been associated with this school? How long in your current role?
4. Tell me about the students in this school. What are the teachers like here?
5. A student is asked to leave a teacher's class because her behavior is distracting the other students. How do you think a student should be dealt with in situations like this?
6. Imagine that you are in this school at the end of the year. The principal announces four terrific accomplishments for the school. I'd like you to listen and choose the one you think would be the most important for this particular school:
 - (1) A major computer company has offered to work in partnership with the school to develop a work experience training program for the students.
 - (2) One of the Grade 12 pupils has just won a prestigious national academic award.
 - (3) The school has been selected to be featured in an educational journal for its humanitarian approaches to teaching.
 - (4) The results on the most recent provincial exams places your school in the top ten schools in the province for the second year in a row.

Please tell why you chose that item.

7. What do you think this school does best in preparing its graduates for the future?
8. What do you think the students of this school see as most important thing they are getting out of their education?
9. If you asked the parents, what do you think they would say was the most important things the school does for their students ?
10. A parent complains that this "cooperative learning stuff is for the birds" and wants to see more competition emphasized in school. How do you personally feel about this?
11. Do you think that schools should place its emphasis on getting academic results or on development of student emotional well-being?
12. A very creative and talented Fine Arts student is constantly late and seems to disregard many school rules--but is a very good Fine Arts student and produces good work. How should the school deal with this student?
13. What things are given the most emphasis for students by the teaching staff of this school?
14. Name some Grade 12 students who you think represent the values of this school. Tell why you chose these students. Can you name some teachers who you think represent the values of this school? Why did you choose these teachers?
15. Which students do you think are the happiest at this school? Which are the least happy?
16. If you could suggest someone I might talk to who represents a distinct group in this school, with a unique perspective on educational values, quite different from your own--who might you suggest?
17. If you could design a perfect school for students, what would it be like?
18. Any additional comments or suggestions?

A.3.2 PARENT QUESTIONS

Overview/Introduction

Good evening. My name is Larry Gray and I am contacting parents from Northridge Secondary School as part of a research project conducted through Simon Fraser university. You should have received a letter and a questionnaire last month which outlined this project. Do you remember it?

I am contacting ten parents of grade 12 students at random for a short telephone interview.

Can you afford about ten minutes to answer some questions about your perceptions of the school? Please be assured that whatever you relate to me will be kept in strict confidence and that, although your responses will be used in this research, there will be no possibility of identifying individuals in any published results. Your anonymity is assured.

Should you feel uncomfortable about the process at any time, you are entirely free to withdraw at that point. Also, if you have any concerns or you would like to comment on the process, you may contact the school principal, or my faculty supervisor, Dr. Peter Coleman at Simon Fraser University.

1. How long have you been associated with this school as a parent?
2. Have you any other sons or daughters in the school?
3. What is your general impression of the students at the school?
4. From your perspective as a parent, what are the teachers like at the school?
5. What do you think this school does best in preparing its graduates for the future?
6. Is there anything as a parent that you would like to see improved at the school?
7. From your viewpoint as a parent, what do you think schools should give most emphasis to in serving the needs of students?
8. Any other comments you would like to share about the school?

APPENDIX FOUR
QUESTIONNAIRE SCALE DEVELOPMENT

RELIABILITY ANALYSIS FOR THE SUBSCALES

R E L I A B I L I T Y A N A L Y S I S - S C A L E (I N T E L)

1. Q2
2. Q12
3. Q19
4. Q27
5. Q35

STATISTICS FOR SCALE	MEAN	VARIANCE	STD DEV	# OF VARIABLES
	17.6955	9.6115	3.1002	5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q2	14.0210	6.7084	.5092	.6300
Q12	13.9013	6.8860	.5040	.6346
Q19	14.5428	6.4946	.3761	.6900
Q27	14.1194	6.4479	.5098	.6267
Q35	14.1974	6.5346	.4114	.6702

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.6990

R E L I A B I L I T Y A N A L Y S I S - S C A L E (E M O T)

1. Q9
2. Q17
3. Q20
4. Q26
5. Q38

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF
SCALE	17.6024	16.0842	4.0105	VARIABLES 5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q9	13.8730	10.9796	.6055	.7855
Q17	14.3349	10.0084	.7046	.7545
Q20	14.1494	11.0679	.6208	.7817
Q26	13.8829	11.8330	.4480	.8291
Q38	14.1695	9.9055	.6863	.7602

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.8193

R E L I A B I L I T Y A N A L Y S I S - S C A L E (P E R S)

1. Q1
2. Q6
3. Q14
4. Q22
5. Q33

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF
SCALE	16.7048	13.3260	3.6505	VARIABLES 5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q1	13.1523	9.5981	.5229	.7755
Q6	13.2565	8.8625	.5446	.7705
Q14	13.3389	8.6036	.5996	.7520
Q22	13.3695	8.4916	.6500	.7350
Q33	13.7021	9.2487	.5812	.7585

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.7973

R E L I A B I L I T Y A N A L Y S I S - S C A L E (C A R E E R)

1. Q4
2. Q8
3. Q13
4. Q21
5. Q30

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
SCALE	17.4593	14.0622	3.7500	5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q4	13.8591	9.0636	.6156	.7277
Q8	14.0619	8.7201	.6680	.7088
Q13	14.2137	9.5067	.5337	.7556
Q21	13.8535	10.2437	.4557	.7788
Q30	13.8489	9.8732	.5429	.7524

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.7859

R E L I A B I L I T Y A N A L Y S I S - S C A L E (O R D E R)

1. Q10
2. Q18
3. Q29
4. Q34
5. Q40

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF
SCALE	17.6456	12.2262	3.4966	VARIABLES 5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q10	14.0139	9.0629	.3734	.7338
Q18	13.9872	8.4180	.5358	.6758
Q29	14.2906	8.0809	.5058	.6861
Q34	14.2136	7.6792	.5750	.6573
Q40	14.0769	8.4730	.4999	.6883

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.7352

R E L I A B I L I T Y A N A L Y S I S - S C A L E (C R E A T)

1. Q7
2. Q25
3. Q28
4. Q33
5. Q36

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF
SCALE	16.4386	11.6405	3.4118	VARIABLES 5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q7	12.9507	7.5276	.5698	.7086
Q25	12.9607	8.6152	.4346	.7538
Q28	13.2853	7.5258	.5970	.6987
Q33	13.4359	8.1252	.5125	.7290
Q36	13.1218	7.6496	.5538	.7145

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.7645

R E L I A B I L I T Y A N A L Y S I S - S C A L E (C O O P)

1. Q3
 2. Q15
 3. Q24
 4. Q32
 5. Q37

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF
SCALE	18.1006	9.7952	3.1297	VARIABLES 5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q3	14.3297	7.1280	.4454	.7367
Q15	14.3985	6.4933	.5906	.6865
Q24	14.6216	6.2483	.5771	.6898
Q32	14.7472	5.9923	.6058	.6780
Q37	14.3055	7.4041	.3916	.7534

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.7548

R E L I A B I L I T Y A N A L Y S I S - S C A L E (C O M P E T)

1. Q5
2. Q16
3. Q23
4. Q31
5. Q39

STATISTICS FOR	MEAN	VARIANCE	STD DEV	# OF VARIABLES
SCALE	17.6216	9.6677	3.1093	5

ITEM-TOTAL STATISTICS

	SCALE MEAN IF ITEM DELETED	SCALE VARIANCE IF ITEM DELETED	CORRECTED ITEM- TOTAL CORRELATION	ALPHA IF ITEM DELETED
Q5	14.2840	6.5741	.3871	.6539
Q16	13.9964	6.7755	.3761	.6567
Q23	13.9407	6.6154	.4529	.6217
Q31	14.3074	6.5178	.4994	.6017
Q39	13.9580	6.9254	.4749	.6162

RELIABILITY COEFFICIENTS

N OF CASES = 619.0

N OF ITEMS = 5

ALPHA = 0.6804

APPENDIX FIVE

LONGITUDINAL ANALYSIS OF GRADE 12 EXAMINATION RESULTS

Note: 0 = results unavailable for 3 or more years
 1= 33rd or lower percentile ranking minimum of 5 years out of 7
 2 = 34th to 66th percentile ranking minimum of 5 years out of 7
 3 = above 66th percentile ranking minimum of 5 years out of 7

Grade 12 School	Examination/Participation Rate										Rate Consistency														
	Examination Scores					Participation Rates					Rate Consistency					Rate Consistency									
	Bic	Cher	Eng	Frei	Geo	His	Li	Mat	Phy	5/9	5/9	E/M	Gr12	Pos	Blol	Chem	Eng	Fren	Geo	His	Lit	Mat	Phy	5/9	5/8
1	3	1	2	3	*	*	*	1	*	*	103			1	3	*	*	3	*	*	*	*	*	*	
2	1	*	*	*	1	*	*	*	*	*	69			*	3	*	*	3	2	*	*	*	*	*	
3	1	1	*	1	*	*	0	1	0	*	38			3	*	*	*	3	*	0	*	*	*		
4	*	1	*	1	1	*	*	*	*	*	338			2	*	*	*	*	1	*	3	*	*		
5	3	2	*	1	*	2	*	2	*	*	171			3	3	*	*	1	*	*	*	*	*		
6	1	2	*	*	*	*	*	*	*	*	70			*	*	*	*	3	*	*	*	*	*		
7	1	*	0	0	1	*	1	0	*	*	28			3	*	1	0	0	3	*	0	*	*		
8	1	2	*	3	*	*	2	1	2	*	188			3	*	*	*	*	*	*	2	*	*		
9	*	2	3	0	*	1	0	*	*	*	50			*	*	1	0	*	3	0	*	*	*		
10	*	*	*	3	*	3	*	2	*	*	170			3	1	*	*	*	*	*	*	*	*		
11	*	*	1	1	1	*	*	*	*	*	49			*	1	*	*	3	3	0	*	*	*		
12	*	3	3	*	3	2	*	2	*	*	175			3	*	*	2	1	*	*	1	*	*		
13	*	*	*	*	3	3	3	3	*	*	74			*	2	2	*	*	3	3	*	*	*		
14	*	*	*	*	*	*	*	*	*	*	102			*	1	*	*	*	1	*	*	*	*		
15	*	*	0	0	1	*	1	*	*	*	38			*	*	0	0	3	3	3	*	*	*		
16	3	1	*	*	*	*	3	*	*	*	97			*	1	*	*	3	1	*	2	*	*		
17	1	2	*	*	*	*	*	0	*	*	53			*	*	*	*	3	2	3	*	*	*		
18	3	3	3	3	3	3	3	3	3	3	347			2	*	*	*	*	3	2	1	*	*		
19	*	*	0	*	0	0	*	*	*	*	60			*	1	0	*	0	0	*	*	*	*		
20	*	*	1	*	*	*	*	1	*	*	82			3	3	*	2	*	*	*	*	*	*		
21	*	2	*	*	*	0	1	1	*	*	107			*	*	3	3	*	0	*	*	*	*		
22	*	2	1	3	3	3	*	*	*	*	94			*	*	*	*	*	*	*	*	*	*		
23	2	*	*	*	2	*	*	*	*	*	124			3	1	*	*	*	*	3	3	*	*		
24	1	1	*	3	0	*	0	*	*	*	66			*	1	*	*	*	0	1	0	*	*		
25	2	1	1	1	1	1	3	1	*	*	124			*	1	2	*	*	*	1	*	*	*		
26	2	2	1	2	2	*	*	*	*	*	277			*	3	2	*	*	1	2	2	*	*		
27	1	1	2	1	*	1	*	1	*	*	113			*	*	*	*	2	*	1	*	*	*		
28	2	2	3	3	1	*	*	*	*	*	300			2	*	2	*	2	3	*	2	*	2		
29	*	2	0	*	*	*	*	*	*	*	93			3	*	3	0	2	2	*	2	*	*		
30	*	3	2	3	*	*	*	1	*	*	124			*	3	3	*	3	3	3	*	3	*		
31	2	1	1	1	1	1	2	2	*	*	235			1	2	1	3	2	1	1	1	*	1		
32	*	2	0	1	*	*	*	*	*	*	100			*	3	2	0	2	*	1	*	*	*		
33	*	3	2	1	3	*	3	1	*	*	121			2	*	*	*	*	*	*	3	*	*		
34	3	2	3	*	2	*	*	3	*	*	110			3	3	2	3	3	3	3	3	3	*		
35	3	3	3	1	*	2	2	2	*	*	474			*	2	2	3	*	1	3	2	*	*		

	Blo	Chem	Ent	Fren	Geo	Hist	Lit	Mat	Phy	6/9	5/9	E/M	Gr12	Poj	Biol	Chem	Ent	Fren	Geo	Hist	Lit	Mat	Phy	6/9	5/9	E/M	
36	*	*	*	0	*	1	*	1	*	*	*	*	54	*	*	*	*	0	3	*	*	*	3	*	*	*	
37	3	3	*	2	*	3	*	3	*	*	*	*	137	*	*	1	*	*	*	*	*	2	1	*	*	*	
38	1	*	1	*	1	0	1	1	*	*	*	1	226	3	*	3	1	*	1	0	1	1	1	*	*	*	
39	*	1	*	*	0	1	0	1	0	*	*	*	54	*	*	*	*	0	*	*	*	*	*	*	*	*	
40	3	1	2	1	*	*	*	*	2	*	*	*	150	2	2	3	*	*	*	*	*	*	*	*	*	*	
41	*	*	3	*	*	0	1	1	1	*	*	*	39	3	3	1	3	*	3	0	*	*	*	*	*		
42	1	1	1	1	1	0	0	*	0	*	1	*	64	*	*	3	1	*	1	0	*	0	*	*	*		
43	1	*	1	*	2	*	*	2	1	*	*	*	385	*	*	*	1	*	0	1	1	1	1	*	*		
44	*	*	*	*	*	1	1	1	2	*	*	*	171	*	*	1	3	1	1	1	*	2	1	*	1	*	
45	*	1	1	1	1	0	1	*	*	*	1	*	140	*	*	*	2	*	0	*	*	*	*	*	*	*	
46	1	*	1	*	*	*	*	*	2	*	*	*	148	*	*	*	1	2	*	*	*	*	2	*	*	*	
47	1	*	*	0	*	0	2	1	*	*	*	*	53	*	*	3	2	*	*	0	*	*	0	*	*	*	
48	1	*	*	*	1	*	0	*	1	*	*	*	133	3	3	*	*	*	*	0	1	*	*	*	*	*	
49	3	*	*	2	1	*	*	*	0	*	*	*	76	1	*	*	*	*	*	*	*	0	*	*	*	*	
50	*	*	*	3	3	*	2	*	*	*	*	*	292	1	1	2	*	*	1	1	*	*	1	*	1	*	
51	*	2	*	2	*	*	2	*	*	*	*	*	220	*	*	*	2	3	*	*	*	*	1	*	*	*	
52	1	*	*	3	*	*	*	3	*	*	*	*	432	*	*	2	*	*	2	1	1	*	3	*	*	*	
53	3	3	*	*	*	3	*	*	0	*	*	*	177	1	*	*	*	*	*	*	*	*	*	*	*	*	
54	3	2	*	3	3	1	*	*	2	*	*	*	247	1	*	*	1	1	*	1	*	*	*	*	*	*	
55	*	*	3	3	3	1	*	*	*	*	*	*	241	1	*	*	1	*	*	*	*	1	1	*	*	1	
56	3	3	1	*	*	*	1	1	*	*	*	1	134	1	1	1	*	1	1	1	*	*	*	*	1	*	
57	2	3	2	*	*	3	*	*	*	*	*	*	168	2	1	*	*	*	2	1	2	2	*	*	*	*	
58	*	3	3	2	*	*	*	2	*	*	*	*	198	1	*	*	*	3	2	1	*	*	1	*	*	*	
59	1	2	*	*	1	*	*	1	*	*	*	*	161	*	*	*	*	*	*	*	*	3	3	*	*	*	
60	3	1	*	1	1	2	2	2	*	*	*	*	613	*	*	3	*	1	1	2	2	1	*	*	*	*	
61	*	1	1	1	*	1	*	1	1	1	1	1	267	2	*	*	2	*	*	1	2	3	*	*	2	*	
62	1	1	1	*	2	*	2	1	*	*	*	1	190	*	*	1	*	*	3	*	1	1	1	*	*	*	
63	*	1	1	*	*	*	1	1	1	*	*	1	262	1	1	1	*	1	*	1	1	1	*	*	1	*	
64	*	*	3	0	1	*	*	1	*	*	*	*	95	*	*	*	0	*	*	*	*	*	*	*	*	*	
65	*	2	1	*	3	*	3	3	3	*	*	*	308	*	*	*	3	3	3	3	3	3	3	3	3	*	
66	*	*	3	2	*	3	2	*	*	*	*	*	244	*	*	3	*	1	3	*	*	1	*	*	*	*	
67	1	*	1	1	*	1	1	2	1	1	1	*	161	1	1	1	3	*	1	*	*	1	*	*	*	*	
68	*	2	*	1	*	*	*	1	*	*	*	*	218	3	1	3	2	*	*	*	*	2	*	*	*	*	
69	2	3	*	*	*	2	*	2	3	*	*	*	635	2	2	2	2	2	2	1	1	1	1	*	2	*	
70	3	2	3	*	*	2	3	3	*	*	*	3	312	*	2	2	3	2	2	*	3	2	*	*	*	*	
71	2	*	3	3	*	3	3	*	3	3	3	*	256	*	3	3	2	*	*	*	*	3	3	*	*	3	
72	3	2	3	2	*	*	3	3	*	*	*	3	485	*	3	3	3	2	3	2	3	1	3	*	*	3	3
73	3	*	*	2	3	2	3	3	3	*	*	*	540	1	2	2	3	1	3	1	3	1	3	3	*	*	
74	2	3	1	3	*	3	3	*	2	*	*	*	503	1	*	*	*	1	3	*	1	*	2	*	*	*	

	Bio	Chem	Eng	Fre	Geo	His	Lit	Mat	Phy	6/9	5/9	E/M	Gr12	Pos	Blol	Chem	Eng	Fre	Geo	His	Lit	Math	Phy	6/9	5/8	E/N
75	*	*	*	*	*	2	1	*	*	*	*	*	83	*	*	*	1	1	*	*	3	*	*	*	*	*
76	1	3	1	3	*	2	3	3	*	*	*	*	189	2	3	3	*	*	1	*	*	*	3	*	*	
77	3	3	3	3	*	2	3	3	3	3	3	*	211	*	3	*	3	3	3	*	*	3	3	*	3	
78	1	*	*	*	3	*	2	3	3	*	*	*	166	1	*	*	3	1	3	3	*	*	*	*	*	
79	*	2	*	3	*	*	*	*	3	*	*	*	276	1	2	2	*	*	*	1	1	3	*	*	*	
80	3	3	3	*	*	2	3	3	3	3	3	3	170	*	*	*	3	*	3	3	3	3	3	*	3	
81	*	*	*	*	3	*	*	*	*	*	*	*	210	1	1	*	*	*	3	*	*	2	1	*	*	
82	*	3	1	*	1	*	1	*	*	*	*	*	375	1	1	1	1	1	1	1	*	2	3	1	1	
83	3	3	3	3	*	3	3	3	*	3	3	*	179	1	3	*	3	*	*	*	3	3	*	*	*	
84	3	*	1	3	*	2	*	1	*	*	*	1	226	1	3	*	2	1	1	1	*	3	*	*	*	
85	3	3	3	3	3	3	3	3	3	3	3	3	327	*	3	2	3	*	3	3	3	3	3	3	3	
86	3	3	*	*	*	2	3	*	*	*	*	*	327	*	*	2	3	2	2	*	*	3	3	*	*	
87	*	*	1	*	*	*	*	*	1	1	*	1	251	1	3	*	*	1	1	1	1	3	3	*	*	
88	3	3	*	3	2	*	*	*	2	3	*	*	182	*	3	1	*	1	1	1	*	3	3	*	*	
89	3	3	3	3	3	3	3	3	3	3	3	3	241	1	3	3	3	3	*	*	3	*	*	3	3	
90	3	1	2	2	1	*	3	3	2	*	*	205	1	3	1	*	*	*	*	*	*	*	*	*	*	
91	3	3	3	3	*	3	3	3	*	3	3	3	349	3	3	*	3	1	*	*	*	3	3	*	3	
92	3	3	3	*	*	*	*	*	*	*	*	3	60	2	*	*	3	*	*	*	3	3	3	*	*	
93	*	*	*	2	*	*	*	*	3	*	*	*	316	2	3	*	1	1	1	1	1	*	*	*	*	
94	2	2	*	*	2	2	2	*	2	2	2	*	433	3	*	*	*	1	*	2	*	3	1	*	*	
95	3	3	3	3	3	3	3	3	3	3	3	*	355	*	3	1	2	*	2	*	3	*	*	*	*	
96	2	2	2	2	2	3	*	2	*	2	2	2	266	*	3	2	3	1	*	*	*	3	*	*	*	
97	*	*	1	1	1	1	1	*	*	*	*	*	162	2	*	*	*	*	*	*	*	*	*	*	*	*
98	2	*	*	3	3	*	*	*	*	*	*	*	136	*	*	*	*	1	*	*	*	3	*	*	*	
99	1	*	2	1	*	*	*	*	*	*	*	*	261	*	*	1	*	3	1	*	*	1	1	*	1	
100	*	1	*	*	*	*	*	*	*	*	*	*	140	2	2	1	1	1	*	1	*	1	1	*	1	
101	*	*	*	3	2	1	*	*	*	*	*	*	144	3	2	1	*	2	*	*	*	*	2	*	*	
102	3	3	*	3	*	3	2	*	*	*	*	*	966	3	*	3	1	2	*	*	*	3	2	*	3	
103	2	*	2	3	*	3	3	2	*	*	*	*	435	2	1	2	1	2	*	2	*	*	1	*	*	
104	*	3	*	2	*	1	*	*	*	*	*	*	519	1	1	*	2	1	1	1	1	2	1	1	1	
105	3	3	*	3	*	3	3	3	3	3	3	*	202	1	*	*	3	*	*	*	3	*	*	*	*	
106	3	3	3	3	2	2	3	3	3	3	3	3	255	2	3	3	3	*	3	*	*	*	2	*	*	
107	3	3	3	3	3	3	2	3	3	3	3	3	207	*	3	3	3	1	3	*	3	3	3	3	3	
108	3	3	*	3	3	3	3	3	3	3	3	*	165	*	*	3	3	*	3	3	*	*	*	*	*	
109	3	*	*	*	*	*	*	3	2	*	*	*	374	1	*	*	3	*	*	*	*	3	2	*	*	
110	3	3	3	*	3	3	3	3	3	3	3	3	88	3	*	3	3	3	*	*	3	*	*	3	*	
111	3	3	3	*	*	*	*	3	3	*	3	3	153	*	*	*	3	*	*	*	3	3	*	*	*	
112	3	3	3	*	*	*	*	3	3	*	3	3	244	*	2	2	3	*	*	*	3	*	*	*	*	
113	*	*	2	2	*	*	2	*	*	*	2	2	93	2	*	2	3	*	*	*	3	*	*	*	*	

	Bio	Chem	Eng	Fre	Geo	Hie	Li	Mat	Phy	6/9	5/9	E/M	Gr12	Pof	Blol	Chem	Eng	Fre	Geo	Hie	Li	Mat	Phy	6/9	5/9	E/M	
114	*	*	*	*	*	*	*	*	*	*	*	*	73	*	*	*	2	*	*	*	*	*	*	*	*	*	
115	1	3	*	2	*	*	*	*	2	*	*	*	264	*	*	1	2	1	2	*	*	*	*	1	*	*	
116	2	*	1	*	*	*	*	*	1	*	*	*	138	*	*	*	*	*	*	1	*	*	2	*	*	*	
117	*	1	2	1	*	*	*	*	*	*	*	31	3	*	*	*	*	*	*	*	*	*	*	0	*	*	
118	*	2	2	1	1	2	*	*	*	*	*	219	*	*	*	1	2	*	2	2	1	1	1	*	*	*	
119	*	1	3	*	*	0	*	*	*	*	*	65	1	1	1	1	*	*	3	0	2	*	*	*	*	*	
120	*	3	3	3	3	*	*	3	3	3	3	108	*	*	*	*	*	3	3	*	*	3	3	*	*	*	
121	*	1	*	*	*	*	*	1	*	*	*	79	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
122	1	1	*	1	*	*	*	*	*	*	*	53	*	*	*	*	*	*	1	*	*	*	0	*	*	*	
123	1	1	1	*	*	1	*	*	1	*	*	55	*	*	*	*	*	3	*	*	*	*	3	*	*	*	
124	1	1	*	*	*	1	*	1	*	*	*	101	1	3	1	*	*	1	*	*	*	1	*	*	*	1	
125	*	1	1	*	*	*	*	*	1	*	*	150	1	*	*	1	3	3	*	*	*	*	*	*	*	*	
126	*	1	*	2	*	*	2	*	2	*	*	508	1	2	*	*	*	*	1	2	1	2	1	*	*	*	
127	1	*	*	*	*	*	*	2	1	*	*	163	1	2	3	*	1	2	*	2	*	*	*	*	*	*	
128	*	*	*	*	*	0	*	*	*	*	*	20	3	*	*	*	3	0	*	*	*	*	*	*	*	*	
129	1	1	1	1	1	1	1	*	*	1	*	67	*	*	*	3	*	3	3	3	*	*	*	*	*	*	
130	1	*	3	3	2	*	*	1	*	*	*	144	3	*	*	*	*	*	*	*	*	*	*	*	*	*	
131	*	2	1	*	1	1	2	*	*	*	2	164	3	2	3	*	2	*	2	*	2	3	3	*	*	*	
132	*	1	1	1	2	*	0	*	1	*	*	246	*	2	1	*	3	2	0	*	*	*	*	*	*	*	
133	*	3	0	*	*	*	0	*	0	*	*	44	*	*	1	*	3	0	0	1	0	*	*	*	*	1	
134	1	1	1	*	1	1	0	1	0	1	1	69	*	*	3	1	*	*	3	0	1	0	*	*	1		
135	*	2	*	2	1	1	1	1	1	*	*	282	*	*	3	2	1	2	*	1	3	3	*	*	*	*	
136	*	1	*	*	*	*	*	1	*	*	*	341	1	1	1	1	1	*	1	1	1	1	1	1	1	1	
137	*	3	3	3	3	2	3	3	3	3	3	227	1	1	3	*	*	2	3	3	2	*	*	*	*	*	
138	*	3	3	3	3	3	3	*	*	*	*	185	3	*	*	*	1	*	3	*	*	*	*	*	*	*	
139	3	*	3	*	2	2	3	3	3	*	3	556	*	2	3	3	3	3	2	3	2	3	2	*	3	*	
140	*	*	3	1	1	*	*	*	2	*	*	121	*	*	1	*	1	*	*	*	1	*	*	*	*	*	
141	3	*	*	2	*	*	*	*	*	*	*	492	*	1	3	*	1	3	1	1	1	1	1	1	1	*	
142	*	3	3	2	*	*	*	*	3	*	*	126	3	*	3	*	*	*	*	*	*	3	*	*	*	3	
143	*	*	*	3	0	1	*	*	*	*	*	70	1	*	3	*	*	*	*	0	1	1	*	*	*	*	
144	2	3	2	2	3	1	*	*	*	*	*	456	*	1	*	*	2	1	*	1	*	*	*	*	*	*	
145	3	*	*	*	*	*	3	3	3	*	*	154	*	*	3	3	1	1	*	*	*	*	*	*	*	*	
146	*	3	3	3	3	*	3	2	*	*	*	182	3	*	3	3	2	*	*	3	2	*	*	*	3	*	
147	*	2	3	3	*	*	*	*	*	*	*	179	1	*	*	*	2	1	*	*	*	*	*	*	*	*	
148	*	1	3	*	3	2	*	*	*	*	*	71	*	*	2	*	1	*	2	*	*	*	*	*	*	*	
149	2	*	*	3	3	2	*	2	*	*	*	421	1	1	2	*	1	*	1	*	2	2	1	*	2	*	
150	2	1	*	1	1	2	1	0	*	*	*	73	1	1	1	1	*	*	*	*	*	1	0	*	1	*	
151	1	*	2	*	*	*	*	1	0	*	*	67	3	*	1	*	3	*	*	*	*	1	0	*	1	*	
152	2	*	*	2	*	2	2	2	*	*	2	562	*	*	*	*	*	*	1	*	*	3	2	*	*	*	

	Blo	Cher	Ent	Fre	Geo	His	Li	Mat	Phy	6/9	5/9	E/M	Gr12	Poj	Blol	Chem	Ent	Fren	Geo	His	Lit	Math	Phy	6/9	5/8	E/M
153	2	*	1	*	*	*	*	*	*	*	*	*	101		1	3	*	*	1	1	*	*	*	*	*	
154	3	*	2	3	*	*	*	*	3	*	*	*	139		2	1	2	*	3	*	*	1	1	*	*	
155	*	*	*	*	0	*	*	*	*	*	*	*	123		1	1	*	*	0	*	3	*	*	*	*	
156	*	*	*	*	2	3	*	*	3	*	*	*	380		*	1	1	*	1	*	*	1	1	*	1	
157	3	3	3	*	*	*	*	2	2	*	*	*	368		1	2	*	*	1	*	*	3	2	*	*	
158	3	3	3	*	*	3	3	3	3	3	3	3	170		*	2	*	*	1	*	*	*	*	*	*	
159	2	*	*	*	*	*	*	1	1	*	*	*	186		*	1	*	1	*	*	*	1	1	*	*	
160	*	3	*	*	1	3	3	*	*	*	*	*	121		*	*	*	*	*	*	*	*	*	*	*	
161	1	*	*	3	*	1	*	*	*	*	*	*	112		*	*	*	1	*	1	*	*	*	*	*	
162	1	3	1	1	*	1	1	*	*	*	*	*	225		*	1	*	*	*	*	2	1	*	*	*	
163	3	*	*	0	*	*	0	*	0	*	*	*	41		1	*	1	0	3	3	0	*	0	*	*	
164	2	*	*	*	*	1	*	2	*	*	*	*	138		3	3	*	1	*	*	*	3	3	*	*	
165	*	*	2	1	*	*	0	2	*	*	*	*	196		2	*	*	3	*	3	0	2	*	*	*	
166	1	*	*	*	1	*	0	*	1	*	*	*	80		1	*	1	*	*	*	0	*	*	*	*	
167	1	1	1	1	*	*	*	*	*	*	*	*	79		*	3	*	3	*	*	*	3	3	*	*	
168	2	*	*	*	3	2	*	*	1	*	*	*	103		*	2	*	*	*	3	*	*	*	*	*	
169	1	*	1	*	0	1	0	1	0	*	*	1	74		1	1	1	0	0	*	1	1	*	1	1	
170	*	3	1	*	*	*	*	*	2	*	*	*	265		3	*	*	1	*	2	2	2	*	*	*	
171	1	0	*	*	*	*	0	*	*	*	*	*	18		3	0	*	*	*	3	0	*	0	*	*	
172	*	*	*	*	0	3	*	*	*	*	*	*	62		*	1	*	0	0	*	*	1	*	*	*	
173	*	*	1	*	*	*	0	2	0	*	*	*	45		*	*	*	*	*	*	0	*	0	*	*	
174	*	*	3	*	3	*	3	3	3	*	3	3	289		3	3	2	1	*	*	3	2	3	*	2	

Biology Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86e	171	3	64.291	64.390	64.311	5.884	0.450	47.120	80.370	60.660	67.930
87e	172	2	63.844	64.205	63.805	5.809	0.443	46.370	82.620	59.910	67.243
88e	173	1	65.724	65.520	65.652	5.565	0.423	51.190	81.160	62.000	69.375
89e	174	0	64.767	64.520	64.750	6.171	0.468	42.830	84.750	60.592	69.310
90e	174	0	61.354	61.875	61.403	7.738	0.587	40.540	80.030	56.720	66.735
91e	174	0	62.720	63.205	62.764	6.270	0.475	46.360	81.920	57.987	66.775
92e	173	1	63.630	63.630	63.587	6.919	0.526	39.850	89.430	60.035	67.565

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86p	171	3	0.28004	0.26470	0.27568	0.10420	0.00797	0.07810	0.62070	0.20390	0.35190
87p	172	2	0.26634	0.25480	0.26195	0.10529	0.00803	0.06120	0.66670	0.18632	0.33330
88p	173	1	0.27919	0.27780	0.27843	0.10066	0.00765	0.07260	0.54550	0.20435	0.35430
89p	174	0	0.26992	0.25340	0.26546	0.09922	0.00752	0.06740	0.62500	0.19373	0.33520
90p	174	0	0.27575	0.27170	0.27451	0.09101	0.00690	0.06020	0.53850	0.20820	0.33022
91p	174	0	0.27777	0.27170	0.27556	0.09226	0.00699	0.06170	0.56820	0.21592	0.34005
92p	173	1	0.27486	0.26060	0.27039	0.09233	0.00702	0.11910	0.61540	0.21640	0.32865

Chemistry Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86e	183	25	65.227	66.600	65.503	7.664	0.567	37.000	83.660	60.460	70.770
87e	174	34	67.924	68.515	68.058	6.772	0.513	45.000	84.390	63.897	72.518
88e	183	25	67.353	68.150	67.575	6.941	0.513	48.400	83.130	63.260	71.930
89e	178	30	68.796	69.580	69.025	6.908	0.518	44.850	83.000	65.310	73.260
90e	180	28	64.532	65.010	64.718	7.699	0.574	35.290	84.330	60.827	69.098
91e	188	20	65.894	66.545	66.057	7.225	0.527	44.550	84.130	60.865	70.798
92e	189	19	67.990	68.100	68.173	7.201	0.524	45.570	86.750	63.795	72.605

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86p	183	25	0.21579	0.20310	0.20836	0.09547	0.00706	0.04850	0.76920	0.15000	0.25200
87p	174	34	0.19026	0.18340	0.18681	0.07577	0.00574	0.04500	0.47370	0.13267	0.23740
88p	183	25	0.19916	0.18720	0.19156	0.09237	0.00683	0.04490	0.77780	0.14130	0.24140
89p	178	30	0.20585	0.18590	0.19904	0.09455	0.00709	0.03170	0.85710	0.14505	0.25023
90p	180	28	0.20658	0.19395	0.20077	0.08801	0.00656	0.03880	0.58330	0.13993	0.24673
91p	188	20	0.21201	0.19865	0.20511	0.09999	0.00729	0.03740	0.75000	0.13978	0.26905
92p	189	19	0.21329	0.20600	0.20706	0.09342	0.00680	0.04760	0.58330	0.14720	0.24955

French Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86e	153	53	66.306	66.130	66.314	6.613	0.535	48.580	85.620	62.120	70.555
87e	161	45	65.843	66.930	66.137	7.644	0.602	41.500	82.690	61.580	71.005
88e	162	44	68.730	69.580	68.993	6.533	0.513	47.330	83.460	65.010	73.308
89e	166	40	70.129	70.740	70.393	6.501	0.505	49.250	86.200	66.780	74.480
90e	169	37	67.508	68.910	68.045	8.338	0.641	34.720	81.260	63.555	73.135
91e	170	36	67.505	68.395	67.744	7.263	0.557	46.640	81.140	62.890	72.815
92e	175	31	66.254	66.870	66.473	6.802	0.514	47.250	82.050	61.870	71.120

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86p	153	53	0.17621	0.14460	0.16881	0.09585	0.00775	0.02900	0.47580	0.10720	0.22190
87p	161	45	0.16802	0.14350	0.16079	0.09025	0.00711	0.03910	0.50000	0.10415	0.20320
88p	162	44	0.17275	0.14685	0.16568	0.09179	0.00721	0.04980	0.42920	0.10647	0.21068
89p	166	40	0.16187	0.14120	0.15488	0.08327	0.00646	0.04550	0.57220	0.10458	0.20475
90p	169	37	0.17071	0.15240	0.16486	0.08393	0.00646	0.03250	0.55920	0.11270	0.21180
91p	170	36	0.17534	0.16650	0.16922	0.08664	0.00665	0.03560	0.47780	0.10977	0.21982
92p	175	31	0.16312	0.14860	0.15740	0.08195	0.00619	0.03440	0.47370	0.10250	0.21620

English Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMDEV	MIN	MAX	Q1	Q3
86Enexam	195	16	66.794	66.410	66.776	3.640	0.261	57.840	76.920	64.540	69.190
87Enexam	196	15	66.415	66.755	66.487	3.768	0.269	48.230	77.280	64.132	68.842
88Enexam	197	14	67.220	67.050	67.198	3.270	0.233	55.000	77.690	65.390	69.115
89Enexam	196	15	67.258	67.465	67.412	3.872	0.277	49.500	77.350	64.970	69.652
90Enexam	198	13	68.538	68.845	68.790	4.526	0.322	43.300	77.580	66.250	71.403
91Enexam	202	9	67.754	67.855	67.926	4.063	0.286	42.310	77.250	65.757	70.277
92Enexam	205	6	67.980	68.340	68.251	4.065	0.284	48.530	76.430	66.125	70.580

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMDEV	MIN	MAX	Q1	Q3
86Enpart	195	16	0.90765	0.93150	0.91901	0.11084	0.00794	0.31580	1.16670	0.88540	0.96790
87Enpart	196	15	0.75453	0.78295	0.75918	0.13377	0.00955	0.30770	1.16670	0.66670	0.84293
88Enpart	197	14	0.75824	0.77450	0.76194	0.11726	0.00835	0.25580	1.00000	0.68945	0.83875
89Enpart	196	15	0.73326	0.75000	0.73851	0.11901	0.00850	0.29170	1.00000	0.67985	0.80375
90Enpart	198	13	0.75358	0.76185	0.75732	0.11001	0.00782	0.33330	1.00000	0.69130	0.82383
91Enpart	202	9	0.75435	0.77290	0.75903	0.10929	0.00769	0.40910	1.00000	0.69683	0.82187
92Enpart	205	6	0.73575	0.73230	0.73898	0.10437	0.00729	0.34480	1.00000	0.67900	0.81045

Geography Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86e	177	29	63.844	63.780	63.902	5.514	0.414	44.750	80.000	60.690	67.205
87e	179	27	64.111	64.580	64.403	6.925	0.518	0.000	81.480	61.380	67.950
88e	179	27	65.443	65.350	65.324	4.934	0.369	53.000	82.770	62.400	68.440
89e	174	32	64.398	64.635	64.666	6.709	0.509	0.000	77.440	61.595	67.680
90e	177	29	63.389	63.660	63.747	6.618	0.497	0.000	75.170	61.050	66.680
91e	179	27	64.045	64.630	64.419	6.915	0.517	0.000	78.330	61.210	67.510
92e	180	26	63.313	64.190	63.709	6.661	0.496	0.000	74.920	60.735	66.822

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86p	177	29	0.3148	0.2907	0.3003	0.1667	0.0125	0.0662	1.0000	0.1910	0.3846
87p	179	27	0.28310	0.25840	0.27663	0.12693	0.00949	0.00000	0.69440	0.18910	0.36450
88p	179	27	0.27003	0.25400	0.26103	0.12574	0.00940	0.06550	0.78790	0.17350	0.34190
89p	174	32	0.25880	0.23485	0.24963	0.12637	0.00958	0.00000	0.71050	0.16557	0.32063
90p	177	29	0.25785	0.23640	0.25115	0.11569	0.00870	0.00000	0.72220	0.18035	0.32870
91p	179	27	0.25632	0.23210	0.24928	0.11621	0.00869	0.00000	0.68420	0.17710	0.32430
92p	180	26	0.24370	0.21120	0.23593	0.13181	0.00982	0.00000	0.88240	0.14358	0.32732

History Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86E	182	25	63.380	63.435	63.573	6.539	0.485	43.400	79.940	59.000	68.143
87E	174	33	64.191	64.840	64.449	5.790	0.439	38.000	75.740	60.790	68.050
88E	180	27	64.842	65.395	64.958	6.608	0.493	41.600	82.300	61.302	69.140
89E	174	33	64.828	65.675	65.070	5.969	0.452	44.440	77.050	60.943	68.515
90E	184	23	62.750	63.045	62.909	6.063	0.447	39.160	75.590	59.158	66.827
91E	178	29	63.452	64.245	63.638	6.106	0.458	45.750	78.430	60.077	67.205
92E	182	25	61.964	62.365	62.197	5.891	0.437	37.120	75.780	58.408	66.403

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86P	182	25	0.28307	0.25805	0.27228	0.13449	0.00997	0.05650	0.83330	0.17840	0.34907
87P	174	33	0.25159	0.24070	0.24755	0.10593	0.00803	0.04690	0.71430	0.16980	0.32685
88P	180	27	0.23838	0.22685	0.23446	0.10195	0.00760	0.04420	0.58330	0.16308	0.30965
89P	174	33	0.22167	0.20890	0.21711	0.09879	0.00749	0.04520	0.50270	0.13887	0.28230
90P	184	23	0.23230	0.21510	0.22310	0.11531	0.00850	0.05070	0.78570	0.14483	0.28908
91P	178	29	0.23084	0.21545	0.22265	0.10861	0.00814	0.05070	0.70000	0.15153	0.27847
92P	182	25	0.22283	0.19350	0.21511	0.11199	0.00830	0.04910	0.75000	0.14395	0.29095

Mathematics Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86m exam	184	25	61.313	61.710	61.531	6.676	0.492	39.800	75.010	57.325	66.273
87m exam	188	21	63.448	63.805	63.604	6.459	0.471	39.800	79.620	59.873	67.743
88m exam	187	22	62.833	63.410	63.022	6.858	0.502	42.500	82.040	59.200	67.570
89m exam	187	22	65.043	65.270	65.158	6.475	0.473	42.600	80.250	60.270	70.010
90m exam	186	23	61.301	61.935	61.681	7.334	0.538	33.450	78.250	57.963	66.257
91m exam	192	17	62.109	62.670	62.274	7.144	0.516	38.870	77.900	57.812	66.917
92m exam	194	15	62.727	63.610	62.951	7.470	0.536	39.140	78.420	57.825	67.565

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86m part	184	25	0.37724	0.37700	0.37495	0.11715	0.00848	0.03570	0.94120	0.31030	0.43840
87m part	188	21	0.32016	0.30785	0.31617	0.10300	0.00743	0.07140	0.78950	0.24290	0.37745
88m part	187	22	0.32001	0.30820	0.31639	0.10678	0.00769	0.00000	0.66670	0.24740	0.38445
89m part	187	22	0.31141	0.30180	0.30790	0.10365	0.00738	0.02220	0.65720	0.23570	0.37250
90m part	186	23	0.33866	0.32670	0.33374	0.12694	0.00904	0.00000	1.06670	0.25595	0.41110
91m part	192	17	0.31648	0.29365	0.31157	0.12448	0.00880	0.07690	0.80000	0.22875	0.39365
92m part	194	15	0.32085	0.30795	0.31547	0.11755	0.00827	0.00000	1.00000	0.24375	0.37407

English Literature Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86e	153	43	61.299	61.000	61.355	6.708	0.542	43.180	78.950	56.685	66.190
87e	153	43	63.034	63.570	63.244	7.445	0.602	39.920	78.250	57.975	68.185
88e	153	43	65.268	65.410	65.555	7.306	0.591	38.590	80.140	59.435	70.640
89e	152	44	65.185	64.680	65.258	6.405	0.520	37.770	79.830	60.925	69.880
90e	161	35	63.598	64.150	63.674	6.529	0.515	47.440	79.330	58.710	68.175
91e	157	39	64.666	64.720	64.674	6.302	0.503	39.540	85.310	61.350	68.265
92e	158	38	64.713	65.460	64.869	6.427	0.511	47.660	79.000	60.590	68.857

Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86p	153	43	0.16468	0.14630	0.16040	0.08333	0.00674	0.01740	0.45450	0.10215	0.22125
87p	153	43	0.14781	0.13330	0.14111	0.07766	0.00628	0.01630	0.57890	0.08945	0.18400
88p	153	43	0.13931	0.12200	0.13104	0.07339	0.00593	0.04270	0.46670	0.09335	0.16475
89p	152	44	0.12831	0.11575	0.12292	0.06297	0.00511	0.03020	0.37780	0.08308	0.15245
90p	161	35	0.13822	0.12140	0.13206	0.07266	0.00573	0.02620	0.41940	0.09025	0.16255
91p	157	39	0.13064	0.11430	0.12506	0.06484	0.00518	0.02910	0.50000	0.08575	0.16110
92p	158	38	0.13881	0.12765	0.13177	0.07129	0.00567	0.02830	0.41670	0.09155	0.16952

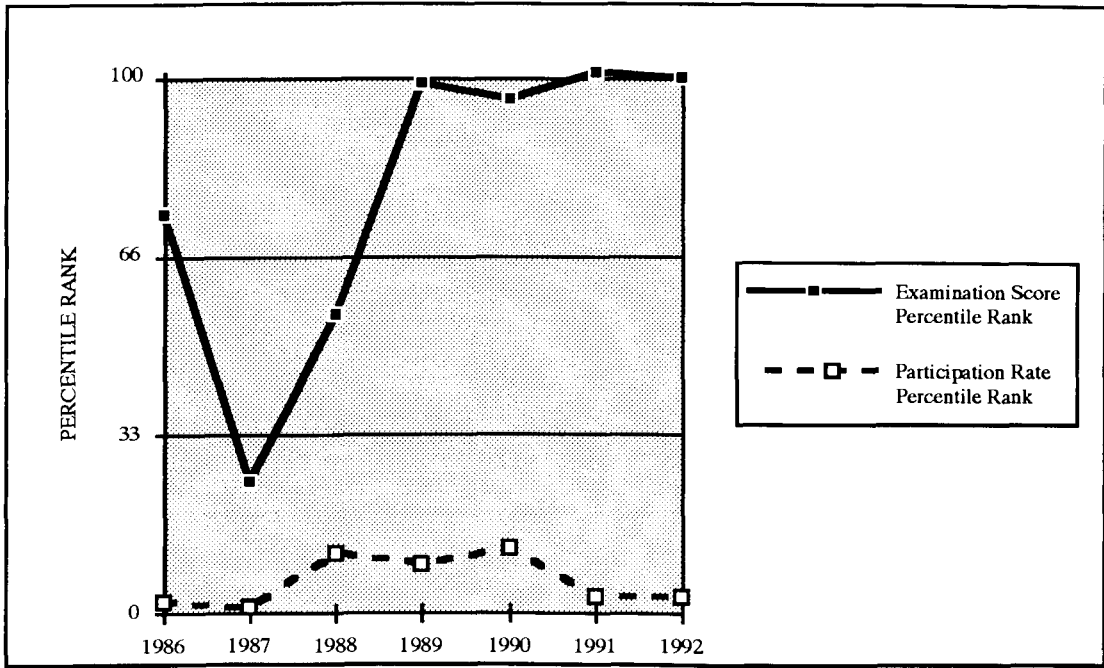
Physics Results 1986-92Examination scores

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86e	159	40	66.930	67.410	67.115	7.065	0.560	42.810	81.530	61.750	72.000
87e	157	42	67.564	68.270	67.938	7.807	0.623	40.090	84.310	62.630	72.505
88e	160	39	69.278	69.285	69.531	7.258	0.574	39.660	83.280	64.890	74.408
89e	159	40	70.943	71.840	71.217	7.135	0.566	46.000	85.680	66.660	76.000
90e	162	37	68.359	69.185	68.653	7.528	0.591	42.660	82.620	63.605	74.100
91e	167	32	64.804	65.070	64.824	9.394	0.727	42.160	87.900	58.120	70.800
92e	166	33	66.675	67.600	66.847	8.997	0.698	38.250	87.000	60.325	72.717

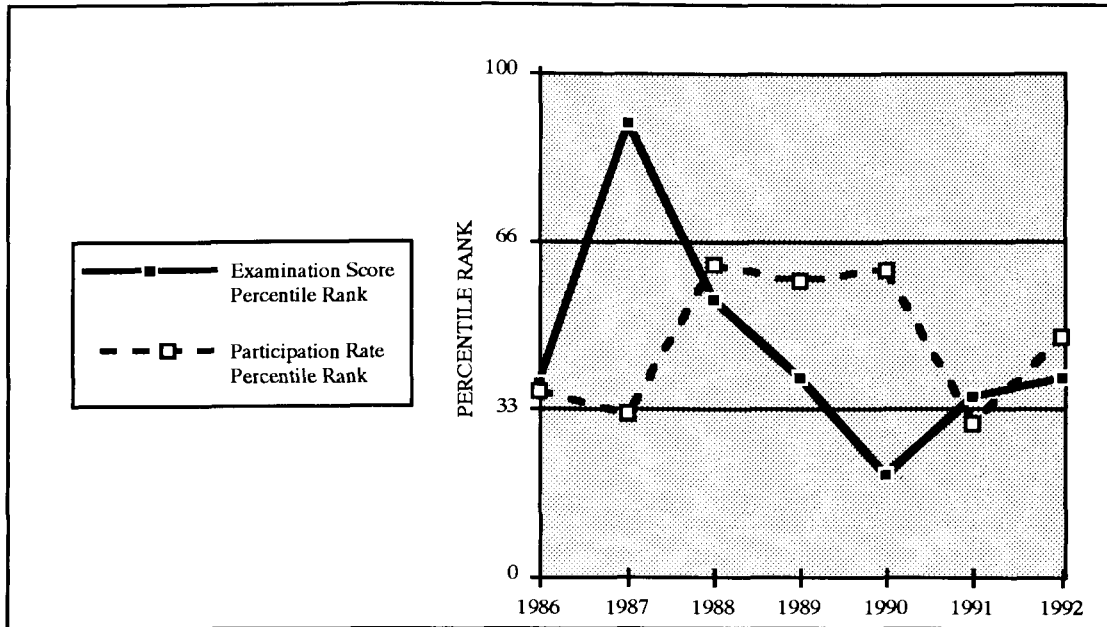
Participation rates

	N	N*	MEAN	MEDIAN	TRMEAN	STDEV	SEMEAN	MIN	MAX	Q1	Q3
86p	159	40	0.13278	0.12500	0.12790	0.05997	0.00476	0.02510	0.40000	0.09160	0.15730
87p	157	42	0.11672	0.11290	0.11240	0.05645	0.00451	0.02050	0.44440	0.07725	0.14965
88p	160	39	0.11987	0.11180	0.11620	0.05399	0.00427	0.02900	0.33330	0.07802	0.14928
89p	159	40	0.11530	0.11010	0.11220	0.04903	0.00389	0.02330	0.28570	0.08290	0.13820
90p	162	37	0.11880	0.10745	0.11373	0.05986	0.00470	0.02540	0.41670	0.07690	0.14052
91p	167	32	0.11993	0.11490	0.11747	0.05157	0.00399	0.02890	0.27270	0.08160	0.14710
92p	166	33	0.12972	0.12440	0.12679	0.05667	0.00440	0.01850	0.29520	0.08825	0.15917

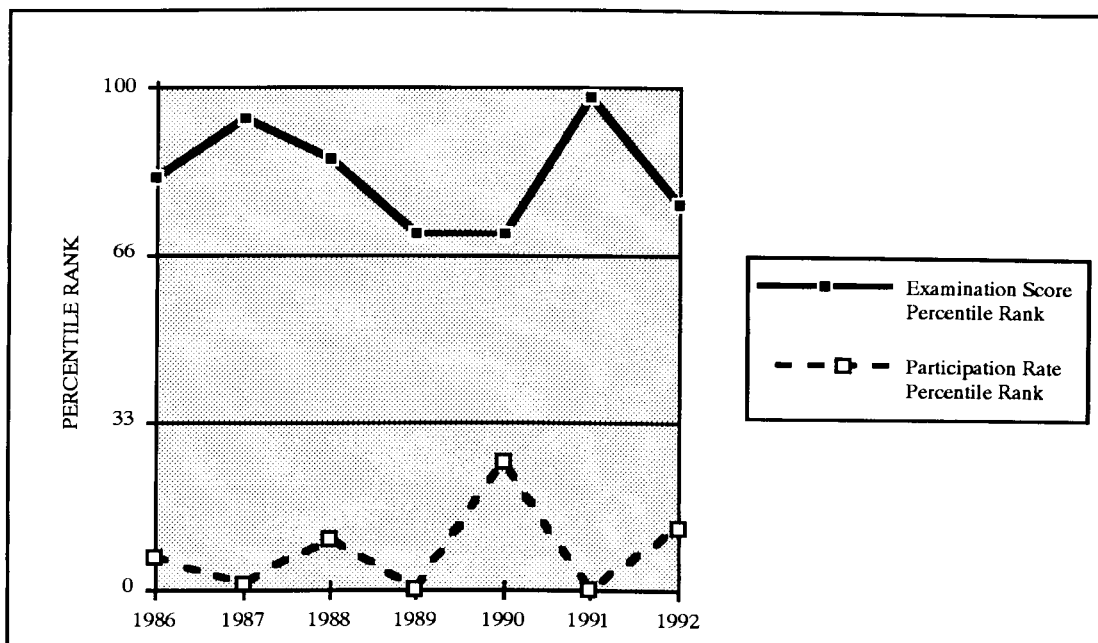
APPENDIX SIX:
SCHOOL ACADEMIC PROFILES



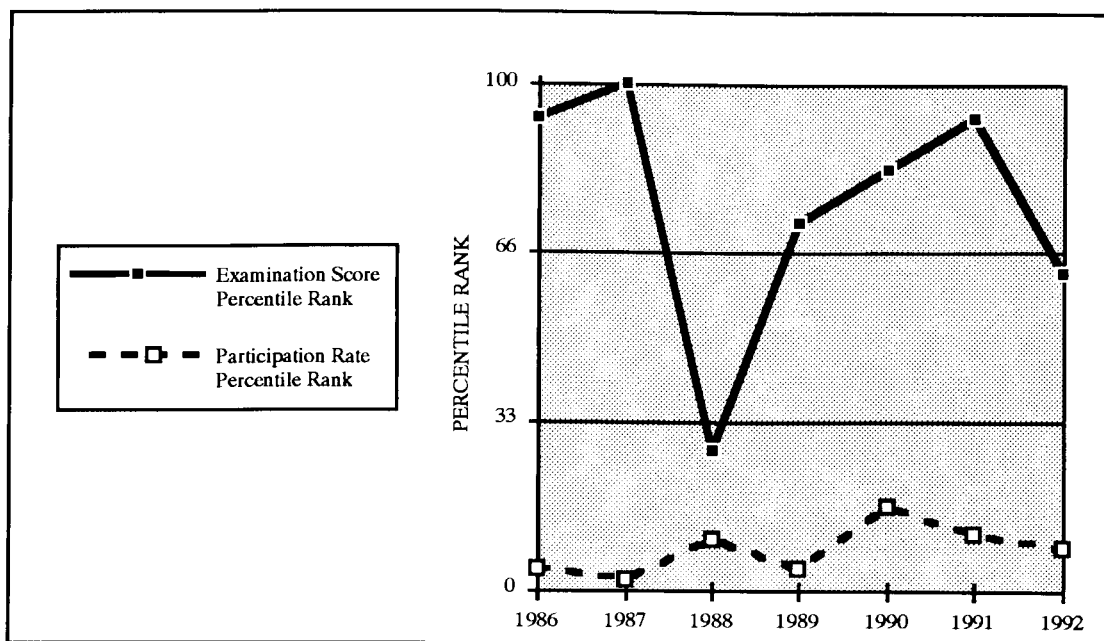
Biology 12 examination score /participation rate percentiles: Arlingdale Secondary.



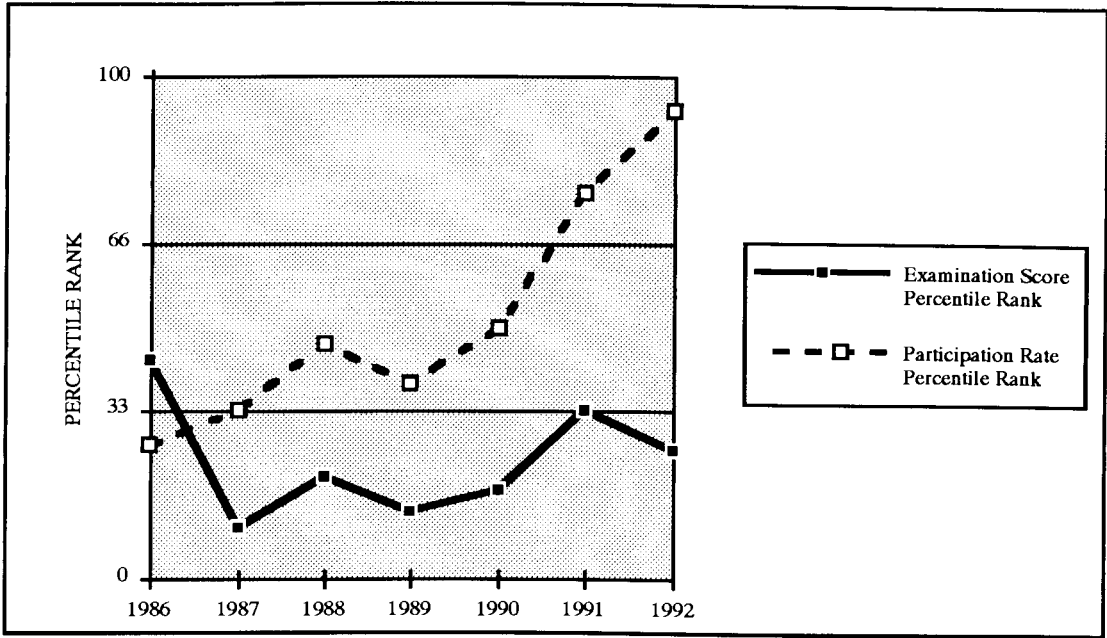
Biology 12 examination score/participation rate percentiles: Pauline Secondary.



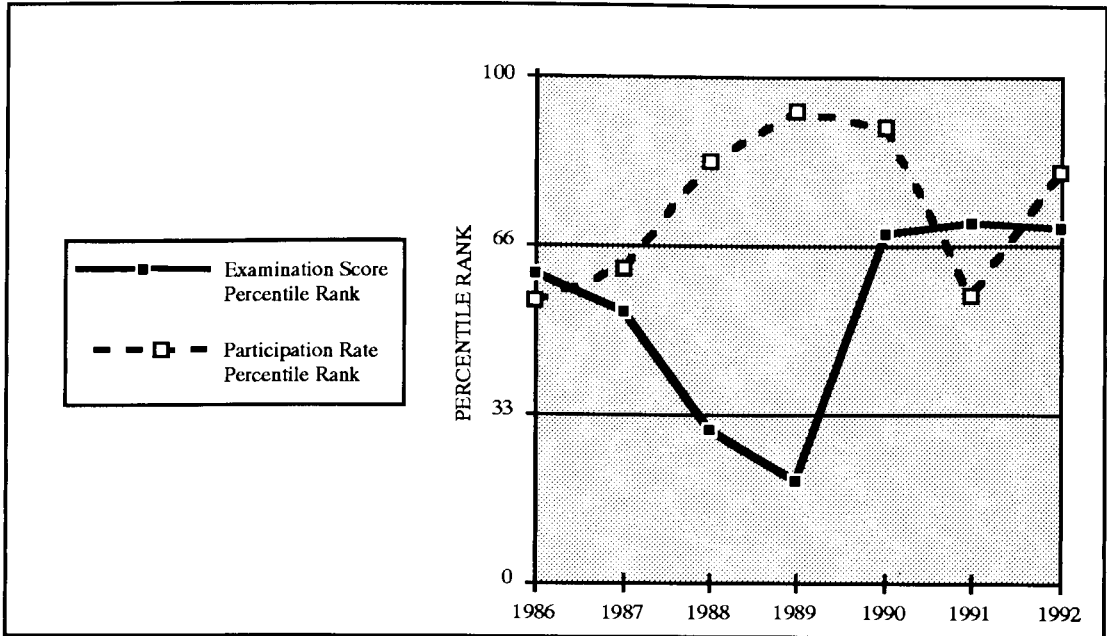
Chemistry 12 examination score/participation rate percentiles: Arlingdale Secondary.



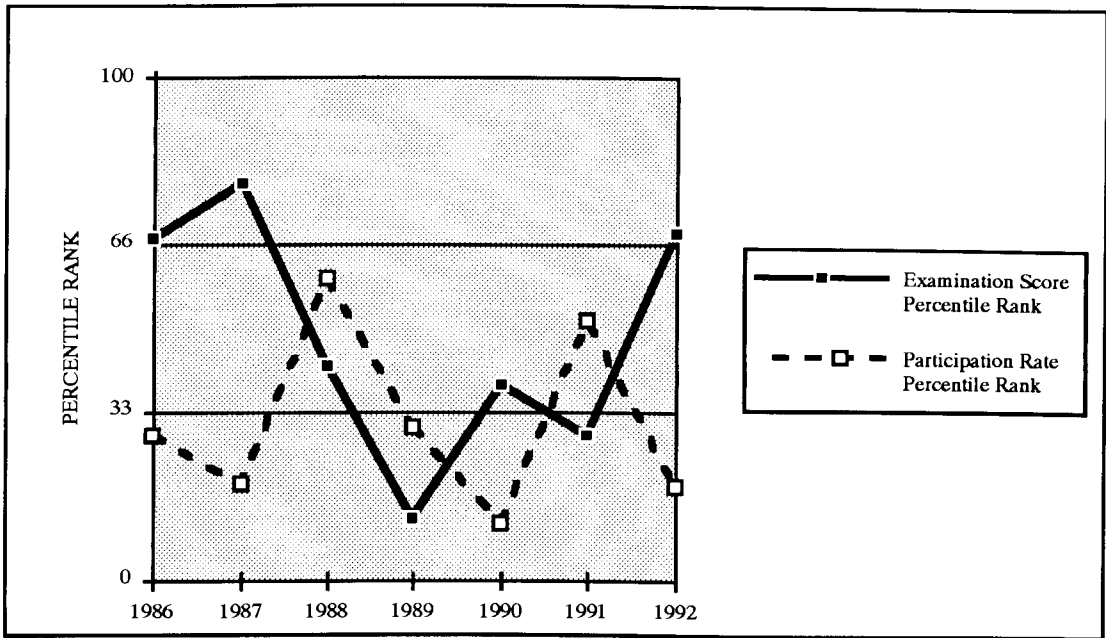
Chemistry 12 examination score/participation rate percentiles: Pauline Secondary.



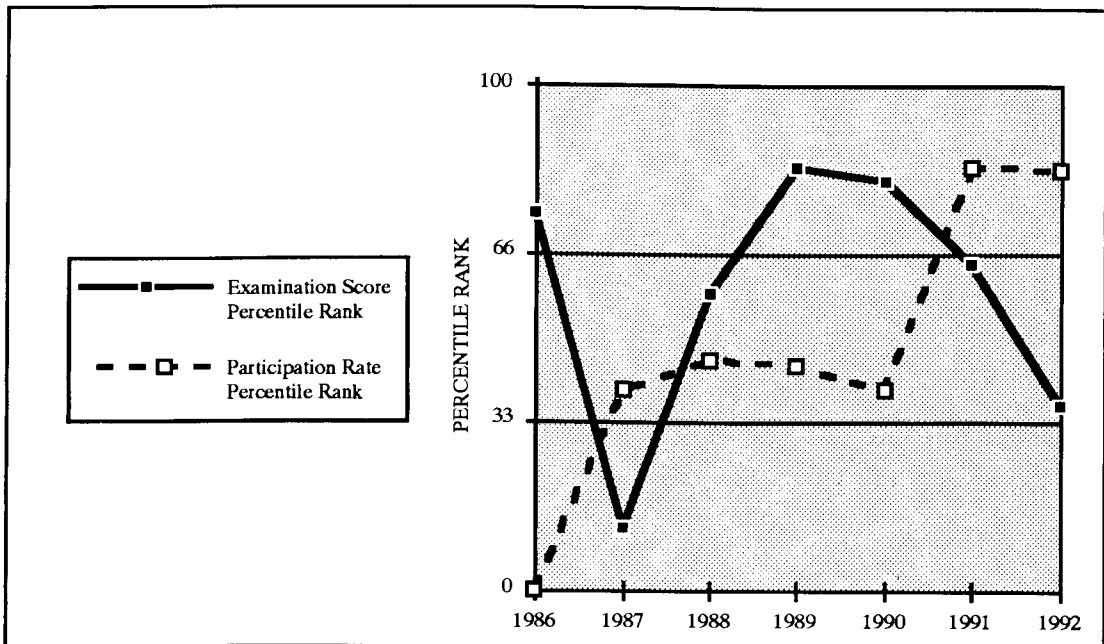
English 12 examination score/participation rate percentiles: Arlingdale Secondary.



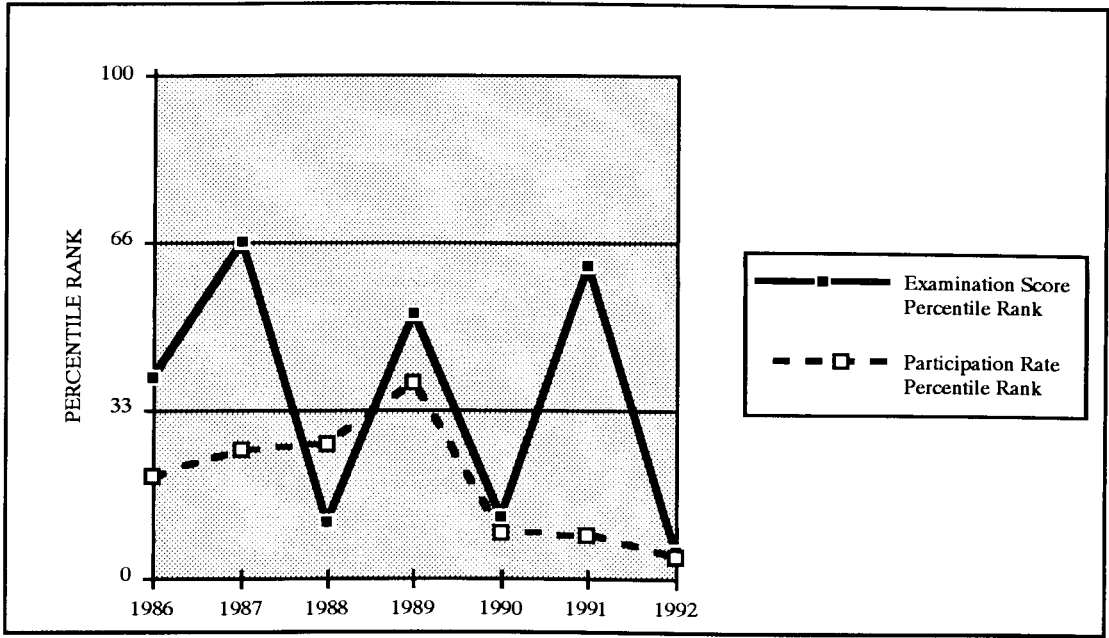
English 12 examination score/participation rate percentiles: Pauline Secondary.



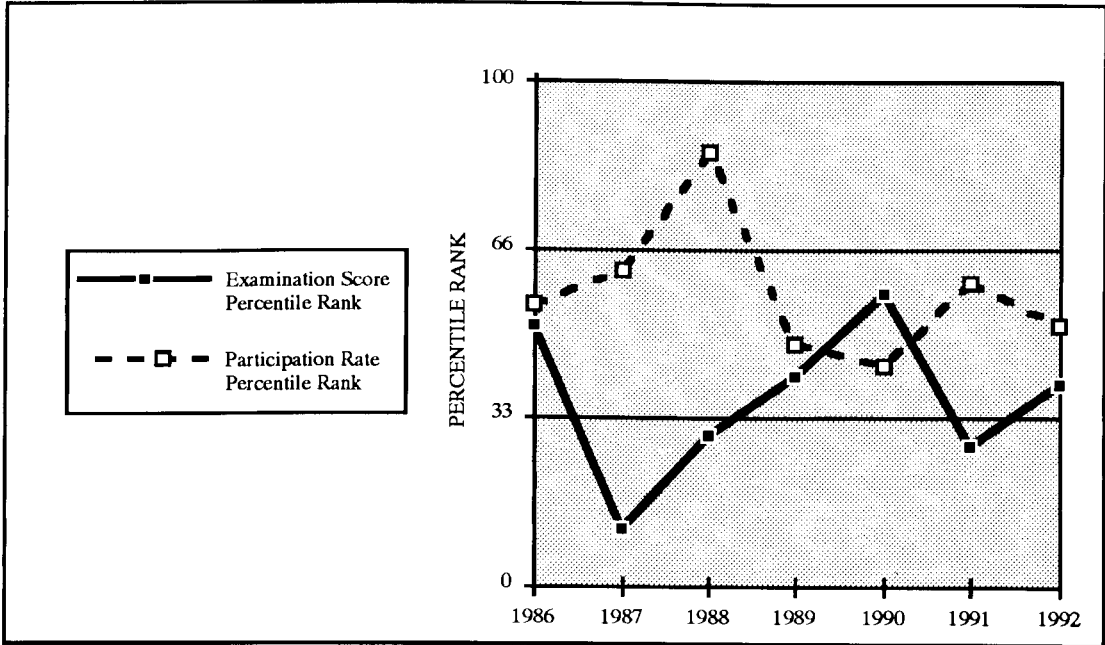
French 12 examination score/participation rate percentiles: Arlingdale Secondary.



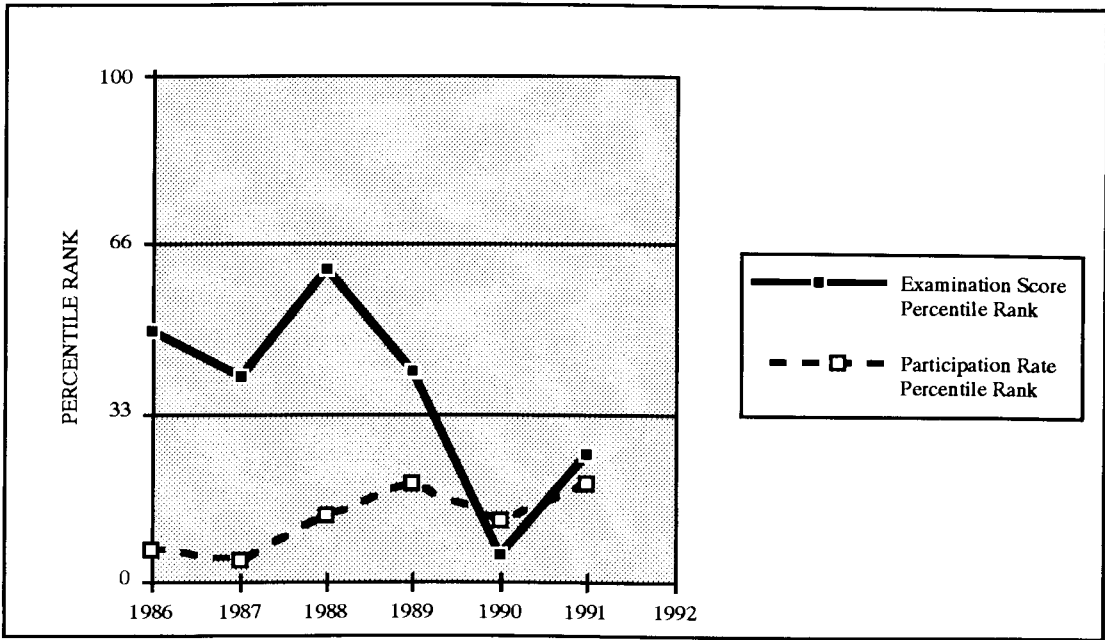
French 12 examination score/participation rate percentiles: Pauline Secondary.



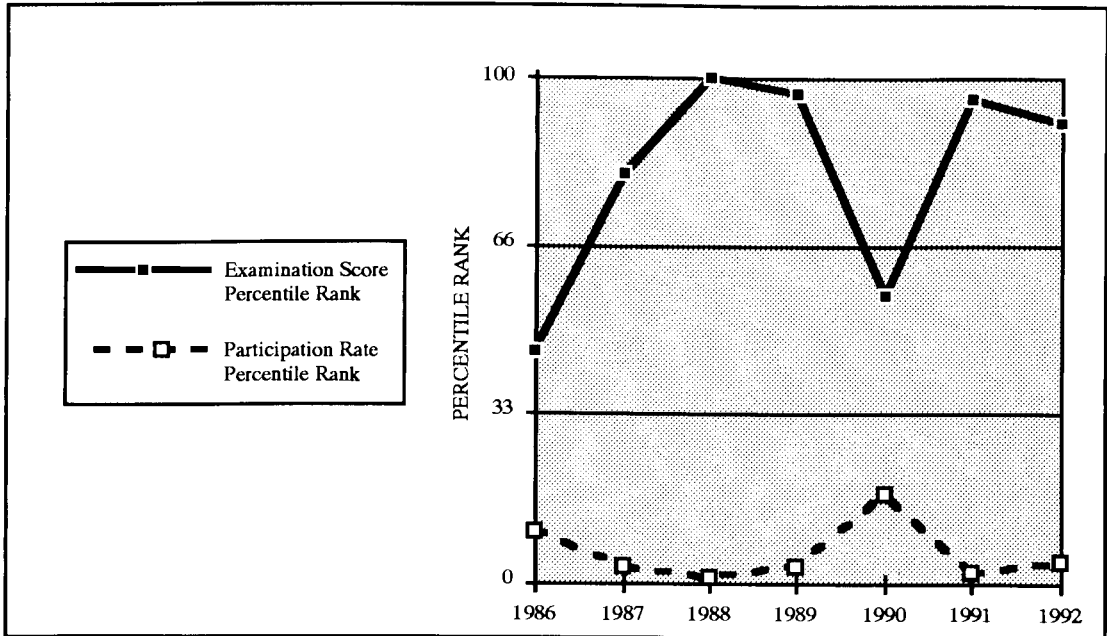
Geography 12 examination score/participation rate percentiles: Arlingdale Secondary.



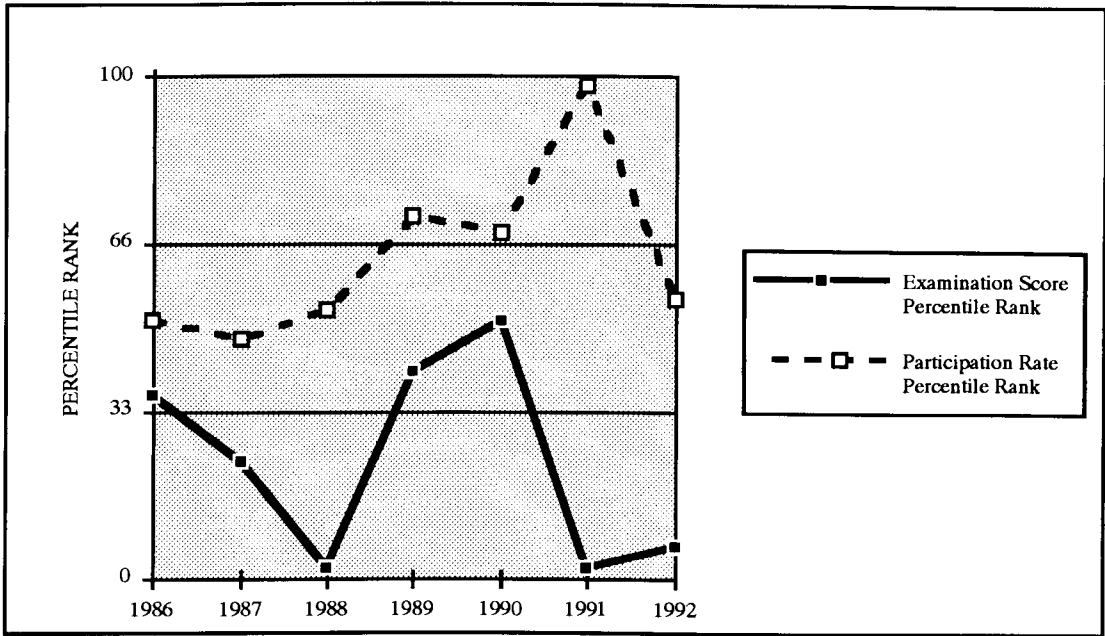
Geography 12 examination score/participation rate percentiles: Pauline Secondary.



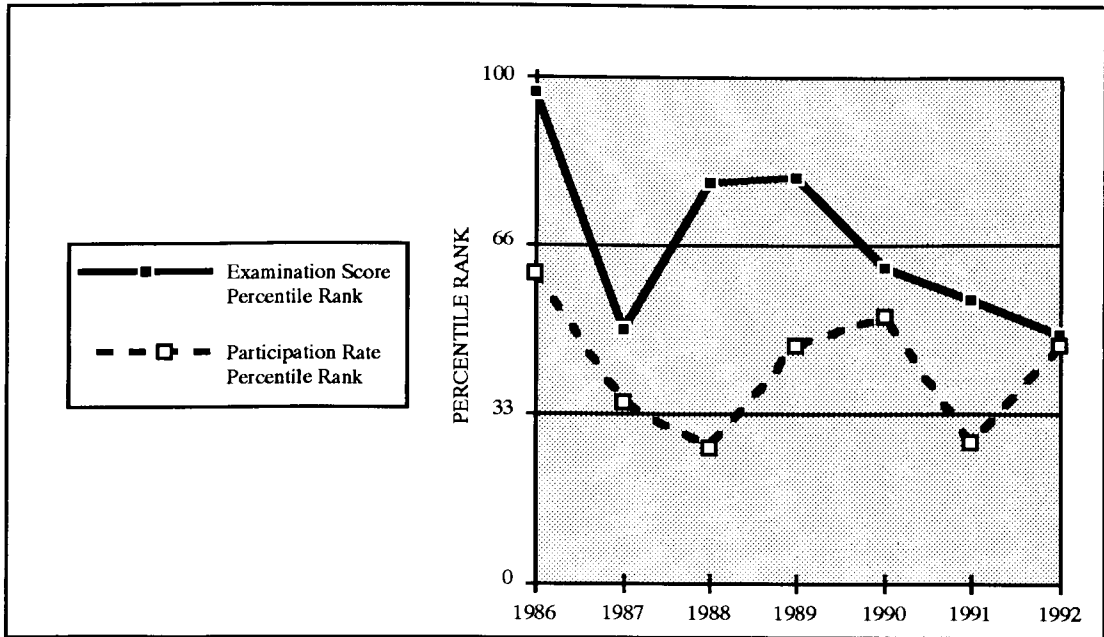
History 12 examination score/participation rate percentiles: Arlingdale Secondary.



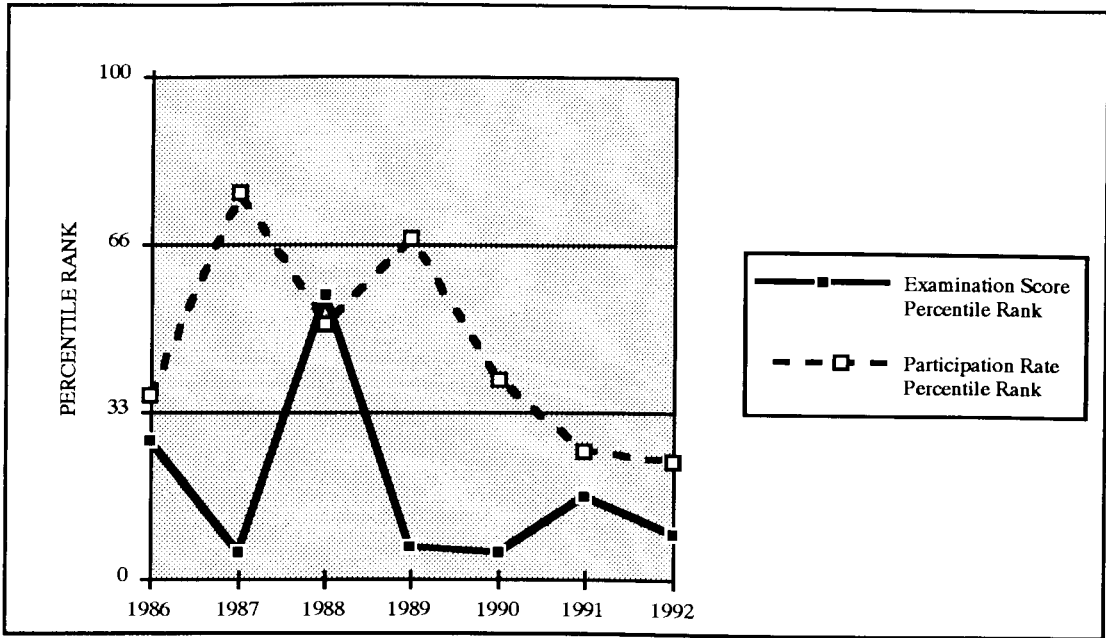
History 12 examination score/participation rate percentiles: Pauline Secondary.



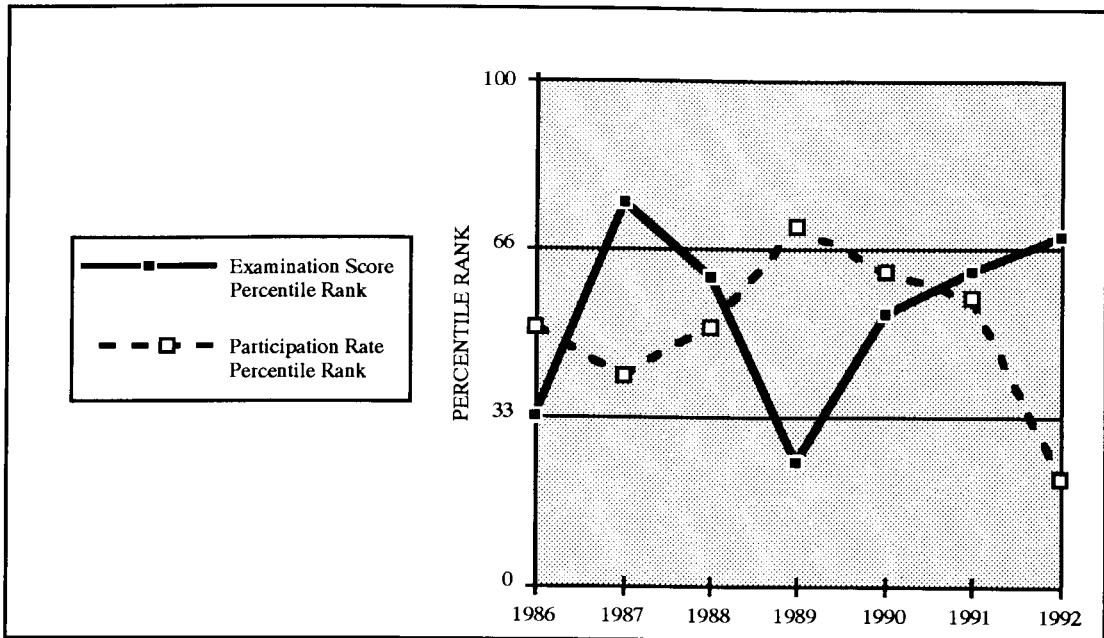
English Literature 12 examination score/participation rate percentiles: Arlingdale Secondary.



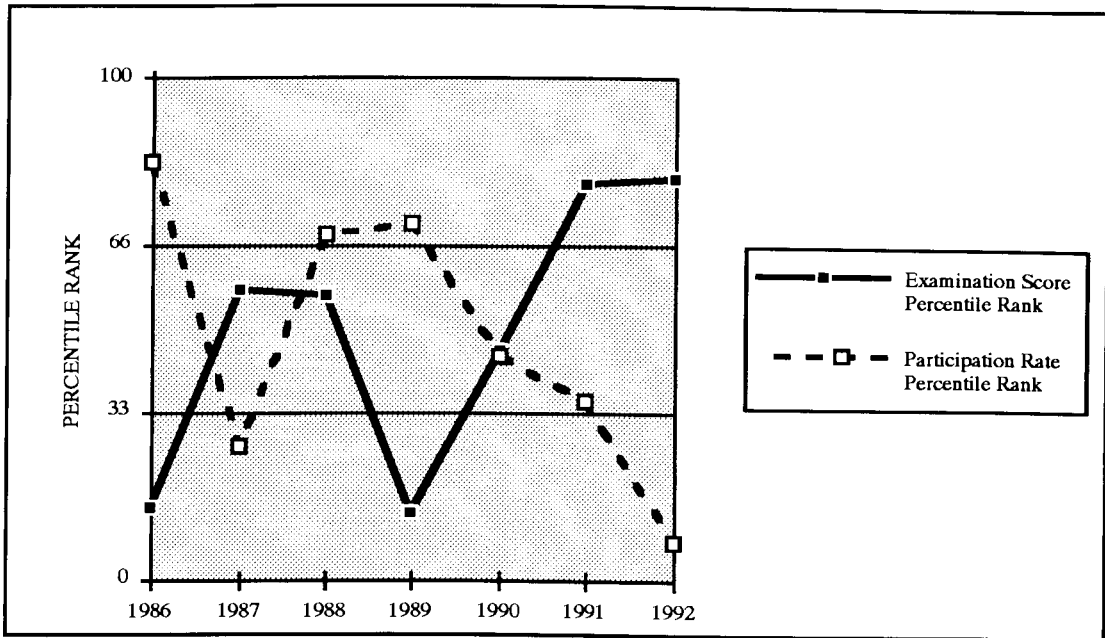
English Literature 12 examination score/participation rate percentiles: Pauline Secondary.



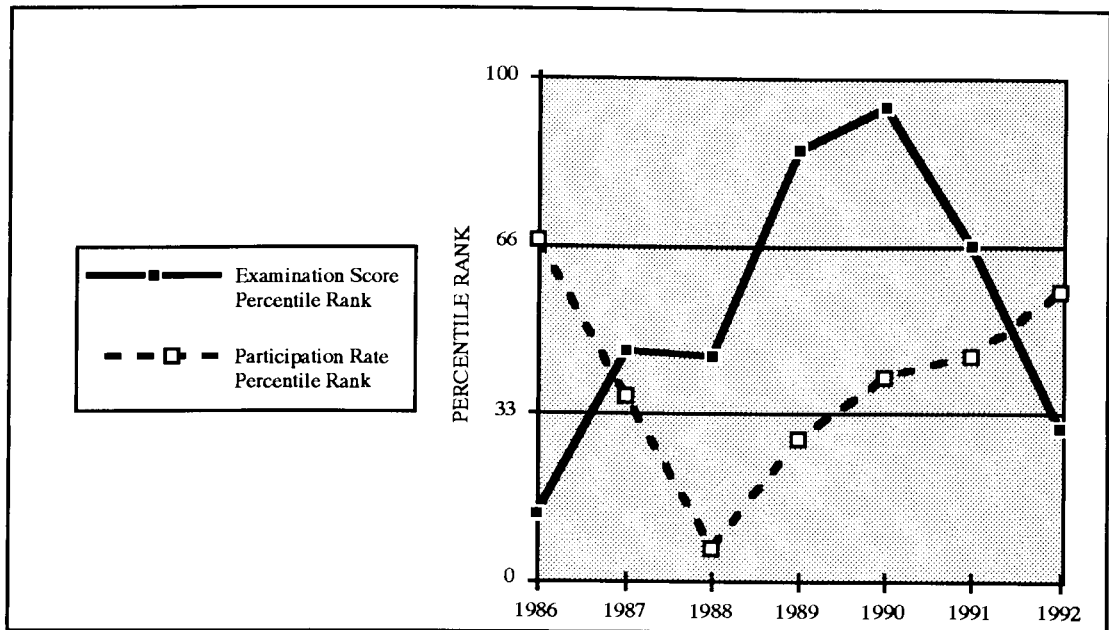
Mathematics examination score/participation rate percentiles: Arlingdale Secondary.



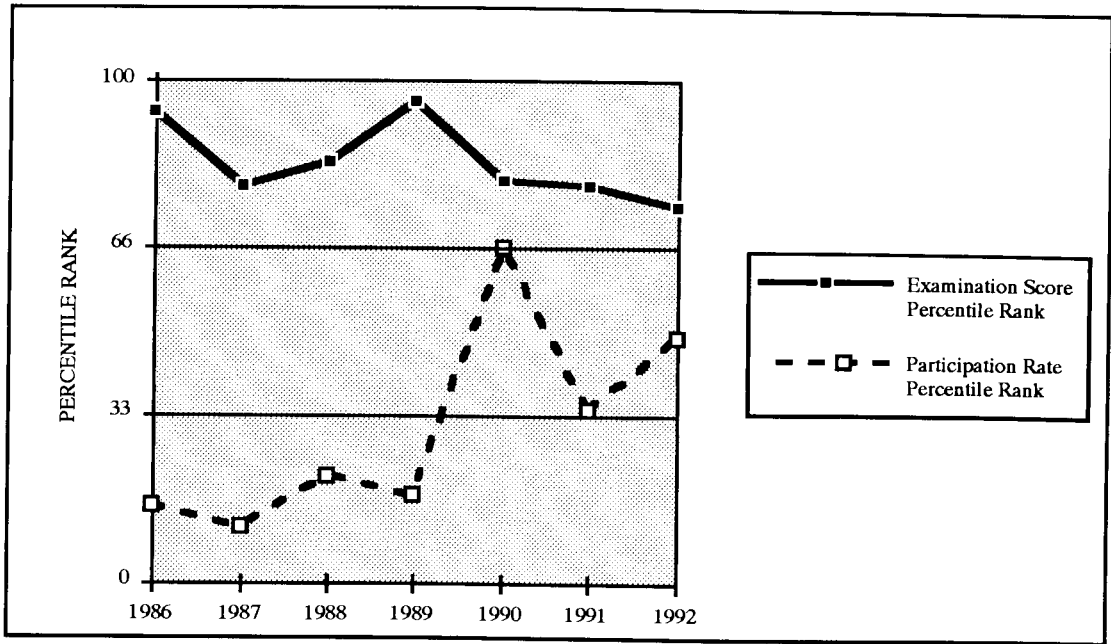
Mathematics examination score and participation rate percentiles: Pauline Secondary.



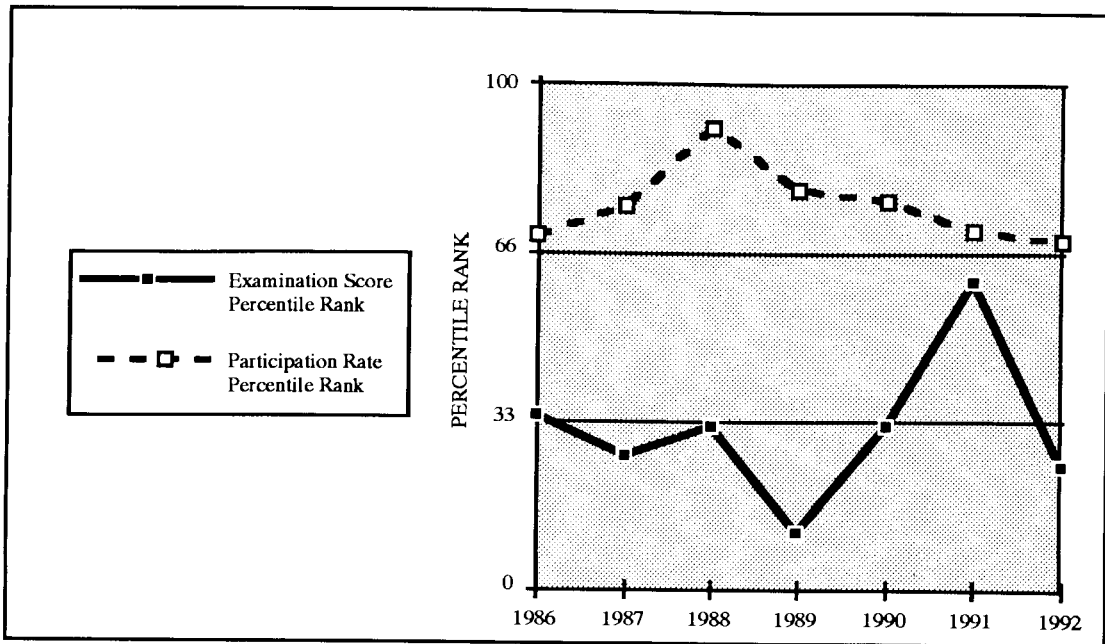
Physics 12 examination score and participation rate percentiles: Arlingdale Secondary.



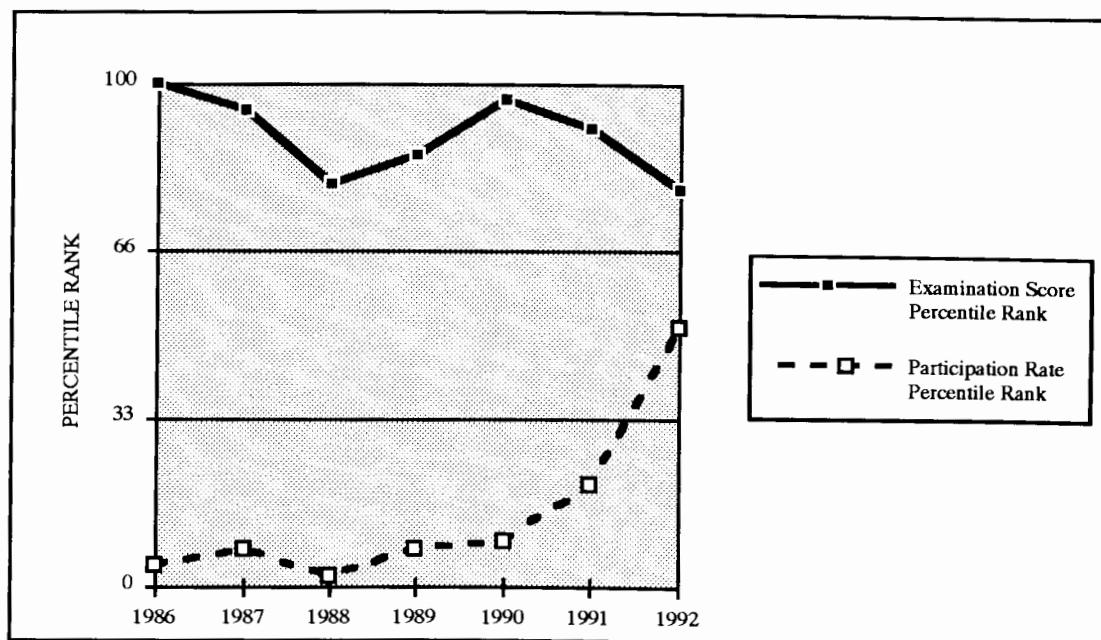
Physics 12 examination score /participation rate percentiles: Pauline Secondary



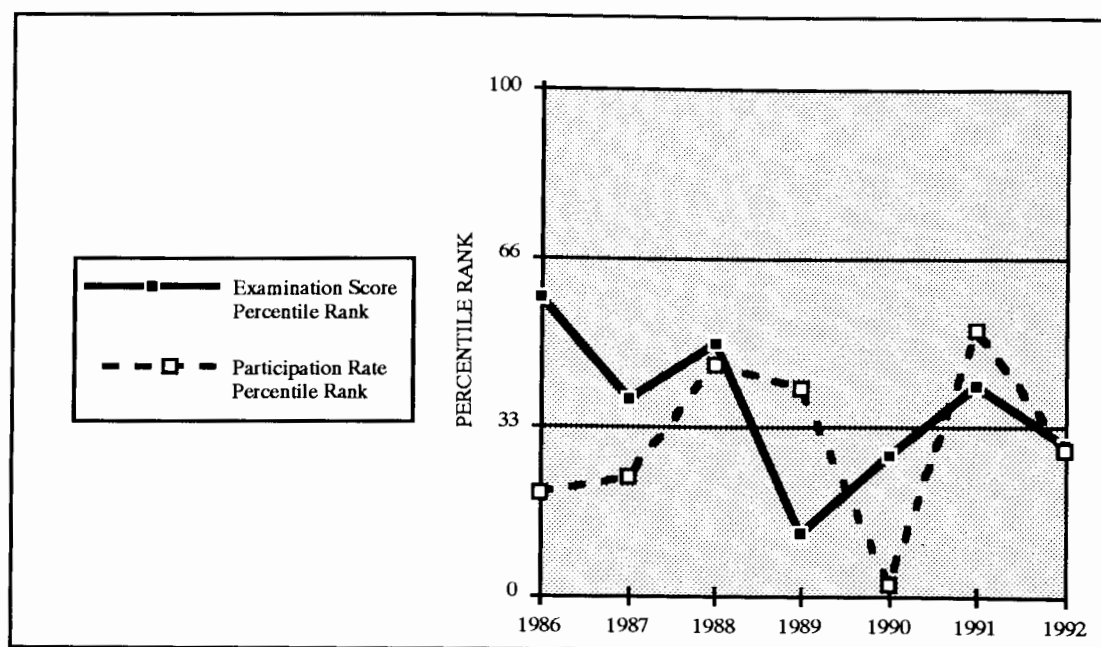
Biology 12 examination score and participation rate percentiles: Brandon Secondary School.



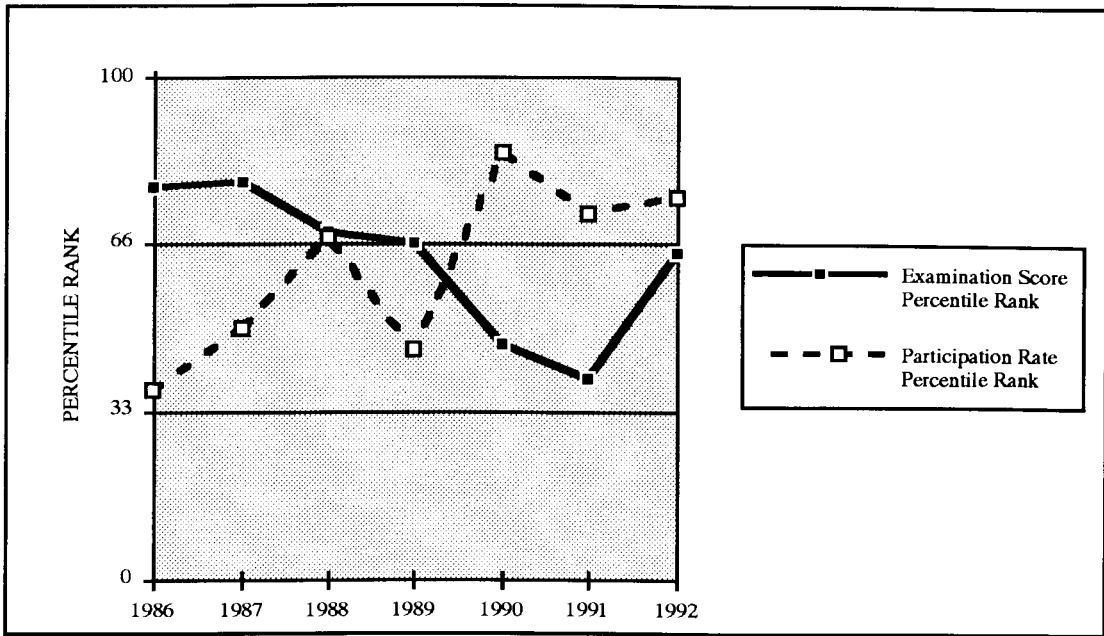
Biology 12 examination score and participation rate percentiles: Northridge Secondary School.



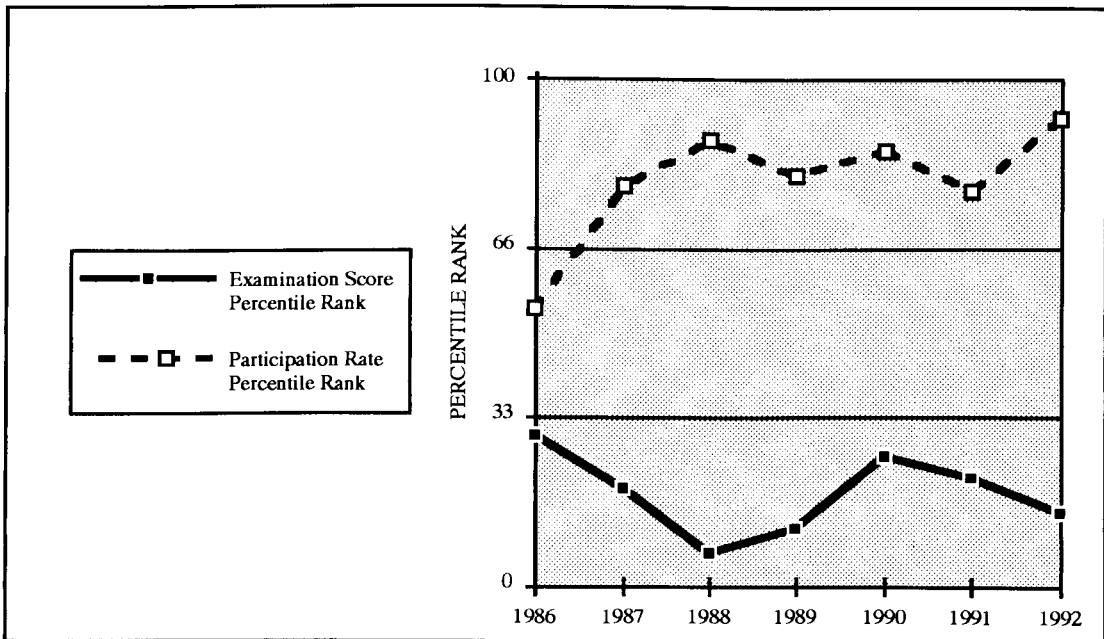
Chemistry 12 examination score and participation rate percentiles: Brandon Secondary School.



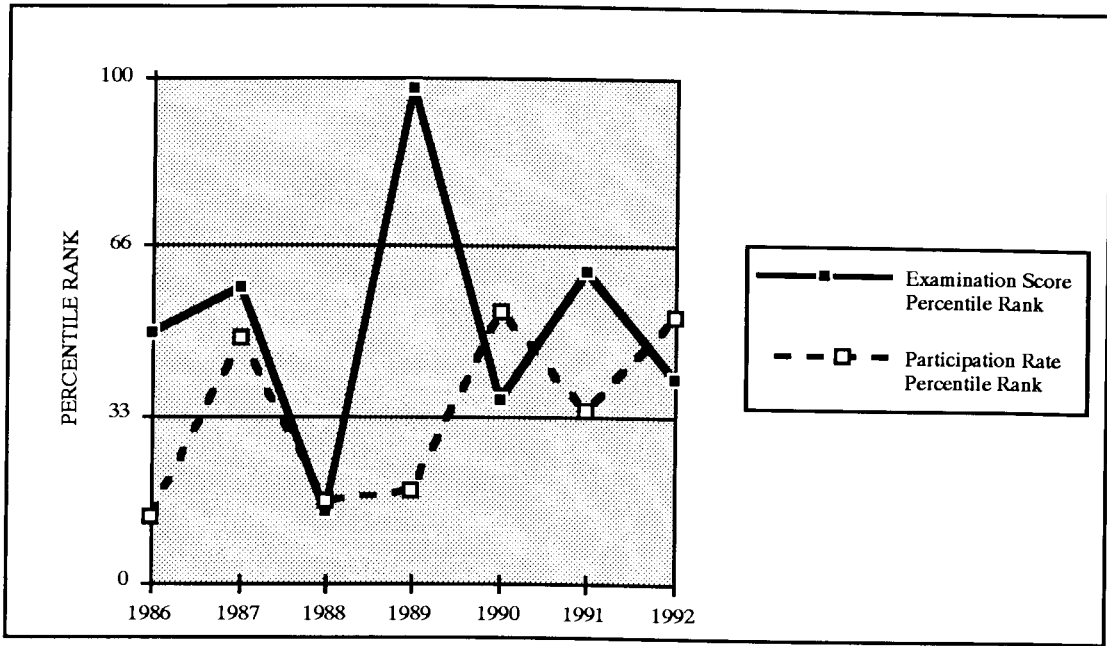
Chemistry 12 examination score and participation rate percentiles: Northridge Secondary School.



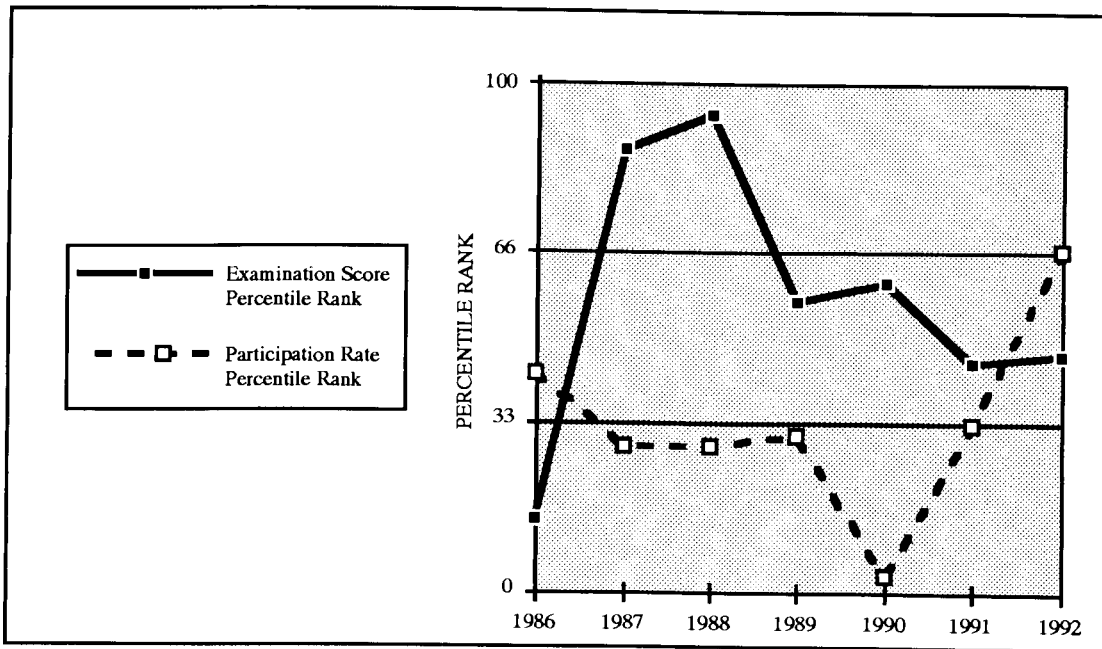
English 12 examination score and participation rate percentiles: Brandon Secondary School.



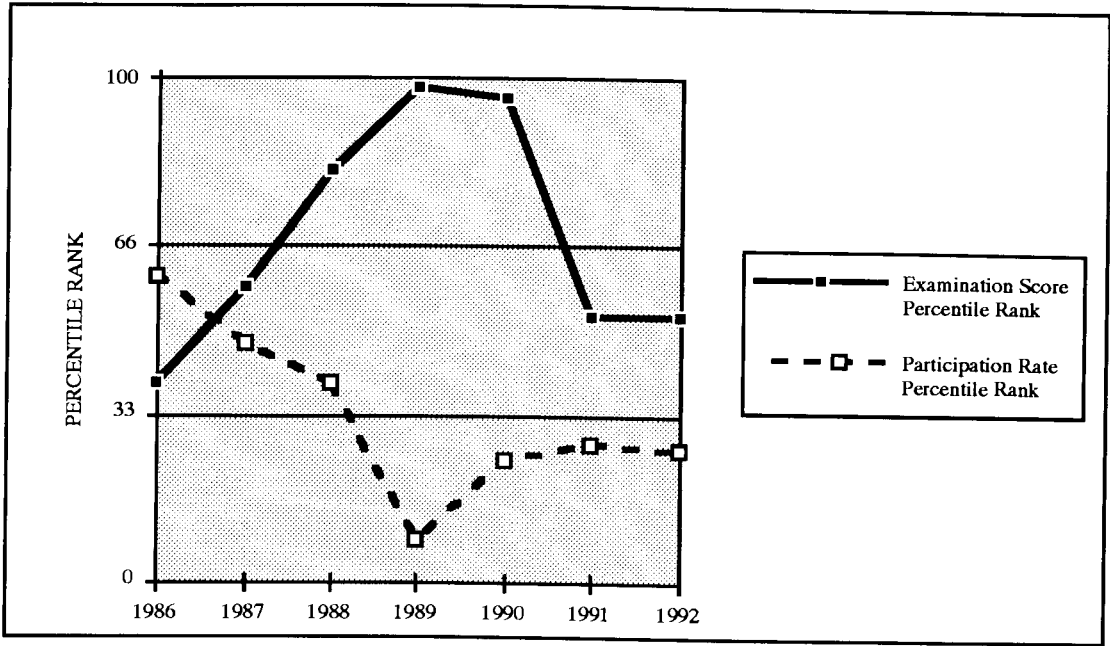
English 12 examination score and participation rate percentiles: Northridge Secondary School.



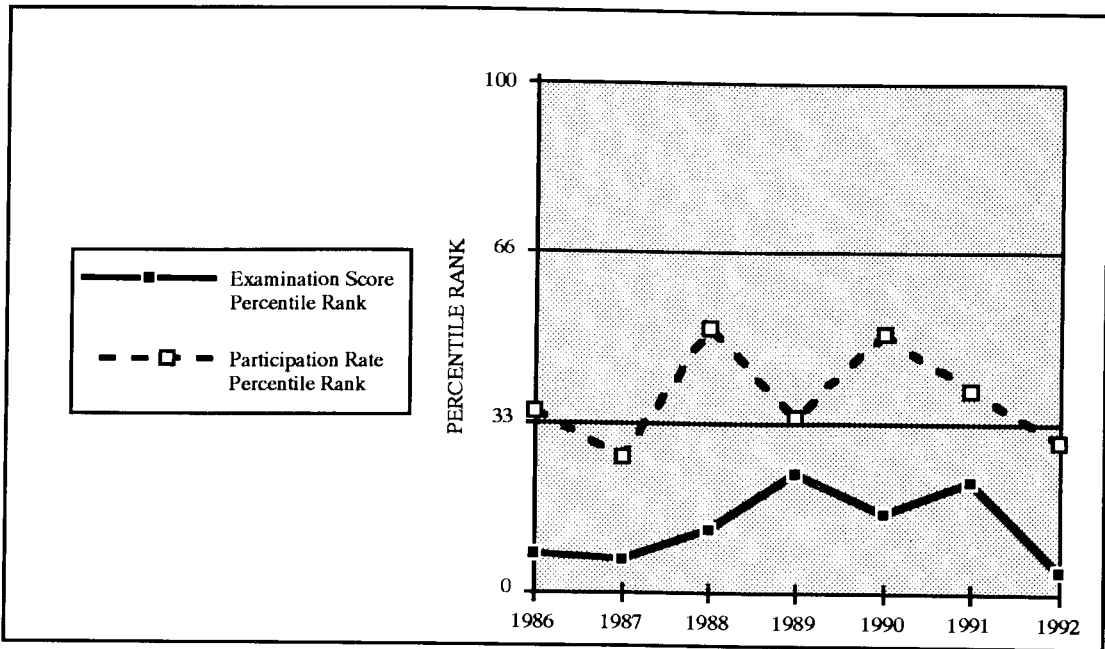
French 12 examination score and participation rate percentiles: Brandon Secondary School.



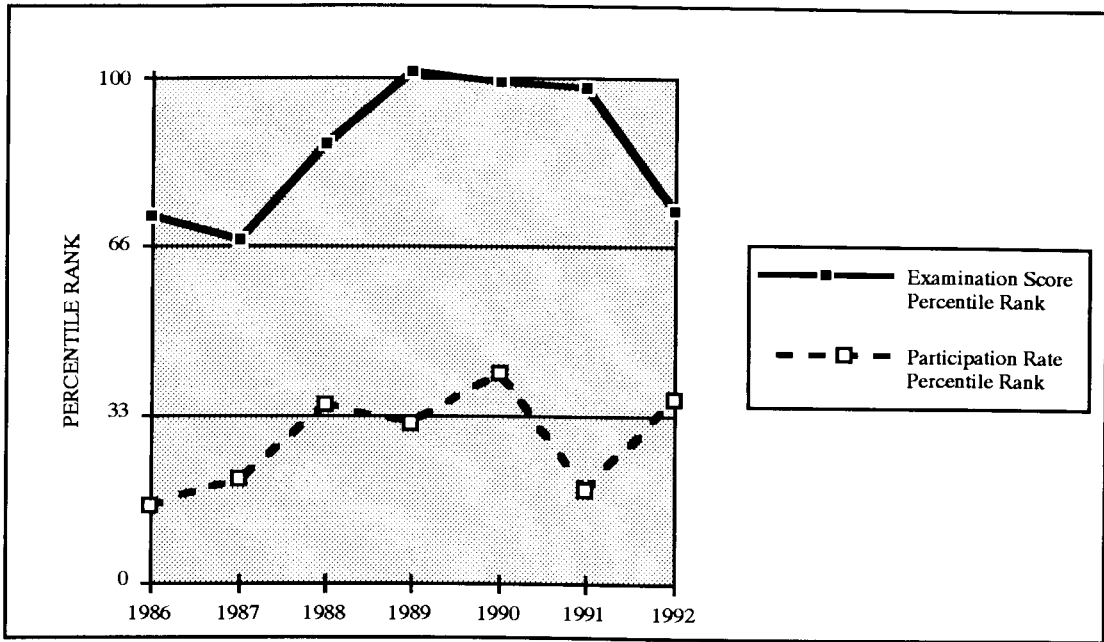
French 12 examination score and participation rate percentiles: Northridge Secondary School.



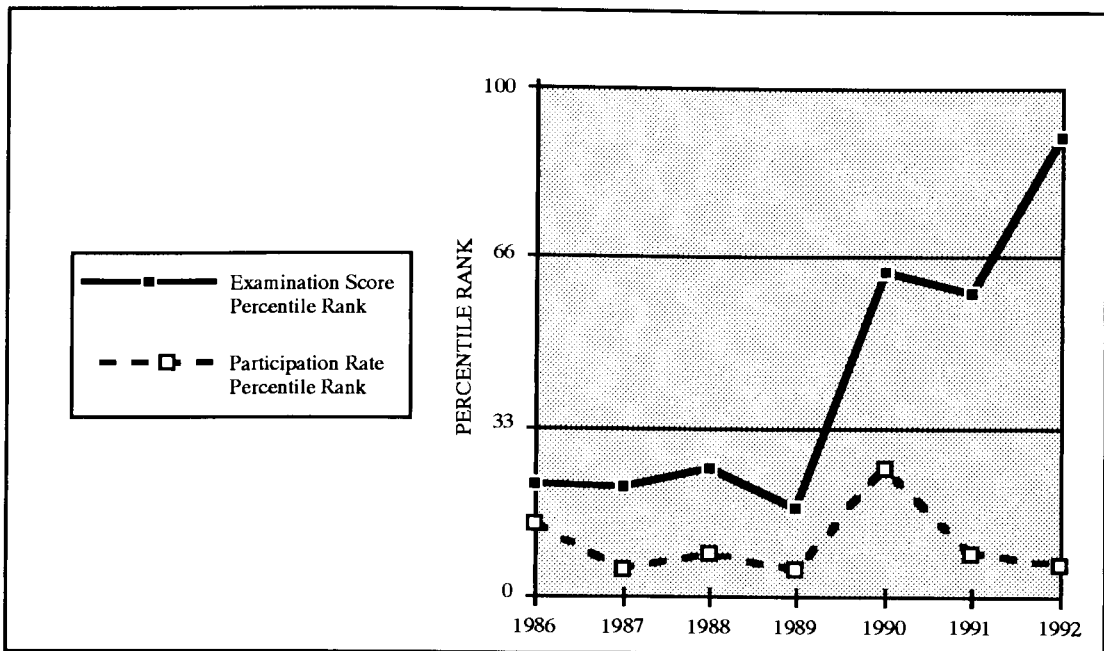
Geography 12 examination score and participation rate percentiles: Brandon Secondary School.



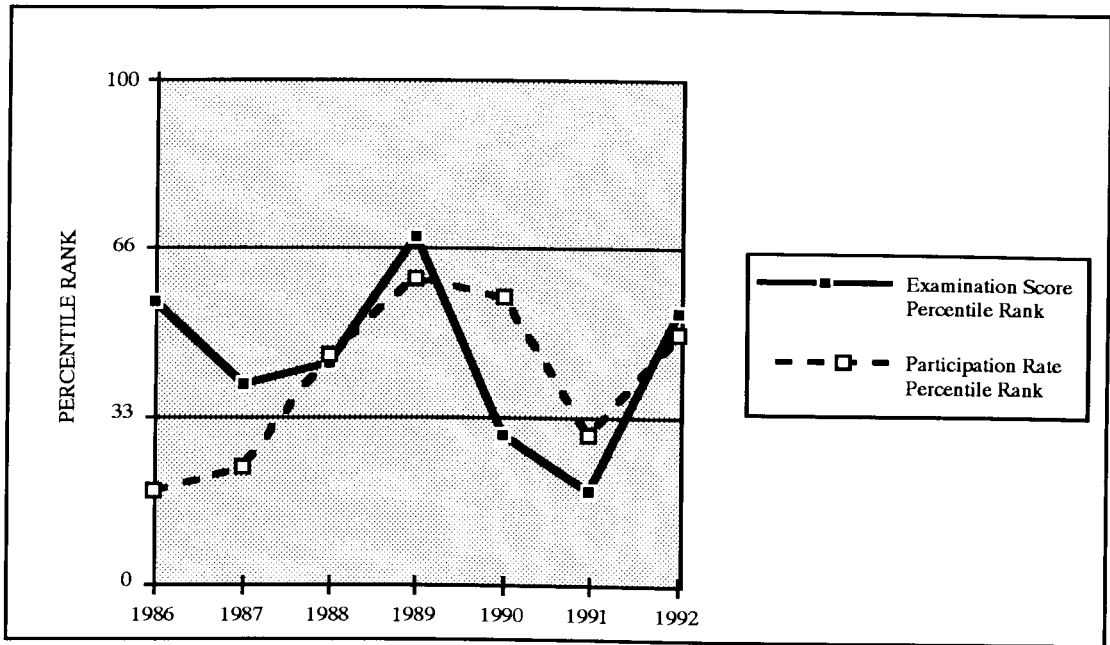
Geography 12 examination score and participation rate percentiles: Northridge Secondary School.



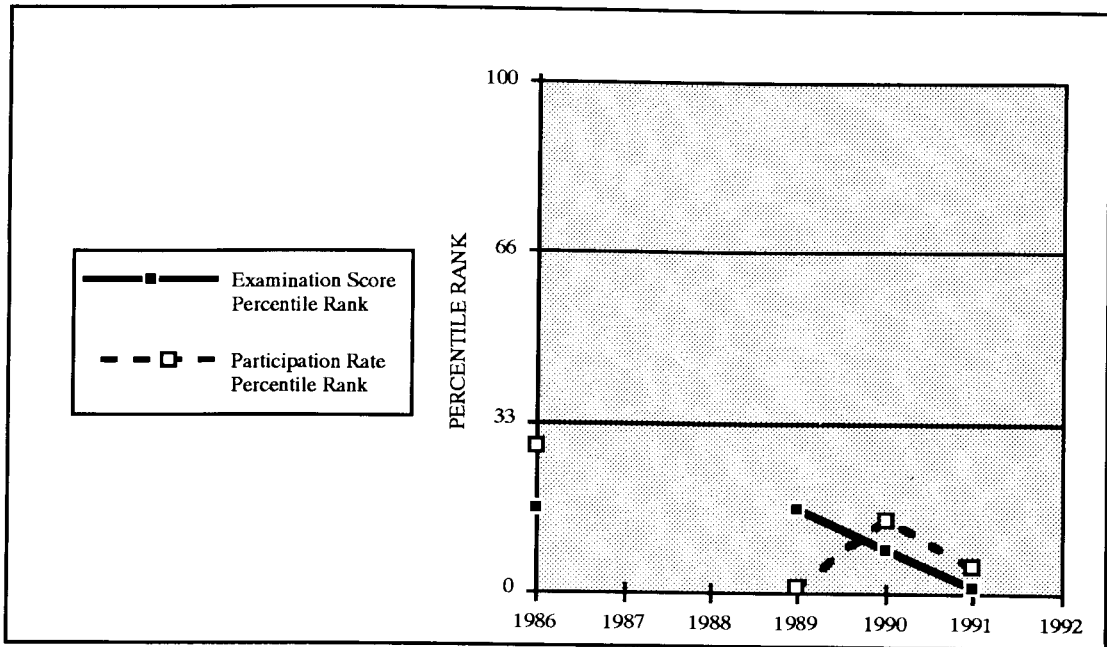
History 12 examination score and participation rate percentiles: Brandon Secondary School.



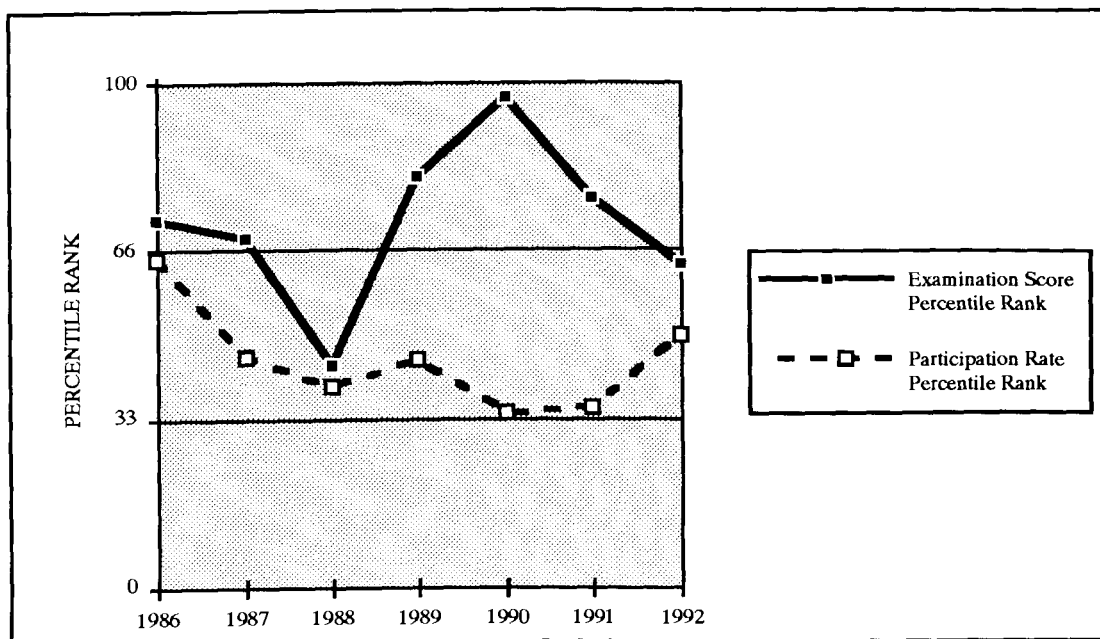
History 12 examination score and participation rate percentiles: Northridge Secondary School.



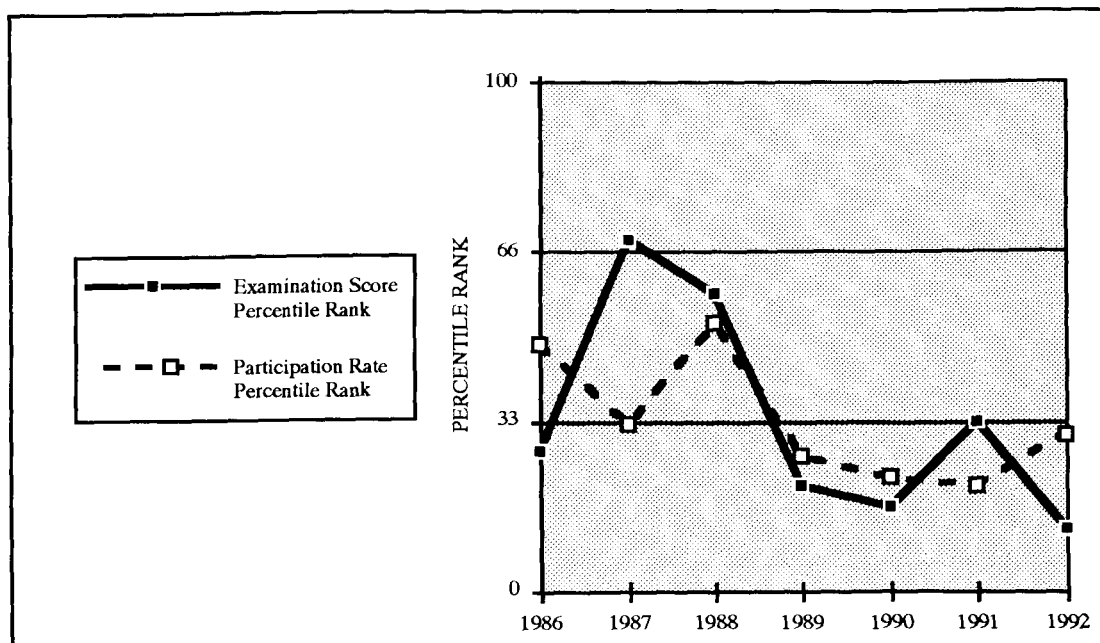
English Literature 12 examination score and participation rate percentiles: Brandon Secondary School.



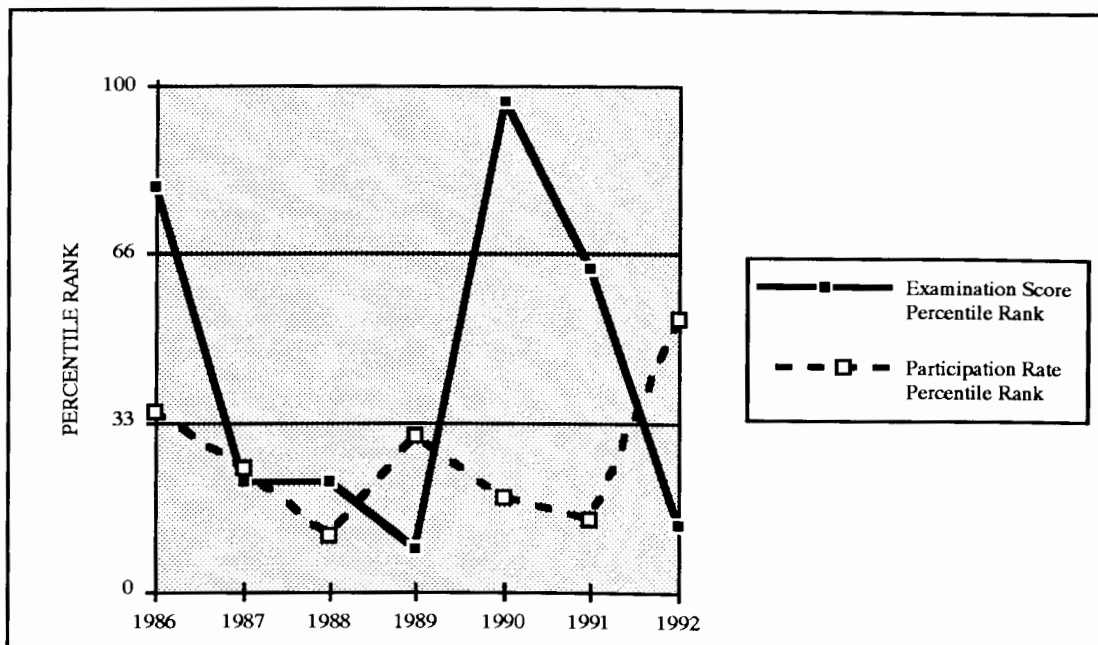
English Literature 12 examination score and participation rate percentiles: Northridge Secondary School.



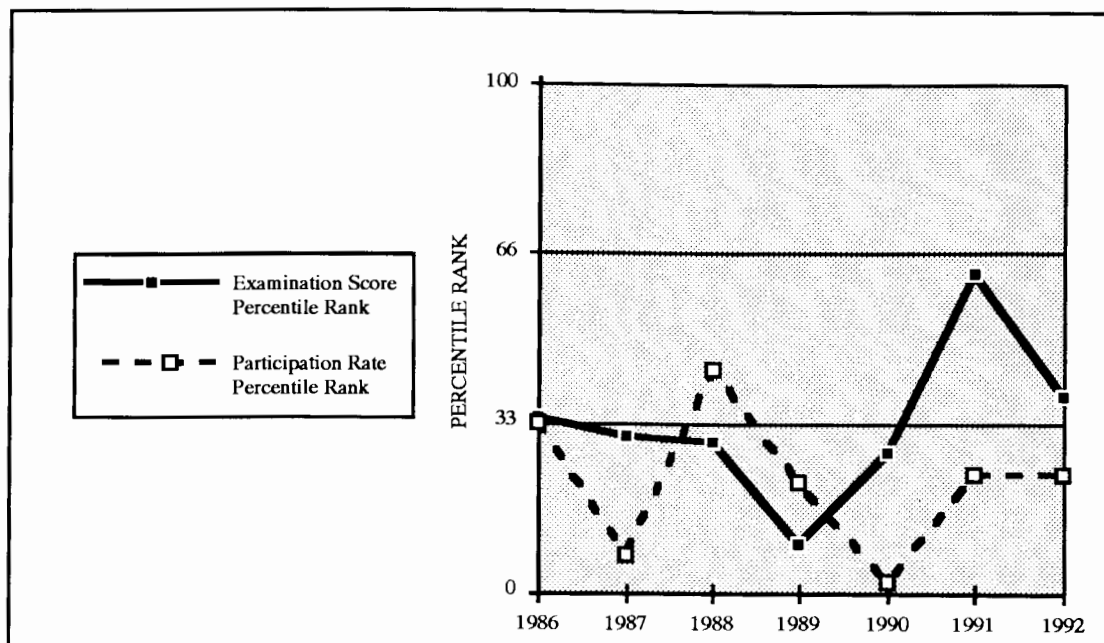
Mathematics/Algebra 12 examination score and participation rate percentiles: Brandon Secondary School.



Mathematics/Algebra 12 examination score and participation rate percentiles: Northridge Secondary School.



Physics 12 examination score and participation rate percentiles: Brandon Secondary School.



Physics 12 examination score and participation rate percentiles: Northridge Secondary School.

APPENDIX SEVEN

INTERVIEW RESPONSE CODES (HyperResearch)

academic subject experts NB
 academics vs career prep
 admin tchr rapport good
 administration is fair
 balance academ career nds
 balance academic emotional
 balance academic sports
 balance academics involvement
 balance coop competition
 balance indiv and group needs
 best fr schl computer lab
 bst fr schl cant decide
 bst fr schl good exam scores
 bst fr schl humanitarian recog
 bst fr schl indiv recognit
 career trdes tchrs downplay
 change is NB
 community image improving
 competit can be problem
 competit deal kids separate
 competit fr sports
 competit NB as indiv account
 competit NB fr academic stdnts
 competition between depts
 competition dont like
 competition NB
 competition NB if healthy
 competition overvalued here
 coop dined as peer press
 coop learning being overdone
 coop learning can be supportive
 coop learning dsnt always work
 coop learning NB
 coop learning not done
 coop learning not done much
 coop more in sr grades
 coop NB fr creativity
 cooperation emphasized
 cooperation mre nded in classes
 cooperation NB lifeskill
 creative need person support
 creative change needed
 creative idea student
 creative idea teacher
 creative kids not hlpd by schls
 creative stdnt same as others
 creative stdnts mst follw rles
 creative student contct parnts
 creative student nds discipline
 creativity needed indiv focus
 creativity over rules needed
 creatv stdnts nd scial rspnsib
 discipline admin support need
 discipline better need jr kids
 discipline better needed
 discipline better tchr team
 discipline contact parent
 discipline counsellor support
 discipline deal with indiv
 discipline done in class

discipline group is NB
discipline isolate individuals
discipline not office
discipline not parent contact
discipline results in consqncs
discipline rules are NB
discipline studts talked to
discipline teacher solves self
discipline thru office
discipline thru pers support
emotion dfnd dlng wth failure
emotion nds some can be met
emotion prblms too big fr tchrs
emotional dev cant be taught
emotional needs NB to deal with
grades not accurate measures
indiv over general rules
indiv personal support
indiv student support needed
indiv support counsellor
individ child focus
individ learning NB
individ listen to students
individual achieve recog
mst NB fr stdnts caring schl
mst NB fr stdnts cooperation
mst NB fr students academics
mst NB fr students career ed
mst NB fr students communic
mst Nb fr students dont know
mst NB fr students enjoy lrng
mst NB fr students fine arts
mst Nb fr students future prep
mst NB fr students grad
mst Nb fr students grades
mst NB fr students indiv dev
mst NB fr students involved
mst NB fr students knowledge
mst NB fr students lifeskills
mst NB fr students respnsblty
mst NB fr students social devel
mst NB fr students sports
NB academ ovr emotion nds
NB acdmic ovr emot fr older kds
NB emotional over academ nds
NB emtnl ovr acdmc fr jr kids
NB social over academic
parent contact minimal
parent support needed more
parents dont push kids achieve
parents dont support academics
parents have input communic
parents low expectations
parents more demanding
parents not good role models
parents not high academics
parents see grad NB end
parents seem disinterested
parents some not supportive
parents some supportive
parents supportive overall
parents top students interested
parents want acad emot bal
parents want academics

parents want bal acad involv
parents want balanced prgms
parents want basic grad
parents want career focus
parents want caring tchrs
parents want cooperation
parents want dont know
parents want indiv self worth
parents want indiv support
parents want invoved studnts
parents want kds prepard future
parents want lifeskills
parents want mutual respect
parents want order discipline
parents want social rspnsibility
parents want social skills
parents want student success
parents want students happy
parents want work ethic
participation more NB win
perf schl mre dept specializ
perf schl students slfmotvated
perf schl acadmic exptations
perf schl admin tchr coop
perf schl balance academ sports
perf schl balanced
perf schl blnce acad practical
perf schl blnce group indiv
perf schl blnce strcture freedm
perf schl blnce strcture open
perf schl creative
perf schl diversity in people
perf schl encourages students
perf schl good sports prgm
perf schl good tchrs
perf schl impossib indiv needs
perf schl individ focus
perf schl less competitive
perf schl listen to kids more
perf schl lss stdent specializ
perf schl more active learning
perf schl more competition
perf schl more individ prep
perf schl more unified tchrs
perf schl mr involved students
perf schl mre career focus
perf schl mre choices interests
perf schl mre dept coop
perf schl mre discipline
perf schl mre financ support
perf schl mre indiv freedom
perf schl mre parent support
perf schl mre respect in class
perf schl mre student balance
perf schl mre technology
perf schl parents supportive
perf schl part of community
perf schl pers support
perf schl skills groups
perf schl social needs met
perf schl tchrs enthusiastic
perf schl this one
perf schl treats people equally
perf school happy families

perf school mr caring
perf school mr involved tchrs
perf school small pop classes
perfect school happy kids
quotable quotes
rep student balanced
rep student gd moral values
rep student loud outgoing
rep students academic
rep students academic focus
rep students break rules
rep students characters
rep students defined by dept
rep students diff outsiders
rep students frndly nice helpfl
rep students involved
rep students jocks
rep students not academic
rep students quiet compliant
rep students socially involved
rep students talented
rep students work hard
rep tchr creative
rep tchr gender role model
rep tchrs academic
rep tchrs almost any on staff
rep tchrs balanced involved
rep tchrs cant name
rep tchrs diff but wrk tgther
rep tchrs diff union values
rep tchrs diff unique subjects
rep tchrs disciplinarian
rep tchrs good teachers
rep tchrs high expectations
rep tchrs not academic press
rep tchrs personable
rep tchrs personal support
rep tchrs stress wk ethic
rep tchrs treat students equal
rep teachers caring
rep teachers involved
rep teachers sports
rep teachers union values
schl focus indiv class results
schl has approp career focus
schl has career focus
schl has some academ depts
schl has won academic awards
schl is bttr than reputation
schl is much improved
schl nds address emotional nds
schl nds balnced focus
schl nds basic academics
schl nds better academ results
schl nds btr leadership
schl nds btr academ focus
schl nds btr career focus
schl nds btr dept specializ
schl nds btr jnr transition
schl nds btr prnt commun
schl nds btr schl spirit
schl nds btr standards achiev
schl nds career focus
schl nds fewer choices

schl nds focus on indiv needs
 schl nds focus overall
 schl nds more acad students
 schl nds more acad supprt
 schl nds more career counsel
 schl nds more indiv direct
 schl nds more unity
 schl nds mr exciting classrooms
 schl nds mr financial support
 Schl nds mr rlvrance fr ftre jbs
 schl nds mr self discipline
 schl nds mr social responsib
 schl nds mre choices
 schl nds mre coop tchrs
 schl nds mre creativity
 schl nds mre extra activities
 schl nds mre fr low students
 schl nds mre indiv freedom
 schl nds mre lifeskills focus
 schl nds mre stdnt input
 schl nds rcgnze achievement
 schl nds some btr tchrs
 schl nds sports gender equity
 schl nds stdnts mre organized
 schl nds tchrs care rspect kds
 schl nds tchrs to commun kids
 schl nds to avoid overspecializ
 schl nds to be only sr sec
 schl nds to be smaller
 schl nds trades educ focus
 schl ndsmre commun interaction
 schl overall good
 schl safe environment
 schl values academics
 schl values fine arts
 schl values sports
 schl values sports too much
 school does best academics
 school does best bal acad pers
 school does best balanced focus
 school does best basic acad
 school does best cooperation
 school does best dont know
 school does best emotional nds
 school does best ethnic mix
 school does best fine arts
 school does best in career ed
 school does best indiv work
 school does best inqry spirit
 school does best learnng rate
 school does best mny prgrams
 school does best pers contact
 school does best pers support
 school does best prep future
 school does best problem solvng
 school does best slf confidnce
 school does best social involve
 school does best some dpt prgms
 school does best sports
 school does best trades tech
 school does best work ethic
 school does bst balnced lives
 school focus by depts
 school focus unknown

social focus for students
 social needs thru participation
 social responsibility in grads
 stdnts becming mre problem
 student academic partic low
 student nd indiv recognition
 student pt tm wk interferes
 students post sec expectation
 students academic focussed
 students appreciative
 students bcmng lower socioec
 students closer in past
 students commun more now
 students cooperative
 students dcision mking little
 students dcsion makng hve inpt
 students decling wrk ethic
 students difficult
 students discipline problem
 students divided into groups
 students dont hold grudges
 students down to earth
 students expectations low
 students good overall
 students happy academics
 students happy accepted
 students happy at school lots
 students happy dont know
 students happy fine arts
 students happy fun parties
 students happy good slf image
 students happy handicapped
 students happy in love
 students happy involved
 students happy no home prob
 students happy nt acad stress
 students happy nt high acad
 students happy quiet
 students happy rebellious
 students happy religious
 students happy social involv
 students happy sports
 students happy sr grades
 students happy successful
 students happy work prgms
 students hard to get to know
 students have home problems
 students have sense of purpose
 students havent chngd recently
 students historical problems
 students honest
 students involved
 students jocks are group
 students lack direction
 students learning as needed
 students less transient
 students low job expectations
 students low socioeconomic
 students many drop out
 students many not involved
 students mddle clss financ ok
 students middle academics
 students mix good bad
 students more normal now

students more positive now
students mre going postsec
students multi ethnic
students need personal care
students nice friendly open
students no major drug problems
students not academic focus
students not cliqueish
students not invlved decisions
students not multi ethnic
students polite well behaved
students respect high expect
students see NBance of grad
students short range view
students some academic
students some individualistic
students some outsiders
students some vry involved
students some work well
students tolerant indiv diff
students tolerant not
students trades oriented
students unhappy acdm frustr
students unhappy dont know
students unhappy hate system
students unhappy home situat
students unhappy jr grades
students unhappy nd recognition
students unhappy not in love
students unhappy outsiders
students unhappy religious
students unhappy rn by parents
students unhappy scial pressur
students unhappy social behav
students unhappy unfocussed
students unhappy uninvolved
students unhappy unsuccessful
students vry invlved activities
students well adjusted
students work hard
tchr adapts to studnt intrsts
tchr caring is most NB thing
tchr emphas academics
tchr emphas career
tchr emphas communication
tchr emphas coop teamwork
tchr emphas dont know
tchr emphas indiv pblm solving
tchr emphas involv out class
tchr emphas low level educ
tchr emphas pers support
tchr emphas social respons
tchr emphas some on subject
tchr emphas sports
tchr emphasis work ethic
tchr expectations inconsistent
tchr union values NB
tchrs academically focussed
tchrs allow student freedom
tchrs are caring
tchrs change dont want
tchrs divided into camps
tchrs dont agree wk togthr
tchrs dont know

tchrs dont listen to kids
 tchrs enthus openminded
 tchrs enthusiastic
 tchrs fair
 tchrs give pers support
 tchrs good teaching skills
 tchrs helpful cooperative
 tchrs helpful not enough
 tchrs listen to kids
 tchrs more unified now
 tchrs mr close in past
 tchrs not enthusiaistic
 tchrs not open professionally
 tchrs overall nd btr quality
 tchrs personable enjoyable
 tchrs shld model expected behav
 tchrs shldnt complain
 tchrs sme disntrstd in kds
 tchrs sme dont care rspect kds
 tchrs sme negtive uninvolvd
 tchrs some favored groups
 tchrs sujet bsd nt student
 tchrs try new approaches
 tchrs unified as group
 tchrs vry invlved sports
 tchrs work hard
 teacher in both camps
 teacher parent involve not NB
 teachers amicable
 teachers communicate openly
 teachers down to earth friendly
 teachers hve low expectations
 teachers love their subject
 teachers needmore materials
 teachers overall good
 teachers set high expectations
 teachers some discipline prob
 teachers some good here
 teachers some not so good
 teachers some respect kids
 teachers strong indiv depts
 teaches varied subjects
 teaching business ed
 teaching counselling
 teaching humanities
 teaching mathematics
 teaching metalwork
 teaching PE
 teaching reason subject orient
 teaching sciences
 teaching special ed
 teaching work experience
 time at school 10 to 20 years
 time at school 20 yrs plus
 time at school 5 to 9 years
 time at school under 5 years
 time parent at schl 5 plus yrs
 time teaching 10 to 19 years
 time teaching 20 plus years
 time teaching 5 to 9 yrs
 time teaching under 5 years

(End list of codes)

APPENDIX EIGHT
QUESTIONNAIRE STATISTICS

MANOVA OF GROUP EFFECT ON PERCEIVED VALUES WITHIN EACH SCHOOL

SCHOOL: 1.00

185 cases accepted.
0 cases rejected because of out-of-range factor values.
0 cases rejected because of missing data.
2 non-empty cells.

Cell Means and Standard Deviations				
Variable .. INTEL				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.361	2.126	46
GROUP	Student	18.324	2.882	139
For entire sample		18.582	2.746	185

Variable .. EMOT				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	22.411	1.884	46
GROUP	Student	17.845	3.650	139
For entire sample		18.981	3.844	185

Variable .. PERS				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	20.130	1.771	46
GROUP	Student	16.392	3.256	139
For entire sample		17.322	3.368	185

Variable .. CAREER				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.735	2.874	46
GROUP	Student	17.000	4.065	139
For entire sample		17.680	3.977	185

Variable .. ORDER				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.363	3.308	46
GROUP	Student	17.935	2.854	139
For entire sample		18.290	3.028	185

Cell Means and Standard Deviations (Cont.)

Variable .. CREAT

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	20.633	2.168	46
GROUP	Student	16.486	3.122	139
For entire sample		17.517	3.419	185

Variable .. COOP

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	21.728	2.149	46
GROUP	Student	19.344	2.402	139
For entire sample		19.937	2.554	185

Variable .. COMPET

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.500	3.325	46
GROUP	Student	17.374	2.834	139
For entire sample		17.654	2.994	185

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	INTEL	EMOT	PERS	CAREER	ORDER	CREAT
INTEL	2.716					
EMOT	.194	3.305				
PERS	.293	.706	2.961			
CAREER	.319	.215	.454	3.807		
ORDER	.361	.405	.424	.345	2.973	
CREAT	.309	.497	.633	.514	.478	2.917
COOP	.126	.329	.340	.227	.340	.443
COMPET	.359	.151	.267	.389	.468	.354
	COOP	COMPET				
COOP	2.342					
COMPET	.256	2.962				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -2.77549
 Bartlett test of sphericity = 498.19991 with 28 D. F.
 Significance = .000

F(max) criterion = 2.64152 with (8,183) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 87)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.35789	12.26178	8.00	176.00	.000
Hotellings	.55735	12.26178	8.00	176.00	.000
Wilks	.64211	12.26178	8.00	176.00	.000
Roys	.35789				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,183) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
INTEL	37.17629	1349.90122	37.17629	7.37651	5.03982	.026
EMOT	720.42092	1998.56903	720.42092	10.92114	65.96571	.000
PERS	483.01483	1604.09869	483.01483	8.76557	55.10366	.000
CAREER	258.49165	2651.70435	258.49165	14.49019	17.83908	.000
ORDER	70.45805	1616.94444	70.45805	8.83576	7.97419	.005
CREAT	594.38574	1556.97231	594.38574	8.50805	69.86161	.000
COOP	196.49449	1003.85556	196.49449	5.48555	35.82038	.000
COMPET	43.81270	1606.04676	43.81270	8.77621	4.99221	.027

SCHOOL: 2.00

132 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

Cell Means and Standard Deviations

Variable .. INTEL				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	15.398	2.935	44
GROUP	Student	16.961	3.337	88
For entire sample		16.440	3.281	132

Variable .. EMOT				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.159	3.027	44
GROUP	Student	15.250	3.527	88
For entire sample		16.553	3.833	132

Variable .. PERS				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.364	3.104	44
GROUP	Student	15.091	3.609	88
For entire sample		16.182	3.770	132

Variable .. CAREER				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.945	3.345	44
GROUP	Student	17.068	3.909	88
For entire sample		17.694	3.823	132

Variable .. ORDER				
FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	14.864	4.359	44
GROUP	Student	15.477	3.784	88
For entire sample		15.273	3.979	132

Cell Means and Standard Deviations (Cont.)

Variable .. CREAT

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.775	3.140	44
GROUP	Student	15.239	3.536	88
For entire sample		16.084	3.603	132

Variable .. COOP

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.514	2.815	44
GROUP	Student	17.352	2.967	88
For entire sample		17.406	2.908	132

Variable .. COMPET

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.439	3.340	44
GROUP	Student	18.864	3.231	88
For entire sample		18.389	3.324	132

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	INTEL	EMOT	PERS	CAREER	ORDER	CREAT
INTEL	3.209					
EMOT	.341	3.370				
PERS	.502	.615	3.450			
CAREER	.386	.529	.589	3.732		
ORDER	.495	.531	.537	.416	3.984	
CREAT	.499	.649	.717	.520	.524	3.410
COOP	.299	.452	.489	.494	.401	.490
COMPET	.425	.280	.377	.271	.338	.372
	COOP	COMPET				
COOP	2.918					
COMPET	.415	3.268				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -3.50440
 Bartlett test of sphericity = 443.30674 with 28 D. F.
 Significance = .000

F(max) criterion = 1.86400 with (8,130) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 60 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.45958	13.07509	8.00	123.00	.000
Hotellings	.85041	13.07509	8.00	123.00	.000
Wilks	.54042	13.07509	8.00	123.00	.000
Roys	.45958				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,130) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
INTEL	71.71879	1338.91841	71.71879	10.29937	6.96341	.009
EMOT	448.24242	1476.38636	448.24242	11.35682	39.46901	.000
PERS	314.18182	1547.45455	314.18182	11.90350	26.39408	.000
CAREER	103.37515	1810.82000	103.37515	13.92938	7.42137	.007
ORDER	11.04545	2063.13636	11.04545	15.87028	.69598	.406
CREAT	188.70545	1511.97114	188.70545	11.63055	16.22499	.000
COOP	.76379	1106.83136	.76379	8.51409	.08971	.765
COMPET	59.56500	1387.98795	59.56500	10.67683	5.57890	.020

SCHOOL: 3.00

188 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

Cell Means and Standard Deviations

Variable .. INTEL

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	16.034	3.680	44
GROUP	Student	17.603	3.097	144
For entire sample		17.236	3.300	188

Variable .. EMOT

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.909	2.737	44
GROUP	Student	15.724	3.903	144
For entire sample		16.703	4.065	188

Variable .. PERS

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.955	2.178	44
GROUP	Student	15.310	3.364	144
For entire sample		16.397	3.692	188

Variable .. CAREER

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.068	2.583	44
GROUP	Student	16.506	3.853	144
For entire sample		17.106	3.751	188

Variable .. ORDER

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.727	3.130	44
GROUP	Student	18.592	2.850	144
For entire sample		18.624	2.910	188

Cell Means and Standard Deviations (Cont.)

Variable .. CREAT		Mean	Std. Dev.	N
FACTOR	CODE			
GROUP	Teacher	16.909	2.868	44
GROUP	Student	15.096	3.011	144
For entire sample		15.520	3.068	188

Variable .. COOP		Mean	Std. Dev.	N
FACTOR	CODE			
GROUP	Teacher	18.250	2.376	44
GROUP	Student	16.909	3.070	144
For entire sample		17.223	2.972	188

Variable .. COMPET		Mean	Std. Dev.	N
FACTOR	CODE			
GROUP	Teacher	15.852	3.629	44
GROUP	Student	17.826	2.794	144
For entire sample		17.364	3.114	188

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	INTEL	EMOT	PERS	CAREER	ORDER	CREAT
INTEL	3.241					
EMOT	.215	3.666				
PERS	.141	.733	3.130			
CAREER	.244	.384	.479	3.599		
ORDER	.358	.511	.537	.297	2.917	
CREAT	.332	.486	.636	.519	.496	2.978
COOP	.418	.572	.528	.511	.488	.630
COMPET	.555	.222	.211	.422	.355	.410
	COOP	COMPET				
COOP	2.925					
COMPET	.381	3.008				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -3.70230
 Bartlett test of sphericity = 675.67017 with 28 D. F.
 Significance = .000

F(max) criterion = 1.57920 with (8,186) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 88 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.40859	15.45845	8.00	179.00	.000
Hotellings	.69088	15.45845	8.00	179.00	.000
Wilks	.59141	15.45845	8.00	179.00	.000
Roys	.40859				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,186) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
INTEL	82.93347	1953.81775	82.93347	10.50440	7.89512	.005
EMOT	590.40200	2499.97609	590.40200	13.44073	43.92633	.000
PERS	727.10261	1822.09548	727.10261	9.79621	74.22283	.000
CAREER	221.20373	2409.69983	221.20373	12.95538	17.07428	.000
ORDER	.61342	1583.06887	.61342	8.51112	.07207	.789
CREAT	110.80933	1649.77386	110.80933	8.86975	12.49295	.001
COOP	60.60339	1590.88826	60.60339	8.55316	7.08549	.008
COMPET	131.34173	1682.44949	131.34173	9.04543	14.52023	.000

SCHOOL: 4.00

114 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

Cell Means and Standard Deviations

Variable .. INTEL

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.971	2.918	34
GROUP	Student	18.256	2.108	80
For entire sample		18.469	2.388	114

Variable .. EMOT

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	20.382	2.629	34
GROUP	Student	17.079	3.636	80
For entire sample		18.064	3.683	114

Variable .. PERS

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	19.476	2.796	34
GROUP	Student	15.688	3.578	80
For entire sample		16.818	3.777	114

Variable .. CAREER

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.750	3.177	34
GROUP	Student	17.269	3.293	80
For entire sample		17.412	3.252	114

Variable .. ORDER

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.779	3.310	34
GROUP	Student	17.289	3.172	80
For entire sample		17.733	3.272	114

Cell Means and Standard Deviations (Cont.)

Variable .. CREAT

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.176	2.931	34
GROUP	Student	15.950	3.154	80
For entire sample		16.614	3.242	114

Variable .. COOP

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.838	3.355	34
GROUP	Student	17.175	3.221	80
For entire sample		17.373	3.261	114

Variable .. COMPET

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.647	2.870	34
GROUP	Student	16.875	2.883	80
For entire sample		17.105	2.888	114

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	INTEL	EMOT	PERS	CAREER	ORDER	CREAT
INTEL	2.375					
EMOT	.130	3.371				
PERS	.016	.576	3.366			
CAREER	.188	.298	.540	3.259		
ORDER	.260	.488	.470	.516	3.213	
CREAT	.152	.557	.687	.502	.598	3.090
COOP	.208	.388	.453	.502	.347	.536
COMPET	.351	.254	.387	.464	.348	.354
	COOP	COMPET				
COOP	3.261					
COMPET	.503	2.879				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -3.21648
 Bartlett test of sphericity = 348.98782 with 28 D. F.
 Significance = .000

F(max) criterion = 2.01368 with (8,112) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 51 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.29307	5.44121	8.00	105.00	.000
Hotellings	.41457	5.44121	8.00	105.00	.000
Wilks	.70693	5.44121	8.00	105.00	.000
Roys	.29307				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,112) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
INTEL	12.17508	631.96746	12.17508	5.64257	2.15772	.145
EMOT	260.39926	1272.58329	260.39926	11.36235	22.91773	.000
PERS	342.53624	1269.20868	342.53624	11.33222	30.22675	.000
CAREER	5.52593	1189.59688	5.52593	10.62140	.52026	.472
ORDER	53.01787	1156.57546	53.01787	10.32657	5.13412	.025
CREAT	118.27637	1069.24118	118.27637	9.54680	12.38912	.001
COOP	10.49541	1190.91029	10.49541	10.63313	.98705	.323
COMPET	14.22214	928.51471	14.22214	8.29031	1.71551	.193

MANOVA OF GROUP EFFECT ON DESIRED VALUES WITHIN EACH SCHOOL

SCHOOL: 1.00

185 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

Cell Means and Standard Deviations

Variable .. Q41_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	14.457	4.113	46
GROUP	Student	19.022	5.832	139
For entire sample		17.886	5.793	185

Variable .. Q42_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	16.739	5.599	46
GROUP	Student	15.871	5.448	139
For entire sample		16.086	5.483	185

```

-----
Variable .. Q43_5
  FACTOR          CODE          Mean  Std. Dev.      N
GROUP           Teacher      20.435   5.460       46
GROUP           Student      19.601   4.742      139
For entire sample      19.808   4.928      185

```

```

-----
Variable .. Q44_5
  FACTOR          CODE          Mean  Std. Dev.      N
GROUP           Teacher      18.370   4.720       46
GROUP           Student      16.701   4.524      139
For entire sample      17.116   4.618      185

```

```

Variable .. Q45_5
  FACTOR          CODE          Mean  Std. Dev.      N
GROUP           Teacher      15.000   5.270       46
GROUP           Student      13.540   4.707      139
For entire sample      13.903   4.880      185

```

Cell Means and Standard Deviations (Cont.)

Variable .. Q46_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	8.152	4.263	46
GROUP	Student	10.763	5.347	139
For entire sample		10.114	5.212	185

Variable .. Q47_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	13.043	6.279	46
GROUP	Student	11.971	5.463	139
For entire sample		12.238	5.678	185

Variable .. Q48_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	13.880	4.932	46
GROUP	Student	12.482	6.023	139
For entire sample		12.830	5.790	185

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	Q41_5	Q42_5	Q43_5	Q44_5	Q45_5	Q46_5
Q41_5	5.459					
Q42_5	-.107	5.485				
Q43_5	-.237	.053	4.928			
Q44_5	-.260	-.060	-.133	4.573		
Q45_5	-.042	-.284	-.331	-.141	4.852	
Q46_5	-.116	-.052	-.026	.084	-.257	5.102
Q47_5	-.061	-.302	-.085	-.210	-.210	-.087
Q48_5	-.236	-.284	-.180	-.110	.316	-.447
	Q47_5	Q48_5				
Q47_5	5.674					
Q48_5	-.148	5.774				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -5.12230
 Bartlett test of sphericity = 919.45363 with 28 D. F.
 Significance = .000

F(max) criterion = 1.59391 with (8,183) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 87)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.19210	5.23096	8.00	176.00	.000
Hotellings	.23777	5.23096	8.00	176.00	.000
Wilks	.80790	5.23096	8.00	176.00	.000
Roys	.19210				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,183) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
Q41_5	720.26792	5454.34830	720.26792	29.80518	24.16586	.000
Q42_5	26.07759	5506.53863	26.07759	30.09038	.86664	.353
Q43_5	24.04356	4444.39428	24.04356	24.28631	.99000	.321
Q44_5	96.17425	3827.57710	96.17425	20.91572	4.59818	.033
Q45_5	73.71627	4308.03237	73.71627	23.54116	3.13138	.078
Q46_5	235.51597	4763.10025	235.51597	26.02787	9.04861	.003
Q47_5	39.73720	5891.79794	39.73720	32.19562	1.23424	.268
Q48_5	67.58906	6100.79743	67.58906	33.33769	2.02741	.156

SCHOOL: 2.00

132 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

Cell Means and Standard Deviations

Variable .. Q41_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	14.659	4.625	44
GROUP	Student	20.932	3.903	88
For entire sample		18.841	5.094	132

Variable .. Q42_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	15.795	5.165	44
GROUP	Student	16.807	5.302	88
For entire sample		16.470	5.259	132

Variable .. Q43_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	21.818	3.591	44
GROUP	Student	17.148	5.599	88
For entire sample		18.705	5.471	132

Variable .. Q44_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.409	4.546	44
GROUP	Student	15.523	4.736	88
For entire sample		16.485	4.852	132

Variable .. Q45_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	13.409	3.371	44
GROUP	Student	12.528	4.263	88
For entire sample		12.822	3.997	132

Cell Means and Standard Deviations (Cont.)

Variable .. Q46_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	6.591	2.806	44
GROUP	Student	11.977	6.172	88
For entire sample		10.182	5.863	132

Variable .. Q47_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	16.023	6.249	44
GROUP	Student	13.358	5.842	88
For entire sample		14.246	6.089	132

Variable .. Q48_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	13.295	5.276	44
GROUP	Student	11.773	6.098	88
For entire sample		12.280	5.861	132

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	Q41_5	Q42_5	Q43_5	Q44_5	Q45_5	Q46_5
Q41_5	4.156					
Q42_5	-.161	5.257				
Q43_5	-.109	.023	5.024			
Q44_5	-.274	-.125	.108	4.674		
Q45_5	-.151	-.018	-.294	-.144	3.990	
Q46_5	.084	-.272	-.243	-.226	-.148	5.301
Q47_5	-.001	-.254	-.286	-.091	-.290	.043
Q48_5	-.235	-.151	-.150	-.183	.240	-.285
	Q47_5	Q48_5				
Q47_5	5.980					
Q48_5	-.314	5.839				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -4.30960
 Bartlett test of sphericity = 545.16426 with 28 D. F.
 Significance = .000

F(max) criterion = 2.24583 with (8,130) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 60 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.48843	14.67971	8.00	123.00	.000
Hotellings	.95478	14.67971	8.00	123.00	.000
Wilks	.51157	14.67971	8.00	123.00	.000
Roys	.48843				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,130) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
Q41_5	1154.18182	2245.47727	1154.18182	17.27290	66.82038	.000
Q42_5	30.00379	3592.87500	30.00379	27.63750	1.08562	.299
Q43_5	639.85227	3281.62500	639.85227	25.24327	25.34744	.000
Q44_5	244.37879	2840.09091	244.37879	21.84685	11.18599	.001
Q45_5	22.75095	2069.81534	22.75095	15.92166	1.42893	.234
Q46_5	851.04545	3652.59091	851.04545	28.09685	30.28971	.000
Q47_5	208.29640	4648.45170	208.29640	35.75732	5.82528	.017
Q48_5	68.01515	4432.61364	68.01515	34.09703	1.99475	.160

SCHOOL: 3.00

188 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

Cell Means and Standard Deviations

Variable .. Q41_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	15.864	5.161	44
GROUP	Student	19.392	5.137	144
For entire sample		18.566	5.343	188

Variable .. Q42_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	18.273	5.121	44
GROUP	Student	17.187	5.159	144
For entire sample		17.441	5.157	188

Variable .. Q43_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	21.886	4.662	44
GROUP	Student	17.622	5.098	144
For entire sample		18.620	5.306	188

Variable .. Q44_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.068	4.310	44
GROUP	Student	16.910	4.926	144
For entire sample		16.947	4.778	188

Variable .. Q45_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	15.489	5.371	44
GROUP	Student	14.167	5.812	144
For entire sample		14.476	5.725	188

Cell Means and Standard Deviations (Cont.)

Variable .. Q46_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	9.114	4.809	44
GROUP	Student	10.681	5.328	144
For entire sample		10.314	5.241	188

Variable .. Q47_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	11.886	4.785	44
GROUP	Student	11.153	4.958	144
For entire sample		11.324	4.915	188

Variable .. Q48_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	12.443	3.754	44
GROUP	Student	12.868	5.480	144
For entire sample		12.769	5.122	188

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	Q41_5	Q42_5	Q43_5	Q44_5	Q45_5	Q46_5
Q41_5	5.142					
Q42_5	.081	5.150				
Q43_5	-.025	-.302	5.001			
Q44_5	-.210	-.027	-.217	4.791		
Q45_5	-.291	-.215	-.205	-.201	5.713	
Q46_5	-.012	-.047	.104	.095	-.307	5.213
Q47_5	-.133	-.218	.081	-.024	-.120	-.203
Q48_5	-.097	-.043	-.223	-.176	.187	-.252
	Q47_5	Q48_5				
Q47_5	4.918					
Q48_5	-.101	5.133				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -1.25618
 Bartlett test of sphericity = 229.25323 with 28 D. F.
 Significance = .000

F(max) criterion = 1.42206 with (8,186) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 88 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.24961	7.44289	8.00	179.00	.000
Hotellings	.33264	7.44289	8.00	179.00	.000
Wilks	.75039	7.44289	8.00	179.00	.000
Roys	.24961				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,186) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
Q41_5	419.65547	4918.26342	419.65547	26.44228	15.87063	.000
Q42_5	39.69161	4933.66477	39.69161	26.52508	1.49638	.223
Q43_5	613.00210	4651.05508	613.00210	25.00567	24.51452	.000
Q44_5	.84624	4268.62184	.84624	22.94958	.03687	.848
Q45_5	58.89797	6070.24432	58.89797	32.63572	1.80471	.181
Q46_5	82.74667	5054.23737	82.74667	27.17332	3.04514	.083
Q47_5	18.13674	4499.07071	18.13674	24.18855	.74981	.388
Q48_5	6.08383	4900.60101	6.08383	26.34732	.23091	.631

SCHOOL: 4.00

114 cases accepted.

0 cases rejected because of out-of-range factor values.

0 cases rejected because of missing data.

2 non-empty cells.

1 design will be processed.

Cell Means and Standard Deviations

Variable .. Q41_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	14.559	5.690	34
GROUP	Student	19.681	5.531	80
For entire sample		18.154	6.032	114

Variable .. Q42_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.206	4.298	34
GROUP	Student	16.581	5.189	80
For entire sample		16.768	4.930	114

Variable .. Q43_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	22.794	3.301	34
GROUP	Student	19.938	4.604	80
For entire sample		20.789	4.441	114

Variable .. Q44_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	17.941	3.915	34
GROUP	Student	15.694	4.338	80
For entire sample		16.364	4.324	114

Variable .. Q45_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	13.088	5.368	34
GROUP	Student	13.163	4.513	80
For entire sample		13.140	4.759	114

Cell Means and Standard Deviations (Cont.)

Variable .. Q46_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	8.485	4.520	34
GROUP	Student	9.813	4.933	80
For entire sample		9.417	4.832	114

Variable .. Q47_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	13.632	5.404	34
GROUP	Student	11.519	5.298	80
For entire sample		12.149	5.394	114

Variable .. Q48_5

FACTOR	CODE	Mean	Std. Dev.	N
GROUP	Teacher	12.118	4.269	34
GROUP	Student	13.419	5.929	80
For entire sample		13.031	5.501	114

WITHIN CELLS Correlations with Std. Devs. on Diagonal

	Q41_5	Q42_5	Q43_5	Q44_5	Q45_5	Q46_5
Q41_5	5.579					
Q42_5	.032	4.943				
Q43_5	-.313	-.043	4.262			
Q44_5	-.100	-.078	-.125	4.218		
Q45_5	-.259	-.124	-.078	-.203	4.781	
Q46_5	-.034	-.249	-.148	.178	-.226	4.815
Q47_5	.065	-.047	-.199	.155	-.085	.067
Q48_5	-.039	.075	.060	.075	.083	-.047
	Q47_5	Q48_5				
Q47_5	5.330					
Q48_5	-.111	5.492				

Statistics for WITHIN CELLS correlations

Log(Determinant) = -.67972
 Bartlett test of sphericity = 73.75004 with 28 D. F.
 Significance = .000

F(max) criterion = 1.74920 with (8,112) D. F.

EFFECT .. GROUP

Multivariate Tests of Significance (S = 1, M = 3 , N = 51 1/2)

Test Name	Value	Exact F	Hypoth. DF	Error DF	Sig. of F
Pillais	.27001	4.85475	8.00	105.00	.000
Hotellings	.36989	4.85475	8.00	105.00	.000
Wilks	.72999	4.85475	8.00	105.00	.000
Roys	.27001				

Note.. F statistics are exact.

EFFECT .. GROUP (Cont.)

Univariate F-tests with (1,112) D. F.

Variable	Hypoth. SS	Error SS	Hypoth. MS	Error MS	F	Sig. of F
Q41_5	626.05937	3485.50423	626.05937	31.12057	20.11722	.000
Q42_5	9.30921	2736.78070	9.30921	24.43554	.38097	.538
Q43_5	194.70104	2034.24632	194.70104	18.16291	10.71970	.001
Q44_5	120.51332	1992.62923	120.51332	17.79133	6.77371	.011
Q45_5	.13159	2559.62279	.13159	22.85377	.00576	.940
Q46_5	42.02819	2596.43015	42.02819	23.18241	1.81293	.181
Q47_5	106.58863	3181.37629	106.58863	28.40515	3.75244	.055
Q48_5	40.39126	3378.75129	40.39126	30.16742	1.33890	.250